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**AG 660**

**CONSUMER ECONOMICS / AGRICULTURAL**

**BUSINESS**

**AND ECONOMICS**

FOR

IDAHO

SECONDARY AGRICULTURE INSTRUCTORS

Developed and written by:  
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University of Idaho

By  
Douglas A. Pals, Project Director

## FOREWORD

The Agricultural Science and Technology Curriculum Guides are the product of many years of careful planning and development. In 1987, an Agricultural Education Technical Committee was assembled to determine the competencies necessary to prepare students for careers in agriculture. In 1989, a committee of secondary agriculture instructors, state supervisory staff and University of Idaho Agricultural and Extension Education faculty arranged the competencies into an outline of courses appropriate for secondary agriculture programs in Idaho. These curriculum guides have been written to provide the secondary agriculture instructor with up-to-date instructional materials to be used in developing lessons for the student interested in pursuing a career in agriculture.

The arrangement of the guide follows the courses outlined in the Agricultural Science and Technology Curriculum Outline - The Guide to the 90's (Vo. Ed. #240) published in 1989. The format used in this guide was adapted from the curriculum guides developed for Idaho secondary agriculture instructors during the period of 1981-1985.

The original Idaho Agricultural Curriculum Guides used in the development of these materials were:

- 1981 - Livestock Production
- 1981 - Agricultural Mechanics
- 1982 - Farm Business Management
- 1985 - Crop and Soil Science

Many individuals made the original guides possible. The format used was adapted from curriculum developed by the Curriculum and Instructional Materials Center of the Oklahoma State Department of Vocational and Technical Education. Selected information and many of the transparency masters used in the guides were provided by the Vocational Instructional Services, Texas A & M University. Additional information and transparency masters were provided by the Department of Agricultural Communications and Education, College of Agriculture, University of Illinois and the Agricultural Education Program, Department of Applied Behavioral Sciences, University of California, Davis.

Laboratory exercises incorporated into the units of instruction were used from the Holt, Rinehart and Winston, Inc. book, Modern Biology, Biology Investigations and the Scott, Foresman, and Company Lab Manual for Biology. Credit appears on the first page of the materials used from these two sources.

Without the following individuals' dedication and commitment, this project would not have been completed.

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## USE OF THIS PUBLICATION

### Introduction

This material must be taught. It does not replace the teacher, nor the teacher's expertise. The teacher needs to adapt the material to the local area and individual students. The teacher must also provide the necessary motivating techniques to help the students learn the material.

The pages in the guide are color coded to assist in identifying and locating the desired pages. The colors used are:

|  |        |
|--|--------|
| Table of Contents                          | Ivory  |
| Semester Course Title Page                 | Green  |
| Foreword                                   | Yellow |
| Use of Publication                         | Salmon |
| Divider Page Between Units                 | Tan    |
| Refer to Another Unit Page                 | Grey   |
| Unit Objectives/Specific Competencies      | White  |
| Suggested Activities                       | Blue   |
| Information Sheets                         | White  |
| Transparency Masters                       | White  |
| Assignment Sheets                          | White  |
| Answers to Assignment Sheets               | Gold   |
| Instructors Notes for Laboratory Exercises | Blue   |
| Laboratory Exercises                       | White  |
| Answers to Laboratory Exercises            | Gold   |
| Unit Test                                  | White  |
| Answers to Test                            | Gold   |

### Instructional Units

These units are not geared to a particular age level and must be adapted for the students with whom they are used. Units include objectives and competencies, suggested activities for the instructor and students, information sheet, transparency masters, assignment sheets, laboratory exercises, instructor notes for laboratory exercises, answers to assignment sheets and laboratory exercises, test and answers to test. Units are planned for more than one lesson or class period.

The teacher should carefully study each instructional unit to determine:

- A. The appropriateness of the material for the age level
- B. The amount of material that can be covered during a class period
- C. Additional objectives and/or assignments, which could be developed

- D. The skills that must be demonstrated
  1. Supplies needed
  2. Equipment needed
  3. Amount of practice needed
  4. Amount of class time needed for demonstrations
- E. Supplementary materials, such as pamphlets, filmstrips and slides that must be ordered
- F. Resource people who must be contacted

Objectives and Competencies

Each unit of instruction is based on stated objectives. These objectives state the goals of the unit, thus providing a sense of direction and accomplishment for the student.

The objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the student performances necessary to reach the unit objective.

Since the objectives of the unit provide direction for the teaching-learning process, it is important for the teacher and students to have a common understanding of the intent of the objectives. A limited number of performance terms have been used in the objectives for this curriculum to assist in promoting the effectiveness of the communication among all individuals using the materials.

Following is a list of performance terms and their synonyms that may have been used in this material:

| <u>Name</u>        | <u>Identify</u> | <u>State a Rule</u> | <u>Apply a Rule</u> |
|--------------------|-----------------|---------------------|---------------------|
| Label              | Select          | Calculate           |                     |
| List in writing    | Mark            |                     |                     |
| List orally        | Point out       |                     |                     |
| Letter             | Pick out        |                     |                     |
| Record             | Choose          |                     |                     |
| Repeat             | Locate          |                     |                     |
| Give               | Match           |                     |                     |
| <u>Describe</u>    |                 | <u>Order</u>        | <u>Distinguish</u>  |
| Define             |                 | Arrange             | Discriminate        |
| Discuss in writing |                 | Sequence            |                     |
| Discuss orally     |                 | List in order       |                     |
| Interpret          |                 | Classify            |                     |
| Tell how           |                 | Divide              |                     |
| Tell what          |                 | Isolate             |                     |
| Explain            |                 | Sort                |                     |

## Construct

Draw  
Make  
Build  
Design  
Formulate  
Reproduce

Transcribe  
Reduce  
Increase  
Figure  
Conduct  
Compare

## Demonstrate

Show your work  
Show procedure  
Perform an experiment  
Perform the steps  
Operate  
Remove

Replace  
Turn on/off  
(Dis) assemble  
(Dis) connect

Reading of the objectives by the student should be followed by a class discussion to answer any questions concerning performance requirements for each instructional unit.

Teachers should feel free to add objectives, which will fit the material to the needs of the students and community. When a teacher adds objectives, he/she should remember to supply the needed information, assignment sheets and/or laboratory exercises and criterion tests.

## Suggested Activities

Each unit of instruction has a suggested activities sheet outlining steps to follow in accomplishing specific objectives. Duties of the instructor will vary according to the particular unit. However, for best use of the material they should include the following: provide students with objective sheet, information sheet, assignment sheets, and laboratory exercises; preview filmstrips, make transparencies, and arrange for resource materials and people; discuss unit and specific objectives and information sheet; give test. Teachers are encouraged to use any additional instructional activities and teaching methods to aid students in accomplishing the objectives.

## Information Sheet

The information sheet provides content essential for meeting the cognitive (knowledge) requirements of the unit. The teacher will find that the information sheet serves as an excellent guide for presenting the background knowledge necessary to develop the skills specified in the unit objective.

Students should read the information sheet before the information is discussed in class. Students may take additional notes on the information sheet.

## Transparency Masters

Transparency masters provide information in a special way. The students may see as well as hear the material being presented, thus reinforcing the learning process. Transparencies may present new information or they may reinforce information presented in the information sheet. They are particularly effective when identification is necessary.

Transparencies should be made and placed in the notebook where they will be immediately available for use. Transparencies direct the class's attention to the topic of discussion. They should be left on the screen only when topics shown are under discussion. (NOTE: Stand away from the overhead projector when discussing transparency material. The noise of the projector may cause the teacher to speak too loudly.)

### Assignment Sheets

Assignment sheets give direction to study and furnish practice for paper and pencil activities to develop the knowledge which is a necessary prerequisite to skill development. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided which may be used by the student and/or teacher for checking student progress.

### Laboratory Exercises

Laboratory exercises are found in selected units. The laboratory exercises include both science and agricultural mechanics activities. The science laboratory exercises often have instructions to the instructor prior to the actual laboratory. Procedures outlined in the laboratory exercise for agricultural mechanics give direction to the skill being taught and allow both student and teacher to check student progress toward the accomplishment of the skill.

### Test and Evaluation

Paper-pencil and performance tests have been constructed to measure student achievement of each objective listed in the unit of instruction. Individual test items may be pulled out and used as a short test to determine student achievement of a particular objective. This kind of testing may be used as a daily quiz and can help the teacher spot difficulties being encountered by students in their efforts to accomplish the unit objective. Test items for objectives added by the teachers should be constructed and added to the test.

### Test Answers

Test answers are provided for each unit. These may be used by the teacher and/or student for checking student achievement of the objectives.

### Care of Materials

The cost of reproduction of this guide prohibits the replacement of these materials. Therefore, please be extremely careful in handling originals. Make the necessary copies of the information sheets, transparencies, assignments and tests and replace originals in the curriculum guide notebook. Take extra care in keeping originals clear for future reproduction.

# 660A-1

## AGRICULTURAL CAREERS

### AG 660 - A

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe careers in agriculture. Students should also be able to describe how to prepare for a career in agriculture and the opportunities available. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with careers in agriculture to their correct definitions.
2. Describe the general view of opportunities in agricultural careers.
3. Describe the benefits of a career in agriculture.
4. Describe how to prepare for a career in agriculture.
5. List four places to receive training for a career in agriculture.
6. List steps for writing a good resume.
7. List six places to look for a job in agriculture.
8. List six dos and six don'ts of the interviewing process.
9. List four careers available in agricultural production.
10. List four careers available in agricultural supplies and services.
11. List four careers available in agricultural mechanics.
12. List four careers available in agricultural processing.
13. List four careers available in ornamental horticulture.
14. List four careers available in natural resources and rural recreation.
15. List four careers available in agricultural education.
16. Develop a survey of agricultural careers in community.
17. Conduct a survey of a specific agricultural occupation.
18. Choose and research a career in agriculture.

## AGRICULTURAL CAREERS

## AG 660 - A

## SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *A Young Person's Guide to Getting and Keeping a Good Job*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$6.95; order no. JWYP.
      - b. *Career Investigation: Opportunities, Choices and Decisions*, textbook with support package; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$24.95; order no. 3970-4.
      - c. *Dictionary of Occupational Titles*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$31.00; order no. JWDOT.
      - d. *Exploring Careers*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$19.95; order no. JWEXP.
      - e. *From School to Work*, textbook; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$21.00; order no. 594-7.
      - f. *Getting Ready: Decisions, Jobs, Careers*, textbook with support package; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$24.95; order no. 3531-8.
      - g. *Getting the Job You Really Want*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$7.95; order no. JWRW.
      - h. *Job Finding Fast*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$15.50; order no. JFF.
      - i. *Occupational Outlook Handbook*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$16.95; order no. JWOOH.

- j. *Working: Skills for a New Age*, textbook; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$26.95; order no. 3344-7.
  - k. *Write Into a Job*, textbook; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$7.95; order no. 3315.
2. Filmstrips, slideshows, etc.
- a. *Careers in the Future: The University of Idaho College of Agriculture*, Program #415; 9 1/2 minutes; available in each University of Idaho District Extension Office.
  - b. The following films are available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); all are 1/2" VHS format.
    - Seven Phases of a Job Interview*, 60 minutes; discusses preparation before the interview, the opening moves, the interview itself, how to close the interview, how to follow up, how to negotiate and how to make a decision on a job offer; approximate cost \$195.00; order no. JW065.
    - How to Get the Job You Want*, 60 minutes; discusses ways to determine what jobs to look for and how to make the necessary contacts to learn of the availability of these positions; approximate cost \$99.00; order no. JW189.
    - Effective Answers to Interview Questions*, 35 minutes; approximate cost \$195.00; order no. JW243.
    - Careers--Marketing Specialists*, 30 minutes; includes Commodity Broker, Livestock Buyer, Cotton Merchant, Sales Representative, Service Representative and others; approximate cost \$69.95; order no. CEV-326.
    - Careers--Social Service Professionals*, 30 minutes; includes USDA Inspector, District 4-H Director, Dietitian, Regional and Community Planner and others; approximate cost \$69.95; order no. CEV-327.
    - Careers--Agricultural Producers*, 30 minutes; includes Farmer, Nurseryman, Rancher, Foreman, Game Manager and others; approximate cost \$69.95; order no. CEV-328.
    - Careers--Education and Communication Specialists*, 30 minutes; includes Farm Show Broadcaster, Agricultural Publication Editor, Advertising/Public Relations Specialist, Vocational-Agriculture Teacher, College Professor/Extension Agent and others; approximate cost 69.95; order no. CEV-329.

*Careers--Agricultural Scientists*, 30 minutes; includes Animal Scientist, Plant Scientist, Landscape Architect, Veterinarian, Entomologist and others; approximate cost \$69.95; order no. CEV-330.

*Careers--Financial Specialists and Managers*, 30 minutes; includes Agricultural Economist, Banker, Appraiser, Food Service Manager, Retail Supermarket Manager; approximate cost \$69.95; order no. CEV-331.

- c. The following filmstrips are available from Vocational Education Productions, California Polytechnic State University, San Luis Obispo, California 93407, (1-800-235-4146).

*Introduction to Careers in Landscape Management*, sound filmstrip; approximate cost \$44.95; order no. 1-902-201J.

*Careers in Agricultural Production*, sound filmstrip; discusses careers in crop, poultry, horse, dairy and livestock production; approximate cost \$19.95; order no. 1-901-131J.

*Careers in Supplies and Services*, sound filmstrip; discusses a wide variety of careers presented in the areas of feed, fertilizers, seeds and chemicals; approximate cost \$19.95; order no. 1-901-132J.

*Careers in Equipment and Mechanics*, sound filmstrip; discusses jobs in the areas of delivery, parts, set-up, maintenance and mechanics; approximate cost \$19.95; order no. 1-901-133J.

*Careers in Agricultural Products*, sound filmstrip; discusses opportunities available in the food processing industry, from entry level into management; approximate cost \$19.95; order no. 1-901-134J.

*Careers in Ornamental Horticulture*, sound filmstrip; discusses specialist careers in arboriculture, floriculture, landscaping, nursery and turf; approximate cost \$19.95; order no. 1-901-135J.

*Careers in Agricultural Resources*, sound filmstrip; discusses careers in fisheries management, soils, range, water and wildlife management and recreation; approximate cost \$19.95; order no. 1-901-136J.

*Careers in Environmental Protection*, sound filmstrip; approximate cost \$19.95; order no. 1-901-138J.

*Careers in Forestry*, sound filmstrip; discusses careers in forest establishment, protection, logging, harvesting and transportation, wood utilization and others; approximate cost \$19.95; order no. 1-901-137J.

- B. Make transparencies and necessary copies of materials.
- C. Provide students with objectives and discuss.

- D. Provide students with information and assignment sheets and discuss.
- E. Arrange for school counselor to present information on careers in agriculture.
- F. Arrange for a field trip to local businesses to look at agricultural occupations.
- G. Attend a career day at the nearest college or university.
- H. Arrange for an employer in the community to visit with students about the qualities of a good prospective employer.
- I. Make a list of various agricultural occupations in the local area.

(Note: There are over 500 different job titles in agriculture. The ones given in this unit are just examples.)

- J. Review and give test.
- K. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Transparency masters
  - 1. TM 1--Dos and Don'ts of Interviewing
  - 2. TM 2--Careers in Agricultural Production
  - 3. TM 3--Careers in Agricultural Supplies and Services
  - 4. TM 4--Careers in Agricultural Mechanics
  - 5. TM 5--Careers in Agricultural Processing
  - 6. TM 6--Careers in Ornamental Horticulture
  - 7. TM 7--Careers in Natural Resources and Rural Recreation
  - 8. TM 8--Careers in Agricultural Education
- E. Handout
  - 1. HO 1--Types of Resumes
- F. Assignments sheets
  - 1. AS 1--Develop a Survey of Agricultural Careers in Community

2. AS 2--Conduct a Survey of a Specific Agricultural Occupation
3. AS 3--Agricultural Career Puzzles

(Note: Career titles may appear in more than one area in the handouts. For example, "farmer" could appear both in agricultural production and agricultural mechanics.)

4. AS 4--Choose and Research a Career in Agriculture

G. Answers to assignment sheets

H. Test

I. Answers to test

III. Unit references

- A. Careers in Agriculture, California Vocational Agriculture Curriculum Guidelines Instructional Unit.
- B. Carlile, Robert B., Careers in Agriculture, Instructional Materials Laboratory, Columbia, Missouri.
- C. Dictionary of Occupational Titles, 4th edition, U.S. Department of Labor, Employment and Training Administration, 1977.
- D. Exploring Careers in Agronomy, Crops, and Soils, American Society of Agronomy, Madison, Wisconsin 53711.
- E. Hoover, Norman K., Handbook of Agricultural Occupations, 4th edition, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1985.
- F. Hoppock, Robert, Occupational Information, 4th edition, 1976.
- G. Koltun, A., Lieruance, N., and Richmond, K., Looking Ahead ... Job Seeking Skills for the Beginner.
- H. Land o' Lakes Agricultural Services, Vol. I. No. 1-4, Sept. 1974., Vol II, No. 1-5, Jan-May, 1975.
- I. Lee, Jasper S., Working in Agricultural Industry, McGraw-Hill Book Company, New York, New York, 1978.
- J. Stone, A.A., Stone, M.L., and Gulvin, H.E., Careers in Agribusiness and Industry, 3<sup>rd</sup> edition, 1980.

AGRICULTURAL CAREERS

AG 660 - A

INFORMATION SHEET

- I. Terms and definitions
  - A. Career--An occupation or profession followed as one's lifework
  - B. Profession--A particular occupation, especially one requiring specialized education
  - C. Agricultural production--The process of producing farm products  
Examples: Dairy farming, producing potatoes
  - D. Job--One or more tasks that are grouped together and performed by a person and/or machine
  - E. Land Grant Colleges--Colleges founded by the U.S. Government to teach agriculture and agricultural mechanics
  - F. Resume--Summary of a person's qualifications, usually in outline form
  - G. Agricultural supplies and service careers--Careers which involve supplying farmers and ranchers with needed products and services
  - H. Agricultural processing careers--Careers which involve handling and processing of farm goods after they have been harvested
  - I. Ornamental horticulture careers--Careers associated with the production, processing and handling of specialty plants such as flowers, shrubs and trees
  - J. Natural resource careers--Careers associated with conserving and managing public and private lands
- II. General view of opportunities in agriculture
  - A. In recent years the number of jobs available has been greater than the number of qualified workers
  - B. Jobs are available for those who work toward becoming educated and trained
  - C. Jobs available in diverse areas
    - 1. Agricultural production
    - 2. Agricultural supplies
    - 3. Agricultural mechanics
    - 4. Agricultural products

5. Ornamental horticulture
6. Agricultural manufacturing and processing
7. Agricultural resources
8. Forestry
9. Agricultural research
10. Agricultural communications
11. Agricultural education

III. Benefits of a career in agriculture

- A. Lets you be a part of a dynamic, competitive and challenging industry
- B. Lets you be in an industry that allows you to use a balance of mental and physical skills
- C. Allows you to have an occupation associated with the production of tangible and useful products essential to all humans
- D. May provide opportunities to work out-of-doors
- E. Allows you a good chance of security in employment
- F. Provides numerous opportunities to work and live in a wide range of desirable living environments

IV. Preparing for a career in agriculture

- A. Choose a specific career or career area that you are interested in pursuing
- B. Research to determine the employment outlook, nature of the work, qualifications needed, salary range and how to enter and advance in the occupation or occupations that interest you
- C. Prepare a plan of action
  1. Work experience
  2. High school education
    - a. Vocational agriculture
    - b. English
    - c. Foreign language
    - d. Sciences

3. Post high school education
    - a. Vocational technical college
    - b. Two year college
    - c. Four year college/university
  4. Activities that develop leadership
- V. Places to receive training for a career in agriculture
- (Note: Some agricultural occupations require four years or more of serious college study. Others require two-year degrees or specialized training. Still others require only on-the-job training. Careful research is suggested before making decisions about where to go. High school counselors can be helpful in providing information, as well as your vocational agriculture instructor and others in the agricultural industry.)
- A. Major colleges and universities
  - B. Junior or community colleges
  - C. Area vocational-technical schools
  - D. Business and technical institutes
- VI. Steps for writing a good resume (Handout #1)
- A. Choose an appropriate style
    1. Chronological--List all work experience and education beginning with most recent
    2. Functional--List work experience by job title and give a description of achievements under each title
  - B. Include the following information
    1. Name, address and telephone at the top of the page
    2. Job objective stating what you want to gain from job
    3. Summary of your work history emphasizing the most important jobs you have done
    4. Schools attended with dates and degrees
    5. Important experiences and awards
  - C. Make resume attractive and useful
    1. Keep it short
    2. Use active verbs like "supervised", "managed", etc.

3. Always type your resume

VII. The job search

- A. State employment service
- B. Private employment agencies
- C. People you know
- D. Want ads
- E. Businesses you are interested in
- F. Door to door approach
- G. Local college placement center

(Note: You must be enrolled in the college or be an alumni of the college to use the placement center.)

- H. Placement interviews conducted by businesses on campuses or in communities

VIII. Dos and don'ts of interviewing (Transparency 1)

- A. Do
  1. Be punctual
  2. Introduce yourself to the interviewer
  3. Act natural
  4. Be pleasant and friendly but businesslike
  5. Let the employer control the interview
  6. Speak positively about your skills
  7. Give specific examples of what you can do
  8. Ask questions
  9. Be appropriately groomed
  10. Wear clean, pressed clothes
  11. Research the business before the interview
  12. Send a follow-up letter after the interview

- B. Don't
  - 1. Gossip or speak badly about former employers or fellow workers
  - 2. Talk about personal, domestic or financial problems
  - 3. Smoke or chew gum
  - 4. Play with your hair or rings
  - 5. Use slang words such as "yep" and "nope"
  - 6. Act nervous
  - 7. Act overly confident
  - 8. Go to the interview dirty or ungroomed
  - 9. Slouch in your chair

IX. Careers in agricultural production (Transparency 2)

- A. Livestock producer--Breeds and raises livestock such as beef, dairy, swine, horses, sheep, fowl and other animals that would fall into the livestock category
- B. Crop producer--Plants, cultivates and harvests crops such as wheat, barley and corn
- C. Farm equipment operator--Operates and maintains farm equipment; may be called on to operate a variety of machines in the completion of jobs such as plowing, discing and grinding grain
- D. Livestock handler--Works on a livestock operation feeding and vaccinating livestock
- E. Farm hand--Performs a variety of tasks on a farm
- F. Trainer--Trains animals for show and competition
- G. Foreman--Supervises the work of farm hands and helps organize the work schedule
- H. Breeder--Studies, supervises and coordinates breeding program for either a crop or livestock operation
- I. Agronomist--Conducts experiments in field crop problems and develops new methods of growing crops
- J. Animal scientist--Conducts research in selection, breeding, feeding, management and marketing livestock

- X. Careers in agricultural supplies and services (Transparency 3)
  - A. Grain inspector--Inspects grain of all types for impurities
  - B. Meat inspector--Inspects meat to insure that the meat and packing plant handling the meat conform to health regulations
  - C. Custom operator--Provides machinery and labor to accomplish a specific farming operation
  - D. Truck driver--Hauls a variety of goods from one location to another
  - E. Veterinarian--Diagnoses and treats diseases and disorders of animals
  - F. Farm supply sales representative--Sells a variety of supplies to farmers and ranchers
  - G. Crop duster--Sprays crops with chemicals using a plane
  - H. Feed mixer--Mixes feed for livestock operation using ration formulation techniques
  - I. Livestock sales representative--Sells livestock on commission to purchasers
  - J. Delivery person--Delivers goods from a supply store to the farm
  
- XI. Careers in agricultural mechanics (Transparency 4)
  - A. Farm equipment mechanic--Maintains, repairs and overhauls farm machinery, equipment and vehicles
  - B. Inspector and tester--Inspects agricultural equipment for missing or defective parts and operational malfunctions
  - C. Farm machinery set-up mechanic--Erects and assembles farm machinery for use in the fields
  - D. Arc welder--Welds together metal components according to work order using electric arc welder
  - E. Gas welder--Welds metal parts according to work order using gas welding equipment
  - F. Machinist--Sets up and operates machine tools to make or repair metal parts
  - G. Agricultural engineer--Applies engineering technology to agricultural problems concerned with power and machinery, structures and processing of agricultural products
  
- XII. Careers in agricultural processing (Transparency 5)
  - A. Food inspector--Inspects establishments where food and similar consumer items are manufactured, handled, stored or sold

- B. Produce broker--Buys and sells produce on commission at customer's order
  - C. Packing house foreman--Supervises and coordinates activities of workers engaged in receiving, grading, storing and shipping produce
  - D. Seed processor--Processes seed for storage and shipment
  - E. Quality control technician--Inspects raw materials and finished products, and tests and adjusts packaging equipment during processing of food
  - F. Display technician--Designs displays, using a variety of materials, to decorate buildings and other places for advertising or special events
  - G. Packager--Packages materials and products manually or with the aid of equipment
- XIII. Careers in ornamental horticulture (Transparency 6)
- A. Supervisor, rose grader--Supervises and coordinates activities of workers engaged in grading flowers according to size and appearance
  - B. Plant propagator--Propagates plants, such as orchids, applying knowledge of environmental controls and plant culture
  - C. Flower picker--Harvests flowers when in bloom
  - D. General horticulture worker--Plants, cultivates and harvests horticultural plants
  - E. Horticulture specialty grower--Grows horticultural specialty products and crops such as flowers and vegetables inside a greenhouse or out in the field
  - F. Horticulture farm supervisor--Supervises and coordinates activities of workers engaged in cultivating, planting and harvesting horticultural crops
  - G. Horticultural buyer--Buys horticultural products such as seed, flowers and trees on contract for stores and private individuals
  - H. Park groundsman--Maintains grounds by performing a combination of many operations such as mowing lawns, planting flowers and spraying trees for insects
  - I. Head greenskeeper--Supervises and coordinates activities of workers engaged in keeping grounds and turf of golf course in playing condition
- XIV. Careers in natural resources and rural recreation (Transparency 7)
- A. Forest nursery supervisor--Supervises and coordinates activities of workers engaged in planting, cultivating, and harvesting seedling forest trees
  - B. Fish hatchery supervisor--Supervises and coordinates activities of workers engaged in the operation of a fish hatchery

- C. Fish and game preserve manager--Directs and coordinates activities concerned with operation of state or private game preserve
  - D. Soil conservationist--Plans and develops coordinated practices for soil erosion control, moisture conservation and sound land use
  - E. Range manager--Conducts research in range problems to provide sustained production of forage, livestock and wildlife
  - F. Forest ecologist--Conducts research in environmental factors affecting forests
  - G. Park ranger--Enforces laws, regulations and policies in state and national parks
  - H. Gamekeeper--Breeds, raises and protects game animals and birds on state game farm or private game preserves
- XV. Careers in agricultural education (Transparency 8)
- A. Agriculture instructor--Teaches students basic theory and technique of production agriculture, agricultural mechanics and agribusiness skills; also teaches and supervises the student organization, the FFA
  - B. Agricultural extension agent--Organizes and conducts cooperative extension programs to advise and instruct farmers about the application of agricultural research findings
  - C. 4-H club agent--Organizes and directs educational projects and activities of 4-H clubs
  - D. District extension supervisor--Directs and coordinates activities of extension agents in a group of counties
  - E. Extension specialist--Instructs extension workers and develops specialized service activities in agriculture
  - F. Feed and farm management advisor--Instructs farmers and retail grain and feed store customers in modern and scientific feed and farm management techniques
  - G. Agricultural education professor--Conducts college or university courses for undergraduate or graduate students that deal with theory and techniques of being a successful secondary agriculture instructor

# **DO'S AND DON'TS OF INTERVIEWING**

## **DO**

**Be punctual**

**Introduce yourself to the interviewer**

**Act natural**

**Be pleasant and friendly but businesslike**

**Let the employer control the interview**

**Speak positively about your skills**

**Give specific examples of what you can do**

**Ask questions**

**Be appropriately groomed**

**Wear clean, pressed clothes**

**Research the business before the interview**

**Send a follow-up letter after the interview**

## **DON'T**

**Gossip or speak badly about former employers or fellow workers**

**Talk about personal, domestic or financial problems**

**Smoke or chew gum**

**Play with your hair or rings**

**Use slang words such as "yep" and "nope"**

**Act nervous**

**Act overly confident**

**Slouch in your chair**

**Go to the interview dirty or ungroomed**

# **CAREERS IN AGRICULTURAL PRODUCTION**

**Livestock Producer**

**Crop Producer**

**Farm Equipment Operator**

**Livestock Handler**

**Farm Hand**

**Trainer**

**Foreman**

**Breeder**

**Agronomist**

**Animal Scientist**

# **CAREERS IN AGRICULTURAL SUPPLIES AND SERVICES**

**Grain Inspector**

**Meat Inspector**

**Custom Operator**

**Truck Driver**

**Veterinarian**

**Farm Supply Sales Representative**

**Crop Duster**

**Feed Mixer**

**Livestock Sales Representative**

**Delivery Person**

# **CAREERS IN AGRICULTURAL MECHANICS**

**Farm Equipment Mechanic**

**Inspector and Tester**

**Farm Machinery Set-up Mechanic**

**Arc Welder**

**Gas Welder**

**Machinist**

**Agricultural Engineer**

# **CAREERS IN AGRICULTURAL PROCESSING**

**Food Inspector**

**Produce Broker**

**Packing House Foreman**

**Seed Processor**

**Quality Control Technician**

**Display Technician**

**Packager**

# **CAREERS IN ORNAMENTAL HORTICULTURE**

**Supervisor, Rose Grader**

**Plant Propagator**

**Flower Picker**

**General Horticulture Worker**

**Horticulture Specialty Grower**

**Horticulture Farm Supervisor**

**Horticulture Buyer**

**Park Groundsman**

**Head Greenskeeper**

# **CAREERS IN NATURAL RESOURCES AND RURAL RECREATION**

**Forest Nursery Supervisor**

**Fish Hatchery Supervisor**

**Fish and Game Preserve Manager**

**Soil Conservationist**

**Range Manager**

**Forest Ecologist**

**Park Ranger**

**Gamekeeper**

**CAREERS IN  
AGRICULTURAL EDUCATION**

**Agriculture Instructor**

**Agricultural Extension Agent**

**4-H Club Agent**

**District Extension Supervisor**

**Extension Specialist**

**Feed and Farm Management Advisor**

**Agricultural Education Professor**

# TYPES OF RESUMES

## CHRONOLOGICAL

Mary Jane Smith  
412 S. Dayton Ave.  
Seattle, WA 92113  
(206)454-9841

### JOB OBJECTIVE:

To become associated with a progressive company in which my business skills and organizational abilities will be utilized to better serve the customer.

### WORK EXPERIENCE:

1989-90  
Sales clerk of a department store. Supervised the layout of the window display, prepared daily invoices, assisted in organizing the advertisement.

Summer: 1988  
Worked while attending high school for Bresler's Ice Cream Parlor. Responsible for closing up the store in the evenings. Operated cash register and dealt with the public.

School Year: 1987-88  
Part-time after school job working for a local newspaper. Organized notes for distribution, handled correspondence, answered phones and maintained office records.

### EDUCATION:

June, 1990  
Chief Joseph High School, Seattle, WA, diploma

June, 1991  
ITT Business School, Seattle, WA, certificate.

### ACHIEVEMENTS:

Pep Club President, 1988  
Honor Society, 1986-88  
Girl's Club Secretary, 1987

### REFERENCES:

Available upon request.

## FUNCTIONAL

Mary Jane Smith  
412 S. Dayton Avenue  
Seattle, WA 92113  
(206)454-9841

### Office Manager

Supervised seven clerical personnel, was responsible for organizing work schedules, time cards and distributing payroll checks. Duties also included staff evaluations and interviewing job applicants.

### Sales Manager

Managed women's apparel section of a large department store, supervised salespersons, designed floor displays. Departmental representative at all organizational meetings.

### Assistant Salesperson

Part-time after school position. Assisted in setting up displays and merchandise sales. Operated cash register and worked extensively with the public.

### Secretary

Answered phone, coordinated staff schedule, greeted public, maintained files, handled correspondence and purchased office materials.

### EDUCATION

June, 1990  
Chief Joseph High School, Seattle, WA diploma

June, 1991  
ITT Business School, Seattle, WA certificate

### REFERENCES

Available upon request.

AGRICULTURAL CAREERS

AG 660 - A

ASSIGNMENT SHEET #1--DEVELOP A SURVEY OF AGRICULTURAL CAREERS  
IN THE COMMUNITY

Name \_\_\_\_\_ Score \_\_\_\_\_

Under each category below, list as many agricultural careers in your community as you can. Talk to employers, employees and other people in the community to get the names of careers in each category.

Example: Production agriculture--Beef Cattle Rancher

1. Agricultural production

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2. Agricultural supplies and services

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3. Agricultural mechanics

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4. Agricultural processing

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5. Ornamental horticulture

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6. Natural resources and rural recreation

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7. Agricultural education

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## AGRICULTURAL CAREERS

AG 660 - A

ASSIGNMENT SHEET #2--CONDUCT A SURVEY OF A SPECIFIC  
AGRICULTURAL OCCUPATION

Name \_\_\_\_\_ Score \_\_\_\_\_

Select one occupation in your community in which you may be interested. Complete the following questions by interviewing someone who works in that occupation. Make sure you interview the person while he is at home and not working. By filling in the questions, you will be able to determine the advantages and disadvantages of the particular occupation.

1. What do workers say they like most and least about their jobs? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Are hours regular or irregular, long or short? \_\_\_\_\_  
\_\_\_\_\_
3. Is there frequent overtime? \_\_\_\_\_
4. Is there night work? \_\_\_\_\_
5. Is there Sunday and holiday work? \_\_\_\_\_
6. What are the vacations? \_\_\_\_\_
7. Is there maternity or paternity leave? \_\_\_\_\_
8. What other types of "fringe" benefits are offered? \_\_\_\_\_
9. Is employment steady, seasonal or irregular? \_\_\_\_\_
10. Does one earn more or less with advancing age? \_\_\_\_\_
11. Is the working lifetime shorter than average? \_\_\_\_\_  
\_\_\_\_\_
12. Are the skills acquired transferable to other occupations? \_\_\_\_\_
13. Is the work hazardous? \_\_\_\_\_
14. What about accidents or occupational diseases? \_\_\_\_\_  
\_\_\_\_\_

15. How will the work affect the life style of the worker and the family? \_\_\_\_\_

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16. Is the pay comparable to that of other jobs with similar skills? \_\_\_\_\_

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17. What is the working environment like? \_\_\_\_\_

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18. What kind of preparation is needed to gain employment? \_\_\_\_\_

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## AGRICULTURAL CAREERS

AG 660 - A

## ASSIGNMENT SHEET #3--AGRICULTURAL CAREERS PUZZLES

Name \_\_\_\_\_ Score \_\_\_\_\_

1. LOCATE FIFTEEN PRODUCTION AGRICULTURE CAREERS

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S | Q | W | C | A | T | T | L | E | R | T | E |
| U | R | I | O | P | A | D | S | F | G | S | H |
| P | K | E | G | G | S | L | G | Z | R | E | X |
| O | C | V | W | B | N | M | O | O | Q | E | R |
| U | T | Y | P | O | R | C | H | A | A | D | N |
| I | C | O | R | N | I | A | P | D | F | G | I |
| T | Y | A | H | I | J | F | E | K | L | R | A |
| R | W | T | Y | D | A | D | E | N | M | W | R |
| Y | T | S | P | W | Q | D | H | A | Y | C | G |
| S | O | Y | B | E | A | N | S | M | N | B | V |

2. LOCATE 10 PRODUCTS OR SERVICES PROVIDED BY AGRICULTURAL SUPPLY AND SERVICE EMPLOYEES

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| L | A | C | I | M | E | H | X | L | I | A | H |
| S | Q | U | W | E | C | T | T | L | N | E | R |
| G | G | S | L | A | G | Z | E | X | S | H | C |
| E | K | T | P | T | O | C | C | V | U | W | R |
| D | N | O | P | E | R | A | T | O | R | M | E |
| G | H | M | R | W | T | E | Y | D | A | I | D |
| R | C | G | R | W | M | D | V | N | N | E | I |
| A | T | R | U | C | K | I | N | G | C | Y | T |
| I | N | S | P | E | C | T | O | R | E | T | Q |
| N | C | R | E | E | N | O | I | T | C | U | A |

3. LOCATE FIFTEEN AGRICULTURAL MECHANICS CAREER AREAS

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | C | O | M | P | A | N | Y | R | E | P | S |
| S | D | A | Q | W | E | R | T | Y | U | I | U |
| D | F | A | R | M | I | N | G | D | F | G | R |
| L | Y | K | J | P | A | R | T | S | H | F | V |
| M | Z | T | C | V | E | M | N | B | V | C | E |
| E | N | G | I | N | E | E | R | I | N | G | Y |
| C | W | L | E | C | R | T | T | I | T | W | O |
| H | Z | X | E | C | I | V | N | R | B | N | R |
| A | B | N | M | U | M | R | E | I | Y | W | Q |
| N | B | V | C | X | F | R | T | P | A | Y | I |
| I | T | S | A | L | E | S | T | C | U | R | O |
| C | G | N | I | D | L | E | W | R | E | T | G |
| M | N | B | V | G | N | I | B | M | U | L | P |
| S | E | T | U | P | D | S | E | R | I | T | E |

4. LOCATE FIFTEEN AGRICULTURAL SALES CAREERS

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F | Q | M | S | L | A | C | I | M | E | H | C |
| L | E | W | E | R | T | Y | U | O | I | D | E |
| O | A | R | S | A | D | F | G | N | E | L | Q |
| W | Z | X | T | C | T | Q | B | E | N | E | U |
| E | M | J | K | I | L | P | S | Y | I | U | I |
| R | Y | D | N | A | L | T | R | E | W | F | P |
| S | Q | M | A | C | H | I | N | E | R | Y | M |
| A | S | H | R | U | B | S | Z | S | D | F | E |
| D | E | E | F | N | B | V | S | E | M | E | N |
| E | C | N | A | R | U | S | N | I | R | G | T |

AGRICULTURAL CAREERS

AG 660 - A

ASSIGNMENT SHEET #4--CHOOSE AND RESEARCH A CAREER IN AGRICULTURE

Name \_\_\_\_\_ Score \_\_\_\_\_

Choose a career in agriculture that interests you. Research the career and write a report about it. Include as much information as you can, such as:

Job/career description and responsibilities

Education required

Training required

Opportunities for advancement

Location (for example, Pacific Northwest, foreign country, rural community, etc.)

Salary range

Why you would or would not want to follow a career in this area

Obtain information from sources such as people you know in that career, books on careers, your school guidance counselor, University of Idaho College of Agriculture and others.

AGRICULTURAL CAREERS

AG 660 - A

ANSWERS TO ASSIGNMENT SHEETS

**Assignment Sheet #1**--Evaluated to the satisfaction of the instructor.

**Assignment Sheet #2**--Evaluated to the satisfaction of the instructor.

**Assignment Sheet #3**

1. Sheep, dairy, hogs, cattle, seed, horse, orchard, eggs, flowers, soybeans, poultry, oats, corn, grain and hay
2. Meat, trucking, auctioneer, A-I, vet, grain inspector, custom operator, hail insurance, credit and chemicals
3. Carpentry, tires, fuel, mechanic, parts, electricity, plumbing, welding, sales, surveyor, grain, engineering, farmer, set-up and company reps
4. Semen, chemicals, land, insurance, machinery, equipment, seed, shrubs, flowers, fertilizer, feed, fuel, meat and money

**Assignment Sheet #4**--Evaluated to the satisfaction of the instructor.

## AGRICULTURAL CAREERS

AG 660 - A

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct number in the blank provided.
- |          |   |   |
|----------|---|---|
| _____ a. | The process of producing farm products  | 1. Natural resource careers                   |
| _____ b. | Careers which involve supplying farmers and ranchers with needed products and services                                | 2. Agricultural processing careers            |
| _____ c. | Careers associated with the production, processing and handling of specialty plants such as flowers, shrubs and trees | 3. Land Grant Colleges                        |
| _____ d. | An occupation or profession followed as one's lifework  | 4. Career                                     |
| _____ e. | One or more tasks that are grouped together and performed by a person and/or machine                                  | 5. Agricultural production                    |
| _____ f. | Careers which involve handling and processing of farm goods after they have been harvested                            | 6. Resume                                     |
| _____ g. | Careers associated with conserving and managing public and private lands  | 7. Ornamental horticulture careers            |
| _____ h. | Summary of a person's qualifications, usually in outline form   | 8. Job  |
| _____ i. | Colleges founded by the U.S. Government to teach agriculture and agricultural mechanics                               | 9. Profession                                 |
| _____ j. | A particular occupation, especially one requiring specialized education   | 10. Agricultural supplies and service careers |
2. Describe the general view of opportunities in agriculture by completing the following section.
- a. Availability of jobs: \_\_\_\_\_  
\_\_\_\_\_
- b. Who the jobs are available for \_\_\_\_\_
- c. Areas jobs are available in: \_\_\_\_\_  
\_\_\_\_\_

3. Describe the benefits of a career in agriculture. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Describe how to prepare for a career in agriculture.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. List four places to receive training for a career in agriculture.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

6. List steps for writing a good resume under the appropriate category below.  
Choose an a. \_\_\_\_\_ for the resume.  
Include the following information:

- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

Make resume attractive and useful by:

g. \_\_\_\_\_

h. \_\_\_\_\_

i. \_\_\_\_\_

7. List six places to look for a job in agriculture.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

8. List six dos and six don'ts of the interviewing process.

Dos:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

Don'ts:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

9. List four careers available in agricultural production.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

10. List four careers available in agricultural supplies and services.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

11. List four careers available in agricultural mechanics.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

12. List four careers available in agricultural processing.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

13. List four careers available in ornamental horticulture.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

14. List four careers available in natural resources and rural recreation.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

15. List four careers in agricultural education.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

## AGRICULTURAL CAREERS

## AG 660 - A

## ANSWERS TO TEST

1.
 

|       |      |      |      |
|-------|------|------|------|
| a. 5  | d. 4 | g. 1 | j. 9 |
| b. 10 | e. 8 | h. 6 |      |
| c. 7  | f. 2 | i. 3 |      |
  
2.
  - a. Job opportunities have been greater than the number of qualified workers
  - b. People who are educated or trained
  
- c. Answer should include some or all of the following:
 

Agricultural Production; Agricultural Supplies; Agricultural Mechanics; Agricultural Products; Ornamental Horticulture; Agricultural Manufacturing and Processing; Agricultural Resources; Forestry; Agricultural Research; Agricultural Communications; Agricultural Education
  
3. Answer should include information from the following:
 

Lets you be part of a dynamic, competitive and challenging industry; Lets you be in an industry that allows you to use a balance of mental and physical skills; Allows you to have an occupation associated with the production of tangible and useful products essential to all humans; May provide opportunities to work out-of-doors; Allows you a good chance of security in employment; Provides numerous opportunities to work and live in a wide range of desirable living environments
  
4. Answer should include information from the following:
 

Choose a specific career or career area that you are interested in pursuing; Research to determine the employment outlook, nature of the work, qualifications needed, salary range and how to enter and advance in the occupation or occupations that interest you; Prepare a plan of action: Work experience; High school education: Vocational agriculture; English; Foreign language; Sciences; Post high school education: Vocational technical college; Two year college; Four year college/university; Activities that develop leadership
  
5. Colleges and universities; Junior and community colleges; Area vocational-technical schools; Business and technical institutes
  
6.
  - a. Appropriate style
  - b. Name, address and telephone at the top of the page
  - c. Job objective stating what you want to gain from job
  - d. Summary of your work history emphasizing the most important jobs you have done
  - e. Schools attended with dates and degrees
  - f. Important experiences and awards
  - g. Keeping it short
  - h. Using active verbs like "supervised", "managed" etc.
  - i. Always typing a resume
  
7. Answer should include six of the following:
 

State employment services; Private employment agencies; People you know; Wants ads; Business you are interested in; Door to door approach; Local college placement center; Placement interviews conducted by businesses on campuses or in communities

8. Answer should include six of the following "Dos":

Be punctual; Introduce yourself to the interviewer; Act natural; Be pleasant and friendly but businesslike; Let the employer control the interview; Speak positively about your skills; Give specific examples of what you can do; Ask questions; Be appropriately groomed; Wear clean, pressed clothes; Research the business before the interview; Send a follow-up letter after the interview

Answer should include six of the following "Don'ts":

Gossip or speak badly about former employers or fellow workers; Talk about personal, domestic or financial problems; Smoke or chew gum; Play with your hair or rings; Use slang words such as "yep" or "nope"; Act nervous; Act overly confident; Slouch in your chair; Go to the interview dirty or ungroomed

9. Answer may include four of the following:

Livestock producer; Crop producer; Farm equipment operator; Livestock handler; Farm hand; Trainer; Foreman; Breeder; Agronomist; Animal scientist

10. Answer may include four of the following:

Grain inspector; Meat inspector; Custom operator; Truck driver; Veterinarian; Farm supply sales representative; Crop duster; Feed mixer; Livestock sales representative; Delivery person

11. Answer may include four of the following:

Farm equipment mechanic; Inspector and tester; Farm machinery set-up mechanic; Arc welder; Gas welder; Machinist; Agricultural engineer

12. Answer should include four of the following:

Food inspector; Produce broker; Packing house foreman; Seed processor; Quality control technician; Display technician; Packager

13. Answer should include four of the following:

Supervisor, rose grader; Plant propagator; Flower picker; General horticultural worker; Horticultural specialty grower; Horticultural farm supervisor; Horticultural buyer; Park groundsman; Head greenskeeper

14. Answer should include four of the following:

Forestry nursery supervisor; Fish hatchery supervisor; Fish and game preserve manager; Soil conservationist; Range manager; Forest ecologist; Park ranger; Gamekeeper

15. Answer should include four of the following:

Agriculture instructor; Agricultural extension agent; 4-H club agent; District extension supervisor; Extension specialist; Feed and farm management advisor; Agricultural education professor

# 660B-1

## AGRICULTURAL SAFETY MANAGEMENT

### AG 660 - B

#### UNIT OBJECTIVE

After completion of this unit, students should be able to identify and describe farm safety practices and management. Students should also be able to apply these safety practices at home, at school or on the job. This knowledge will be demonstrated by completion of assignment sheets and unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with farm safety management to their correct definitions.
2. List in decreasing order of importance the three factors which contribute to farm accidents.
3. Describe management's responsibility in farm safety.
4. List sources of safety information.
5. Describe steps in developing a farm safety plan or checklist.
6. Describe how to train a new worker so that safety precautions are observed.
7. List examples of personal protective equipment recommended for farm safety.
8. Describe how to prepare for an emergency.
9. Describe safety practices that should be followed for livestock.
10. Describe safety practices that should be followed for farm machinery.
11. Select safety practices that should be followed when storing farm materials.
12. Develop and carry out a farm safety plan.
13. Develop an emergency plan for a farm and/or school shop.
14. Teach someone how to safely use a piece of equipment and how to follow the safety plan.

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Agricultural Safety*, covers farm machinery safety; available from John Deere Distribution Service Center, Service Publications, Department 150, 1400-13th St., East Moline, Illinois 61244, (1-800-544-2122); approximate cost \$30.00; order no. FMO18103B.
      - b. *Farm Accident Rescue*, handbook; discusses agricultural accidents involving overturned tractors, entanglements in large machinery, grain bin and silo entrapments, exposure to toxic gases and agricultural chemicals, and chemical fires; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-2020); order no. NRAES-10.
      - c. *First on the Scene*, bulletin; discusses farm accidents involving machinery, storage facilities, chemicals and electrocution; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-2020); order no. NRAES-12.
      - d. *Power Tool Safety and Operation*, manual; includes information on part identification, safe operational procedures, general safety practices and ten completion questions; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-2020); approximate cost \$7.45; order no. 173.
    2. Filmstrips, slideshows, etc.
      - a. *Agricultural Safety*, 240 slides; covers farm machinery safety; available from John Deere Distribution Service Center, Service Publications, Department 150, 1400-13th St., East Moline, Illinois 61244, (1-800-544-2122); approximate cost \$146.00; order no. FMO182035.
      - b. *John Deere Consolidated Safety Videotapes*, includes information on bypass starting hazards, warning signs, farm safety, safety attitude, mowing safety, combine safety, tractor safety and farm accidents; available from Deere and Company, Distribution Service Center, Safety Films Department, 1400-13th St., East Moline, Illinois 61244, (309-765-2967); approximate cost \$15.00; order no. DKVHU89580EN.

- c. *Tractor Safety*, Program #31; 20 minutes; available from Agricultural Communications Center, 10 Ag Science Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).

- B. Make transparencies and necessary copies of materials.
- C. Provide students with objective sheet and discuss.
- D. Provide students with information and assignment sheets and discuss.
- E. Obtain slide or film presentation on farm safety management.

(Note: The National Safety Council and Agricultural Extension Service would be good sources for a slide presentation. The University of Idaho and many machinery companies also have safety films available.)

- F. Arrange a field trip to a local farm to look at the safety practices carried out by the farmer.
- G. Arrange for an extension safety specialist to give a presentation on farm safety.
- H. Obtain posters on farm safety from the National Safety Council.
- I. Inspect school shop for safety hazards.
- J. Review and give test.
- K. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Transparency masters
  - 1. TM 1--Questions for Setting Up a Safety Plan
  - 2. TM 2--Safety Training
  - 3. TM 3--Emergency Plan Ingredients
- E. Assignment sheets
  - 1. AS 1--Develop and Carry Out a Farm Safety Plan
  - 2. AS 2--Develop an Emergency Plan For a Farm and/or School Shop
  - 3. AS 3--Teach Someone How to Safely Use a Piece of Equipment and How to Follow the Safety Plan

- F. Test
- G. Answers to test

III. Unit references

- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- B. *Farm Tractor Safety*, National Safety Council Farm Department, Bulletin A-022-78. Stock No. 699.41-22.
- C. *Hazard Checklist For Agriculture*, National Safety Council Farm Department, Bulletin A-008-08.
- D. *Safety Management In Agricultural Operations*, National Safety Council Farm Department, Stock No. 699.41-20.
- E. *Safety With Animals, Rural Accident Prevention Bulletin*, National Safety Council Farm Department, Stock No. 699.41-18.
- F. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- G. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

INFORMATION SHEET

- I. Terms and definitions
  - A. Safety--The condition of being safe, in which precautions are taken to prevent accident or injury
  - B. Accident--An unplanned, negative occurrence which often results in property damage and/or human injury
  - C. Safety plan--List of steps for creating a safe working environment
  - D. Safety management--Management of all elements of the farm in such away as to insure that the operation of the farm is safe for all workers
  - E. PPE--Personal protective equipment  
Examples: Gloves, goggles
  - F. Emergency plan--Plan to insure proper steps will be taken to see that an injured person is treated properly in the case of an accident
  - G. Hazard--Source of danger
  - H. National Safety Council--Organization which provides safety information
  - I. Training--Steps taken to educate new workers as to the function of equipment and safety practices that are to be followed
  - J. Human error--Mistake in judgment often caused by carelessness
- II. Factors which contribute to farm accidents
  - A. Human error
    - 1. Number one cause of accidents
    - 2. Causes
      - a. Foolish action
      - b. Falling asleep at the wheel
      - c. Poor judgment
      - d. Failure to service or make needed repairs on machinery
      - e. Safety shields not in place on machinery

- B. Machine failure
  - 1. Second leading cause of accidents, but not nearly as important as human error
  - 2. Causes
    - a. Factory error
    - b. Premature material failure

- C. Environmental factors
  - 1. Third leading cause of accidents
  - 2. Causes
    - a. Bad weather
    - b. Rugged terrain

III. Management's responsibility in farm safety

- A. Control environment  
Example: Limiting farming on unsafe ground
- B. Control machinery  
Examples: Service and repair
- C. Control employees  
Examples: Hiring, firing, discipline, education
- D. Direct safety plan
- E. Direct employee training
- F. Direct emergency plan

IV. Sources of safety information

(Note: Reading safety bulletins and materials is fundamental for an effective safety program.)

- A. Operating manuals
- B. Chemical and pesticide labels
- C. Safety articles in magazines and newspapers
- D. State and local safety councils

- E. National Safety Council
  - F. Insurance companies
  - G. Farm organizations
  - H. Manufacturers
  - I. Health and safety-oriented associations
  - J. Universities and colleges
  - K. Government agencies
  - L. Film showings
  - M. Training programs
  - N. Courses or classes
  - O. Demonstrations
  - P. Safety seminars
- V. Developing a farm safety plan and checklist (Transparency 1)
- A. Develop a list of hazards--fixed and nonfixed
    - Examples of fixed hazards: Steep slopes, power lines, bodies of water, ditches, fences
    - Examples of nonfixed hazards: Missing guards; improperly stored chemicals; faulty electrical equipment or wiring; guard rails; stairs; poorly maintained equipment and facilities; poor housekeeping; ladders; tools; work and traffic patterns; storage areas; lighting; heaters; livestock facilities; walking and working surfaces; flammables
  - B. Analyze records or recollections of past accidents to determine how the accidents could have been prevented
- VI. Training a new employee to observe safety practices (Transparency 2)
- (Note: Hiring the right person in the first place is important to job safety.)
- A. Be sure worker is physically and mentally able to handle the job
  - B. Assign people with lesser abilities to jobs they can handle

- C. Explain the job in a step by step manner using the following guidelines
  - 1. Put trainee at ease and explain why the job is important and why it should be done correctly and safely
  - 2. Demonstrate the job one step at a time with the trainee observing
  - 3. Have trainee repeat the operation several times
  - 4. Put trainee to work
  - 5. Check worker often and invite questions
  - 6. Explain what to do in an emergency
  - 7. Call safety violations to the attention of the worker
- D. Retrain if necessary

VII. Personal protective equipment used for farm safety

(Note: PPE has been used successfully in industry and could prevent many farm injuries if used properly and consistently. PPE information can be obtained from local agricultural agencies.)

- A. Bump caps and hard hats
- B. Protective eyewear
- C. Hearing protectors
- D. Dust masks
- E. Cartridge respirators
- F. Safety shoes
- G. Proper gloves
- H. Properly fitted work clothes
- I. Rubber and plastic clothing for pesticides

VIII. Preparing for an emergency (Transparency 3)

- A. Develop an emergency plan and make sure all employees and family members are familiar with it
  - 1. List steps to be taken in case of injury, choking or poisoning
  - 2. List steps to be taken in case of heart attack, stroke, heat exhaustion, heat stroke, etc.
  - 3. List steps to take in case of a natural disaster

4. List steps to take in case of a fire
  - B. Post emergency numbers at every telephone
  - C. Install smoke detectors and fire extinguishers at appropriate locations
  - D. Keep fully stocked first-aid kits in convenient locations including aboard machinery
- IX. Safety practices for livestock operations
- A. Design handling facilities for efficiency and safety
    1. Holding pens should be equipped with a quick way of emptying the pen
    2. Crowd gates should be used for crowding livestock into sorting pens
    3. Catwalks should be used along chutes and alleys
    4. Sufficient lighting should be available
  - B. Treat livestock with respect and be prepared
    1. Beef
      - a. Never startle the animal
      - b. Leave yourself an out when cornering an animal
      - c. Guard against kicking
      - d. Keep strangers and children away from animal
    2. Dairy
      - a. Never startle the animal
      - b. Give animal time to adjust to a constraining space
      - c. Don't make loud noises when handling animal
      - d. Beware of cows defending calves
      - e. Construct special facilities so no contact is made with a bull
      - f. Keep strangers and children away from animal
    3. Swine
      - a. Guard against being bitten
      - b. Never treat baby pigs in same pen as the sow
      - c. Move hogs by using a small hurdle

- d. Never startle hogs
- e. Keep strangers and children from sticking hands through fence and petting hogs
- 4. Horses
  - a. Make sure riders can handle animal, especially younger riders
  - b. Allow only a skilled rider to ride a high-spirited horse
  - c. Be especially careful when riding in rough, slippery or wooded areas
- 5. Sheep--Beware of rams and ewes with lambs
- 6. Other animals
  - a. Keep mean dogs tied up
  - b. Protect small children from roosters or geese
  - c. Teach children how to handle pets and be gentle with them
- C. Maintain safe practices around livestock facilities
  - 1. Be a good housekeeper
  - 2. Keep facilities and equipment in good repair
  - 3. Check out electrical systems in buildings
  - 4. Keep power tools in good condition
  - 5. Enter a sealed silo or manure facility only with a supplied air breathing device
  - 6. Enter a grain or feed bin only while loading and unloading operations are shut down
  - 7. Store barn chemicals and pharmaceuticals in a clean, cool, dry place where children and visitors cannot get to them
  - 8. Check all facilities for protruding nails, sharp edges and other hazards
  - 9. Keep children out of animal quarters and work areas
  - 10. Keep doors and gates closed

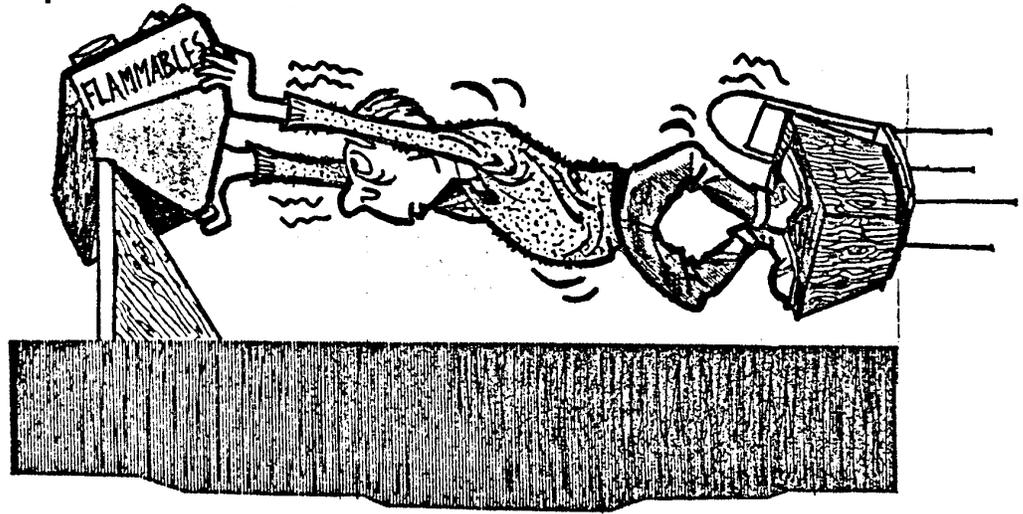
- X. Safety practices for farm machinery
  - A. Machinery maintenance and operation
    - 1. All farm machinery should be operated and maintained according to instruction manual recommendations
    - 2. Safe operating rules should be known and observed by everyone
    - 3. Shields and guards should always be in place
    - 4. Defective or worn parts should be replaced or repaired
    - 5. Power should be turned off before adjusting
    - 6. Children should be kept away from machinery
    - 7. Tractors should be equipped with roll-over protection equipment
    - 8. Slow moving emblems should be on machinery when on public roads
    - 9. Equipment lighting should be adequate
    - 10. Protective clothing should be worn when working with hazardous materials
    - 11. Hitches should be sturdy and safe
    - 12. Employees should be properly trained for each task
  - B. Machinery storage
    - 1. Floor surface should be firm and level
    - 2. Machinery should be parked so adequate walking space is available
    - 3. Doors and windows should be opened before starting an engine
    - 4. Tools and supplies should be stored neatly
    - 5. Buildings should be kept clean
    - 6. Keys should be removed from motorized equipment
    - 7. Doors should open easily and smoothly
- XI. Safety practices for storing farm materials
  - A. Agricultural chemical storage
    - 1. Chemicals should be stored in buildings that can be locked to prevent children from entering
    - 2. A building should be reserved for chemicals only

3. A sign should be posted to warn others of hazards
  4. Chemicals should be stored in their original containers
  5. Empty containers should be disposed of safely
  6. Chemicals should be mixed in the open
  7. Building should be watertight
  8. Building should be well ventilated
  9. Employees should be trained to handle chemicals safely
- B. Fuel storage
1. Above-ground tanks should be solidly supported
  2. Below-ground tanks should be located where vehicles will not affect them
  3. Hoses and pumps should be in good condition
  4. Workers should be taught safe refueling practices
  5. Workers should be alert to any leaks
- C. Grain and silage storage
1. Entrances to storage areas should be closed to keep children out
  2. Unloading machinery should be properly shielded
  3. Silo ladders should be solid
  4. Grain bins should have inside and outside ladders
  5. Sealed silos should be kept tight to prevent fire
  6. Respirator should be used when handling grain
  7. Workers should be alert to dangers of silo gas
  8. Workers should be warned of automatic operation of equipment and dangers of being inside the bin

# Questions For Setting Up A Safety Plan

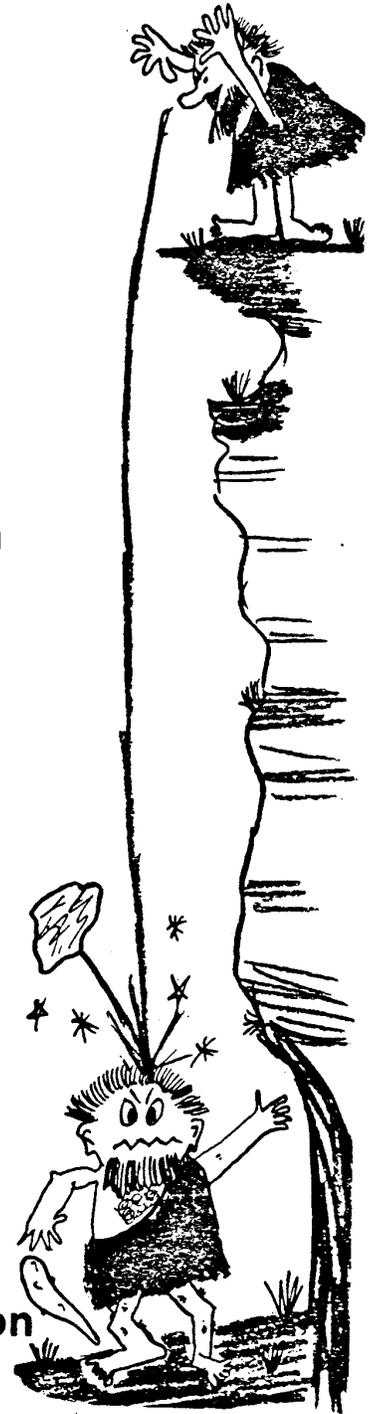
1. What are unsafe conditions that exist in my business?
2. What are common unsafe work practices?
3. Do workers understand reasons for following safe methods?
4. What are abilities of employees?
5. What laws am I responsible for?

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# Safety Training

1. Put worker at ease
2. Explain importance of safety
3. Explain importance of correct operation
4. Demonstrate one step at a time
5. Have worker repeat several times
6. Put worker to work
7. Check often
8. Call safety violations to worker's attention
9. Retrain if necessary

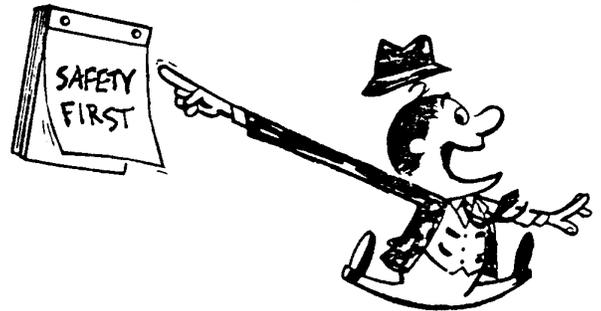


# Emergency Plan Ingredients

**1. Steps for injury, choking, or poisoning**

**2. Steps for medical emergencies**

**3. Steps for fire emergencies**



**4. Steps for natural disasters**

**5. Emergency number location**

**6. Location and stocking of medicine cabinet**

**7. Location of first aid kits**

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

ASSIGNMENT SHEET #1--DEVELOP AND CARRY OUT A FARM SAFETY PLAN

Name \_\_\_\_\_ Score \_\_\_\_\_

Develop a checklist and safety plan for your home or farm. After completing the plan, carry it out to make your home or farm safer. Turn in a checklist of hazards found and a copy of your safety plan.

Be sure to include:

1. Fixed hazards
2. Nonfixed hazards

Carry out your plan by:

1. Removing or correcting hazards
2. Warning against hazards
3. Implementing safety precautions detailed in this unit

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

ASSIGNMENT SHEET #2--DEVELOP AN EMERGENCY PLAN FOR A FARM AND/OR  
SCHOOL SHOP

Name \_\_\_\_\_ Score \_\_\_\_\_

Develop an emergency plan for your home, farm or the school shop. In your plan be sure to include steps that should be taken in each of the following areas:

1. Injuries
  - a. Bones
  - b. Cuts
  - c. Burns
2. Choking
3. Poisoning
4. Medical emergencies
  - a. Heart attack
  - b. Stroke
  - c. Heat exhaustion
5. Fire
6. Any natural disasters that threaten your area

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

ASSIGNMENT SHEET #3--TEACH SOMEONE HOW TO SAFELY USE A PIECE OF  
EQUIPMENT AND HOW TO FOLLOW THE SAFETY PLAN

Name \_\_\_\_\_ Score \_\_\_\_\_

Teach an employee, student or family member how to safely use one piece of farm equipment. Include information from your safety plan.

To accomplish this:

1. Select an employee or member of your family to whom you will teach a new skill
2. Select piece of equipment or tool
3. Instruct the person how to safely use the piece of equipment or tool
4. Review your checklist of hazards and safety plan with them. Be sure to instruct them about the hazards

AGRICULTURAL SAFETY MANAGEMENT

AG 660 - B

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |  |                            |
|----------|--|----------------------------|
| _____ a. | Personal protective equipment  | 1. Accident                |
| _____ b. | Mistake in judgment often caused by carelessness   | 2. National Safety Council |
| _____ c. | Organization which provides safety information   | 3. PPE                     |
| _____ d. | The condition of being safe, where precautions are taken to prevent accident or injury                                     | 4. Human error             |
| _____ e. | List of steps for creating a safe working environment  | 5. Safety                  |
| _____ f. | Steps taken to educate new workers as to the function of equipment and safety practices that are to be followed management | 6. Safety plan             |
| _____ g. | An unplanned, negative occurrence which often results in property damage and/or human injury                               | 7. Training                |
| _____ h. | Plan to insure proper steps will be taken to see that an injured person is treated properly in the case of an accident     | 8. Emergency plan          |
| _____ i. | Management of all elements of the farm in such a way as to insure that the operation of the farm is safe for all workers   | 9. Safety                  |
| _____ j. | Source of danger   | 10. Hazard                 |
2. List in decreasing order of importance the three factors which contribute to farm accidents. (List the number one first, number two second and number three third.)
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

3. Describe management's responsibility in farm safety.

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4. List eight sources of safety information.

|          |          |
|----------|----------|
| a. _____ | e. _____ |
| b. _____ | f. _____ |
| c. _____ | g. _____ |
| d. _____ | h. _____ |

5. Describe two steps in developing a farm safety plan or checklist.

a. \_\_\_\_\_

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b. \_\_\_\_\_

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6. By completing the following section, describe how to train a new worker so that safety precautions are observed.

Before training the employee, make sure to hire the (a) \_\_\_\_\_ person for the job. Be sure the worker is (b) \_\_\_\_\_ and (c) \_\_\_\_\_ able to handle the job. Assign people with lesser (d) \_\_\_\_\_ to jobs they can handle. When training, put trainee at ease and (e) \_\_\_\_\_ why the job is important and why it should be done (f) \_\_\_\_\_ and safely. (g) \_\_\_\_\_ the job one step at a time with the trainee observing. Have trainee (h) \_\_\_\_\_ the operation several times. Call safety (i) \_\_\_\_\_ to the attention of the worker. (j) \_\_\_\_\_ if necessary.

7. List five examples of personal protective equipment recommended for farm safety.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

8. Describe how to prepare for an emergency.

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9. Describe safety practices that should be followed for livestock by completing the following.

Design handling facilities for efficiency and a) \_\_\_\_\_. Holding pens should be equipped with a quick way of (b) \_\_\_\_\_ the pen. Crowding into sorting pens should be done with (c) \_\_\_\_\_ gates.

When working with beef, never (d) \_\_\_\_\_ the animal. When cornering a beef animal, always leave yourself an (e) \_\_\_\_\_. Keep strangers and (f) \_\_\_\_\_ away from beef animals. When working with dairy, don't make (g) \_\_\_\_\_ noises. Beware of dairy cows defending their (h) \_\_\_\_\_. Construct special facilities for the (i) \_\_\_\_\_. Treat livestock with (j) \_\_\_\_\_ and be prepared.

- When working with swine, never treat baby pigs in the same pen with the (k) \_\_\_\_\_.
- Move hogs with a small (l) \_\_\_\_\_. With horses, only allow a skilled rider to ride a (m) \_\_\_\_\_. When producing sheep, beware of (n) \_\_\_\_\_ and ewes with lambs. To protect strangers from getting bitten, keep mean (o) \_\_\_\_\_ tied up. To reduce injuries around animal facilities, always keep the facilities and equipment in good (p) \_\_\_\_\_ and continuously look for (q) \_\_\_\_\_ that could cause an injury.
10. Describe safety practices that should be followed for farm machinery by completing the following:
- All farm machinery should be operated according to what? (a) \_\_\_\_\_
- Safe operating rules should be known and observed by whom? (b) \_\_\_\_\_. What should be done to defective or worn parts? (c) \_\_\_\_\_. Before adjusting the machine, what should you always do? (d) \_\_\_\_\_. When moving machinery on public roads, what should the machine have on it? (e) \_\_\_\_\_. Before the employee can accomplish the task he should have received (f) \_\_\_\_\_. When storing equipment the machinery should be parked so that there is (g) \_\_\_\_\_. Doors and windows should be (h) \_\_\_\_\_ before starting an engine. What should be done with tools and supplies? (i) \_\_\_\_\_.
11. Select safety practices from the list below that should be followed when storing farm materials. Write an "X" in the blank before each correct answer.
- \_\_\_\_ a. Chemicals should be stored in building that can be locked to prevent children from entering
- \_\_\_\_ b. A sign should be posted to warn others of hazards
- \_\_\_\_ c. Chemicals should be mixed inside the building to prevent drift of chemical which would harm the environment
- \_\_\_\_ d. Chemicals should not be stored in their original containers
- \_\_\_\_ e. Above-ground tanks should be solidly supported

- \_\_\_\_\_ f. Unloading machinery should not be shielded to prevent overheating
- \_\_\_\_\_ g. Grain bins should never have inside ladders
- \_\_\_\_\_ h. Sealed silos should be kept tight to prevent fire
- \_\_\_\_\_ i. Workers should check for leaks in fuel hoses by lighting and checking for flame
- \_\_\_\_\_ j. Workers should be alert to the dangers of silo gas which could overtake them and cause death

## AGRICULTURAL SAFETY MANAGEMENT

## AG 660 - B

## ANSWERS TO TEST

1.    a. 3            d. 5            g. 1            j. 10  
       b. 4            e. 6            h. 8  
       c. 2            f. 7            i. 9
  
2.    a. Human error  
       b. Machine failure  
       c. Environmental factors
  
3.    Control the environment, machinery and employees and to direct the safety plan, employee training and the emergency plan
  
4.    Answer should include eight of the following:  
  
       Operating manuals; Chemical and pesticide labels; Safety articles in magazines and newspapers; State and local safety councils; National Safety Council; Insurance companies; Farm organizations; Manufacturers; Health and safety-oriented associations; Universities and colleges; Government agencies; Film showings; Training programs; Courses or classes; Demonstrations; Safety seminars
  
5.    a. List hazards--fixed and nonfixed  
       b. Analyze records or recollections of past accidents to determine how the accidents could have been prevented
  
6.    a. right            e. explain            i. violations  
       b. physically        f. correctly            j. Retrain  
       c. mentally          g. Demonstrate  
       d. abilities          h. repeat
  
7.    Answer should include five of the following:  
  
       Bump caps and hard hats; Protective eyewear; Hearing protectors; Dust masks; Cartridge respirators; Safety shoes; Proper gloves; Properly fitted work clothes; Rubber and plastic Clothing for pesticides
  
8.    Develop an emergency plan and make sure all employees and family members are familiar with it. Plan should include steps to take in case of an injury or medical emergency and also in case of a fire or natural disaster; Post emergency numbers at every telephone; Install smoke detectors and fire extinguishers at appropriate locations; Keep fully stocked first-aid kits in convenient locations including aboard machinery
  
9.    a. safety            g. loud            m. high-spirited horse  
       b. emptying        h. calves            n. rams  
       c. crowd            i. bull                o. dogs  
       d. startle            j. respect            p. condition (or repair)  
       e. out                k. sow                q. hazards  
       f. children          l. hurdle

10.
  - a. instruction manual recommendations
  - b. everyone
  - c. replace them or repair them
  - d. shut the power off
  - e. slow moving emblem
  - f. training
  - g. walking space available
  - h. open
  - i. stored neatly
  
11.
  - a, b, e, h, j

BASICS OF AGRIBUSINESS MANAGEMENT

AG 660 - C

UNIT OBJECTIVE

After completion of this unit, students should be able to describe agribusiness management and the factors that affect management. Students should also be able to describe important considerations in starting an agribusiness and the basic types of business structures in the United States. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with the basics of agribusiness management to their definitions.
2. Describe agribusiness management.
3. List the characteristics of a good manager.
4. Arrange in order the steps in decision making.
5. List sources of information for making decisions.
6. List six factors that affect the starting of an agribusiness.
7. List four regulatory items that need to be evaluated before starting a business.
8. Define productivity.
9. Describe how to determine market potential.
10. Label the three basic types of business structures in the United States.
11. Distinguish among the main characteristics of individual proprietorships, partnerships and corporations.
12. Describe the contributions approach to a partnership.
13. Describe a limited partnership.
14. List the unique characteristics of a subchapter S corporation.
15. Match methods of involving non-owners in a business to descriptions of those methods.
16. Select the characteristics of a cooperative.
17. Design a partnership agreement.

## BASICS OF AGRIBUSINESS MANAGEMENT

## AG 660 - C

## SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Doane's Farm Management Guide*, textbook; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$9.75; order no. DFMG-1.
      - b. *Farm and Ranch Business Management*, textbook; available from John Deere Distribution Service Center, Service Publications, Department 150, 1400-13th St., East Moline, Illinois 61244, (1-800-544-2122); approximate cost \$18.64; order no. FBM10102B.
      - c. The following are available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).
 

|     |     |  |        |
|-----|-----|--|--------|
| CIS | 610 | <i>Effective Personnel Leadership</i>          | \$ .35 |
| CIS | 611 | <i>Recruiting and Retaining Good Personnel</i> | \$ .35 |
| CIS | 612 | <i>Management Succession</i>                   | \$ .35 |
| CIS | 613 | <i>Problem Employees</i>                       | \$ .35 |
| CIS | 840 | <i>Forming a Cooperative</i>                   | \$ .35 |
    2. Filmstrips, slideshows, etc.
      - a. *Farm and Ranch Management*, sound filmstrip; illustrates all aspects of a farm manager's job; available from Vocational Education Productions, California Polytechnic State University, San Luis Obispo, California 93407, (1-800-235-4146); approximate cost \$19.95; order no. 1-810-136J.
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.

- E. Have class start a cooperative. Have them elect a board of directors and a manager and assign responsibilities. The cooperative could be used to purchase FFA supplies for the members or shop equipment such as gloves or safety glasses.
- F. Have the class form a corporation. Choose something to sell or a service to provide and have class members buy stock. A board of directors should be elected to make decisions and issue dividends. The corporation could even pay taxes on the profits to the FFA chapter.
- G. Have a farmer who has incorporated a farm speak to the class about the procedures, pitfalls and advantages of incorporation.
- H. Have an individual proprietor speak to the class about what it takes to start and manage a business.

(Note: It might work well to have a panel of business people representing individual proprietorships, partnerships, corporations and cooperatives.)

- I. Develop some hypothetical businesses the students could use when they form their partnerships for Assignment Sheet #1.
- J. Review and give test.
- K. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Transparency masters
  - 1. TM 1--Steps in Decision Making
  - 2. TM 2--Factors That Affect the Starting of a Business
  - 3. TM 3--Characteristics of a Cooperative
- E. Assignment sheet
  - 1. AS 1--Design a Partnership Agreement
- F. Test
- G. Answers to test

## III. Unit references

- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- B. Long, Don L., Oliver, J. Dale, Coale, Charles W. and Lee, Jasper S., *Introduction to Agribusiness Management*, McGraw-Hill Book Company, New York, 1979.
- C. Lowe, Ross E., et al., *Consumer Education and Economics*, 3<sup>rd</sup> edition, Glencoe Publishing Company, Mission Hills, California, 1990.
- D. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- E. Miller, Roger Leroy, *Scribner Economics*, Scribner Educational Publishers, New York, 1988.
- F. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agriculture Management*, Reston Publishing Company-Prentice Hall, Reston, Virginia, 1978.
- G. Peterson, H. Craig, *Economics of Work*, 2<sup>nd</sup> edition, South-Western Publishing Company, Cincinnati, Ohio, 1988.
- H. Smith, Robert F., et al., *The American Economic System*, 3<sup>rd</sup> editions, Laidlaw Brothers, Publishers, River Forest, Illinois, 1987.
- I. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- J. Swanson, Bettye B., *Consumer Challenges and Issues*, South-Western Publishing Co., Cincinnati, Ohio, 1987.
- K. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

BASICS OF AGRIBUSINESS MANAGEMENT

AG 660 - C

INFORMATION SHEET

- I. Terms and definitions
  - A. Capital--Valued resources made by man and used for production
  - B. Monitor--To keep track of
  - C. Resource--Wealth or asset
  - D. Agribusiness--Farming and related food-processing and marketing enterprises
  - E. Regulatory item--Items (usually laws) that control or direct a business operation
  - F. Proprietorship--A business
  - G. Stock--A unit into which the capital worth of a corporation has been divided
  - H. Stockholders--People who own the stock of a corporation
  - I. Liability--Debt or money owed
  - J. Dividend--Money distributed to a stockholder as his share of the company's profits
  - K. Business agreement--Conditions, usually written, under which two or more people decide to operate a business
  - L. Patronage--Doing business with; buying goods or services from
- II. Agribusiness management--Using land, labor, capital and ideas to most effectively meet the goals of an agriculture-related business; making, implementing and monitoring decisions  

(Note: Just because a person does not have thousands of dollars invested does not mean that person is not or cannot be a manager. Good management is important for a person raising a single calf, running a small vegetable stand or organizing a money making project for the FFA chapter.)
- III. Characteristics of a good manager
  - A. Ability to set goals
  - B. Ability to make plans to use resources effectively
  - C. Ability to make decisions

- D. Ability to train and utilize workers

(Note: This includes the ability to delegate responsibilities to others.)

IV. Steps in decision making (Transparency 1)

- A. Set goal--Profit, personal satisfaction, etc.
- B. Gather information about ideas and ways to get to goal
- C. Make a plan based on the information
- D. Put plan into action
- E. Evaluate

V. Sources of information for making decisions

- A. Other people in the business
- B. Customers
- C. Articles in agricultural magazines
- D. Extension publications
- E. College and Universities
- F. Friends
- G. Consulting firms
- H. Servicing businesses

Example: A business that sells milking equipment should have some ideas on more efficient milking parlor management.

- I. Agriculture instructor or extension agent

VI. Factors that affect the starting of an agribusiness (Transparency 2)

- A. Goals of the manager
- B. Abilities of the manager
- C. Resources available

(Note: These would include land, labor and capital, as well as transportation, storage, etc.)

- D. Credit available
- E. Market potential or availability of customers

- F. Government regulations
- VII. Regulatory items that need evaluation before starting a business  
(Note: Information about these items can be obtained from local government officials, government publications, accountants, consultants, lawyers, bankers and even other businesses.)
- A. Licenses and/or fees
  - B. Health and safety regulations
  - C. Tax regulations
  - D. Zoning regulations
- VIII. Productivity—The measure of goods and services made with a set amount of resources for a given period of time.
- IX. Determining market potential for an agribusiness.
- (Note: For a large agribusiness, the potential customers may include warehouses, wholesale distributors or even international corporations. In these cases the information needed on the potential customers would be expanded and modified to fit the situation.)
- A. Determine age of potential customers.
  - B. Determine income of potential customers.
  - C. Determine location of potential customers.
  - D. Evaluate competition.
  - E. Evaluate ability to reach customers.
- Example: You may have a lot of potential customers that could only be reached by television, but the scope of your business may not justify the cost.
- X. Basic types of business structures in the U.S.
- A. Individual proprietorship--Business owned by one person
  - B. Partnership--Business owned by two or more persons
  - C. Corporation--Business owned by stockholders that has an identity separate from the stockholders
- XI. Characteristics of individual proprietorships, partnerships and corporations
- A. Individual proprietorship
    - 1. Easiest to start with; fewest legal requirements

2. The owner makes the decisions--has maximum flexibility
3. The owner receives the profit or sustains the loss
4. The owner is personally responsible for all business debts
5. The existence of the business is directly tied to the owner

B. Partnership

(Note: The following apply to a general or unlimited partnership.)

1. Responsibilities are shared by two or more owners
2. More capital resources are available to operate the business
3. Each individual is liable for all business debts
4. Each individual is responsible for the business decisions made by the other partners
5. The business ends if one member dies or pulls out

C. Corporation

1. The business is itself a legal "person"
2. The business is owned by stockholders
3. The business is managed by a board of directors elected by the stockholders
4. Liability of the owners is limited to their investments in the business
5. Most effective way to involve a large number of investors in a business
6. Profits are taxed and then returned to the stockholders as dividends where they are also taxed
7. Business does not end when a stockholder withdraws or dies
8. Ownership of a portion of the business is easily transferred
9. Subject to numerous legal restrictions

XII. Contributions approach to a partnership

- A. Method of determining what a fair business agreement should include.
- B. Each person's contribution to the business is assigned a dollar value which determines the Percentage of return each partner should get from the business.

## XIII. Limited partnership

- A. Limited partner contributes finances only—not management or services.
- B. Limited partner is not liable beyond the investment made.
- C. A limited partnership must have at least one general partner.

## XIV. Subchapter S corporation

(Note: In a small corporation the board of directors, managers and stockholders can be all the same people since the stockholder can elect themselves to the board. There is always a legal difference between these groups, however.)

- A. Mainly created to avoid double taxation—taxed as a partnership

(Note: This means the corporation profits are not taxed. Only the profits returned to the individuals are taxed.)

- B. Must not be over 15 stockholders
- C. Only one kind of stock can be issued

## XV. Methods for getting non-owners involved in a business

- A. Wage incentive program---A fair wage is paid plus a bonuses based on some production goal the employee can work toward
- B. Enterprise working agreement—Employee is involved extensively with a particular part of the business, providing capital as well as labor
- C. Joint venture—Profits are shared with the employee according to the contributions made by that employee
- D. Leases—A person rents a part of the business or land for cash or a share of the product.

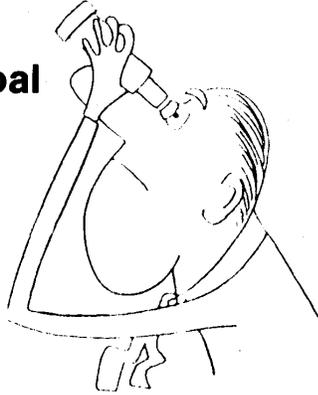
## XVI. Characteristics of a cooperative (Transparency 3)

- A. Corporation organized and owned by members to provide supplies and/or services to themselves
- B. Each member gets one vote
 

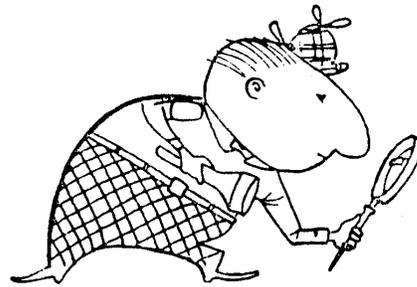
(Note: Sometimes this is modified to allow a member more votes based on amount of patronage.)
- C. Profits are returned to the people who buy the goods and services based on their volume of business or patronage
- D. Governed by board of directors elected by the members
- E. Returns on money invested in a cooperative are limited by law

# Steps In Decision Making

**Set Goal**



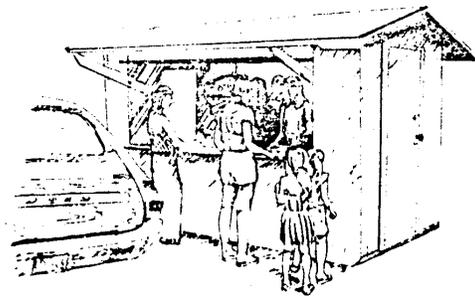
**Gather Information**



**Make A Plan**



**Put Plan Into Action**



**Evaluate**



# **FACTORS THAT AFFECT THE STARTING OF A BUSINESS**

**Manager's goals**

**Manager's abilities**

**Available resources**

**Available credit**

**Market potential/availability  
of customers**

**Government regulations**

## **CHARACTERISTICS OF A COOPERATIVE**

- Corporation organized and owned by members to provide supplies and/or services to themselves**
- One vote per member**
- Profits returned to people who purchased based on the volume of their purchases**
- Governed by board of directors elected by members**
- Returns on money invested are limited by law**

BASICS OF AGRIBUSINESS MANAGEMENT

AG 660 - C

ASSIGNMENT SHEET #1--DESIGN A PARTNERSHIP AGREEMENT

Name \_\_\_\_\_ Score \_\_\_\_\_

Pair up with someone in the class, decide on a small business you can form a partnership for, and write up a partnership agreement. Be sure to include what each person will provide at the beginning of the partnership, what the responsibilities for each person will be and how profits (and losses) will be distributed.

Business name and type \_\_\_\_\_

\_\_\_\_\_

What each person will provide:

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Responsibilities:

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

How profits (and losses) will be distributed:

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Partner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## BASICS OF AGRIBUSINESS MANAGEMENT

AG 660 - C

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |  |                       |
|----------|--|-----------------------|
| _____ a. | Money distributed to a stockholder as his share of the company's profits                 | 1. Resource           |
| _____ b. | Valued resources made by man and used for production                                     | 2. Business agreement |
| _____ c. | Law that controls or directs a business operation  | 3. Stock              |
| _____ d. | To keep track of   | 4. Capital            |
| _____ e. | Doing business with; buying goods or services from                                       | 5. Patronage          |
| _____ f. | Conditions, usually written, under which two or more people decide to operate a business | 6. Liability          |
| _____ g. | Debt or money owed   | 7. Proprietorship     |
| _____ h. | Farming and related food-processing and marketing enterprises                            | 8. Dividend           |
| _____ i. | People who own the stock of a corporation  | 9. Stockholders       |
| _____ j. | A business   | 10. Regulatory item   |
| _____ k. | Wealth or asset  | 11. Agribusiness      |
| _____ l. | A unit into which the capital worth of a corporation has been divided                    | 12. Monitor           |

2. Describe agribusiness management.

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3. List four characteristics of a good manager.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  
4. Arrange in order the following steps in decision making by placing a "1" through "5" in front of the appropriate step. "1" would be the first thing to do, "2" would be the second, etc.
  - \_\_\_\_\_ a. Evaluate
  - \_\_\_\_\_ b. Gather information about ideas and ways to get to goal
  - \_\_\_\_\_ c. Put plan into action
  - \_\_\_\_\_ d. Make a plan based on the information
  - \_\_\_\_\_ e. Set goal
  
5. List five sources of information for making decisions.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  
6. List six factors that affect the starting of an agribusiness.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_

7. List four regulatory items that need to be evaluated before starting a business.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
8. Define productivity.
- \_\_\_\_\_
- \_\_\_\_\_
9. Describe how to determine market potential.
- \_\_\_\_\_
- \_\_\_\_\_
10. Label the three basic types of business structures described below.
- \_\_\_\_\_ a. Business owned by stockholders that has an identity separate from the stockholders
  - \_\_\_\_\_ b. Business owned by two or more persons
  - \_\_\_\_\_ c. Business owned by one person
11. Distinguish among the main characteristics of individual proprietorship (I), partnership (P) and corporations (C) by placing their abbreviations in front of the appropriate statements. (Note: Some may apply to more than one type of business. In that case put both abbreviations.)
- \_\_\_ a. Each individual is responsible for the business decisions made by the other partners
  - \_\_\_ b. The business is itself a legal "person"
  - \_\_\_ c. Each individual is liable for all business debts
  - \_\_\_ d. One person receives the profit or sustains the loss
  - \_\_\_ e. Easiest to start with; fewest legal requirements
  - \_\_\_ f. Ownership of a portion of the business is easily transferred
  - \_\_\_ g. The business is managed by a board of directors elected by the stockholders
  - \_\_\_ h. One person is personally responsible for all business debts

- \_\_\_\_ i. Business does not end when an owner withdraws or dies
- \_\_\_\_ j. The business ends if one member dies or pulls out
- \_\_\_\_ k. The business is owned by stockholders
- \_\_\_\_ l. Several owners invest capital in the business
- \_\_\_\_ m. Most effective way to involve a large number of investors in a business
- \_\_\_\_ n. Liability of the owner is limited to the owner's investment in the business
- \_\_\_\_ o. Subject to the most legal restrictions
- \_\_\_\_ p. One person makes the decisions; maximum flexibility
- \_\_\_\_ q. Profits are taxed and then returned to the owners as dividends where they are taxed again

12. Describe the contributions approach to a partnership.

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13. Describe a limited partnership.

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14. List three unique characteristics of a subchapter S corporation.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

15. Match the ways to involve non-owners in a business listed on the right to their correct descriptions.
- |        |  |                                 |
|--------|--|---------------------------------|
| ___ a. | Employee is involved extensively with a particular part of the business, providing capital as well as labor. | 1. Wage incentive program       |
| ___ b. | A fair wage is paid plus a bonus based on some production goal the employee can work toward                  | 2. Joint venture                |
| ___ c. | A person rents a part of the business or land for cash or a share of the product                             | 3. Leases                       |
| ___ d. | Profits are shared with the employee according to the contributions made by that employee                    | 4. Enterprise working agreement |
16. Select the characteristics of a cooperative from the list below by marking an "X" in the blank before each correct answer.
- \_\_\_ a. Members always get votes in proportion to the amount of stock owned
  - \_\_\_ b. Corporation organized to provide goods and services to members
  - \_\_\_ c. Governed by board of directors elected by members
  - \_\_\_ d. Profits are returned according to patronage
  - \_\_\_ e. Profits are distributed according to amount of stock owned
  - \_\_\_ f. Returns on money invested are limited by law
  - \_\_\_ g. Each member gets one vote

## BASICS OF AGRIBUSINESS MANAGEMENT

## AG 660 - C

## ANSWERS TO TEST

1.     a. 8                   d. 12                   g. 6                   j. 7  
        b. 4                   e. 5                   h. 11                  k. 1  
        c. 10                  f. 2                   i. 9                   l. 3
2.     Using land, labor, capital and ideas to most effectively meet the goals of an agriculture-related business; Making, implementing and monitoring decisions
3.     Ability to set goals; Ability to make plans to use resources effectively; Ability to make decisions; Ability to train and utilize workers
4.     a. 5                   b. 2                   c. 4                   d. 3                   e. 1
5.     Answer should include five of the following:  
        Other people in the business; Customers; Articles in agricultural magazines; Extension publications; College and universities; Friends; Consulting firms; Servicing businesses; Agriculture instructor or extension agent.
6.     Goals of the manager; Abilities of the manager; Resources available; Credit available; Market potential or availability of customers; Government regulations
7.     Licenses and/or fees; Health and safety regulations; Tax regulations; Zoning regulations
8.     The measure of good and services made with a set amount of resources for a given period of time
9.     Determine age of potential customers; Determine income of potential customers; Determine location of potential customers; Evaluate competition; Evaluate ability to reach customers.
10.    a.     Corporation  
        b.     Partnership  
        c.     Individual proprietorship
11.    a. P                   f. C                   k. C                   p. I  
        b. C                   g. C                   l. P and C           q. C  
        c. P                   h. I                   m. C  
        d. I                   i. C                   n. C  
        e. I                   j. P and I           o. C
12.    Each person's contributions to the business are assigned a dollar value which determines the percentage of return that partner should get from the business
13.    Limited partner contributes finances only—not management or services; Limited partner is not liable beyond the investment made; A limited partnership must have at least one general partner

14. Mainly created to avoid double taxation; taxed as a partnership; Must not be over 15 Stockholders;  
Only one kind of stock can be issued
15. a. 4            b. 1            c. 3            d. 2
16. b, c, d, f, g

GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 660 - D

UNIT OBJECTIVE

After completion of this unit, students should be able to describe the primary agencies involved with agriculture and the major services they provide. Students should also be able to describe how to obtain those services. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with the role of agencies in agriculture to their correct definitions.
2. List the three primary state agencies involved with Idaho agriculture.
3. List four major objectives of the United States Department of Agriculture.
4. List four methods used by the government to support prices.
5. Match major agricultural agencies to their primary purpose.
6. Select services provided by the Agricultural Marketing Service.
7. Match the primary types of Agricultural Stabilization and Conservation Service programs to their descriptions.
8. Describe two primary services provided by the Soil Conservation Service.
9. Select characteristics of the soil conservation districts.
10. List the four primary government agencies involved with agricultural credit.
11. Describe the Farm Credit System and the organizations that are part of it.
12. Describe three services provided by the Cooperative Extension Service.
13. Describe the three services provided by the Analytical Services Lab.
14. Describe the creation, purpose and funding of agricultural commodity commissions.
15. Construct a chart of agencies in the local area including the services they provide.

GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 660 - D

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Make transparencies and necessary copies of materials.
  - B. Provide students with objectives and discuss.
  - C. Provide students with information and assignment sheets and discuss.
  - D. Arrange for a field trip to the local SCS, ASCS and FmHA offices or the State Department of Agriculture in Boise.
  - E. Invite a representative from a local farm organization to speak to the class.
  - F. Write for information on commodity commissions and the USDA.
  - G. Have students watch for advertisements of programs provided for farmers and agribusiness people.
  - H. Invite a county agent to talk about services extension can provide.
  - I. Send a soil sample to the Analytical Services Lab to be tested.

(Note: Soil containers and instructions can be obtained from the local county extension agent. The address for the lab is: Analytical Services Lab, College of Agriculture, Department of Plant and Soil Sciences, University of Idaho, Moscow, Idaho 83843.)
  - J. Review and give test.
  - K. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    1. TM 1--Functions of the CCC
    2. TM 2--Objectives of the U.S. Forest Service
    3. TM 3--Objectives of FmHA

4. TM 4--ASCS Programs
- E. Handout
1. HO 1--SCS Sample Conservation Plan
  2. HO 2--SCS Sample Conservation Plan
  3. HO 3--Full Data Listing
  4. HO 4--Full Data Listing
  5. HO 5--Conservation Plan Map
- F. Assignment sheet
1. AS 1--Construct a Chart of Agencies in the Local Area Including the Services They Provide
- G. Test
- H. Answers to test
- III. Unit references
- A. Assorted pamphlets from the United States Department of Agriculture.
  - B. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - C. Hoag, W. Gifford, *The Farm Credit System*, Agri Business Publications, Danville, Illinois, 1978.
  - D. *Idaho Annual Report*, 1980 ASCS Programs, USDA, ASCS, April 1980.
  - E. Idaho Wheat: At Home Around the World, Idaho State Wheat Growers Association and the Idaho Wheat Commission.
  - F. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
  - G. *The Story of the Dry Pea and Lentil Industry*, Washington and Idaho Dry Pea and Lentil Commission, Moscow, Idaho.
  - H. United State Government Manual, Office of the Federal Register, National Archives and Records Service, General Service Administration, 1981-1982.
  - I. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 660 - D

INFORMATION SHEET

- I. Terms and definitions
- A. USDA--United States Department of Agriculture
  - B. SCS--Soil Conservation Service
  - C. ASCS--Agricultural Stabilization and Conservation Service
  - D. CCC--Commodity Credit Corporation
  - E. FmHA--Farmers Home Administration
  - F. PCA--Production Credit Association
  - G. FLBA--Federal Land Bank Association
  - H. Loan guarantee--A promise provided to a lender that the loan will be paid by the agency if the borrower does not pay back the loan
  - I. Commodity--Product having a value  
Example: Wheat, milk, meat
  - J. Standardization--Bringing under a uniform set of rules or guidelines
  - K. Quarantine--Isolation of diseased animals
  - L. Stabilize--To make resistant to sudden change or decline
  - M. Technical assistance--Help provided to solve a particular problem or to accomplish a particular task
  - N. Cost-share--Refers to money provided by an agency for some cause on the condition that the person or entity receiving the money pays part of the cost
  - O. Drought--Period of extreme lack of water
  - P. Mortgage--Letting a creditor have title to property as security for a loan
- II. Primary state agencies affecting agriculture
- (Note: Many federal agencies have state offices and the majority of agricultural programs are carried out through cooperation between state and federal agencies.)
- A. Idaho State Department of Agriculture
  - B. Idaho Crop and Livestock Reporting Service

- C. Idaho State Soil Conservation Commission
- III. Major objectives of the USDA
- A. Maintain and improve farm income
  - B. Expand agricultural markets
  - C. Curb hunger and poverty
  - D. Protect productive land and improve the environment
- IV. Methods used by the government to support prices
- A. Loan guarantee
  - B. Loan
  - C. Purchase of the commodity
  - D. Direct payment
- V. Agricultural agencies
- A. Rural Electrification Administration--Finances rural electric and telephone facilities
  - B. Animal and Plant Health Inspection Service--Conducts programs to protect and improve animal and plant health
    - Examples: Quarantines; Inspection of imported and transported animals; Pest and disease control
  - C. Federal Grain Inspection Service--Establishes and administers standards for grain inspection
  - D. Food Safety and Quality--Provides inspection of agricultural products and processing to insure that safe and wholesome foods reach the consumer
  - E. Commodity Credit Corporation--Provides funds through loans, payments and direct purchasing to stabilize farm commodity prices (Transparency 1)
  - F. Federal Crop Insurance Corporation--Makes insurance available for certain designated crops against unavoidable losses
  - G. Science and Education Administration--Provides funds for research and helps distribute information through the Cooperative Extension Service and agricultural publications
  - H. Forest Service--Manages national forests to protect natural resources while balancing the needs of recreation and industry (Transparency 2)
  - I. Occupational Safety and Health Administration--Develops and enforces safety regulations for workers

- J. Environmental Protection Agency--Administers programs to control air and water pollution

(Note: This agency is currently cooperating with the Division of the Environment of the Idaho State Department of Health and Welfare to control water pollution caused by soil erosion, livestock waste and fertilizer runoff.)

- K. Farm Credit Administration--Supervises activities of the Farm Credit System which provides credit to agribusinesses

(Note: The Farm Credit System includes the Intermediate Credit Banks, which make loans to local Production Credit Associations, the Federal Land Banks and the Banks for Cooperatives.)

- L. Small Business Administration--Provides loans, loan guarantees and management assistance to small businesses which could include farm and other agribusinesses

- M. Farmers Home Administration (FmHA)--Provides closely supervised agricultural loans, loan guarantees and technical assistance to credit worthy agribusinesses that cannot obtain credit elsewhere; loans must be retired when it is feasible to do so (Transparency 3)

- N. Idaho Crop and Livestock Reporting Service--Collects and publishes information on Idaho agricultural production

(Note: Idaho has four crop reporting districts from which information is collected.)

VI. Agricultural Marketing Service

- A. Provides information on marketing conditions

- B. Provides grading and standardization services

Example: Yield or quality grading for beef

- C. Regulates marketing practices to insure fairness

Example: Requiring an honest and complete seed label

- D. Administers marketing orders and agreements

Example: Minimum prices distributors are required to pay producers for milk

- E. "Copyrights" new plant varieties

## VII. ASCS programs (Transparency 4)

(Note: ASCS is administered by a committee of farmers and by a county executive director who is responsible to the committee. The farmers are elected each year through an election held by mail.)

- A. Agricultural Conservation Program--A cooperative endeavor by farmers, ranchers, government agencies and other groups to solve soil, water and related resource problems through cost-sharing and exchange of technical expertise
- B. Emergency Conservation Program--Provides emergency funds for sharing with farmers and ranchers the cost of restoring to productive use farmland seriously damaged by natural disasters, and for carrying out emergency water conservation measures during periods of severe drought
- C. Rural Clean Water Program--Provides long-term financial and technical assistance to prevent or reduce the amount of sediment, chemicals, livestock wastes and other agricultural pollutants from entering streams and lakes
- D. Forestry Incentives Program--Provides cost-share funds for tree planting and timber stand improvement with private forest landowners who often cannot afford to make the long-term investment required to develop their woodlands
- E. Water Bank Program--Provides annual payments to landowners for conserving and protecting wetlands from drainage, filling or other practices which may destroy the character of the wetland
- F. Community programs
  - 1. Designed to improve the economic stability of agriculture and to help farmers adjust production to meet demand by providing assistance through price support loans and purchases, payments and related acreage reductions and diversions
  - 2. Commodity stabilization programs are administered for wheat, corn , grain sorghum, barley, oats, rye, soybeans, rice, tobacco, peanuts, milk, cotton, wool, mohair, sugar and honey
  - 3. Commodity Credit Corporation loans allow farmers to use stored crop as collateral; farmers have the option of paying off the loan and marketing the commodity or simply forfeiting the commodity to the government to discharge the loan obligation in full
  - 4. Farmer-Owned Grain Reserve--Provides farmers with the opportunity to extend the crop loan for wheat and feed grains for longer periods; storage payments are made for the grain
  - 5. Deficiency Payment Program--Provides a direct payment based on the difference between a target price set by law and the higher of either the loan rate or the national average market price; for wheat, feed grains, rice and cotton

6. Incentive payments to sheep producers--Provides price support for shorn wool and mohair and for the sale of unshorn lambs; encourages producers to improve the marketing and quality of wool and mohair by providing a higher payment to producers who get a higher market price
  7. Dairy Price Support Program--The CCC helps to maintain market prices at the legislated support level by buying surplus butter, cheese and nonfat dry milk from processors at announced prices
- G. Emergency Feed Program--Provides cost-share funds or feed grains to livestock producers who have lost feeds because of a natural disaster
- VIII. Service provided by the Soil Conservation Service (Handout #1)
- A. Collects information for the publication of soil maps
  - B. Develops soil conservation plans with and for farmers, including a map and recommended practices
  - C. Provides soil information for engineering purposes
  - D. Monitors cost-share programs for ASCS
- IX. Soil conservation district
- (Note: The SCS only provides assistance to those areas that have formed a soil conservation district.)
- A. Created by a majority vote of the landowners in an area
  - B. Administered by local, elected supervisors who serve without pay
  - C. Coordinates a program of soil and water conservation in an area
  - D. Has the authority to obtain help from the SCS and other state and federal agencies involved in conservation
- X. Primary agencies involved with agricultural credit
- A. Farmers Home Administration
  - B. Commodity Credit Corporation
  - C. Small Business Administration
  - D. Farm Credit Administration
- (Note: This agency was started with federal funds, but has since paid back that money and operates with money generated from the loans obtained by the members of the Farm Credit System.)

- XI. Farm Credit System
  - A. User owned cooperatives designed to provide credit to agriculture
  - B. Organized into twelve credit districts supervised by an independent federal agency
  - C. Components
    - 1. Federal Land Banks--Provide credit to the local Land Bank associations
    - 2. Federal Intermediate Credit Banks--Provide loan funds to local Production Credit associations
    - 3. Banks for Cooperatives--Provide credit to agricultural cooperatives
    - 4. Production Credit associations--Provide short and intermediate-term credit to farmers  
  
(Note: Intermediate term credit is usually up to seven years.)
    - 5. Federal Land Bank associations--Provide agricultural credit for long-term first-mortgage loans
  
- XII. Cooperative Extension Service
  - A. Provides educational assistance through publications and county agents
  - B. Provides information on current research developments
  - C. Provides technical assistance to farmers
  - D. Provides youth development activities through 4-H
  
- XIII. Analytical Services Lab
  - A. Provides a soil testing service through the county extension agents
  - B. Provides a testing service for run-off water quality
  - C. Provides a testing service for nutrient content of plant samples  
  
(Note: The primary service provided is soil testing. Sample containers and instructions for taking samples can be obtained from the county extension agent.)
  
- XIV. Agricultural commodity commissions
  - A. Created by state law to act as an advocate for a particular commodity, particularly in expanding markets and promoting research
  - B. Funded by a tax on the commodity

- C. Idaho commissions exist for beans, dairy products, peas and lentils, wheat, barley and potatoes

(Note: There are also many grower associations and other state agricultural associations that are involved in promoting and improving Idaho agriculture.)

## **FUNCTIONS OF THE CCC**

**Support the prices of  
agricultural commodities**

**Make materials and facilities available  
for producing and marketing agricultural  
commodities**

**Procure agricultural commodities for sale  
to other government agencies, foreign  
governments and others**

**Remove, dispose of or aid in removing  
and disposing of surplus agricultural  
commodities**

**Increase consumption of  
agricultural commodities**

**Export and aid in development of  
foreign markets**

**Carry out other operations  
authorized by Congress**

# **OBJECTIVES OF THE U.S. FOREST SERVICE**

**Protect and prevent forest fires**

**Produce and distribute forest  
tree nursery stock**

**Provide technical assistance on  
forest management**

**Cooperate with others in conserving the  
forest and other natural resources**



## **OBJECTIVES OF FmHA**

### **Provide loans to farmers**

**Operating loans**

**Ownership loans**

**Soil and water conservation loans**

**Emergency loans**

**Farm housing loans**

### **Provide technical assistance**

**Help tenants become established  
in farming**

**Assist with long-range farm and  
home plans**

**Furnish technical advice and guidance  
to borrowers**

# ASCS Programs

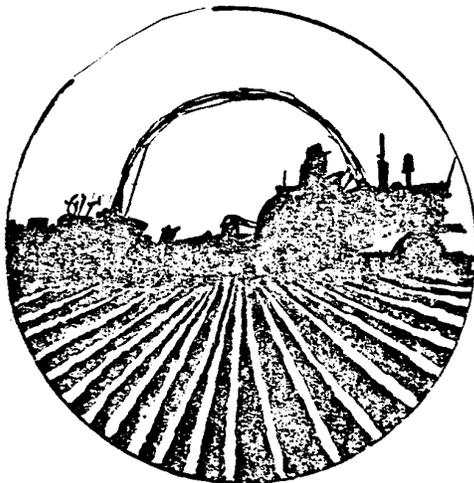
**Agriculture Conservation**



**Emergency Conservation**



**Forestry Incentives**



**Wheat And Feed Grain**

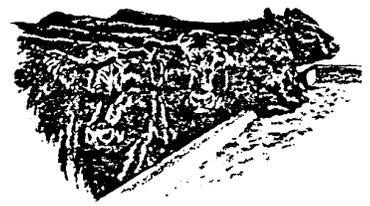


**Price Support**

**Grain Reserve**



**Emergency Feed**



**Wool Payment**

## SCS SAMPLE CONSERVATION PLAN

U.S. Department of Agriculture  
Soil Conservation Service

Date June 20, 1990

John Doe  
RECORD OF DECISIONS AND APPLICATION

Assisted by Jim Graham

| Field No.               | Planned Amount | Planned Date | Applied Amount | Applied Date | Narrative Record  |
|-------------------------|----------------|--------------|----------------|--------------|---|
| Tract Number            | 0004482        |              |                |              |   |
| Conservation System ID: | ctu1           |              |                |              | Cropland  |
| 3 HEL*                  | 96.8 Ac        | Oct. 88      |                |              | 328--Conservation Cropping Sequence<br>CONSERVATION CROPPING SEQUENCE: FIVE YEAR ROTATION Low residue crops will be limited to 40% of the rotation (example: winter wheat/barley/peas/winter wheat/ASCS set-aside). Low residue crops will not be grown 2 years in a row. This rotation provides adequate surface residue and organic matter for optimum erosion control, water intake and soil tilth.                  |
| 3 HEL*                  | 96.8 Ac        | Oct. 88      |                |              | 329--Conservation Tillage System<br>TILLAGE SYSTEM: A minimum-tillage system will be applied. Conventional equipment may be used in such a manner that adequate residue is maintained on the soil surface.<br>This includes such practices as uphill (or trashy) plowing high residue crops; a cultivate/shank fertilizer/seed combination on low residue crops; and replacing some tillage operations with herbicides. |
| 3 HEL*                  | 96.8 Ac        | Oct. 88      |                |              | 330--Contour Farming<br>CONTOUR FARMING: Tillage and seeding operations will be done across slope as close to the contour as practical.   |

\*The application and maintenance of this conservation practice is required for compliance with the Food Security Act of 1985.

HO 1-1

## SCS SAMPLE CONSERVATION PLAN

U.S. Department of Agriculture  
Soil Conservation Service

Date June 20, 1990

John Doe  
RECORD OF DECISIONS AND APPLICATION

Assisted by Jim Graham

| Field No.  | Planned |         | Applied |      | Narrative Record  |
|--|---------|---------|---------|------|---|
|  | Amount  | Date    | Amount  | Date |   |
| 3 HEL*   | 96.8 Ac | Oct. 88 |         |      | <p>344--Crop Residue Use<br/>CONSERVATION TILLAGE/CROP RESIDUE USE: At least 600 lbs of residue will be left on the soil surface after seeding spring crops; a minimum of 1600 lbs of residue will be present after the last operation in the fall. Summer fallow (ACR) will have less than 100 lbs of residue, standing stubble, permanent vegetation or an approved cover crop.</p> <p>Pasture</p>                                    |
| Tract Number 0004679<br>Conservation System ID: ctu2   |         |         |         |      |   |
| 1 HEL*   | 54.3 Ac | Oct. 88 |         |      | <p>328--Conservation Cropping Sequence<br/>CONSERVATION CROPPING SEQUENCE: PERENNIAL VEGETATIVE COVER--Grass or a combination of grass and legumes will be established and maintained according to specifications. Hay, pasture or grass seed are the principal uses. Stands may be renovated periodically with 2-3 years of cropping. This level of protection will provide for erosion control, optimum water intake, soil tilth.</p> |
| <p>*The application and maintenance of this conservation practice is required for compliance with the Food Security Act of 1985.</p> |         |         |         |      |   |

## FULL DATA LISTING

Opunit Name: John Doe

June 20, 1990

Opid: 1234

| Practice Narratives |                  |   |  |                      |
|---------------------|------------------|---|--|----------------------|
| Practice Code       | Narrative Number | # | Pre-written Narrative Text   | Additional Narrative |
| 328                 | 1                | 4 | <p><b>CONSERVATION CROPPING SEQUENCE: FIVE YEAR ROTATION</b> Low residue crops will be limited to 40% of the rotation (example: winter wheat/barley/peas/winter wheat/ASCS set-aside). Low residue crops will not be grown 2 years in a row. This rotation provides adequate surface residue and organic matter for optimum erosion control, water intake, and soil tilth.</p>                         |                      |
| 328                 | 2                | 6 | <p><b>CONSERVATION CROPPING SEQUENCE: PERENNIAL VEGETATIVE COVER</b>--Grass or a combination of grass and legumes will be established and maintained according to specifications. Hay, pasture or grass seed are the principle uses. Stands may be renovated periodically with 2-3 years of cropping. This level of protection will provide for erosion control, optimum water intake, soil tilth.</p> |                      |
| 329                 | 1                | 2 | <p><b>TILLAGE SYSTEM:</b> A minimum-tillage system will be applied. Conventional equipment may be used in such a manner that adequate residue is maintained on the soil surface. This includes such practices as uphill (or trashy) plowing high residue crops; a cultivate/shank fertilizer/seed combination on low residue crops; and replacing some tillage operations with herbicides.</p>         |                      |

## FULL DATA LISTING

June 20, 1990

Opid: 1234

Opunit Name: John Doe

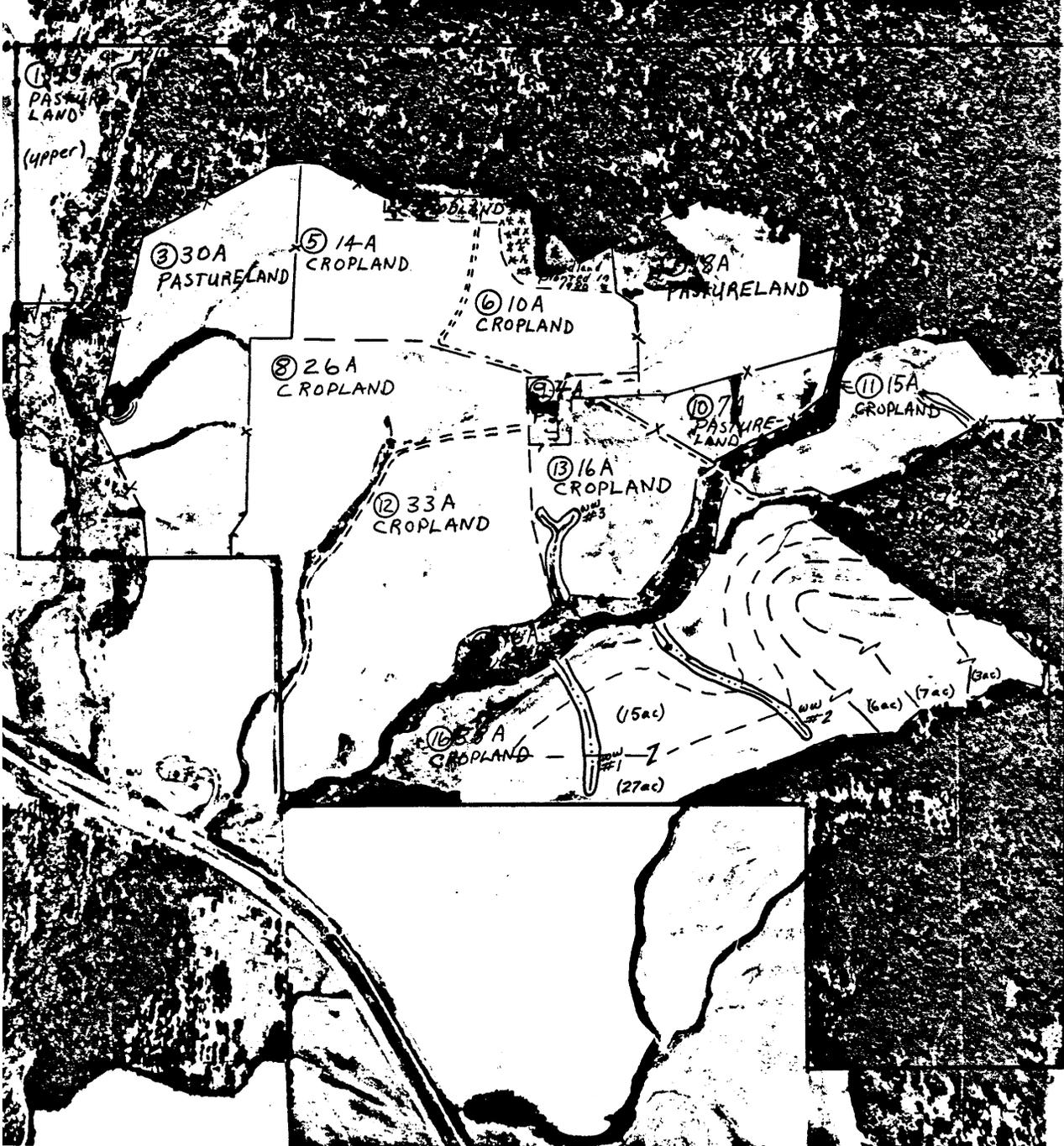
| Practice Narratives |                  |   |  |                      |
|---------------------|------------------|---|--|----------------------|
| Practice Code       | Narrative Number | # | Pre-written Narrative Text   | Additional Narrative |
| 330                 | 1                | 2 | CONTOUR FARMING: Tillage and seeding operations will be done across slope as close to the contour as practical.  |                      |
| 344                 | 1                | 9 | CONSERVATION TILLAGE/<br>CROP RESIDUE USE:<br>At least 600 lbs of residue will be left on the soil surface after seeding spring crops; a minimum of 1600 lbs of residue will be present after the last operation in the fall. Summer fallow (ACR) will have less than 1000 lbs of residue, standing stubble, permanent vegetation or an approved cover crop. |                      |

SCS-CONS-18  
OCTOBER 1974

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

CONSERVATION PLAN MAP

Owner Anybody Operator Same  
 County Someplace State Idaho Date January 1982  
 Approximate acres 480 Approximate scale 8" = 1 mile  
 Cooperating with Latah Conservation District  
 Plan identification \_\_\_\_\_ Photo number \_\_\_\_\_  
 Assisted by Ken Hauska USDA Soil Conservation Service



GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 660 - D

ASSIGNMENT SHEET #1--CONSTRUCT A CHART OF AGENCIES IN THE LOCAL AREA  
INCLUDING THE SERVICES THEY PROVIDE

Name \_\_\_\_\_ Score \_\_\_\_\_

Many services provided are similar throughout Idaho, but individual localities may have variations due to differences in the type of agriculture, size of community, geographic location and ownership of land.

Do some research about the services provided by agencies in your local area and complete the chart below.

Agency \_\_\_\_\_ Location \_\_\_\_\_

Types of service provided \_\_\_\_\_

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---

---

How to obtain services (reports necessary, etc.) \_\_\_\_\_

---

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Agency \_\_\_\_\_ Location \_\_\_\_\_

Types of service provided \_\_\_\_\_

---

---

---

How to obtain services (reports necessary, etc.) \_\_\_\_\_

---

Agency \_\_\_\_\_ Location \_\_\_\_\_

Types of service provided \_\_\_\_\_

---

---

---

How to obtain services (reports necessary, etc.) \_\_\_\_\_

---

---

---

Agency \_\_\_\_\_ Location \_\_\_\_\_

Types of service provided \_\_\_\_\_

---

---

---

How to obtain services (reports necessary, etc.) \_\_\_\_\_

---

---

---

Agency \_\_\_\_\_ Location \_\_\_\_\_

Types of service provided \_\_\_\_\_

---

---

---

How to obtain services (reports necessary, etc.) \_\_\_\_\_

---

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## GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 660 - D

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |   |                         |
|----------|---|-------------------------|
| _____ a. | To make resistant to sudden change or decline   | 1. Drought              |
| _____ b. | Agricultural Stabilization and Conservation Service   | 2. Standardization      |
| _____ c. | Isolation of diseased animals   | 3. Cost-share           |
| _____ d. | Production Credit Association   | 4. Quarantine           |
| _____ e. | Help provided to solve a particular problem or to accomplish a particular task  | 5. Technical assistance |
| _____ f. | Soil Conservation Service   | 6. Commodity            |
| _____ g. | Bringing under a uniform set of rules or guidelines   | 7. ASCS                 |
| _____ h. | Product having a value  | 8. FmHA                 |
| _____ i. | Period of extreme lack of water   | 9. Stabilize            |
| _____ j. | Commodity Credit Corporation  | 10. FLBA                |
| _____ k. | United States Department of Agriculture   | 11. Mortgage            |
| _____ l. | Federal Land Bank Association   | 12. USDA                |
| _____ m. | Letting a creditor have title to property as security for a loan  | 13. CCC                 |
| _____ n. | A promise provided to a lender that the loan will be paid by the agency if the borrower does not pay back the loan                        | 14. PCA                 |
| _____ o. | Refers to money provided by an agency for some cause on the condition that the person or entity receiving the money pays part of the cost | 15. Loan guarantee      |
| _____ p. | Farmers Home Administration   | 16. SCS                 |

- 2. List the three primary state agencies involved with Idaho agriculture.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
- 3. List four major objectives of the United States Department of Agriculture.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
- 4. List four methods used by the government to support prices.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

5. Match the major agricultural agencies on the right to their primary purpose. Write the correct number in the blank.

(Note: This question continues on the next page.)

- |          |  |   |
|----------|--|---|
| _____ a. | Develops and enforces safety regulations for workers   | 1. Idaho Crop and Livestock Reporting Service |
| _____ b. | Conducts programs to protect and improve animal and plant health   | 2. Animal and Plant Health Inspection Service |
| _____ c. | Provides closely supervised agricultural loans, loan guarantees and technical assistance to credit worthy agribusinesses that cannot obtain credit elsewhere; loans must be retired when it is feasible to do so | 3. Environmental Protection Agency            |
| _____ d. | Provides funds for research and helps distribute information through the Cooperative Extension Service and agricultural publications   | 4. Food Safety and Quality                    |
| _____ e. | Supervises activities of the Farm Credit System which provides credit to agribusinesses  | 5. Farm Credit Administration                 |
| _____ f. | Establishes and administers standards for grain inspection   | 6. Federal Crop Insurance Corporation         |
| _____ g. | Manages national forests to protect natural resources while balancing the needs of recreation and industry   |   |

- |  |   |
|--|---|
| <p>_____ h. Provides inspection of agricultural products and processing to insure that safe and wholesome foods reach the consumer</p> <p>_____ i. Administers programs to control air and water pollution</p> <p>_____ j. Collects and publishes information on Idaho agricultural production</p> <p>_____ k. Finances rural electric and telephone facilities</p> <p>_____ l. Provides funds through loans, payments and direct purchasing to stabilize farm commodity prices</p> <p>_____ m. Provides loans, loan guarantees and management assistance to small businesses which could include farms and other agribusinesses</p> <p>_____ n. Makes insurance available for certain designated crops against unavoidable losses</p> | <p>7. Small Business Administration</p> <p>8. Farmers Home Administration</p> <p>9. Rural Electrification Administration</p> <p>10. Science/Education Administration</p> <p>11. Commodity Credit Corporation</p> <p>12. Federal Grain Inspection Service</p> <p>13. Occupational Safety and Health Admin.</p> <p>14. Forest Service</p> |
|--|---|
6. Select the services provided by the Agricultural Marketing Service from the list below. Write an "X" in the blank before each correct answer.
- \_\_\_\_\_ a. Administers marketing orders and agreements
- \_\_\_\_\_ b. Provides information on marketing conditions
- \_\_\_\_\_ c. "Copyrights" new plant varieties
- \_\_\_\_\_ d. Regulates marketing practices to insure fairness
- \_\_\_\_\_ e. Regulates rail transportation of agricultural products
- \_\_\_\_\_ f. Supplies money to farmers under poor marketing conditions
- \_\_\_\_\_ g. Operates a futures market for agricultural products

7. Match the primary types of Agricultural Stabilization and Conservation Service programs on the right to their descriptions. Write the correct number in the blank provided.

- |          |  |  |
|----------|--|--|
| _____ a. | Maintains market prices at the legislated support level by buying surplus butter, cheese and nonfat dry milk from processors at announced prices   | 1. Agricultural Conservation Program     |
| _____ b. | Provides emergency funds for sharing with farmers and ranchers the cost of restoring to productive use farmland seriously damaged by natural disasters   | 2. Emergency Conservation Program        |
| _____ c. | Provides annual payments to landowners for conserving and protecting wetlands from drainage, filling or other practices which may destroy the character of the wetland   | 3. Rural Clean Water Program             |
| _____ d. | Provides farmers with the opportunity to extend the crop loan for wheat and feed grains for longer periods   | 4. Forestry Incentives Program           |
| _____ e. | Provides a direct payment based on the difference between a target price set by law and the higher of either the loan rate or the national average market price  | 5. Water Bank Program                    |
| _____ f. | Provides long-term financial and technical assistance to prevent or reduce the amount of sediment and pollutants from entering streams and lakes   | 6. Commodity Programs                    |
| _____ g. | Improve the economic stability of agriculture and helps farmers adjust production to meet demand by providing assistance through price support loans and purchases, payments and related acreage reductions and diversions | 7. Farmer-Owned Grain Reserve            |
| _____ h. | Provides cost-share funds or feed grains to livestock producers who have lost feeds because of a natural disaster  | 8. Deficiency Payment Program            |
| _____ i. | Provides price support and encourages producers to improve the marketing and quality wool and mohair by providing a higher payment to producers who get a higher market price  | 9. Incentive Payments to Sheep Producers |
| _____ j. | Provides cost-share funds for tree planting and timber stand improvement with private forest landowners who often cannot afford to make the long-term investment required to develop their woodlands                       | 10. Dairy Price Support Program          |
| _____ k. | A cooperative endeavor by farmers, ranchers, government agencies and other groups to solve soil, water and related resource problems through cost-sharing and exchange of technical expertise                              | 11. Emergency Feed Program               |

8. Describe two services provided by the Soil Conservation Service.
- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
9. Select characteristics of a soil conservation district from the list below. Write an "X" in the blank before each correct answer.
- \_\_\_\_\_ a. Has the authority to obtain help from the SCS and other state and federal agencies involved in conservation
- \_\_\_\_\_ b. Membership fees for the district depend on the amount of land owned
- \_\_\_\_\_ c. Coordinates a program of soil and water conservation in an area
- \_\_\_\_\_ d. All landowners are required to participate in the district
- \_\_\_\_\_ e. Districts are determined by the secretary of agriculture
- \_\_\_\_\_ f. Administered by local, elected supervisors who serve without pay
- \_\_\_\_\_ g. Created by a majority vote of the landowners in an area
10. List the four primary government agencies involved in agricultural credit.
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
11. Describe the Farm Credit System and the organizations that are a part of it as indicated below.
- a. Overall description \_\_\_\_\_
- b. How organized \_\_\_\_\_
- c. Federal Land Banks \_\_\_\_\_
- d. Federal Intermediate Credit Banks \_\_\_\_\_
- e. Banks for Cooperatives \_\_\_\_\_
- f. Production Credit Association \_\_\_\_\_
- g. Federal Land Bank Association \_\_\_\_\_

12. Describe three services provided by the Cooperative Extension Service.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

13. Describe the three services provided by the Analytical Services Lab.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

14. Describe the creation, purpose and funding of agricultural commodity commissions.

\_\_\_\_\_

\_\_\_\_\_

## GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

## AG 660 - D

## ANSWERS TO TEST

1.
 

|       |       |       |       |
|-------|-------|-------|-------|
| a. 9  | e. 5  | i. 1  | m. 11 |
| b. 7  | f. 16 | j. 13 | n. 15 |
| c. 4  | g. 2  | k. 12 | o. 3  |
| d. 14 | h. 6  | l. 10 | p. 8  |
  
2. Idaho State Department of Agriculture; Idaho Crop and Livestock Reporting Service; Idaho State Soil Conservation Commission
  
3. Maintain and improve farm income; Expand agricultural markets; Curb hunger and poverty; Protect productive land and improve the environment
  
4. Loan guarantee; Loan; Purchase of the commodity; Direct payment
  
5.
 

|       |       |       |      |
|-------|-------|-------|------|
| a. 13 | e. 5  | i. 3  | m. 7 |
| b. 2  | f. 12 | j. 1  | n. 6 |
| c. 8  | g. 14 | k. 9  |      |
| d. 10 | h. 4  | l. 11 |      |
  
6. a, b, c, d
  
7.
 

|       |       |      |
|-------|-------|------|
| a. 10 | e. 8  | i. 9 |
| b. 2  | f. 3  | j. 4 |
| c. 5  | g. 6  | k. 1 |
| d. 7  | h. 11 |      |
  
8. Answer should include two of the following:  
  
 Collects information for the publication of soil maps; Develops soil conservation plans with and for farmers, including a map and recommended practices; Provides soil information for engineering purposes; Monitors cost-share programs for ASCS
  
9. a, c, f, g
  
10. Farmers Home Administration; Commodity Credit Corporation; Small Business Administration; Farm Credit Administration
  
11.
  - a. User owned cooperatives designed to provide credit to agriculture
  - b. Organized into twelve credit districts supervised by an independent federal agency
  - c. Provide credit to the local land bank associations
  - d. Provide loan funds to local Production Credit Associations
  - e. Provide credit to agricultural cooperatives
  - f. Provide short and intermediate-term credit to farmers
  - g. Provide agricultural credit for long-term, first-mortgage loans

12. Answer should include three of the following:  
  
Provides educational assistance through publications and county agents; Provides information on current research developments; Provides technical assistance to farmers; Provides youth development activities through 4-H
13. Provides a soil testing service through the county extension agents; Provides a testing service for run-off water quality; Provides a testing service for nutrient content of plant samples
14. Created by state law to act as an advocate for a particular commodity, particularly in expanding markets and promoting research; Funded by a tax on the commodity

BASIC ECONOMIC PRINCIPLES

AG 660 - E

UNIT OBJECTIVE

After completion of this unit, students should be able to describe the basic economic factors that affect farm and agribusiness management decisions. Students should also be able to describe the role money and prices have in regulating business. This knowledge will be demonstrated by completion of the assignment sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with basic economic principles to their correct definitions.
2. Define economics.
3. Define an economic system.
4. List the four basic questions that must be answered for every economic system.
5. List and define the three basic economic systems.
6. Select the basic beliefs of capitalism.
7. Write the main characteristic of pure competition.
8. List three functions of money.
9. Name three ways the Federal Reserve System can increase the money supply.
10. Name three ways the Federal Reserve System can decrease the money supply.
11. Describe the role prices play in economics.
12. Describe two reasons prices paid to the farmer do not tend to rise with inflation.
13. Describe how supply and demand affect prices.
14. List three factors that affect prices other than supply and demand.
15. Describe the reasons price cycles occur.
16. Distinguish among supplementary, complementary, competitive and independent enterprises.
17. List two advantages of diversification.
18. List two advantages of specialization.
19. Write and explain examples of the four types of enterprises.

BASIC ECONOMIC PRINCIPLES

AG 660 - E

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Make transparencies and necessary copies of materials.
  - B. Provide students with objectives and discuss.
  - C. Provide students with information and assignment sheets and discuss.
  - D. Develop local examples using student projects if possible to demonstrate economic concepts.
  - E. Arrange a "bartering" activity to demonstrate how money represents actual goods.
  - F. Have students collect and report on news articles dealing with economic policy.
  - G. Have students write up a hypothetical business including the different types of enterprises they would include.
  - H. Collect local livestock sales records to show the yearly trend in livestock prices.
  - I. Develop a game with tokens and different products to demonstrate the concept of supply and demand and also how price is involved in distribution of resources. Some items should be in short supply while others are plentiful.
  - J. Review and give test.
  - K. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--The Federal Reserve
    - 2. TM 2--Types of Enterprises
  - E. Assignment sheet
    - 1. AS 1--Write and Explain Examples of the Four Types of Enterprises

- F. Answers to assignment sheet
  - G. Test
  - H. Answers to test
- III. Unit references
- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - B. Herbst, J.H., *Farm Management: Principles, Budgets, Plans*, Stipes Publishing Co., Champaign, Illinois, 1980.
  - C. Lowe, Ross E., et al., *Consumer Education and Economics*, 3<sup>rd</sup> edition, Glencoe Publishing Company, Mission Hills, California, 1990.
  - D. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
  - E. Miller, Roger Leroy, *Scribner Economics*, Scribner Education Publishers, New York, 1988.
  - F. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agriculture Management*, Reston Publishing Company-Prentice Hall, Reston, Virginia, 1978.
  - G. Peterson, J. Craig, *Economics of Work*, 2<sup>nd</sup> edition, South-Western Publishing Company, Cincinnati, Ohio, 1988.
  - H. Roy, Ewell P., Corty, Floyd L., and Sullivan, Gene D., *Economics: Applications to Agriculture and Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1981.
  - I. Smith, Robert F., et al., *The American Economic System*, 3<sup>rd</sup> edition, Laidlaw Brothers, Publishers, River Forest, Illinois, 1987.
  - J. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
  - K. Swanson, Bettye B., *Consumer Challenges and Issues*, South-Western Publishing Col., Cincinnati, Ohio, 1987.
  - L. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

BASIC ECONOMIC PRINCIPLES

AG 660 - E

INFORMATION SHEET

- I. Terms and definitions
- A. Management--Mental human energy used in production, primarily concerned with decision making and evaluation of risks to accomplish predetermined goals
  - B. Land--Natural wealth including soil, minerals, native vegetation and wild animals
  - C. Labor--Physical human energy used in production
  - D. Capital--Man-made wealth used for production, such as machinery, buildings and money  
  
(Note: Money is technically not considered a capital good although it can be put to work to produce more wealth.)
  - E. Corporation--Legal business entity made up of stockholders
  - F. Discount rate--Rate of interest charged to member banks in the Federal Reserve System
  - G. Federal securities--Certificates issued by the Federal Government in return for money loaned to it by individuals, to be repaid with interest
  - H. Fiscal--Having to do with money
  - I. GNP--Gross National Product or total value of all goods and services purchased by the final customers of those products
  - J. Enterprise--A specific economic project or activity such as raising wheat or dairy cows
  - K. Diversification--Branching out into several different types of enterprises
  - L. Specialization--Concentrating on one particular enterprise
  - M. Monopoly--A marketing situation in which a large company controls a certain market because it is the only one to provide that service or product
  - N. Oligopoly--A marketing situation in which a few large companies exert control over a certain market
- II. Economics--The science of using scarce resources in the best way possible to satisfy human needs and wants

(Note: Scarce resources include land, labor, capital and management.)

- III. Economic System—The way in which a nation uses its resources to satisfy its people's needs and wants
- IV. Four basic questions for every economic system
  - A. What do we produce?
  - B. How do we produce it?
  - C. Who should produce what?
  - D. For whom do we produce it?
- V. Basic economic systems
  - A. Traditional systems
    - 1. Nearly all economic decisions are based on age-old traditions, customs and beliefs
    - 2. Most nations are underdeveloped
    - 3. Most people are poor and lack education
    - 4. Change may be impossible with this system; people cannot recognize alternatives
    - 5. Pure traditional societies are rare today
  - B. Command systems
    - 1. Economic decision-making is centralized in the government
    - 2. Consumers have very little influence on the way economic decisions are made
  - C. Market systems
    - 1. Forces of supply and demand direct economic decision-making
    - 2. Government does not intervene
    - 3. Key economic decisions are made by individuals
    - 4. Also called free or capitalist system

(Note: Few, if any, economic systems are totally traditional, command or market systems. Most are a mixture of two or more kinds.)
- VI. Capitalism
  - A. Ownership of resources is by private individuals or corporations
  - B. Property owners hold the primary economic power

- C. Decisions of property owners are usually directed toward obtaining the greatest amount of satisfaction and profit with the least effort
- D. Competition provides the balance between supply and demand and insures the efficient utilization of resources

(Note: Sometimes long term use of resources is sacrificed for short term benefit, however.)

VII. Main characteristic of pure competition--No individual can affect the price of a product

VIII. Functions of money

- A. Serves as a convenient medium of exchange
- B. Provides a measure of value
- C. Serves to store value for savings

IX. Methods used by the Federal Reserve System to affect the money supply (Transparency 1)

(Note: The Federal Reserve System consists of a Board of Governors, 12 regional Federal Reserve Banks and numerous member banks. The governors are appointed by the President of the United States to 14-year terms. The Federal Reserve acts as a bank for banks, supervises and regulates member banks, acts as the federal government's bank and manages the nation's money supply.)

- A. Raise or lower the amount banks are required to have on reserve

Example: If the reserve requirement is 20%, then a bank would have to have 2 dollars on reserve for every 10 dollars in deposit accounts at the bank. Reducing the reserve requirement would make more money available to loan and thereby increase the nation's money supply

- B. Raise or lower the "discount rate" or the interest charged to member banks for the money they borrow

Example: Raising the discount rate would cause member banks to charge more interest which would decrease borrowing and therefore reduce the money supply

C. Buy or sell government securities

Example: Selling securities would reduce the amount of money on deposit and therefore reduce money supply

X. Role of prices--Act as the guide for allocation of resources

Example: A farmer might decide to put extra fertilizer on the wheat and less on the hay if the profit from the increased wheat would be more than the profit from the additional hay

- XI. Reasons prices to the farmer do not tend to rise with inflation
  - A. Competition in agriculture is more intense than in many other industries
  - B. Farmers cannot easily adjust supplies to market demand and over-supply drives down the price
  - C. Market for farmers' products does not change very much as price and income levels change
  - D. Farmers have high fixed costs and tend to produce the most they can to offset these costs, therefore creating an over-supply
  - E. Governmental policy has a major impact on commodity prices
  
- XII. Supply and demand
  - A. When supply is high or demand is low, the price will decrease
  - B. When supply is low or demand is high, the price will increase
  
- XIII. Factors affecting prices other than supply and demand
  - A. Labor unions forcing higher wages
  - B. Government regulations creating artificial supply and/or demand levels or controlling prices
  - C. Oligopolies or monopolies
    - Example: If one farm machinery company sets a certain price, others are very likely to follow
  
- XIV. Price cycles
  - A. Farmer response to prices
    - 1. When the price is high a farmer increases production
    - 2. Increased production tends to drive the price down
    - 3. Because of the delay between the movement in price and the response of the farmer, a cycle is created
  - B. Technological developments
    - Example: Poultry producers have introduced new methods of raising poultry which have reduced the price over a 30-year period
  - C. Seasonal changes that create seasonal cycles
    - Example: Fruit is much more available and therefore cheaper in the summer and fall than in the winter and spring

XV. Enterprises within an agricultural business (Transparency 2)

- A. Supplementary--Additional enterprises that use resources such as land, equipment and labor that would otherwise remain idle part of the time

Example: A wheat farmer may raise cattle or sheep in the winter

- B. Complementary--Additional enterprises that improve the profitability of the original enterprises

Example: A machinery dealer also providing a credit service; growing legumes in rotation with non-legumes to improve the soil

- C. Competitive--Additional enterprises that detract from the original one by using resources needed by the original enterprise

Example: An orchard owner starts a hog operation and the pigs start farrowing right when the fruit needs picking

(Note: This enterprise could have started out as supplementary, but simply grew too big or was poorly planned and therefore turned into a competitive one.)

- D. Independent--Enterprises that neither detract from nor help one another

Example: A farmer could raise both wheat and corn

XVI. Advantages of diversification

- A. Provides an alternate source of income should one particular enterprise fail

- B. May provide a more continuous use of resources

XVII. Advantages of specialization

- A. Manager can concentrate on one enterprise and can become more knowledgeable and efficient in its production

- B. May reduce overhead costs

Example: A farmer who raises only wheat will need to buy additional equipment (such as a swather, baler, etc.) if he decides to raise hay also

# The Federal Reserve

## Methods of Increasing Money Supply

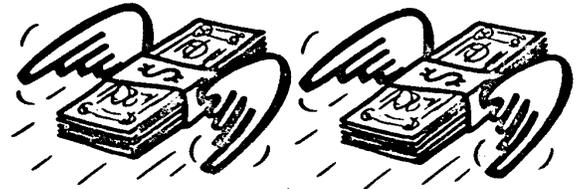
REDUCE AMOUNTS BANKS  
MUST HAVE ON RESERVE



Interest Charges  
~~15%~~ 14%

LOWER THE INTEREST  
RATE ON MONEY BANKS  
MUST BORROW

BUY GOVERNMENT SECURITIES



## Methods of Decreasing Money Supply

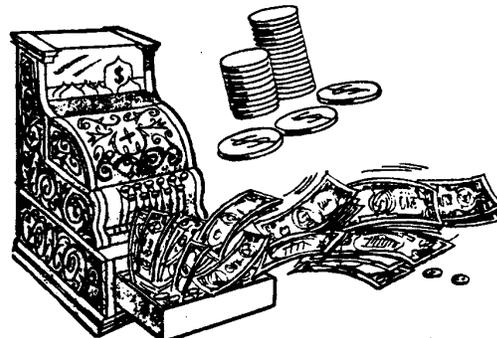
INCREASE AMOUNTS BANKS  
MUST HAVE ON RESERVE



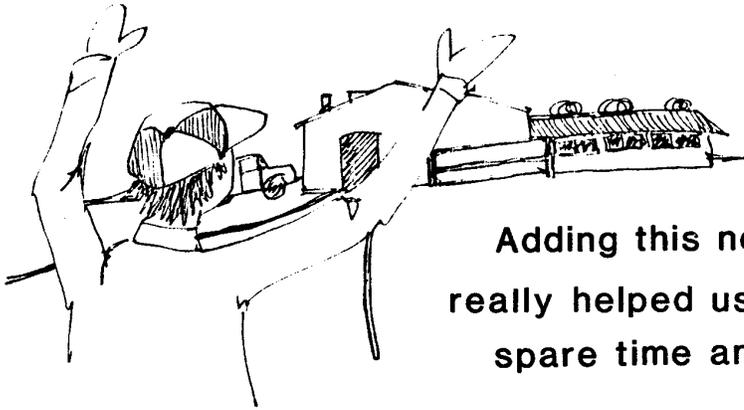
Interest Charges  
14% ~~15%~~

RAISE THE INTEREST RATE  
ON MONEY BANKS MUST BORROW

SELL GOVERNMENT SECURITIES



# Types Of Enterprises

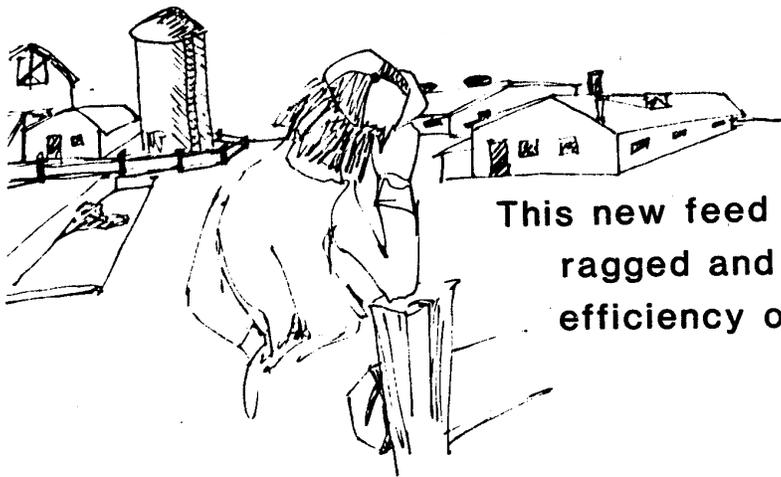
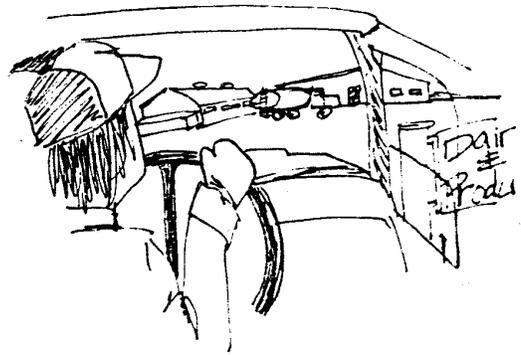


## Supplementary

Adding this new swine enterprise has really helped us make better use of our spare time and equipment

## Complementary

This processing plant has made our dairy a lot more profitable since we now have a guaranteed market



## Competitive

This new feed plant is running me ragged and is cutting into the efficiency of our cattle operation

BASIC ECONOMIC PRINCIPLES

AG 660 - E

ASSIGNMENT SHEET #1--WRITE AND EXPLAIN  
EXAMPLES OF THE FOUR TYPES OF ENTERPRISES

Name \_\_\_\_\_ Score \_\_\_\_\_

Choose one of the following agribusiness enterprises: cow-calf beef operation; dairy herd; raising corn or wheat; machinery dealer or feed store. Then write at least one additional enterprise beside each of the types of enterprises listed and describe why the enterprise you chose fits into that category.

Primary enterprise \_\_\_\_\_

Supplementary enterprise \_\_\_\_\_

Why? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Complementary enterprise \_\_\_\_\_

Why? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Competitive enterprise \_\_\_\_\_

Why? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Independent enterprise \_\_\_\_\_

Why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BASIC ECONOMIC PRINCIPLES

AG 660 - E

ANSWERS TO ASSIGNMENT SHEET

**Assignment Sheet #1**

(Note: Types of enterprises can change according to the situation. For example, a supplementary enterprise in one situation can become competitive in another. The important consideration is whether the student can justify the selection made.)

An example of a correct answer would be as follows:

Primary enterprise Raising wheat

Supplementary enterprise Feeding cattle during the winter

Wheat production mainly occurs in the spring, summer and fall. Therefore, feeding cattle could use those management and labor resources that are not being used in the winter.

Complementary enterprise Raising peas

Peas add nitrogen to the soil, which improves the soil for the wheat. Peas also prevent the build-up of disease organisms, which can occur in wheat. These factors improve the profitability of the wheat enterprise.

Competitive enterprise Custom combining

The demand for custom combining would be the greatest when their own wheat would need harvesting.

Independent enterprise Raising barley

Since barley and wheat use the same equipment and take about the same amount of time, it would not affect the management of the original enterprise.

## BASIC ECONOMIC PRINCIPLES

AG 660 - E

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |  |                       |
|----------|--|-----------------------|
| _____ a. | Branching out into several different types of enterprises  | 1. Fiscal             |
| _____ b. | Concentrating on one particular enterprise   | 2. Labor              |
| _____ c. | Rate of interest charged to member banks in the Federal Reserve System   | 3. Discount rate      |
| _____ d. | Legal business entity made up of stockholders  | 4. Land               |
| _____ e. | Physical human energy used in production   | 5. Monopoly           |
| _____ f. | A specific economic project or activity such as raising wheat or dairy cows  | 6. Corporation        |
| _____ g. | Having to do with money  | 7. Management         |
| _____ h. | Natural wealth including soil, minerals, native vegetation and wild animals  | 8. Federal securities |
| _____ i. | Mental human energy used in production, primarily concerned with decision making and evaluation of risks to accomplish predetermined goals | 9. Enterprise         |
| _____ j. | Total value of all goods and services purchased by the final consumers of those products   | 10. Diversification   |
| _____ k. | A marketing situation in which a few large companies exert control over a certain market   | 11. Specialization    |
| _____ l. | Man-made wealth used for production  | 12. Capital           |
| _____ m. | Certificates issued by the Federal Government in return for money loaned to it by individuals, to be repaid with interest                  | 13. GNP               |
| _____ n. | A marketing situation in which a large company controls a certain market because it is the only one to provide that service or product     | 14. Oligopoly         |

2. Define economics.

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3. Define economic system.

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4. List the four basic questions that must be answered for every economic system.

- a. 

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- b. 

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- c. 

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- d. 

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5. List and define the three basic economic systems.

- a. 

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- b. 

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- c. 

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6. Select the basic beliefs of capitalism from the ones listed. Write an "X" in the blank before each correct answer.
- a. Competition provides the balance between supply and demand and insures the efficient utilization of resources
  - b. Decisions of property owners are usually directed toward obtaining the greatest amount of satisfaction and profit with the least effort
  - c. Property is privately owned but rigidly controlled by the government
  - d. Property owners hold the primary economic power
  - e. The state has ownership over all goods
  - f. Overall economic planning is central to the working of capitalism
  - g. The individual is considered a servant of the state
  - h. Ownership of resources is by private individuals or corporations
  - i. Profit making is a secondary consideration
  - j. Economic controls are maintained democratically by the people and economic benefits are distributed fairly equally

7. Write the main characteristic of pure competition.

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8. List three functions of money.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

9. Name three ways the Federal Reserve System can increase the money supply.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

10. Name three ways the Federal Reserve System can decrease the money supply.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

11. Describe the role prices play in economics.

\_\_\_\_\_  
\_\_\_\_\_

12. Describe two reasons prices paid to the farmer do not tend to rise with inflation.

a. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

13. Describe how supply and demand affect prices.

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

14. List three factors that affect prices other than supply and demand.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

15. Describe the reasons price cycles occur.

a. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Distinguish among supplementary (S), complementary (CY), competitive (CE) and independent (I) enterprises by writing the appropriate abbreviation in front of the descriptions.

- \_\_\_\_ a.    Detracts from original enterprise
- \_\_\_\_ b.    Uses resources during a time they would otherwise be idle
- \_\_\_\_ c.    Improves profitability of the original enterprise
- \_\_\_\_ d.    Does not add to or detract from the original enterprise

17. List two advantages of diversification.

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

18. List two advantages of specialization.

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

## BASIC ECONOMIC PRINCIPLES

AG 660 - E

## ANSWERS TO TEST

- |    |       |      |       |       |
|----|-------|------|-------|-------|
| 1. | a. 10 | e. 2 | i. 7  | l. 12 |
|    | b. 11 | f. 9 | j. 13 | m. 8  |
|    | c. 3  | g. 1 | k. 14 | n. 5  |
|    | d. 6  | h. 4 |       |       |
2. The science of using scarce resources in the best way possible to satisfy human needs and wants
  3. The way in which a nation uses its resources to satisfy its people's needs and wants
  4. What do we produce?; How do we produce it?; Who should produce what?; For whom do we produce it?
  5. Traditional systems: Nearly all economic decisions are based on age-old traditions, customs and beliefs; Most nations are underdeveloped; Most people are poor and lack education; Change may be impossible with this system; people cannot recognize alternative; Pure traditional societies are rare today  
Command systems: Economic decision-making is centralized in the government; Consumers have very little influence on the way economic decisions are made.  
Market systems: Forces of supply and demand direct economic decision-making; Government does not intervene; Key economic decisions are made by individuals; Also called free or capitalist systems
  6. a, b, d, h
  7. No individual can affect the price of a product
  8. Serves as a convenient medium of exchange; Provides a measure of value; Serves to store value for savings
  9. Reduce reserve requirement; Lower discount rate; Buy back government securities
  10. Raise reserve requirement; Raise discount rate; Sell government securities
  11. Act as the guide for allocation of resources
  12. Answer should include two of the following:  
 Competition in agriculture is more intense than in many other industries; Farmers cannot easily adjust supplies to market demand and over-supply drives down the price; Market for farmers' products does not change very much as price and income levels change; Farmers have high fixed costs and tend to produce the most they can to offset these costs creating an over-supply; Governmental policy has a major impact on commodity prices
  13. When supply is high or demand is low the price will decrease; When supply is low or demand is high the price will increase

14. Labor unions forcing high wages; Government regulations creating artificial supply and/or demand levels or controlling prices; Oligopolies or monopolies
15. Farmers respond to high prices by increasing production. This production increase is delayed because of the time it takes to produce a product. These products then come on the market and the price goes down causing the farmer to decrease production; Technological developments; Seasonal changes
16. a. CE            b. S            c. CY            d. I
17. Provides an alternate source of income should one particular enterprise fail; May provide a more continuous use of resources
18. Manager can concentrate on one enterprise and can become more knowledgeable and efficient in its production; May reduce overhead costs

ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

UNIT OBJECTIVE

After completion of this unit, students should be able to describe economic decision-making tools that can be used to help determine the profitability of agricultural enterprises. Students should also be able to make calculations using these tools. This knowledge will be demonstrated by completion of assignment sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with advanced economic principles to their correct definitions.
2. Select the product an area would produce using the principle of comparative advantage.
3. Describe the substitution principle.
4. Describe the concept of diminishing returns.
5. Distinguish among the three stages of production.
6. Distinguish between fixed and variable costs.
7. Distinguish between marginal cost and marginal return.
8. Determine the maximum profit point or the number of inputs at which maximum net return is realized.
9. Determine where to allocate resources using the equi-marginal principle.
10. Calculate marginal cost and marginal return.

ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Make transparencies and necessary copies of materials.  
  
(Note: Transparency five can be used to show the concept of diminishing returns as well as marginal cost and return. It is the graphic representation of the information used for Assignment Sheet #1.)
  - B. Provide students with objectives and discuss.
  - C. Provide students with information and assignment sheets and discuss.
  - D. Carefully review economic principles covered in this unit. They are somewhat complicated and can be confusing. Make sure you understand them before presenting to students.
  - E. Develop local examples using student projects if possible to demonstrate economic concepts.
  - F. Have students collect and report on news articles dealing with economic policy.
  - G. Review and give test.
  - H. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Factors Affecting Comparative Advantage
    - 2. TM 2--Substitution Principle
    - 3. TM 3--Stages of Production
    - 4. TM 4--Marginal Cost and Return
    - 5. TM 5--Marginal Return on Nitrogen Applied to Potatoes

- E. Assignment sheets
    - 1. AS 1--Calculate Marginal Cost and Marginal Return
    - 2. AS 2--Determine the Maximum Profit Point
  - F. Answers to assignment sheets
  - G. Test
  - H. Answers to test
- III. Unit references
- A. Herbst, J.H., *Farm Management: Principles, Budgets, Plans*, Stripes Publishing Co., Champaign, Illinois, 1980.
  - B. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
  - C. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agriculture Management*, Reston Publishing Company-Prentice Hall, Reston, Virginia, 1978.
  - D. Roy, Ewell P., Corty, Floyd L., Sullivan, Gene D., *Economics: Applications to Agriculture and Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1981.
  - E. Schneeberger, Kenneth and Osburn, Donald, *Farm Management Manual*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1978.

## ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

## INFORMATION SHEET

- I. Terms and definitions
- A. Surplus--The amount above what is needed
  - B. Substitution--Using one product in place of part or all of another
  - C. Unit of input--Defined amount of some resource that needs to be supplied in order to produce a product
  - D. Unit of output--Defined amount of a product
  - E. Return--The amount of money or product that is given back to the investor or producer
  - F. Ratio--The relationship between two numbers
  - G. Maximum profit point--The level of inputs at which the most profit can be made
- II. Principle of comparative advantage (Transparency 1)
- A. An area will specialize in a product that has the greatest advantage over other areas in producing and then will trade the surplus of that product (or the money it represents) for the other products
 

Example: A farmer in North Idaho is growing both wheat and peas, and so is a farmer in South Idaho. The farmer in South Idaho is growing 140 bushels to the acre of wheat and 1 ton to the acre of peas. The farmer in North Idaho is growing 70 bushels to the acre of wheat and 2 tons to the acre of peas. If the farmer in North Idaho would put all of her acres in peas and the farmer in South Idaho would put all of his in wheat, the amount of peas produced would double and the amount of wheat produced would double. A trading arrangement could then be worked out and the standard of living of both farmers would increase because overall production would increase without an increase in labor or cost
  - B. Even if one area is better at producing all the products, it will select those products in which it has the greatest production advantage
 

Example: Boise Valley can produce more potatoes per acre than Eastern Idaho. However, since Eastern Idaho can produce potatoes, but not vegetable seed, Boise Valley specializes in the area in which it has the greatest advantage--vegetable seed

III. Principle of substitution (Transparency 2)

- A. Involves making decisions on the type of inputs to use based on cost and availability

Example: Using barley instead of corn, buying automatic feeders instead of hiring someone to do the job, and replacing some of the grain in a ration with hay

- B. Some inputs can entirely replace another input, but some can only replace a part of another because of a decreasing rate or efficiency of substitution

Example: Additional hay can replace grain in a dairy ration to a certain extent, but since hay is harder for the cow to digest it will take more and more hay to replace the same amount of grain. Eventually, the cow will not be able to eat enough hay or the amount of hay it takes to replace the grain will cost more than the grain it replaces

(Note: The point at which substitution is no longer profitable can be determined by the following ratio. The first is the rate at which one product can be replaced by another.)

$$\frac{\text{Number of units of original input}}{\text{Number of units of substitute input}} = \frac{\text{Price of substituted input per unit}}{\text{Price of original input per unit}}$$

If the first ratio or substitution ratio is greater than the price ratio, then more substitution is profitable. When they become equal, additional substitution is no longer profitable.)

IV. Concept of diminishing returns--The increase in output will become smaller and smaller with the addition of each input

- Example:
1. A 220 pound animal needs 6 pounds of dry matter to gain 2.4pounds per day, while a 770 pound animal takes 17.6 pounds and a 1,100 pound animal takes 22.9 pounds. The increase in weight per pound of feed added decreases as the animal get heavier
  2. Each pound of fertilizer added produces a samller increase in crop yield until adding more fertilizer does not increase yield at all.

V. Stages of production (Transparency 3)

- A. Stage 1--Each additional unit of input results in a bigger increase in output than the previous unit of input provided; output is increasing at an increasing rate

(Note: Inputs would continue to be added at this stage.)

B. Stage 2--Each additional unit of input results in an increase in output, but not as big an increase as the previous unit of input provided

C. Stage 3--Each additional unit of input actually results in a decrease in output

(Note: This stage of production obviously needs to be avoided.)

VI. Types of costs

A. Fixed costs--Costs that will exist regardless of the level of production

Example: The interest on a combine will have to be paid whether it is used or not

B. Variable costs--Costs that change with levels of production

Example: Seed costs will increase as the number of acres planted increase

VII. Marginal cost and marginal return (Transparencies 4, 5)

A. Marginal cost of an added unit of input--Expense of adding another unit of input

B. Marginal return per unit of input--Value gained by adding another unit of input

(Note: If the marginal cost is greater than the marginal return, then it is not profitable to add that last unit of input or produce that last unit of output.)

VIII. Determining the maximum profit point or the net return (Transparencies 4, 5 and Assignment Sheet #2)

A. Calculate the cost of adding each unit of input--marginal cost

B. Calculate the value of the output produced at each level--marginal return

C. Determine the level at which the value of the output no longer justifies the cost to produce it

- IX. Equi-marginal principle--Resources should be distributed among various enterprises so that they create the most return

Example: A farmer has \$900 to spend on fertilizer for 50 acres of wheat and 50 acres of barley. Fertilizer cost \$.20/pound. The wheat is selling for \$.06/pound and the barley for \$.05/pound. The response to the fertilizer is as follows:

(Note: This is strictly a hypothetical example.)

| <u>Pounds of Fertilizer</u> | <u>Pounds Needed to Cover 50 Acres</u> | <u>Pounds of Wheat/Acre</u> | <u>Increase in the Value of Wheat</u> | <u>Pounds of Barley/Acre</u> | <u>Increase in the Value of Barley</u> |
|-----------------------------|--|-----------------------------|---------------------------------------|------------------------------|--|
| 0                           | 0                                      | 2000                        | ----                                  | 1500                         | ----                                   |
| 30                          | 1500                                   | 3000                        | \$60                                  | 2000                         | \$25                                   |
| 60                          | 3000                                   | 3600                        | \$36                                  | 2400                         | \$20                                   |
| 90                          | 4500                                   | 4000                        | \$24                                  | 2800                         | \$20                                   |
| 120                         | 6000                                   | 4300                        | \$18                                  | 3000                         | \$10                                   |

Total fertilizer farmer can buy = 4,500 pounds or 90 pounds/acre

He would put the first 60 pounds/acre of fertilizer on the wheat since it would increase the value by \$96. He would put the final 30 pounds/acre on the barley since putting it on the wheat would only increase the value by \$24/acre while putting it on the barley would increase the value \$25/acre

# Factors Affecting Comparative Advantage

**MARKETS**



**CHANGING CUSTOMS**

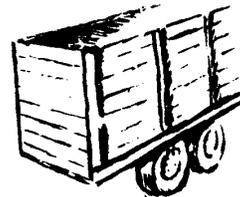


**CLIMATE**

**SOILS AND TOPOGRAPHY**



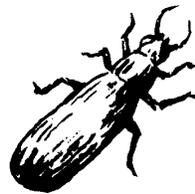
**FREIGHT RATES**



**LABOR SUPPLY**



**SANITARY REGULATIONS**



**INSECTS AND DISEASES**

# Substitution Principle

**Combinations of hay and grain that will produce 13,500 lbs of milk are:**

| <b>Feed Combinations</b> | <b>Pounds of Hay</b> | <b>Pounds of Grain</b> |
|--------------------------|----------------------|------------------------|
| <b>A</b>                 | <b>5,400</b>         | <b>5,850</b>           |
| <b>B</b>                 | <b>6,200</b>         | <b>4,990</b>           |
| <b>C</b>                 | <b>7,000</b>         | <b>4,378</b>           |
| <b>D</b>                 | <b>7,800</b>         | <b>3,910</b>           |

**Cost of hay and grain if grain is \$6 a hundred and hay is \$75 a ton for feed combinations A through D are:**

| <b>Feed Combinations</b> | <b>Price of Hay</b> | <b>Price of Grain</b> | <b>Combined Price</b> |
|--------------------------|---------------------|-----------------------|-----------------------|
| <b>A</b>                 | <b>202.50</b>       | <b>351.00</b>         | <b>553.50</b>         |
| <b>B</b>                 | <b>232.50</b>       | <b>299.40</b>         | <b>531.90</b>         |
| <b>C</b>                 | <b>262.50</b>       | <b>262.68</b>         | <b>525.18</b>         |
| <b>D</b>                 | <b>292.50</b>       | <b>234.60</b>         | <b>527.10</b>         |

**Feed Combination "C" is the cheapest. It is economical to substitute hay for grain at 7,000 pounds of hay, but not 7,800 pounds of hay.**

# Stages Of Production

|                | Units of<br>GoGrow<br>Fertilizer | Pounds<br>of Crop<br>Produced |   | Increase in<br>Production<br>(pounds) |
|----------------|----------------------------------|-------------------------------|---|---------------------------------------|
| <b>Stage 1</b> | <b>1</b>                         | <b>5</b>                      |   |                                       |
|                | <b>2</b>                         | <b>10</b>                     | <b>Increase at an<br/>increasing rate</b> | <b>5</b>                              |
|                | <b>3</b>                         | <b>20</b>                     |   | <b>10</b>                             |
|                | <b>4</b>                         | <b>35</b>                     |   | <b>15</b>                             |
| <b>Stage 2</b> | <b>5</b>                         | <b>45</b>                     | <b>Increase at a<br/>decreasing rate</b>  | <b>10</b>                             |
|                | <b>6</b>                         | <b>50</b>                     |   | <b>5</b>                              |
|                | <b>7</b>                         | <b>51</b>                     |   | <b>1</b>                              |
| <b>Stage 3</b> | <b>8</b>                         | <b>50</b>                     | <b>Decrease</b>                           | <b>-1</b>                             |
|                | <b>9</b>                         | <b>45</b>                     |   | <b>-5</b>                             |
|                | <b>10</b>                        | <b>30</b>                     |   | <b>-10</b>                            |

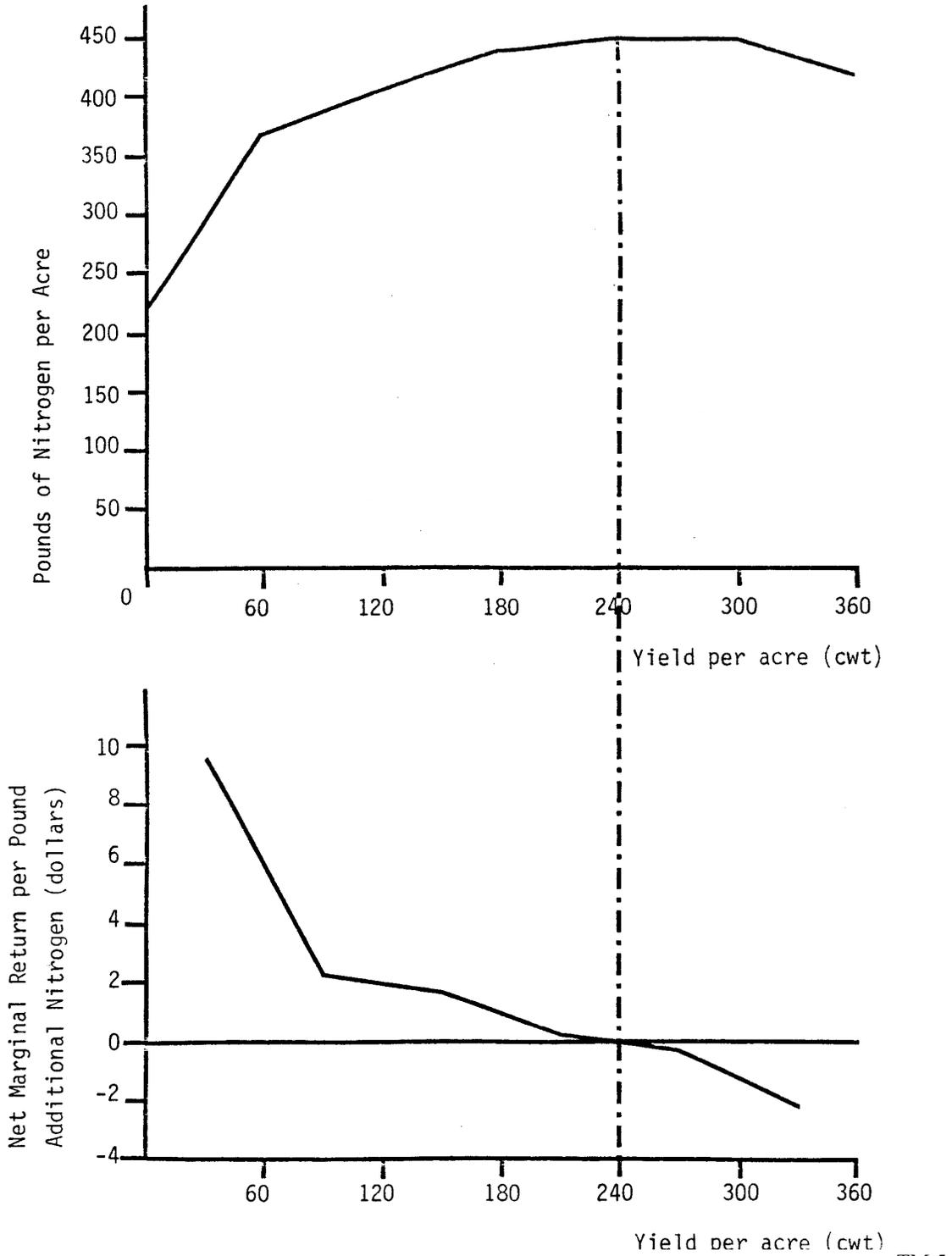
# Marginal Cost And Return

Cost per unit of GoGrow Fertilizer \$13.00  
 Value per unit of crop produced \$3.00

| Units of<br>GoGrow<br>Fertilizer | Units of<br>Crop<br>Produced | Increase in<br>Production | Marginal<br>Cost \$ | Marginal<br>Return \$ | Net<br>Marginal<br>Return \$ |
|----------------------------------|------------------------------|---------------------------|---------------------|-----------------------|------------------------------|
| 1                                | 5                            | 5                         | \$13.00             | \$15.00               | \$ 2.00                      |
| 2                                | 10                           | 5                         | 13.00               | 15.00                 | 2.00                         |
| 3                                | 20                           | 10                        | 13.00               | 30.00                 | 17.00                        |
| 4                                | 35                           | 15                        | 13.00               | 45.00                 | 32.00                        |
| 5                                | 45                           | 10                        | 13.00               | 30.00                 | 17.00                        |
| 6                                | 50                           | 5                         | 13.00               | 15.00                 | 2.00                         |
| 7                                | 51                           | 1                         | 13.00               | 3.00                  | -10.00                       |
| 8                                | 50                           | -1                        | 13.00               | -3.00                 | -16.00                       |
| 9                                | 45                           | -5                        | 13.00               | -15.00                | -28.00                       |

 Point at which to stop adding inputs. From here on marginal cost is greater than marginal return.

# Marginal Return On Nitrogen Applied To Potatoes



## ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

## ASSIGNMENT SHEET #1--CALCULATE MARGINAL COST AND MARGINAL RETURN

Name \_\_\_\_\_ Score \_\_\_\_\_

Whether to add that last pound of fertilizer, apply that expensive insecticide, feed the animals for another 30 days or apply one more irrigation are all decisions that can be made by knowing the marginal cost and marginal return. It is profitable to add that last unit of input?

Calculate the marginal cost and return for each level of input in the following problem: Use \$4 per cwt for potatoes and \$.33 per pound for nitrogen. The first one is completed for you.

## NITROGEN APPLICATION ON POTATOES AT TWIN FALLS, IDAHO

| <u>Inputs</u><br>Nitrogen Per<br>Acre (pounds) | <u>Output</u><br>Yield Per<br>Acre (cwt) | <u>Increase in</u><br><u>Production (cwt)</u> | <u>Marginal</u><br><u>Cost (\$)</u> | <u>Marginal</u><br><u>Return</u> | <u>Net Marginal</u><br><u>Return Per Acre</u> |
|--|--|---|-------------------------------------|----------------------------------|---|
| 0  | 220                                      | (370-220)                                     | (60x.33)                            | (150x4)                          | (600-19.80)                                   |
| 60   | 370                                      | <u>150</u>                                    | <u>\$19.80</u>                      | <u>\$600</u>                     | <u>\$580.20</u>                               |
| 120  | 410                                      | _____   | _____                               | _____                            | _____   |
| 180  | 440                                      | _____   | _____                               | _____                            | _____   |
| 240  | 450                                      | _____   | _____                               | _____                            | _____   |
| 300  | 450                                      | _____   | _____                               | _____                            | _____   |
| 360  | 420                                      | _____   | _____                               | _____                            | _____   |

ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

ASSIGNMENT SHEET #2--DETERMINE THE MAXIMUM PROFIT POINT

Name \_\_\_\_\_ Score \_\_\_\_\_

Once the marginal cost and marginal return have been calculated, it is relatively simple to decide where to stop adding inputs in order to realize the maximum profit or the maximum net return.

In the following problem the price of the inputs (nitrogen fertilizer) and the price of the product (corn) are varied. In each case the maximum profit point can change. Determine the level at which the most profit would be made in each case. You will need to calculate the marginal cost and return in each case.

(Note: Each input represents 15 pounds of nitrogen.)

| <u>Level</u> | <u>Inputs</u> | <u>Output (bu)</u> | <u>Increase in product (bu)</u> |
|--------------|---------------|--------------------|---------------------------------|
| A            | 4             | 123                |                                 |
| B            | 5             | 128                | 5                               |
| C            | 6             | 132                | 4                               |
| D            | 7             | 134                | 2                               |
| E            | 8             | 136                | 2                               |
| F            | 9             | 137                | 1                               |
| G            | 10            | 134                | -3                              |

Case #1: Nitrogen is \$.20/lb or \$3 per pound unit; corn is \$2.50/bu

|                             | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> |
|-----------------------------|----------|----------|----------|----------|----------|----------|
| Marginal cost               | _____    | _____    | _____    | _____    | _____    | _____    |
| Marginal return             | _____    | _____    | _____    | _____    | _____    | _____    |
| Maximum profit point--level | _____    |          |          |          |          |          |

Case #2: Nitrogen is \$.15/lb or \$2.25 per 15 pound unit; corn is \$2.50/bu

|                             | B     | C     | D     | E     | F     | G     |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| Marginal cost               | _____ | _____ | _____ | _____ | _____ | _____ |
| Marginal return             | _____ | _____ | _____ | _____ | _____ | _____ |
| Maximum profit point--level | _____ |       |       |       |       |       |

Case #3: Nitrogen is \$.30/lb or \$4.50 per 15 pound unit; corn is \$2/bu

|                             | B     | C     | D     | E     | F     | G     |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| Marginal cost               | _____ | _____ | _____ | _____ | _____ | _____ |
| Marginal return             | _____ | _____ | _____ | _____ | _____ | _____ |
| Maximum profit point--level | _____ |       |       |       |       |       |

## ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

## ANSWERS TO ASSIGNMENT SHEETS

**Assignment Sheet #1**

| <u>Inputs</u><br>Nitrogen Per<br>Acre (pounds) | <u>Output</u><br>Yield Per<br>Acre (cwt) | <u>Increase in</u><br><u>Production (cwt)</u> | <u>Marginal</u><br><u>Cost (\$)</u> | <u>Marginal</u><br><u>Return</u> | <u>Net Marginal</u><br><u>Return Per Acre</u> |
|--|--|---|-------------------------------------|----------------------------------|---|
| 0  | 220                                      |   |                                     |                                  |   |
| 60   | 370                                      | <u>150</u>                                    | <u>\$19.80</u>                      | <u>\$600</u>                     | <u>\$580.20</u>                               |
| 120  | 410                                      | <u>40</u>                                     | <u>19.80</u>                        | <u>160</u>                       | <u>140.20</u>                                 |
| 180  | 440                                      | <u>30</u>                                     | <u>19.80</u>                        | <u>120</u>                       | <u>100.20</u>                                 |
| 240  | 450                                      | <u>10</u>                                     | <u>19.80</u>                        | <u>40</u>                        | <u>20.20</u>                                  |
| 300  | 450                                      | <u>0</u>                                      | <u>19.80</u>                        | <u>0</u>                         | <u>-19.80</u>                                 |
| 360  | 420                                      | <u>-30</u>                                    | <u>19.80</u>                        | <u>-120</u>                      | <u>-139.80</u>                                |

**Assignment Sheet #2**

Case #1:

|                             | B            | C            | D           | E           | F           | G            |
|-----------------------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Marginal cost               | <u>3.00</u>  | <u>3.00</u>  | <u>3.00</u> | <u>3.00</u> | <u>3.00</u> | <u>3.00</u>  |
| Marginal return             | <u>12.50</u> | <u>10.00</u> | <u>5.00</u> | <u>5.00</u> | <u>2.50</u> | <u>-7.50</u> |
| Maximum profit point--level | <u>E</u>     |              |             |             |             |              |

Case #2:

|                             | B            | C            | D           | E           | F           | G            |
|-----------------------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Marginal cost               | <u>2.25</u>  | <u>2.25</u>  | <u>2.25</u> | <u>2.25</u> | <u>2.25</u> | <u>2.25</u>  |
| Marginal return             | <u>12.50</u> | <u>10.00</u> | <u>5.00</u> | <u>5.00</u> | <u>2.50</u> | <u>-7.50</u> |
| Maximum profit point--level | <u>F</u>     |              |             |             |             |              |

Case #3:

|                             | B            | C           | D           | E           | F           | G            |
|-----------------------------|--------------|-------------|-------------|-------------|-------------|--------------|
| Marginal cost               | <u>4.50</u>  | <u>4.50</u> | <u>4.50</u> | <u>4.50</u> | <u>4.50</u> | <u>4.50</u>  |
| Marginal return             | <u>10.00</u> | <u>8.00</u> | <u>4.00</u> | <u>4.00</u> | <u>2.00</u> | <u>-6.00</u> |
| Maximum profit point--level | <u>C</u>     |             |             |             |             |              |

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ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |   |                   |
|----------|---|-------------------|
| _____ a. | The amount above what is needed   | 1. Return         |
| _____ b. | The amount of money or product that is given back to the investor or producer point     | 2. Maximum profit |
| _____ c. | Using one product in place of part or all of another                                    | 3. Surplus        |
| _____ d. | Defined amount of a product   | 4. Ratio          |
| _____ e. | Defined amount of some resource that needs to be supplied in order to produce a product | 5. Substitution   |
| _____ f. | The level of inputs at which the most profit can be made                                | 6. Unit of output |
| _____ g. | The relationship between two numbers  | 7. Unit of input  |

2. Select the product each area would produce using the principle of comparative advantage.

Case #1: Area A can produce 30 bushels of wheat to the acre while area B can produce 60  
Area A can also produce 50 bushels of corn to the acre while area B can produce 55

a. Area A would produce \_\_\_\_\_

b. Area B would produce \_\_\_\_\_

3. Describe the substitution principle.

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4. Describe the concept of diminishing returns.

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5. Distinguish among the three stages of production by writing the stage number in front of the correct description.
- \_\_\_\_ a. Each additional unit of input results in an increase in output, but not as big an increase as the previous unit of input provided
  - \_\_\_\_ b. Each additional unit of input actually results in a decrease in output
  - \_\_\_\_ c. Each additional unit of input results in a bigger increase in output than the previous unit of input provided; output is increasing at an increasing rate
6. Distinguish between fixed (F) and variable (V) cost by writing the appropriate abbreviation in front of different types of expenses listed.
- \_\_\_\_ a. Depreciation cost on equipment
  - \_\_\_\_ b. Fuel for equipment
  - \_\_\_\_ c. Seed
  - \_\_\_\_ d. Salary of \$15,000/year for ranch foreman
  - \_\_\_\_ e. Fertilizer
  - \_\_\_\_ f. Interest on equipment
7. Distinguish between marginal cost (MC) and marginal return (MR) by writing MC or MR in front of the correct description.
- \_\_\_\_ a. Expense of adding another unit of input
  - \_\_\_\_ b. Value gained by adding another unit of input
8. Determine the level at which the maximum profit would be realized in the steer feeding operation described. Grain is \$.05/lb and the added weight is worth \$.65/lb. Marginal cost and marginal return will need to be calculated first.

| <u>Level</u> | <u>Inputs (grain needed to produce the increase in weight)</u> | <u>Increase in Weight</u> | <u>Marginal Cost</u> | <u>Marginal Return</u> |
|--------------|--|---------------------------|----------------------|------------------------|
| A            | 1340 lbs   | 200                       | _____                | _____                  |
| B            | 1660 lbs   | 200                       | _____                | _____                  |
| C            | 1980 lbs   | 200                       | _____                | _____                  |
| D            | 1120 lbs   | 100                       | _____                | _____                  |

Maximum profit point \_\_\_\_\_

9. Determine how to divide up 11,000 bushels of corn to feed to the steers and hogs in the following example to realize the most profit using the principle of equi-marginal returns.

| <u>Corn (bu)</u> | <u>Return in dollars per 1,000 bu of corn<br/>fed to steers and hogs</u> |             |
|------------------|--|-------------|
|                  | <u>Steers</u>  | <u>Hogs</u> |
| 1,000            | \$1,265  | 1,400       |
| 2,000            | 1,710  | 1,400       |
| 3,000            | 1,680  | 1,350       |
| 4,000            | 1,300  | 1,162       |
| 5,000            | 1,235  | 1,137       |
| 6,000            | 1,235  | 1,137       |
| 7,000            | 1,190  | 1,137       |
| 8,000            | 1,142  | 1,137       |
| 9,000            | 1,142  | 1,092       |
| 10,000           | 1,098  | 1,092       |

- a. Bushels feed to steers \_\_\_\_\_
- b. Bushels feed to hogs \_\_\_\_\_

TOTAL 11,000 bu

## ADVANCED ECONOMIC PRINCIPLES

AG 660 - F

## ANSWERS TO TEST

1.    a. 3                    e. 7  
      b. 1                    f. 2  
      c. 5                    g. 4  
      d. 6
2.    a. Corn                b. Wheat
3.    Involves making decisions on the type of inputs to use based on cost and availability; Some inputs can entirely replace another input, but some can only replace a part of another because of a decreasing rate or efficiency of substitution
4.    The increase of output will become smaller with the addition of each input
5.    a. 2                    b. 3                    c. 1
6.    a. F                    b. V                    c. V                    d. F                    e. V                    f. F
7.    a. MC                    b. MR
8.    

| <u>Level</u> | <u>Marginal Cost</u> | <u>Marginal Return</u> |
|--------------|----------------------|------------------------|
| A            | \$67.00              | \$130.00               |
| B            | 83.00                | 130.00                 |
| C            | 99.00                | 130.00                 |
| D            | 56.00                | 65.00                  |

Maximum profit point   A
9.    a. 7000 bu            b. 4000 bu

AGRICULTURAL CREDIT

AG 660 - G

UNIT OBJECTIVE

After completion of this unit, students should be able to discuss the role of credit in agriculture, as well as the types and sources of credit. Students should also be able to calculate interest and loan payments and complete a net worth statement. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with agricultural credit to their correct definitions.
2. Describe in a short paragraph, the role of credit in agriculture.
3. List eight primary principles to observe in using credit to be considered by a potential borrower.
4. Distinguish among the short-term, intermediate and long-term basis.
5. Define production credit and consumption credit.
6. List five factors to consider in selecting a source of credit.
7. Match sources of credit to a list of advantages and disadvantages.
8. List six primary factors a lender might consider in evaluating a loan application.
9. List five factors affecting repayment capacity.
10. Distinguish among various types of assets.
11. Distinguish among various types of liabilities.
12. List four factors that affect the cost of credit.
13. Match types of interest to their proper explanation.
14. Determine the actual interest rate.
15. Define money.
16. List the three functions of money.
17. Identify the three types of financial institutions.
18. Describe the Federal Reserve System.
19. List the five functions of the Federal Reserve System.

20. Write a check.
21. Describe how and where to endorse a check.
22. List and describe the three types of check endorsements.
23. Fill out a deposit slip.
24. Reconcile a checkbook register and bank statement.
25. Discuss the impact of savings on our national economy.
26. Identify types of savings and investment programs.
27. Calculate interest expense.
28. Determine net worth and solvency ratio.
29. Select the most appropriate lending institution.

## AGRICULTURAL CREDIT

## AG 660 - G

## SUGGESTED ACTIVITIES

## I. Suggested activities for the instructor

## A. Order materials to supplement unit.

## 1. Literature

- a. The following are available from Agricultural Communications Center, Ag Publications Building, Building J40, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).

CIS 350 *Credit or Cash: Equal Credit Opportunity Act, Fair Credit Billing Act* \$.25

CIS 351 *Credit or Cash: Consumers and Credit* \$.25

CIS 358 *Credit or Cash: Advantages and Disadvantages of Buying on Credit* \$.25

CIS 491 *Credit Cards* \$.35

## 2. Filmstrips, slideshows, etc.

- a. *Agricultural Credit*, sound filmstrip; discusses where to go for a loan, how loans are granted and methods of working with credit; available from Vocational Education Productions, California Polytechnic State University, San Luis Obispo, California 93407, (1-800-235-4146); approximate cost \$19.95; order no. 1-810-135J.
- b. *Analyzing Financial Performance*, Program #375; 29 minutes; discusses how to use the information from the three basic financial statements to analyze the farm's financial performance including how to calculate measures to evaluate liquidity, solvency, profitability and financial efficiency; available from Agricultural Communications Center, 10 Ag Science Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
- c. *Farm and Ranch Business Management Slide Set*, available from John Deere Distribution Service Center, Service Publications, Department 150, 1400-13th Street, East Moline, Illinois 61244; approximate cost \$105.48; order no. FBM-10202S.

- d. *Obtaining and Using Credit Effectively*, Program #430; 49 1/2 minutes; discusses procedures and documentation necessary to obtain agricultural credit, how to calculate ratios and other guidelines that assist in analyzing financial performance, and what qualities to look for when selecting a lender; available from Agricultural Communications Center, 10 Ag Science Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).

- B. Make transparencies and necessary copies of materials.
- C. Provide students with objectives and discuss.
- D. Provide students with information and assignment sheets and discuss.
- E. Invite a loan officer to class to discuss the use of credit in agriculture.
- F. Tour a bank, PCA, FLB or FmHA office to determine what a lender looks for in a potential borrower and the importance of record keeping in securing a loan.
- G. Select a member of the class to investigate various sources of credit and report back to the class as a resource panel.
- H. Interview a young farmer just becoming established in farming to determine credit needs and credit sources available.
- I. Review and give test.
- J. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Transparency masters
  - 1. TM 1--Principles of Credit
  - 2. TM 2--Factors to Consider in Selecting a Credit Source
  - 3. TM 3--Credit Sources for Agriculture
  - 4. TM 4--Credit Factors Considered by a Lender
  - 5. TM 5--Calculating Compound Interest
  - 6. TM 6--Calculating Simple Interest
  - 7. TM 7--Calculating Discounted Interest

8. TM 8--Calculating Add-on Interest
  9. TM 9--Calculate Actual Interest Rates
  10. TM 10--Calculating Total Interest Paid
  11. TM 11—Important Parts of a Check
  12. TM 12—Some Errors to Avoid in Writing a Check
  13. TM 13—Endorsing a Check
  14. TM 14—Filling Out a Deposit Slip
  15. TM 15—A Bank Statement
  16. TM 16—Sources of Information for a Bank Reconciliation
  17. TM 17—Savings and investment Programs
- E. Handout
1. HO 1--Net Worth Statements
- F. Assignment sheets
1. AS 1--Calculate Interest Expense
  2. AS 2--Determine Net Worth and Solvency Ratio
  3. AS 3--Select the Most Appropriate Lending Institution
- G. Answers to assignment sheets
- H. Test
- I. Answers to the test
- III. Unit references
- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
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  - C. Lowe, Ross E., et al., *Consumer Education and Economics*, 3<sup>rd</sup> edition, Glencoe Publishing Company, Mission Hills, California, 1990.
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(Note: The following transparency masters were reprinted with permission from *Agricultural Business Sales*, Instructional Materials Laboratory, University of Missouri-Columbia, June 1984: Important Parts of a Check; Some Errors to Avoid in Writing a Check; A Bank Statement; and Sources of Information for a Bank Reconciliation.)

AGRICULTURAL CREDIT

AG 660 - G

INFORMATION SHEET

I. Terms and definitions

- A. Debt--Obligation to pay in the future
- B. Credit--Money loaned to an individual or business
- C. Interest--Cost or "rent" for borrowed money

(Note: The cost of credit is the difference between the total money the borrower receives from the lender and the total amount of money paid to retire the loan.)

- D. Interest rate--Percentage of the loan charged for the use of the money
- E. Asset--Items of ownership convertible to cash; physical resources of a person or business
- F. Liability--Money owed; debts or obligations to be paid in the future
- G. Loan--Money furnished on condition of being returned, usually with interest
- H. Operating capital--Production resources expected to be used in one year

Examples: Feed, fertilizer, seed and labor

- I. Investment capital--Durable resources in which money is invested for a period of a year
- J. Solvency ratio--Comparison of assets to liabilities

(Note: A solvency ratio is the amount of assets a borrower has for each \$1.00 of liabilities. A solvency ratio of 3:1 is considered desirable, while a solvency ratio of 1:1 is less desirable. Lending money to an individual with a 1:1 solvency ratio is very risky.)

- K. Borrower--Individual or business seeking a loan from a lender
- L. Lender--Individual or business providing a loan to a borrower
- M. Principle--Amount of money borrowed
- N. Net worth statement--A listing and summary of assets and liabilities

(Note: A lender will look at a borrower's net worth statement to determine solvency ratio--a measure of the potential of repayment.)

- O. Collateral--Property or assets used as security to insure payment of a loan

II. Role of credit in agriculture

- A. Gives individuals and businesses purchasing power based on future income
- B. Aids to speed production and expansion

(Note: If a business could invest in production items only in an amount equal to its own savings, its resources would be cut sharply and expansion would proceed slowly.)

- C. Credit needs of agriculture have risen dramatically in recent years due to the growing capital requirements of farm and ranch operations and due to continued substitution of capital for labor

III. Primary credit principles (Transparency 1)

- A. Production loans should be used only to increase income
- B. Limit the amount borrowed on new or unfamiliar enterprises
- C. Keep debts as low as possible while still maintaining efficiency

(Note: Credit should be available to cover some unanticipated expenses such as additional spray for a heavy insect infestation. Having "just enough" credit can reduce management flexibility as the year progresses.)

- D. Study markets and trends
- E. Keep the proper debt-net worth relationship
- F. Keep the proper debt-income relationship
- G. Select a dependable lender who will give the best terms
- H. Have a definite repayment program
- I. Be businesslike, fair and frank
- J. Carry adequate insurance

IV. Types of loans

- A. Long-term loans
  - 1. Extend from five to thirty years or more
  - 2. Used for such purposes as the purchase of farms, farm improvements, major repairs and other purposes

- B. Intermediate loans
  - 1. Extend for periods of one to seven years
  - 2. Used for purchase of machinery and equipment, breeding herds and flocks, and construction or major repair of farm buildings
- C. Short-term loans
  - 1. Extend for periods up to one year
  - 2. Used for such items as fertilizer, feed or seed, or to pay other current operating expenses
- V. Kinds of credit
  - A. Production credit--Used to increase production or income
    - Example: Credit used to purchase livestock, land, equipment, seed, fertilizer, etc.
  - B. Consumption credit
    - 1. Used to purchase items consumed by family
    - 2. Does not contribute to farm income
    - 3. Can limit the amount of production credit available when used in excess
- VI. Factors to consider in selecting a source of credit (Transparency 2)
  - A. The lending institution's knowledge of agricultural practices and problems
  - B. The institution's experience in handling agricultural credit of a similar nature
  - C. The institution's lending policies
    - 1. Interest rates
    - 2. Repayment schedule
    - 3. Closing costs
    - 4. Method of handling emergencies
    - 5. Required collateral
  - D. The availability of additional credit to meet unexpected needs
  - E. Reputation of lending institution

- VII. Advantages and disadvantages of credit sources (Transparency 3)
  - A. Commercial banks
    - 1. Advantages
      - a. Convenience of borrowing
      - b. Knowledge of personal needs
      - c. Speed of loan approval
      - d. Diversity of loans made
      - e. Availability of character loans
    - 2. Disadvantages
      - a. High interest rate
      - b. Preference of short-term loans
      - c. Limitations on amount of money loaned, especially for land
  - B. Individuals
    - 1. Advantages
      - a. Lower rate of interest
      - b. Ability to get an immediate loan
      - c. Greater possibility to negotiate the payment or interest of loan
    - 2. Disadvantages
      - a. Not a dependable source of credit
      - b. Usually short-term credit
      - c. Frequently involves large down payments
  - C. Finance companies
    - 1. Advantages
      - a. Easier for poor-risk persons
      - b. Immediate loan approval
      - c. Convenience of borrowing

2. Disadvantages
  - a. Extremely high interest rates
  - b. High pressure loan agents
  - c. Usually short-term credit

D. Federal Land Bank

1. Advantages

- a. Low interest rates on long term loans
- b. Availability of long-term credit (5-40 years)
- c. More understanding of economic conditions
- d. Loans up to 85% of appraised value
- e. New loans have a variable interest rate, changing with economic conditions
- f. Profits are returned to borrowers

2. Disadvantages

- a. Complicated loan procedures
- b. Necessity for borrower to buy shares
- c. Low property appraisals
- d. Limited funds to be loaned

E. Production Credit Association

1. Advantages

- a. Low interest rate--usually lower than commercial banks
- b. Unlimited funds
- c. Interest paid only on amount of time used
- d. Provide thorough record keeping and management assistance
- e. Profits are returned to borrowers

2. Disadvantages
  - a. Necessity for borrower to buy shares
  - b. Availability of short-term and intermediate-term credit only-- up to 7 years
  - c. Local office not always available

F. Farmers' Home Administration

1. Advantages
  - a. Makes loans to individuals who do not qualify for other loans
  - b. Short, intermediate and long-term loans
  - c. Reasonable rates and terms on loans
  - d. Advice, assistance and supervision given by supervisor
  - e. Usually little or no down payment required
2. Disadvantages
  - a. Not intended as a permanent source of financing--borrowers expected to refinance when suitable commercial sources are available
  - b. Loans can be secured only on large acreage
  - c. Strict requirements exist for the agribusiness obtaining the loan

G. Insurance companies

1. Advantages

(Note: With the current fluctuating interest rates, insurance companies are moving away from long-term land investments.)

  - a. Long-term mortgages
  - b. Low interest rates--but higher than Farmer's Home Administration
  - c. Not any limits on size of loan except for self-imposed limits
2. Disadvantages
  - a. First mortgage loans
  - b. Some states prohibit short-term loans
  - c. Selective about areas where loans are made

- d. Cannot pay loan back all at once
- e. Maximum loan is usually 65-70% of appraised value

H. Merchants and dealers

(Note: Many sellers of farm inputs such as feed, seed, fertilizer, machinery and equipment offer credit to agribusinessmen who purchase those inputs.)

1. Advantages

- a. Easier for poor-risk persons
- b. Convenient for farmer
- c. Can get immediate loan
- d. Loan can be made for large percent of value
- e. Repayment schedule may be designed for individual

2. Disadvantages

- a. Interest is usually higher
- b. May have different form of credit arrangement for various customers

(Note: This could be an advantage.)

VIII. Primary factors considered by lender (Transparency 4 and Handout 1)

A. Personal honesty and integrity of the applicant

(Note: If a lender does not already know the applicant, a credit investigation will probably be made.)

B. Managerial ability of the applicants

C. Repayment capacity

D. Loan purpose

E. Financial position of applicant

(Note: Financial position is generally determined by the analysis of a Net Worth Statement. Lenders generally evaluate the appropriateness of a loan by reviewing the applicant's solvency ratio.)

F. Loan security or collateral

- IX. Factors affecting repayment capacity
  - A. Size of business
  - B. Production level per enterprise
  - C. Price level of units sold
  - D. Production costs of units produced
  - E. Level of overhead costs
  - F. Personal living expenses
  - G. Previous repayment record
- X. Types of assets
  - A. Long-term assets
    - 1. Permanent in nature
    - 2. Consist primarily of real estate and its improvements
  - B. Intermediate assets
    - 1. Resources and production items having a life of 1 to 10 years
    - 2. Consist of resources that support production such as equipment, machinery and breeding stock
  - C. Current assets or short-term assets
    - 1. Cash or resources which will be converted to cash through normal operations within the business year
    - 2. Include accounts receivable, inventory on hand or held for sale, cash value of insurance policies, stocks, bonds, etc.
- XI. Types of liabilities
  - A. Long term liabilities--Consist of mortgages and land contracts on real estate, less the principle balance due within the operating year
  - B. Intermediate liabilities--Loans or obligations assumed for a period greater than 12 months, but less than 8-10 years
    - Example: Equipment purchases, addition to breeding stock or dairy herd or major adjustments in farming operation

- C. Current liabilities-Debts due within the current operating year, normally 12 months

Example: Short term notes, rent, taxes, accounts payable, interest and that portion of intermediate or long-term debt due within the operating year

XII. Factors that affect cost of credit

(Note: Cost of credit is the amount of money paid back to the lender above the original amount borrowed. It is not just the interest rate. Even when two lenders quote the same interest rate, the actual dollars charged may vary considerably.)

- A. Cost of money to the lender

- B. Cost of servicing the loan

Example: Making, handling, collecting and keeping records on the loan

- C. Risk associated with the loan

- D. Number of installments or repayment schedule

XIII. Types of interest (Transparencies 5, 6, 7, 8)

- A. Compound interest--Interest calculated at regular intervals and added to the principle (Transparency 5)

(Note: Many institutions compound interest daily.)

Example: Compound interest on a \$100.00 loan with interest at 1 percent per month

|    | Period  | Beginning Balance | Chart Interest | Ending Balance |
|----|---------|-------------------|----------------|----------------|
| a. | 1st mo. | \$100.00          | \$1.00         | \$101.00       |
| b. | 2nd mo. | 101.00            | 1.01           | 102.01         |
| c. | 3rd mo. | 102.01            | 1.02           | 103.03         |
| d. | 4th mo. | 103.03            | 1.03           | 104.06         |

- B. Simple interest--Product of the principle, the time in years and the annual rate of interest (Transparency 6)

Example: Interest on \$1,200.00 for one year with the rate of interest at 11 1/2 percent per annum equals \$138.00

- C. Discounted interest--Interest is deducted from principle at the time loan is made (Transparency 7)

Example:

- a. \$1,200.00 loan for one year discounted at 11 1/2 percent
- b. Borrower would receive  $\$1,200.00 - 138 = \$1,062.00$
- c. \$1,200.00 would be paid at the end of the year

(Note: Actual interest would be 12.99 percent.)

- D. Add-on-interest--Interest is calculated on the beginning balance and then added to the principle to obtain the amount to be repaid in equal periodic installments (Transparency 8)

Example:

- a. \$1,200.00 installment plan loan at 11 1/2 percent interest to be repaid in 12 equal monthly payments
- b.  $\$1,200.00 \times 11 \frac{1}{2}\% = \$138.00$
- c.  $\$1,200.00 + \$138.00 = \$1,338.00$  divided by 12 months = \$111.50

(Note: Interest is being paid on unowed money, actual rate is 21.23%)

XIV. Calculating actual interest rates and total interest paid (Transparencies 9,10)

(Note: I = Interest rate; N = Number payments per year; C = Total interest paid; P = Principle borrowed; T = Total payments.)

- A. Calculating actual interest rates (Transparency 9)

$$I = \frac{2(N)(C)}{P(T+1)}$$

Example: A farmer borrowed \$8,000.00 which cost him \$900.00 for 24 months. He paid the entire balance at the end of the 24 months. What interest rate did he pay?

$$\frac{2 \times 1 \times \$900}{\$8,000 \times 2} = \frac{1,800}{16,000} = 11.25\% \text{ actual interest}$$

## B. Calculating total interest paid (Transparency 10)

$$C = \frac{I(P)(T+1)}{2(N)}$$

Example: A farmer borrowed \$10,000 at 15% interest on the unpaid balance. He will make 24 monthly payments. How much interest will he pay?

$$\frac{15\% \times \$10,000 \times 25}{24} = \$1562.50$$

XV. Money—Anything that is acceptable as a medium of exchange (a seller will accept it in exchange for a good or service)

## XVI. Functions of money

- A. Medium of exchange
- B. Unit of accounting
- C. Store of value

## XVII. Types of financial institutions

## A. Commercial Banks

- 1. Operated for profit
- 2. Offer full range of banking services
- 3. Emphasize shorter term loans (one to five years)
- 4. Chief source of business loans
- 5. Home loans

## B. Mutual Savings

- 1. Owned by its depositors
  - a. Owners receive dividends instead of interest
  - b. Ownership share determined by amount on deposit
- 2. Offer all traditional banking services

## C. Savings and Loans Associations

- 1. Specialize in loans to home buyers
- 2. Usually operated as mutual organizations

3. Offer complete line of banking services, including consumer loans and money market accounts

XVIII. Federal Reserve System

- A. Central banking system of the United States
- B. Set up by the Federal Reserve Act of 1913
- C. Responsible for controlling the nation's money supply and maintaining the value of the nation's currency
- D. Run by 7-member Board of Governors
  1. Appointed by the President
  2. Serve on 14-year term
  3. Rotational-One vacancy is filled every two years
- E. 12 district banks throughout the United States

XIX. Functions of the Federal Reserve System

- A. Clear Checks
- B. Act as the federal government's fiscal agent
- C. Supervise member banks
- D. Supply paper currency
- E. Regulate the money supply

(Note: The major responsibility of the Federal Reserve is to determine the amount of money in circulation, which, in turn, affects the amount of credit and business activity in the economy.)

XX. Writing a check (Transparencies 11, 12)

- A. Your checks should carry your name and correct, current address
- B. Each check has a number, which helps you to keep accurate financial records
- C. Your bank identification number is also carried on your checks
- D. Always use the correct date
- E. Write the payee's name after the words "Pay to the order of"
- F. Write the amount of the check clearly in numerals after the dollar sign. On the line below, write the amount of the check in words, Finish the space with a line so that words can't be added to increase the amount of the check

- G. Your signature should match the one put on file at your bank
- H. Each check should have two sets of code numbers. The first is your bank's code number and the second is your account number
- I. Most checks have a space labeled "memo" where you can write what the check is for. This helps you keep accurate records
- J. The bank's name and address is usually on each check
- K. Write down each transaction in your checkbook to keep a continuing balance of your account balance.

|   |                               |  |
|---|-------------------------------|--|
| Roger K. Jones<br>Route 20<br>Boonville, MO 65233           | No. <u>26</u><br><u>May 6</u> | <u>13-25</u><br><u>420</u><br>19 <u>78</u> |
| PAY TO THE<br>ORDER OF <u>Davis and Davis, Inc.</u>         | <u>147.58</u>                 |  |
| <u>One hundred forty-seven <sup>58</sup>/<sub>100</sub></u> | <u>58</u>                     | DOLLARS                                    |
| First National Bank<br>Boonville, MO                        | <u>Roger K. Jones</u>         |  |
| ⑆04 20-00 25⑆ 017 57037 1⑆                                  |                               |  |

## XXI. Endorsing a check (Transparency 13)

- A. Sign (do not print) name on the back of the check
  - 1. Sign name exactly as it is written on the front
  - 2. Sign on back of check on the same end that has the words "Pay to the order of" (this is the left side when you are reading the front of the check—just flip it over)
  - 3. Do not write below 3 inches of the end—this is reserved for use by bank institutions
- B. Three types
  - 1. Blank endorsement
    - a. Sign your name on the back of the check
    - b. Whoever has the check may deposit it or cash it by endorsing the check below your name
  - 2. Restrictive endorsement
    - a. Write the words "For deposit only" and sign your name below
    - b. The check may only be deposited into the account of the endorsed name

3. Special endorsement
  - a. Used if you want to transfer a check written to you to someone else out having to deposit it in your account and write a new check
  - b. Write the words "Pay to the order of" and the name of the person you to transfer the check to; then sign your name
  - c. The person to whom you endorsed the check signs his name below yours to deposit or cash it.

XXII. Filling out a deposit slip (Transparency 14)

- A. List any currency and/or coin deposited on the front
- B. List checks singly by bank number (or other identification) on the front and the amount for each
- C. List any additional checks (that won't fit on the front) on the back. List the check by bank number, write the amount for each, and then total all checks listed on the back
- D. List the total from the checks listed on the back
- E. Total all checks and cash
- F. List the amount of cash received, if any
- G. Subtract cash received from total for the net deposit
- H. Make sure all checks are properly endorsed
- I. Write the correct date
- J. Sign the deposit slip (this must be done in teller's presence if you are to receive cash back)

XXIII. Bank reconciliation (Transparency 15, 16)

- A. Arrange cancelled checks in order by check number
- B. Check off the cancelled check numbers in your checkbook register to determine which checks have not been cleared
- C. Sort deposit slips by date
- D. Check off deposits in your checkbook register
- E. Enter (in your checkbook register) any service charges, per-check fees or check orders that are shown on your bank statement
- F. Calculate your revised checkbook balance if any changes were made

- G. Add to the balance on the bank statement any deposits that you have made but are not yet listed on your bank statement
- H. Add up the total amount of the checks that have not yet cleared, and subtract this amount from the revised bank statement balance
- I. The revised bank statement balance and revised checkbook register balance should be the same

Example:

|    |  |                                  |  |
|----|--|----------------------------------|--|
| 1. | Checkbook balance - -                    | \$683.21                         |  |
| 2. | Checks not cleared (number and amount)   |                                  |  |
|    | # 543 -                                  | \$20                             |  |
|    | # 681 -                                  | \$10                             |  |
|    | # 682 -                                  | <u>\$10</u>                      |  |
|    |  | \$40                             |  |
| 3. | Deposits not cleared (source and amount) |                                  |  |
|    | Paycheck                                 | \$246                            |  |
|    | Fair premium                             | <u>\$ 25</u>                     |  |
|    |  | \$271                            |  |
| 4. | Service Charge --                        | \$5                              |  |
|    | Check order --                           | \$9                              |  |
| 5. | Revised checkbook balance                | \$683.21                         |  |
|    |  | -5.00                            |  |
|    |  | <u>-9.00</u>                     |  |
|    |  | \$669.21                         |  |
| 6. | Bank statement balance                   | - 438.21                         |  |
|    |  | + 271.00 deposits not cleared    |  |
|    |  | <u>-40.00</u> checks not cleared |  |
|    |  | \$669.21                         |  |

#### XXIV. Impact of savings on national economy

- A. Savings are important to the health and growth of the economy – by limiting their consumption and by saving, individuals make money available for businesses to improve or to increase their production.
- (Note: Savers deposit in banks and banks use the money to make loans to businesses, buy stocks or undertake other types of investments.)
- B. A country's savings are the ultimate source of its investment and investment is the ultimate source of jobs, economic growth and rising living standards
- C. Saving is important in relationship to the government's gigantic annual budget deficit—without sufficient savings, the government must rely on attracting capital from overseas to finance the deficit.

## XXV. Savings and investment programs (Transparency 17)

- A. Savings accounts
  - 1. Passbook savings account—Depositor receives a booklet in which deposits, withdrawals and interest are recorded; customer must present booklet for each transaction
  - 2. Statement savings account—Basically the same as passbook savings account; no passbook required for each transaction—the depositor receives a monthly statement showing all transactions; interest is usually low
  - 3. NOW (Negotiable Order of Withdrawal) account—Combines benefits of checking and savings accounts; customers earn interest on any unused money in their account, but the interest is usually low.
  - 4. Money market deposit accounts—pay high interest rates; immediate access to money; minimum balance requirement of \$1,000 to \$2,500; personal withdrawals may be made at any time, but only three checks a month may be written
- B. Time deposits (also called certificates of deposit or savings certificates)—Refers to a wide variety of saving plans that require a saver to leave his/her money on deposit for a certain period of time; offer higher interest rates than passbook or statement savings accounts; the longer the maturity (time period which the money must be left in; ranges from 7 days to 8 years or more), the higher the interest rate.
- C. Stocks – Entitle the buyer to a certain part of the future profits and assets of a corporation; people make money if the company makes a profit and declares a dividend, or more likely, by selling for more than they paid.
- D. Bonds -- Certificates issued by a company or government in exchange for borrowed money; a stated rate of interest and state period of time are promised—at the end of that time the amount will be paid in full
  - 1. Tax-exempt bonds—Issued by local and state governments; interest is not taxed; good investments for wealthier people who would otherwise pay high taxes on investment interest earnings.
  - 2. Savings bonds—Most common type of bond issued by the federal government; sold for less than their stated value and when redeemed at maturity, they are worth their purchase price plus interest; their low prices is an advantage for people with limited money to invest; interest is exempt from state and local taxes and can be put off for federal income taxes until cashed in
- E. Mutual fund—An investment company that pools the money of many individuals to buy stocks or bonds or other investments; the risk of losing money from a poor investment is decreased, since losses in one area are likely to be made up by gains in another area; not insured against loss by the federal government.

- F. Keogh plan – Passed to help self-employed people set up their own pension plans; allows a person to set aside a maximum of 15 percent of income up to \$9,500 a year; income tax is paid only when the money is withdrawn at retirement.
- G. Individual Retirement Account (IRA) – Allows a person to contribute up to \$2,000 of his/her earnings per year for retirement; income tax is paid only when the money is withdrawn at retirement

# **PRINCIPLES OF CREDIT**

**Production loans should be used only to increase income**

**Limit the amount borrowed on new or unfamiliar enterprises**

**Keep debts as low as possible while still maintaining efficiency**

**Study markets and trends**

**Keep the proper debt-net worth relationship**

**Keep the proper debt-income relationship**

**Select a dependable lender who will give the best terms**

**Have a definite repayment program**

**Be businesslike, fair and frank**

**Carry adequate insurance**

## **FACTORS TO CONSIDER IN SELECTING A CREDIT SOURCE**

**The lending institution's knowledge of  
agricultural practices and problems**

**The institution's experience in handling  
agricultural credit of a similar nature**

**The institution's policies regarding**

**Interest rates**

**Repayment schedule**

**Closing costs**

**Handling emergencies**

**The availability of additional credit  
to meet unexpected needs**

**Reputation of the lending institution**

# **CREDIT SOURCES FOR AGRICULTURE**

**Commercial Banks**

**Individuals**

**Finance Companies**

**Federal Land Banks**

**Production Credit Associations**

**Farmers' Home Administration**

**Insurance Companies**

**Merchants and Dealers**

**CREDIT FACTORS CONSIDERED  
BY A LENDER**

**Personal honesty and integrity  
of the applicant**

**Managerial ability of the applicant**

**Repayment capacity as indicated by**

**Loan purpose**

**Financial position of the applicant**

**Loan security or collateral**

# CALCULATING COMPOUND INTEREST

**Interest is calculated at regular intervals  
and added to the principle**

**EXAMPLE:** Compound interest on a \$100 loan with  
interest at 1 percent per month

| <b>Period</b>    | <b>Beginning<br/>Balance</b> | <b>Chart<br/>Interest</b> | <b>Ending<br/>Balance</b> |
|------------------|------------------------------|---------------------------|---------------------------|
| <b>1st month</b> | <b>100.00</b>                | <b>1.00</b>               | <b>101.00</b>             |
| <b>2nd month</b> | <b>101.00</b>                | <b>1.01</b>               | <b>102.01</b>             |
| <b>3rd month</b> | <b>102.01</b>                | <b>1.02</b>               | <b>103.03</b>             |
| <b>4th month</b> | <b>103.03</b>                | <b>1.03</b>               | <b>104.06</b>             |

## **CALCULATING SIMPLE INTEREST**

**Product of the principle, the time in years  
and the annual rate of interest**

### **PROBLEM:**

**Simple interest on a \$15,000  
loan for one year with the  
rate of interest at 12 percent  
per annum**

$$\begin{aligned} \$15,000 \times 1 \text{ year} \times .12/\text{year} &= \\ &\$1,800 \text{ interest} \end{aligned}$$

## **CALCULATING DISCOUNTED INTEREST**

**Interest is deducted from principle at  
the time the loan is made**

### **PROBLEM:**

**Discounted interest on a \$15,000 loan  
at a 12 percent interest rate**

- A. \$15,000 loan for one year at 12 percent**
- B. Borrower would receive  
 $\$15,000 - \$1,800 = \$13,200$**
- C. \$15,000 would be paid at the end of the year**

## **CALCULATING ADD-ON INTEREST**

**Interest is calculated on the beginning balance and then added to principle to obtain the amount to be repaid in equal periodic installments**

### **EXAMPLE:**

**Add-on interest on a \$15,000 loan at a 12 percent interest rate**

- A. \$15,000 installment plan loan at 12 percent interest to be repaid in 12 equal monthly payments**
- B.  $\$15,000 \times 12\% = \$1,800$**
- C.  $\$15,000 + \$1,800 = \$16,800$**
- D.  $\$16,800 \div 12 \text{ months} = \$1,400 \text{ monthly payments}$**

## CALCULATING ACTUAL INTEREST RATES

|          |          |                                    |
|----------|----------|------------------------------------|
| <b>I</b> | <b>=</b> | <b>Interest rate</b>               |
| <b>N</b> | <b>=</b> | <b>Number of payments per year</b> |
| <b>C</b> | <b>=</b> | <b>Total interest paid</b>         |
| <b>P</b> | <b>=</b> | <b>Principle borrowed</b>          |
| <b>T</b> | <b>=</b> | <b>Total payments</b>              |

$$I = \frac{2 (N) (C)}{P (T + 1)}$$

**A farmer bought new tires for his tractor for \$2,500.00. The manager of the tire company told him he can pay in full when the tires are delivered or make 12 monthly payments of \$230.00. What will the actual interest rate be if he decides to pay the monthly installments?**

$$\frac{2 (12) (260)}{2,500 (13)} = \frac{6,240}{32,500} = 19.2\%$$

**actual  
interest  
rate**

## CALCULATING TOTAL INTEREST PAID

**I = Interest rate**

**N = Number of payments per year**

**C = Total interest paid**

**P = Principle borrowed**

**T = Total payments**

$$C = \frac{I(P)(T + 1)}{2(N)} = \text{total interest}$$

**A farmer borrowed \$90,000.00 to buy some land at 10.5% interest on the unpaid balance. He will make a yearly payment for 25 years. How much total interest will he pay?**

$$\frac{10.5\% \times 90,000 \times 26}{2 \times 1} = \$122,850.00$$

**total interest**

# Important Parts of a Check

Name and address of drawer may be printed on each check

Check number should be written if it is not printed

Name of payee

Date

ABA number

Roger K. Jones  
Route 20  
Boonville, MO 65233

No. 26      13-25  
May 6      420  
19 78

PAY TO THE ORDER OF Davis and Davis, Inc. \$ 147.58  
One hundred forty-seven and 58/100 DOLLARS

First National Bank  
Boonville, MO

Roger K. Jones

:04 20 00 25:    0 6 7 57037 1:

Amount in words

Signature of drawer

Numbers printed in magnetic ink used in sorting checks

Line filling space between amount in words and the word "dollars"

Amount in figures

# Some Errors to Avoid in Writing a Check

Title "Mr." is not needed, but name should be complete with given name or initials

Year omitted from date

Check number omitted

Roger K. Jones  
Route 20  
Boonville, MO 65233

No. \_\_\_\_\_ 13 - 25  
*Sept. 1* 19\_\_ 420

PAY TO THE ORDER OF *Mr. Bradley* \$ *10 00*  
*Ten 00/100* DOLLARS

First National Bank  
Boonville, MO

*Roger K. Jones*

⑆0420⑉0025⑆ 067⑉57037⑆⑆⑆

Should be no blank space before or after amount in words

Should be no blank space before or after amount in figures

Line should connect amount in words and word "dollars"

# Endorsing A Check

|   |                            |
|---|----------------------------|
| David R. Smith<br>Sara A. Smith<br>Rt. 1 Box 53<br>Nowhere, Idaho 88888 | 151<br>92-155/1241         |
|   | <u>May 20</u> 19 <u>92</u> |
| Pay to the Order of <u>Katie Smith</u>                                  | \$ <u>25<sup>00</sup></u>  |
| <u>Twenty five dollars &amp; <sup>no</sup>/<sub>100</sub></u>           | DOLLARS                    |
| First Bank of Mars<br>Mars, Idaho 99988                                 | <b>SAMPLE VOID</b>         |
| Memo <u>Birthday present</u>  | <u>Sara A. Smith</u>       |
| /:1222 ' ' ' 2222 ':□□12 ' ' ' 7777                                     |                            |

*Katie Smith*

*For deposit only  
Katie Smith*

*Pay to the order of  
Susie Smith  
Katie Smith  
Susie Smith*

# Filling Out a Deposit Slip

FOR DEPOSIT TO THE ACCOUNT OF

David R. Smith  
Sara A. Smith  
Rt. 1 Box 53  
Nowhere, Idaho 88888

Date July 20 1991

DEPOSITS MAY NOT BE AVAILABLE FOR IMMEDIATE WITHDRAWAL →

SIGN HERE FOR LESS CASH IN TELLER'S PRESENCE

|                       |          |                            |    |
|-----------------------|----------|----------------------------|----|
| C<br>A<br>S<br>H      | CURRENCY |                            |    |
|                       | COIN     |                            |    |
| List Checks Singly    |          | C<br>H<br>E<br>C<br>K<br>S |    |
| 55-200/63             | 25       |                            | 00 |
| 52-123/54             | 500      |                            | 00 |
| 56-222/22             | 50       | 00                         |    |
| TOTAL FROM OTHER SIDE |          | 710                        | 00 |
| TOTAL                 |          | 1285                       | 00 |
| LESS CASH RECEIVED    |          |                            |    |
| NET DEPOSIT           |          | 1285                       | 00 |

92-155/1241

USE OTHER SIDE FOR ADDITIONAL LISTING

BE SURE EACH ITEM IS PROPERLY ENDORSED

FIRST BANK OF MARS  
Mars, Idaho 99988  
/:1222 ' ' ' 2222 -:0012

PLEASE LIST EACH CHECK SEPARATELY BY BANK NUMBER

| CHECKS (Properly Endorsed)<br>Bank No. | DOLLARS | CENTS |
|--|---------|-------|
| 1 45-466/27                            | 700     | 00    |
| 2 42-888/23                            | 10      | 00    |
| 3                                      |         |       |
| 4                                      |         |       |
| 5                                      |         |       |
| 6                                      |         |       |
| 7                                      |         |       |
| 8                                      |         |       |
| 9                                      |         |       |
| 10                                     |         |       |
| 11                                     |         |       |
| 12                                     |         |       |
| 13                                     |         |       |
| 14                                     |         |       |
| 15                                     |         |       |
| 16                                     |         |       |
| PLEASE FORWARD TOTAL TO REVERSE SIDE   | 710     | 00    |

CASH COUNT — FOR OFFICE USE ONLY

|              |    |
|--------------|----|
| x 100        |    |
| X 50         |    |
| X 20         |    |
| X 10         |    |
| X 5          |    |
| X 2          |    |
| X 1          |    |
| <b>TOTAL</b> | \$ |

# A Bank Statement

Checks paid by bank during the month

Name and address of depositor

Account number

Sandra Brown  
Route 14  
Anytown, ID 83999

|                   |
|-------------------|
| Account No.       |
| 342 5641 1562     |
| Date of statement |
| June 30, 1991     |

| CHECKS AND OTHER DEBITS |         | DEPOSITS           | DATE   | BALANCE |
|-------------------------|---------|--------------------|--------|---------|
| 10.00                   |         | BALANCE FORWARD -- | June 1 | 780.00* |
| 75.00                   |         |                    | 2      | 770.00* |
| 15.75                   |         |                    | 4      | 695.00* |
| 20.00                   |         |                    | 8      | 679.25* |
| 17.34                   |         |                    | 9      | 659.25* |
|                         |         |                    | 12     | 641.91* |
| 22.86                   |         | 175.50             | 15     | 817.41* |
| 400.00                  |         |                    | 17     | 794.55* |
| 7.50                    |         |                    | 19     | 394.55* |
|                         |         | 198.25             | 20     | 387.05* |
| 21.50                   |         |                    | 22     | 585.30* |
| 7.77                    |         |                    | 24     | 563.80* |
| 20.00                   |         |                    | 27     | 556.03* |
| 8.50                    | 1.80 DM |                    | 29     | 536.03* |
| 11.99                   |         |                    | 29     | 527.53* |
|                         |         |                    | 30     | 515.54* |
| 90.00                   |         |                    | 30     | 513.74* |
| 14.50                   |         |                    | 30     | 423.74* |
| 160.00                  | 1.50 SC |                    | 30     | 409.24* |
|                         |         |                    | 30     | 249.24* |
|                         |         |                    |        | 247.74* |

| BALANCE previous statement | Number enclosure | CHECKS |         | DEPOSITS |         | SERVICE CHARGE | CLOSING BALANCE |    |    |
|----------------------------|------------------|--------|---------|----------|---------|----------------|-----------------|----|----|
|                            |                  | Number | Amount  | Number   | Amount  |                |                 |    |    |
| 7 80 00                    |                  | 16     | 9 02 71 | 2        | 3 73 75 |                | 2               | 47 | 74 |

SYMBOLS:  
SC — SERVICE CHARGE  
LS — LIST  
OD — OVERDRAFT CHARGE

RT — RETURNED CHECK  
CM — DEBIT MEMO

Service charge for the month

Balance at beginning of month

Deposits made during month

Balance at end of month

## Sources of Information for a Bank Reconciliation

Deposit not yet shown on bank statement, found by comparing deposits on check stubs and bank statement.

Checkbook balance as shown on check stub.

**You Can Easily  
BALANCE YOUR CHECK BOOK**

|   |  |
|---|--|
| <p>Balance Shown on Bank Statement: <span style="float: right;">\$ <u>247.74</u></span></p> <p>Add Deposits Not on Statement: <span style="float: right;">\$ <u>361.90</u></span></p> <hr style="width: 100%;"/> <p style="text-align: right;">Total: <span style="float: right;">\$ <u>609.64</u></span></p> <p>Subtract Checks Issued but Not on Statement:</p> <p>\$ _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p style="text-align: right;">Total: <span style="float: right;">\$ <u>69.30</u></span></p> <p>Balance: <span style="float: right;">\$ <u>540.34</u></span></p> | <p>Balance shown in Your Check Book: <span style="float: right;">\$ <u>543.64</u></span></p> <p>Add any Deposits Not Already Entered in Check Book <span style="float: right;">\$ _____</span></p> <hr style="width: 100%;"/> <p style="text-align: right;">Total: <span style="float: right;">\$ <u>543.64</u></span></p><br><p>Subtract Service Charges and other Bank Charges Not in Check Book:</p> <p style="text-align: right;">\$ <u>1.50</u></p> <p style="text-align: right;"><u>1.80</u></p> <hr style="width: 100%;"/> <p style="text-align: right;">Total: <span style="float: right;">\$ <u>3.30</u></span></p> <p>Balance: <span style="float: right;">\$ <u>540.34</u></span></p> |
|---|--|

Bank balance at end of month shown on bank statement.

Outstanding checks found by comparing checkbook and canceled checks.

Charge for imprinting checks shown on bank statement and on debit slip sent with statement.

Service charge as shown on bank statement and on debit slip sent with statement.

# **SAVINGS AND INVESTMENT PROGRAMS**

## **Savings accounts**

**Passbook savings account  
Statement savings account  
Negotiable order of withdrawal  
Money market deposit account**

## **Time deposits**

## **Stocks**

## **Bonds**

**Tax exempt bonds  
Savings bonds**

## **Mutual funds**

## **Keogh plan**

## **Individual retirement account**





## AGRICULTURAL CREDIT

AG 660 - G

## ASSIGNMENT SHEET #1--CALCULATE INTEREST EXPENSE

Name \_\_\_\_\_ Score \_\_\_\_\_

Calculate interest expense for the following loan. Be sure to notice the type of interest used in each problem. Show your work for each problem.

1. How much interest would be paid for the use of \$7,200.00 for one year at 12% simple interest?

---

 Answer

2. How much interest would be paid for the use of \$4,500.00 for 18 months at 11% simple interest?

---

 Answer

3. How much compound interest would be paid for 3 months use of \$3,600.00 at 1% interest per month?

---

 Answer

4. a. What would monthly payments be for one year's use of \$1,500.00 to be repaid in 12 equal monthly payments using 9% add-on type interest?

---

 Answer

- b. What would be the actual interest rate for the above loan?

---

 Answer

5. a. How much interest would be paid for one year's use of \$1,400.00 to be repaid in 12 equal payments using 8% discount interest?

---

 Answer

- b. What would be the actual interest rate for the above loan?

---

 Answer

6. a. If a farmer borrows \$5,000 at \$166.70 per month for 36 months, how much total interest will he pay?

---

Answer

- b. What is the actual interest rate for the above loan?

---

Answer

## AGRICULTURAL CREDIT

AG 660 - G

## ASSIGNMENT SHEET #2--DETERMINE NET WORTH AND SOLVENCY RATIO

Name \_\_\_\_\_ Score \_\_\_\_\_

Lenders examine a variety of criteria in determining if a potential borrower may be a good risk before granting a loan. The Net Worth Statement is examined closely to determine if an applicant's assets are large enough to offset liabilities and provide enough margin to repay the loan.

On the attached Net Worth Statement, determine if the borrower has sufficient security to borrow \$50,000 for a one-year operating loan. Complete the following activities:

1. Enter the assets or liabilities in the appropriate locations on the Net Worth Statement.
2. Determine the applicant's current net worth.
3. Determine the applicant's solvency ratio.
4. Provide a recommendation for either granting or denying the operating loan.

Farm-related financial information available:

|   |              |
|---|--------------|
| Value of machinery and equipment on hand            | \$143,800.00 |
| Taxes and interest payments due                     | 5,200.00     |
| Outstanding machinery loans                         | 45,000.00    |
| Livestock loan for 10 new dairy replacement heifers | 7,550.00     |
| Farm account balance in bank                        | 6,350.00     |
| Annual farm payment for current year                | 7,000.00     |
| Value of purchased feeds on hand                    | 2,300.00     |
| Farm mortgage (excluding current year's payment)    | 163,000.00   |
| Interest due on livestock loans                     | 1,050.00     |
| Value of dairy cattle (breeding stock)              | 63,000.00    |
| Value of farm-stored grain                          | 23,000.00    |
| Accounts payable                                    | 4,000.00     |
| Annual rent for additional pasture                  | 3,780.00     |
| Value of land                                       | 300,000.00   |

|                         |           |
|-------------------------|-----------|
| Value of buildings      | 75,000.00 |
| Value of breeding swine | 17,500.00 |

Based on your findings, answer the following:

1.     a.     Total current assets \_\_\_\_\_  
       b.     Total intermediate assets \_\_\_\_\_  
       c.     Total long-term assets \_\_\_\_\_  
       d.     Total assets \_\_\_\_\_
2.     a.     Total current liabilities \_\_\_\_\_  
       b.     Total intermediate liabilities \_\_\_\_\_  
       c.     Total long-term liabilities \_\_\_\_\_  
       d.     Total liabilities \_\_\_\_\_
3.     Total Net Worth (Assets - Liabilities) \_\_\_\_\_
4.     Solvency ratio (Assets / Liabilities) \_\_\_\_\_
5.     Based on this information, what recommendation would you make in regard to a \$50,000.00 operating loan for 12 months at 12% interest?

---

---

---

---

NET WORTH STATEMENT

Name \_\_\_\_\_

Date \_\_\_\_\_

| ASSETS |  | BEGIN YEAR | END YEAR | LIABILITIES AND NET WORTH |   | BEGIN YEAR | END YEAR |
|--------|--|------------|----------|---------------------------|---|------------|----------|
| 1      | Family Bank Balance  |            |          | 40                        | Charge Accounts   |            |          |
| 2      | Savings  |            |          | 41                        |   |            |          |
| 3      | Stocks and Bonds (Present value)                             |            |          | 42                        | Notes (Portion due next year)                                     |            |          |
| 4      | Accounts and Notes Receivable                                |            |          | 43                        | Mortgages (Portion due next year)                                 |            |          |
| 5      | Life Insurance (Cash value)                                  |            |          | 44                        | Accrued Interest On Above   |            |          |
| 6      | <b>Total Non-Farm Current Assets (Add lines 1 thru 5)</b>    |            |          | 45                        | <b>Total Non-Farm Current Liabilities (Add lines 40 thru 44)</b>  |            |          |
| 7      | Auto (Family share)  |            |          | 46                        | Notes (Portion due after next year)                               |            |          |
| 8      | Household Furnishings, Clothing, Jewelry                     |            |          | 47                        |   |            |          |
| 9      | Boat, Camper, Etc.   |            |          | 48                        | Mortgages (Portion due after next year)                           |            |          |
| 10     | Non-Farm Real Estate   |            |          | 49                        |   |            |          |
| 11     |  |            |          | 50                        | <b>Total Non-Farm Liabilities (Add lines 45 thru 49)</b>          |            |          |
| 12     | <b>Total Non-Farm Assets (Add lines 6 thru 11)</b>           |            |          | 51                        | <b>Non-Farm Net Worth (Line 12 minus line 50)</b>                 |            |          |
| 13     | Cash in Farm Account   |            |          | 52                        | Short-Term Farm Notes Payable                                     |            |          |
| 14     | Farm Accounts Receivable                                     |            |          | 53                        |   |            |          |
| 15     | Swine (Non-breeding)   |            |          | 54                        |   |            |          |
| 16     | Beef (Non-breeding)  |            |          | 55                        | Accounts Payable  |            |          |
| 17     | Dairy (Non-breeding)   |            |          | 56                        |   |            |          |
| 18     | Other (Non-Breeding)   |            |          | 57                        |   |            |          |
| 19     | Purchased Feeds  |            |          | 58                        | Portion of Intermediate and Long-Term Debt Due Next Year          |            |          |
| 20     | Stored Crops   |            |          | 59                        |   |            |          |
| 21     | Growing Crops  |            |          | 60                        |   |            |          |
| 22     | Crop Supplies  |            |          | 61                        | Accrued Liabilities (Taxes, rent, interest)                       |            |          |
| 23     | Livestock Supplies   |            |          | 62                        |   |            |          |
| 24     | Other Current Assets:  |            |          | 63                        |   |            |          |
| 25     |  |            |          | 64                        | <b>Total Farm Current Liabilities (Add lines 52 thru 63)</b>      |            |          |
| 26     |  |            |          | 65                        | Portion of Intermediate-Term Debt Due After Next Year             |            |          |
| 27     | <b>Total Farm Current Assets (Add lines 13 thru 26)</b>      |            |          | 66                        | (Breeding stock, machinery, and equipment)                        |            |          |
| 28     | Swine (Breeding)   |            |          | 67                        |   |            |          |
| 29     | Beef (Breeding)  |            |          | 68                        |   |            |          |
| 30     | Dairy (Breeding)   |            |          | 69                        | <b>Total Farm Intermediate Liabilities (Add lines 65 thru 68)</b> |            |          |
| 31     | Other (Breeding)   |            |          | 70                        | Portion of Long-Term Debt Due After Next Year                     |            |          |
| 32     | Machinery and Equipment                                      |            |          | 71                        |   |            |          |
| 33     | <b>Total Farm Intermediate Assets (Add lines 28 thru 32)</b> |            |          | 72                        |   |            |          |
| 34     | Buildings (Book value)                                       |            |          | 73                        | <b>Total Farm Long-Term Liabilities (Add lines 70 thru 72)</b>    |            |          |
| 35     | Land (Improvements)  |            |          | 74                        | <b>Total Farm Liabilities (Add lines 64, 69 and 73)</b>           |            |          |
| 36     | Land   |            |          | 75                        | <b>Farm Net Worth (Line 38 minus line 74)</b>                     |            |          |
| 37     | <b>Total Farm Long-Term Assets (Add lines 34 thru 36)</b>    |            |          | 76                        | <b>Total Liabilities (Add lines 50 and 74)</b>                    |            |          |
| 38     | <b>Total Farm Assets (Add lines 27, 33 and 37)</b>           |            |          | 77                        | <b>Total Net Worth (Line 39 Minus line 76)</b>                    |            |          |
| 39     | <b>Total Assets (Add lines 12 and 38)</b>                    |            |          | 78                        | <b>Total Liabilities Plus Net Worth (Add lines 76 and 77)</b>     |            |          |

AGRICULTURAL CREDIT

AG 660 - G

ASSIGNMENT SHEET #3--SELECTING THE MOST APPROPRIATE  
LENDING INSTITUTION

Name \_\_\_\_\_ Score \_\_\_\_\_

The selection of the best possible lending institution is of primary importance, since the cost and conditions of borrowing money may mean the difference in realizing a profit or assuming a loss.

Based on the information presented in this unit, select the lending institution most appropriate for providing a loan under the conditions described. You may wish to review the section on factors to consider in selecting a source of credit.

Alternatives to select from:

Commercial banks; individuals; finance companies; Federal Land Bank; Production Credit Association; Farmers Home Administration; insurance companies, merchants and dealers.

.....

Case #1

Carl Clark is a young operator trying to become established in farming. He has investigated possibilities of a farm purchase loan through commercial banks, but was told he didn't have enough of a down-payment and loan security. He will need at least a 30-year loan to finance a land purchase of \$390,000.00. He is confident that with some management assistance and supervision, he could easily refinance his loan in 5-6 years if he could only get the chance to become established now.

Where would you suggest Carl get his loan?

.....

Case #2

Farmer Lynn Johnson would like to increase production by renting additional acreage. This additional production will necessitate the purchase of a new tractor. The tractor will cost approximately \$35,000.00 and will require seven years to pay off. Although a seven-year loan is acceptable, Lynn would like to pay it off earlier and not be penalized by prepayment charges or interest costs.

Where would you suggest Lynn get his loan?

.....

.....

Case #3

Farmer George Swanson purchased some additional land and ran a little short in being able to purchase seed and fertilizer to get it into production. He can get the production materials from the same dealer, a long established firm in the community. He is looking for a source of credit that is short term, yet offers some flexibility in repayment procedures.

Where would you suggest George get his loan?

.....

Case #4

Nancy and Jim Palmer own the local Farm Supply Company in Woodburn, Idaho. They are thinking very seriously of expanding their twenty-year-old business by adding a new warehouse storage building. Since they are an established business in Woodburn, they would like to capitalize on their fine reputation locally in obtaining their loan.

Where would you suggest Nancy and Jim get their loan?

.....

## AGRICULTURAL CREDIT

## AG 660 - G

## ANSWERS TO ASSIGNMENT SHEETS

**Assignment Sheet #1**

1.  $\$7,200 \times 12\% = \underline{\$864}$
2.  $\$495 \text{ for 12 months} + \$246.50 \text{ for 6 months} = \underline{\$742.50}$
3. 1st month -  $3,600.00 \times 1\% = 36.00$  -- ending balance = 3,636.00  
 2nd month -  $3,636.00 \times 1\% = 36.36$  -- ending balance = 3,672.36  
 3rd month -  $3,672.36 \times 1\% = 36.72$  -- ending balance = 3,709.08    Compound interest = \$109.08
4. a.  $\$1,500.00 \times 9\% = \$135$      $1,500.00 + 135 = 1,635/12 = \underline{\$136.25}$   
 b.  $\frac{(2)(12)(135)}{(1,500)(13)} = \frac{3,240}{19,500} = \underline{16.6\%}$     Actual interest
5. a.  $\$1,400 \times 8\% = \$112.00$  interest  
 b.  $\frac{(2)(12)(112)}{(1,288)(13)} = \frac{2,688}{16,744} = \underline{16.05\%}$     Actual interest
6. a.  $\$166.70 \times 36 = 6,001.20 - 5,000 = \$1,001.20$   
 b.  $\frac{(2)(12)(1001.2)}{(5,000)(37)} = \frac{24,028.8}{185,000} = \underline{12.99\%}$     Actual interest

**Assignment Sheet #2**    (Net Worth Statement completed on the following page)

1. a.    \$31,650    b.    \$224,300    c.    \$375,000    d.    \$630,950
2. a.    \$21,030    b.    \$52,550    c.    \$163,000    d.    \$236,580
3.    \$394,370
4.    2.7:1
5.    Recommendation: Grant the loan. A solvency ratio of 2.7:1 is high enough to grant the loan.

**Assignment Sheet #3**

(Note: Other alternatives may be considered. However, the primary value of this assignment may be in the discussion generated.)

Case #1:    Farmers' Home Administration  
 Case #2:    Production Credit Association

Case #3:    Dealer or Merchant  
 Case #4:    Commercial Bank

Name Key NET WORTH STATEMENT Date \_\_\_\_\_

| ASSETS |  | BEGIN YEAR | END YEAR | LIABILITIES AND NET WORTH |   | BEGIN YEAR | END YEAR      |
|--------|--|------------|----------|---------------------------|---|------------|---------------|
| 1      | Family Bank Balance  |            |          | 40                        | Charge Accounts   |            |               |
| 2      | Savings  |            |          | 41                        |   |            |               |
| 3      | Stocks and Bonds (Present value)                             |            |          | 42                        | Notes (Portion due next year)                                     |            |               |
| 4      | Accounts and Notes Receivable                                |            |          | 43                        | Mortgages (Portion due next year)                                 |            |               |
| 5      | Life Insurance (Cash value)                                  |            |          | 44                        | Accrued Interest On Above   |            |               |
| 6      | <b>Total Non-Farm Current Assets (Add lines 1 thru 5)</b>    |            |          | 45                        | <b>Total Non-Farm Current Liabilities (Add lines 40 thru 44)</b>  |            |               |
| 7      | Auto (Family share)  |            |          | 46                        | Notes (Portion due after next year)                               |            |               |
| 8      | Household Furnishings, Clothing, Jewelry                     |            |          | 47                        |   |            |               |
| 9      | Boat, Camper, Etc.   |            |          | 48                        | Mortgages (Portion due after next year)                           |            |               |
| 10     | Non-Farm Real Estate   |            |          | 49                        |   |            |               |
| 11     |  |            |          | 50                        | <b>Total Non-Farm Liabilities (Add lines 45 thru 49)</b>          |            |               |
| 12     | <b>Total Non-Farm Assets (Add lines 6 thru 11)</b>           |            |          | 51                        | <b>Total Non-Farm Net Worth (Line 12 minus line 50)</b>           |            |               |
| 13     | Cash in Farm Account   |            | 6350     | 52                        | Short-Term Farm Notes Payable                                     |            |               |
| 14     | Farm Accounts Receivable                                     |            |          | 53                        |   |            |               |
| 15     | Swine (Non-breeding)   |            |          | 54                        |   |            |               |
| 16     | Beef (Non-breeding)  |            |          | 55                        | Accounts Payable  |            | 4000          |
| 17     | Dairy (Non-breeding)   |            |          | 56                        |   |            |               |
| 18     | Other (Non-Breeding)   |            |          | 57                        |   |            |               |
| 19     | Purchased Feeds  |            | 2300     | 58                        | Portion of Intermediate and Long-Term Debt Due Next Year          |            | 7000          |
| 20     | Stored Crops   |            | 23000    | 59                        |   |            |               |
| 21     | Growing Crops  |            |          | 60                        |   |            |               |
| 22     | Crop Supplies  |            |          | 61                        | Accrued Liabilities (Taxes, rent, interest)                       |            | 5200          |
| 23     | Livestock Supplies   |            |          | 62                        |   |            | 1050          |
| 24     | Other Current Assets:  |            |          | 63                        |   |            | 3780          |
| 25     |  |            |          | 64                        | <b>Total Farm Current Liabilities (Add lines 52 thru 63)</b>      |            | <b>21030</b>  |
| 26     |  |            |          | 65                        | Portion of Intermediate-Term Debt Due After Next Year             |            |               |
| 27     | <b>Total Farm Current Assets (Add lines 13 thru 26)</b>      |            | 31650    | 66                        | (Breeding stock, machinery, and equipment)                        |            | 45000         |
| 28     | Swine (Breeding)   |            | 17500    | 67                        |   |            | 7550          |
| 29     | Beef (Breeding)  |            |          | 68                        |   |            |               |
| 30     | Dairy (Breeding)   |            | 63000    | 69                        | <b>Total Farm Intermediate Liabilities (Add lines 65 thru 68)</b> |            | <b>52650</b>  |
| 31     | Other (Breeding)   |            |          | 70                        | Portion of Long-Term Debt Due After Next Year                     |            | 163000        |
| 32     | Machinery and Equipment                                      |            | 413800   | 71                        |   |            |               |
| 33     | <b>Total Farm Intermediate Assets (Add lines 28 thru 32)</b> |            | 224300   | 72                        |   |            |               |
| 34     | Buildings (Book value)                                       |            | 75000    | 73                        | <b>Total Farm Long-Term Liabilities (Add lines 70 thru 72)</b>    |            | <b>163000</b> |
| 35     | Land (Improvements)  |            |          | 74                        | <b>Total Farm Liabilities (Add lines 64, 69 and 73)</b>           |            | <b>236580</b> |
| 36     | Land   |            | 300000   | 75                        | Farm Net Worth (Line 38 minus line 74)                            |            | 894370        |
| 37     | <b>Total Farm Long-Term Assets (Add lines 34 thru 36)</b>    |            | 375000   | 76                        | <b>Total Liabilities (Add lines 50 and 74)</b>                    |            | <b>236580</b> |
| 38     | <b>Total Farm Assets (Add lines 27, 33 and 37)</b>           |            | 639750   | 77                        | <b>Total Net Worth (Line 39 Minus line 76)</b>                    |            | <b>394370</b> |
| 39     | <b>Total Assets (Add lines 12 and 38)</b>                    |            | 630750   | 78                        | <b>Total Liabilities Plus Net Worth (Add lines 76 and 77)</b>     |            | <b>630750</b> |

## AGRICULTURAL CREDIT

AG 660 - G

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

|          |  |     |                     |
|----------|--|-----|---------------------|
| _____ a. | Money owed; debts or obligations to be paid in the future                          | 1.  | Interest            |
| _____ b. | Obligation to pay in the future  | 2.  | Lender              |
| _____ c. | Individual or business providing a loan to a borrower                              | 3.  | Interest rate       |
| _____ d. | Items of ownership convertible to cash; physical resources of a person or business | 4.  | Borrower            |
| _____ e. | Durable resources in which money is invested for a period of a year                | 5.  | Net worth statement |
| _____ f. | Production resources expected to be used in one year                               | 6.  | Operating capital   |
| _____ g. | Amount of money borrowed   | 7.  | Credit              |
| _____ h. | Cost or "rent" for borrowed money  | 8.  | Investment capital  |
| _____ i. | A listing and summary of assets and liabilities                                    | 9.  | Collateral          |
| _____ j. | Individual or business seeking a loan from a lender                                | 10. | Loan                |
| _____ k. | Comparison of assets to liabilities  | 11. | Debt                |
| _____ l. | Money furnished on condition of being returned, usually with interest              | 12. | Solvency ratio      |
| _____ m. | Percentage of the loan charged for the use of the money                            | 13. | Principle           |
| _____ n. | Money loaned to an individual or business  | 14. | Asset               |
| _____ o. | Property or assets used as security to insure payment of a loan                    | 15. | Liability           |

2. Describe in a short paragraph the role of credit in agriculture.

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3. List eight primary principles of credit to be considered by a potential borrower.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

g. \_\_\_\_\_

h. \_\_\_\_\_

4. Distinguish among short-term, intermediate and long-term loans by placing 1, 2, or 3 in front of the appropriate statement.

|          |  |                      |
|----------|--|----------------------|
| _____ a. | For a period of 1 to 7 years                                       | 1. Short-term loan   |
| _____ b. | Used to purchase land, buildings or major improvements             | 2. Intermediate loan |
| _____ c. | Used to purchase machinery, equipment or construction of buildings | 3. Long-term loan    |
| _____ d. | For a period of 1 to 12 months                                     |                      |
| _____ e. | For a period of 5 to 30 years or more                              |                      |
| _____ f. | Used for current expenses such as feed, seed, fertilizer, etc.     |                      |

5. Describe production credit and consumption credit.

a. Production Credit \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

b. Consumption Credit \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

6. List five factors to consider in selecting a source of credit.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

7. Match the sources of credit on the right with the list of advantages and disadvantages on the left. Write the correct numbers in the blanks provided.

(Note: This question continues on the next page.)

\_\_\_\_\_ a. Advantages: low interest rate; unlimited funds; interest paid only on amount of time used; provide thorough record keeping and management assistance; profits are returned to borrowers. Disadvantages: availability of short-term and intermediate term credit only--up to 7 years; local office not always available; necessity for borrower to buy shares

\_\_\_\_\_ b. Advantages: easier for poor risk persons; convenient for farmer; can get immediate loan; loan can be made for large percent of value; repayment schedule may be designed for individual. Disadvantages: interest is usually higher; may have different form of credit arrangement for various customers

- 1. Merchants and dealers
- 2. Individuals
- 3. Commercial banks
- 4. Farmers' Home Administration
- 5. Finance companies
- 6. Insurance company
- 7. Production Credit Association
- 8. Federal Land Bank

- \_\_\_\_\_ c. Advantages: low interest rates on long-term loans; availability of long-term credit (5-40 years); more understanding of economic conditions; loans up to 85% of appraised value; new loans have a variable interest rate, changing with economic conditions; profits are returned to borrowers. Disadvantages: complicated loan procedures; necessity for borrower to buy shares; low property appraisals; limited funds to be loaned
- \_\_\_\_\_ d. Advantages: lower rate of interest; ability to get an immediate loan; greater possibility to negotiate the payment or interest of loan. Disadvantages: not a dependable source of credit; usually short-term credit; frequently involves larger down payments
- \_\_\_\_\_ e. Advantages: easier for poor risk persons; borrowing. Disadvantages: extremely high interest rates; high pressure loan agents; usually short-term credit
- \_\_\_\_\_ f. Advantages: long-term mortgages; low interest rates; not any limits on size of loan except for self-imposed limits. Disadvantages: first mortgage loans; some states prohibit short-term loans; selective about areas where loans are made; cannot pay loan back all at once; maximum loan is usually 65-70% of appraised value
- \_\_\_\_\_ g. Advantages: convenience of borrowing; knowledge of personal needs; speed of loan approval; diversity of loans made; availability of character loans. Disadvantages: high interest rate; preference of short-term loans; limitations on amount of money loaned, especially for land
- \_\_\_\_\_ h. Advantages: makes loans to individuals who do not qualify for other loans; short, intermediate and long-term loans; reasonable rates and terms on loans; advice, assistance and supervision given by supervisor; usually little or no down payment required. Disadvantages: not intended as a permanent source of financing--borrowers expected to refinance when suitable commercial sources are available; loans can be secured only on large acreage; strict requirements exist for the agribusinesses obtaining the loan

8. List six factors a lender might consider in evaluating a loan application.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
9. List five factors that affect a borrower's repayment capacity.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
10. Distinguish among the various types of assets by placing a "C" before statements that characterize current assets, an "I" before statements that characterize intermediate assets or an "L" before statements that characterize long-term assets.
- \_\_\_\_ a. Consist primarily of real estate and its improvements
  - \_\_\_\_ b. Resources and production items having a life of 1-10 years
  - \_\_\_\_ c. Consist of resources such as machinery, equipment and breeding stock
  - \_\_\_\_ d. Include accounts receivable, inventory, stocks, bonds, etc.
  - \_\_\_\_ e. Assets that are permanent in nature
  - \_\_\_\_ f. Cash or resources which can be converted to cash within the business year
11. Distinguish among the various types of liabilities by placing a "C" before statements that characterize current liabilities, an "I" before statements that characterize intermediate liabilities or an "L" before statements that characterize long-term liabilities.
- \_\_\_\_ a. Debts due within the current operating year, normally 12 months
  - \_\_\_\_ b. Examples include equipment purchases, additions to breeding herds or major adjustments in the farming operation
  - \_\_\_\_ c. Loans or obligations assumed for a period greater than 12 months, but less than 8 to 10 years

- \_\_\_\_\_ d. Consists of mortgages and land contracts on real estate, less the principle balance due within the operating year
- \_\_\_\_\_ e. Examples include short-term notes, rents, taxes, accounts payable, interest, plus that portion of debts due within the operating year

12. List four factors that affect the cost of credit.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

13. Match the types of interest on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>_____ a. Product of the principle, the time in years and the annual rate of interest</li> <li>_____ b. Interest is deducted from principle at the time the loan is made</li> <li>_____ c. Interest calculated at regular intervals and added to the principle</li> <li>_____ d. Interest is calculated on the beginning balance and then added to the principle to obtain the amount to be repaid in equal periodic installments.</li> </ul> | <ul style="list-style-type: none"> <li>1. Simple interest</li> <li>2. Compound interest</li> <li>3. Discounted interest</li> <li>4. Add-on interest</li> </ul> |
|---|--|

14. Determine the actual interest rate in the problem below.

Problem: A farmer borrowed \$6,000 which cost him a total of \$400 in interest and was paid in 12 monthly payments. Calculate the interest rate by using the following formula.

$$I = \frac{2(N)(C)}{P(T+1)}$$

Actual Rate of Interest = \_\_\_\_\_

15. Define money.

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16. List the three functions of money.

a. \_\_\_\_\_

b. \_\_\_\_\_

17. Identify the three types of financial institutions.

a. \_\_\_\_\_ Specialize in loans to home buyers; usually operated as mutual organizations; offer complete line of banking services

b. \_\_\_\_\_ Operated for profit; offer full range of banking services; emphasize shorter term loans; chief source of business loans; home loans

c. \_\_\_\_\_ Owned by its depositors; offer all traditional banking services

18. Describe the Federal Reserve System.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

19. List the five functions of the Federal Reserve System.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

20. Write a check for the following: To: Sunny Seed Company on June 18, 1992 for \$1,336.81 to pay for wheat seed.

|  |                                |
|--|--------------------------------|
| Roger K. Jones<br>Route 20<br>Booneville, MO 65233 | No. <u>101</u><br>_____ 19____ |
| PAY TO THE<br>ORDER OF _____                       | \$ _____                       |
|  | _____ DOLLARS                  |
| First National Bank<br>Booneville, MO              | _____                          |
| ⑆0420⑉0025⑆ 017⑉570371⑆                            |                                |

21. Describe how and where to endorse a check.

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22. List and describe the three types of check endorsements.

a. \_\_\_\_\_

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b. \_\_\_\_\_

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c. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

23. Fill out a deposit slip using the following information.

Date – August 1, 1992  
 Deposits  
 \$50 from bank #22-111/5555  
 \$100 from banks #55-222/4444  
 \$75. 63 cash  
 \$25 from bank #66-444/1111

|  |  |             |             |
|--|--|-------------|-------------|
| FOR DEPOSIT TO THE ACCOUNT OF                          |  | CURRENCY    |             |
| David R. Smith   |  | DATE        | 92-155/1241 |
| Sara A. Smith  |  | AMOUNT      |             |
| Rt. 1 Box 53   |  | IN          |             |
| Nowhere, Idaho 88888                                   |  | OUT         |             |
| Date _____ 19__  |  | TOTAL       |             |
| DEPOSITS MAY NOT BE AVAILABLE FOR IMMEDIATE WITHDRAWAL |  | LESS        |             |
| SIGN HERE FOR LESS CASH IN TELLER'S PRESENCE           |  | RECEIVED    |             |
| FIRST BANK OF MARS                                     |  | NET DEPOSIT |             |
| Mars, Idaho 99988                                      |  |             |             |
| /1222 11 2222 :0012                                    |  |             |             |

| PLEASE LIST EACH CHECK SEPARATELY BY BANK NUMBER |         |       |
|--|---------|-------|
| CHECKS Properly Endorsed                         | DOLLARS | CENTS |
| 1  |         |       |
| 2  |         |       |
| 3  |         |       |
| 4  |         |       |
| 5  |         |       |
| 6  |         |       |
| 7  |         |       |
| 8  |         |       |
| 9  |         |       |
| 10   |         |       |
| 11   |         |       |
| 12   |         |       |
| 13   |         |       |
| 14   |         |       |
| 15   |         |       |
| 16   |         |       |
| PLEASE FORWARD TOTAL TO REVERSE SIDE             |         |       |
| CASH COUNT -- FOR OFFICE USE ONLY                |         |       |
|  | \$ 100  |       |
|  | X 50    |       |
|  | X 20    |       |
|  | X 10    |       |
|  | X 5     |       |
|  | X 2     |       |
|  | X 1     |       |
| TOTAL  | \$      |       |

24. Reconcile a checkbook register and bank statement using the given information. You must show all steps.

1. Checkbook balance - \$500
2. Checks not cleared
  - #222 -- \$50
  - #223 -- \$20
  - #240 -- \$30
3. Deposits not cleared
  - Paycheck -- \$200
  - Gift money -- \$50
4. Service charge -- \$5
5. Bank statement balance -- \$345

25. Discuss the impact of savings on our national economy.

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26. Identify types of savings and investment programs by writing the correct names in the blanks provided.

- a. \_\_\_\_\_ Most common type of bond issued by the federal government; sold for less than their stated value and when redeemed at maturity , they are worthy their purchase price plus interest
- b. \_\_\_\_\_ An investment company that pools the money of many individuals to buy stock or bonds or other investments; risk of losing money from a poor investment is decreased, since losses in one area are likely to be made up by gains in another area.
- c. \_\_\_\_\_ Combines benefits of checking and savings accounts; customers earn interest on any unused money in their account; interest is usually low.
- d. \_\_\_\_\_ Entitle the buyer to a certain part of the future profits and assets of a corporation; people make money if the company makes a profit and declares a dividend, or more likely , bye selling for more than they paid.
- e. \_\_\_\_\_ Passed to help self-employed people set up their own pension plans; allows a person to set aside a maximum of 15 percent of income up to \$9,500 a year.
- f. \_\_\_\_\_ No passbook required for each transaction – the depositor receives a monthly statement showing all transactions

- g. \_\_\_\_\_ Certificates issued by a company or government in exchange for borrowed money; a stated rate of interest and state period of time are promised – at the end of that time the amount will be paid in full
- h. \_\_\_\_\_ Also called certificates of deposit or savings certificates; refers to a wide variety of savings plans that requires saver to leave his/her money on deposit for a certain period of time
- i. \_\_\_\_\_ Depositor receives a booklet in which deposits, withdrawals and interest are recorded; customer must present booklet for each transaction
- j. \_\_\_\_\_ Issued by local and state governments; interest is not taxed; good investments for wealthier people who would otherwise pay high taxes on investment interest earnings
- k. \_\_\_\_\_ Allows a person to contribute up to \$2,000 of his/her earnings per year for retirement; income tax is paid only when the money is withdrawn at retirement
- l. \_\_\_\_\_ Pay high interest rate; immediate access to money; minimum balance requirement; personal withdrawals may be made at any time, but only 3 checks a month may be written

## AGRICULTURAL CREDIT

## AG 660 - G

## ANSWERS TO TEST

1.
 

|            |       |       |      |
|------------|-------|-------|------|
| a. 15 / 11 | e. 8  | i. 5  | m. 3 |
| b. 11 / 15 | f. 6  | j. 4  | n. 7 |
| c. 2       | g. 13 | k. 12 | o. 9 |
| d. 14      | h. 1  | l. 10 |      |
  
2. The paragraph should include key concepts from the following:
 

Gives individuals and businesses purchasing power based on future income; Aids to speed production and expansion; Credit needs of agriculture have risen dramatically in recent years due to the growing capital requirements of farm and ranch operations and the continued substitution of capital for labor
  
3. Answer should include eight of the following in any order:
 

Production loans should be used only to increase income; Limit the amount borrowed on new or unfamiliar enterprises; Keep debts as low as possible while still maintaining efficiency; Study markets and trends; Keep the proper debt-net worth relationship; Keep the proper debt-income relationship; Select a dependable lender who will give the best terms; Have a definite repayment program; Be businesslike, fair and frank; Carry adequate insurance
  
4.
 

|      |      |
|------|------|
| a. 2 | d. 1 |
| b. 3 | e. 3 |
| c. 2 | f. 1 |
  
5. Answer should include key concepts as listed below:
  - a. Production credit is used to increase production or income
  - b. Consumption credit is used to purchase items consumed by family; does not contribute to farm income; can limit the amount of production credit available when used in excess
  
6. The lending institution's knowledge of agricultural practices and problems; The institution's experience in handling agricultural credit of a similar nature; The institution's lending policies-- interest rates, repayment schedule, closing costs, handling emergencies; The availability of additional credit to meet unexpected needs; Reputation of lending institution
  
7.
 

|      |      |
|------|------|
| a. 7 | e. 5 |
| b. 1 | f. 6 |
| c. 8 | g. 3 |
| d. 2 | h. 4 |
  
8. Personal honesty and integrity of the applicant; Managerial ability of the applicant; Repayment capacity; Loan purpose; Financial position of applicant; Loan security or collateral
  
9. Answer should include five of the following:
 

Size of business; Production level per enterprise; Price level of units sold; Production costs of units produced; Level of overhead costs; Personal living expenses; Previous repayment record

10. a. L                      b. I                      c. I                      d. C                      e. L                      f. C
- 
11. a. C                      b. I                      c. I                      d. L                      e. C
12. Cost of money to the lender; Cost of servicing the loan; Risk associated with the loan; Number of installments or repayment schedule
13. a. 1                      b. 3                      c. 2                      d. 4
14. 12.3% annual interest
15. Anything that is acceptable as a medium of exchange (a seller will accept it in exchange for a good or service)
16. Medium of exchange; Unit of accounting; Store of value
17. a. Savings and Loans Associations  
b. Commercial Banks  
c. Mutual Savings Banks
18. Answer should include information from the following:  
  
Central banking system of the United States; Set up by the Federal Reserve Act of 1913; Responsible for controlling the nation's money supply and maintaining the value of the nation's currency; Run by 7-member Board of Governors who are appointed by the President, serve on 14-year term which is rotational – one vacancy is filled every two year; 12 district banks throughout the United States.
19. Clear check; Act as the federal government's fiscal agent; Supervise member banks; Supply paper currency; Regulate the money supply
- 20.

|  |   |
|--|---|
| <p><b>Roger K. Jones</b><br/>Route 20<br/>Booneville, MO 65233</p>   | <p>No. <u>101</u><br/><u>June 18 1992</u></p> |
| <p>PAY TO THE ORDER OF <u>Sunny Seed Company</u> \$<u>1,336<sup>81</sup></u><br/><u>One thousand three hundred thirty six <sup>81</sup>/<sub>100</sub> - DOLLARS</u></p> |   |
| <p><b>First National Bank</b><br/>Booneville, MO</p>   | <p><u>Roger K. Jones</u></p>                  |
| <p>⑆0420⑉0025⑆ 017⑉57037⑆⑆</p>   |   |

21. Answer should include information from the following:

Sign (do not print) name on the back of the check; Sign name exactly as it is written on the front; Sign on back of check on the same end that has the words "Pay to the order of"; Do not write below 3 inches of the end – this is reserved for use by bank institutions

22. Blank endorsement: Sign your name on the back of the check; Whoever has the check may deposit it or cash it by endorsing the check below your name.  
Restrictive endorsement: Write the words "For deposit only" and sign your name below; The check may only be deposited into the account of the endorsed name  
Special endorsement: Used if you want to transfer a check written to you or someone else without having to deposit it in your account and write a new check; Write the words "Pay to the order of" and the name of the person you want to transfer the check to; then sign your name; The person to whom you endorsed the check signs his name below yours to deposit or cash it

23.

### Filling Out a Deposit Slip

FOR DEPOSIT TO THE ACCOUNT OF

David R. Smith  
Sara A. Smith  
Rt. 1 Box 53  
Nowhere, Idaho 88888

Date AUGUST 1 1992

DEPOSITS MAY NOT BE AVAILABLE FOR IMMEDIATE WITHDRAWAL

SIGN HERE FOR LESS CASH IN TELLER'S PRESENCE

FIRST BANK OF MARS  
Mars, Idaho 99988  
1:1222 ' ' 2222 -10012

|               |           |        |             |
|---------------|-----------|--------|-------------|
| CURRENCY      |           | 7565   |             |
| CHECKS        |           |        |             |
| 1             | 2391/2528 | 50.00  | 92-155/1241 |
| 2             | 5170/4001 | 100.00 |             |
| 3             | 1477/1111 | 155.00 |             |
| TOTAL         |           | 305.00 |             |
| LESS RECEIVED |           |        |             |
| NET DEPOSIT   |           | 305.00 |             |

PLEASE LIST EACH CHECK SEPARATELY BY BANK NUMBER

| CHECK (Previous Statement Bank No.) | DOLLARS | CENTS |
|-------------------------------------|---------|-------|
| 1                                   |         |       |
| 2                                   |         |       |
| 3                                   |         |       |
| 4                                   |         |       |
| 5                                   |         |       |
| 6                                   |         |       |
| 7                                   |         |       |
| 8                                   |         |       |
| 9                                   |         |       |
| 10                                  |         |       |
| 11                                  |         |       |
| 12                                  |         |       |
| 13                                  |         |       |
| 14                                  |         |       |
| 15                                  |         |       |
| 16                                  |         |       |
| 17                                  |         |       |
| 18                                  |         |       |
| 19                                  |         |       |
| 20                                  |         |       |
| TOTAL TO DEPOSIT                    |         |       |
| CASH COUNTY - FOR OFFICE USE ONLY   |         |       |
|                                     | X       | 100   |
|                                     | X       | 50    |
|                                     | X       | 20    |
|                                     | X       | 10    |
|                                     | X       | 5     |
|                                     | X       | 2     |
|                                     | X       | 1     |
| TOTAL                               |         | \$    |

24. Revised checkbook balance           \$500  
 Service charge                            - 5  
   \$495

Revised bank statement balance-  
 Bank statement balance               \$345  
 Deposits not cleared                   +250  
 Checks not cleared                      -100  
   \$495

25. Answer should include information from the following:

Savings are important to the health and growth of the economy—by limiting their consumption and by saving, individuals make money available for businesses to improve or to increase their production; A country’s savings are the ultimate source of its investment and investment is the ultimate source of jobs, economic growth and rising living standard; Saving is important in relationship to the government’s gigantic annual budget deficit –without sufficient savings, the government must rely on attracting capital from overseas to finance the deficit

26.
  - a. Savings bonds
  - b. Mutual fund
  - c. NOW (Negotiable Order of Withdrawal)
  - d. Stocks
  - e. Keogh plan
  - f. Statement savings account
  - g. Bonds
  - h. Time deposits
  - i. Passbook savings account
  - j. Tax-exempt bonds
  - k. Individual Retirement Account
  - l. Money market deposit accounts

# 660H-1

## AGRICULTURAL RECORDS

### AG 660 - H

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe the reasons for keeping records. Students should also be able to describe, complete and use inventories. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with the introduction to farm records to their definitions.
2. List four reasons for keeping records.
3. Match types of records to their descriptions.
4. Distinguish between the two methods of accounting.
5. Describe the two basic systems of keeping books.
6. List three purposes for calculating depreciation.
7. Describe the criteria of depreciable property for tax purposes.
8. Describe how to determine the basis of an asset.
9. Describe the information needed to figure depreciation.
10. List four purposes of an inventory.
11. List four principles in taking an inventory.
12. Describe methods of determining the value of various assets for an inventory.
13. Distinguish between inventory values and depreciation values.
14. Complete an inventory record.

AGRICULTURAL RECORDS

AG 660 - H

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. The following are available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).

|      |      |  |         |
|------|------|--|---------|
| MS   | 107a | <i>Idaho Farm Record Book</i>                                | \$23.00 |
| MS   | 107b | <i>Idaho Farm Record Book User's Guide</i>                   | NC      |
| WREP | 99   | <i>Selection and Implementation of a Farm Records System</i> | \$.50   |
    2. Filmstrips, slideshows, etc.
      - a. *Selecting and Implementing a Farm Record System*, Program #372; 46 minutes; discusses the application of a record system in managing a farm or ranch business and explains some of the specific issues such as cash vs. accrual accounting, single vs. double entry accounting and the types and uses of financial reports; available from Agricultural Communications Center, 10 Ag Science Building, Moscow, Idaho 83843-4196, (208-885-6436).
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.
  - E. Obtain copies of current tax laws to determine allowances for depreciation and other tax considerations which could affect records.
  - F. Tax laws concerning depreciation are constantly changing. Consult current year's IRS tax depreciation booklet for up-to-date information or a tax accountant familiar with farm and ranch tax accounting.
  - G. Have students conduct an inventory of their home places or have them bring examples of equipment that could be used to demonstrate depreciation.
  - H. Obtain samples of different types of record books that are available.

## 660H-3

- I. Have someone from an agribusiness who has good inventory and depreciation records show those records to the class.
  - J. Invite a tax accountant who is familiar with agribusiness tax accounting to speak to the class about the current depreciation tax laws and how depreciation is calculated.
  - K. Have students take an inventory of everything in their locker.
  - L. Review and give test.
  - M. Reteach and retest if necessary.
- II. Instructional materials
- A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Systems of Keeping Books
    - 2. TM 2--Average Expected Life of Farm Assets
  - E. Assignment sheet
    - 1. AS 1--Complete an Inventory Record
  - F. Answers to assignment sheet
  - G. Test
  - H. Answers to test
- III. Unit references
- A. *Farm Business Management Curriculum Guide*, Instructional Material Year 1, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma, 1979.
  - B. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - C. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.
  - D. James, Sidney and Everett, Stoneberg, *Farm Accounting and Business Analysis*, 3rd edition, Iowa State University, Ames, Iowa, 1986.

- E. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- F. Nelson, Gene A., Willett, Gayle S. and Becker, Manning, *Economic Recovery Act of 1981: Income Tax Provisions Affecting Farmers and Ranchers*, Pacific Northwest Extension Service, PNW 218, January, 1982.
- G. Persons, Edgar A., Palmer, Rodger E. and Palan, Ralph L., *Farm and Ranch Management, A Course of Study for Adults*, Division of Agricultural Education, University of Minnesota, St. Paul, Minnesota.
- H. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- I. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

AGRICULTURAL RECORDS

AG 660 - H

INFORMATION SHEET

- I. Terms and definitions
- A. Transaction--The act of carrying out to a conclusion or settlement
  - B. Income--Money coming in that is not borrowed
  - C. Expense--Money going out
  - D. Assets--Items that are owned and have a monetary value
  - E. Man-hour--The time worked by one person for one hour  
Example: If five people worked for 8 hours they would have worked forty man-hours
  - F. Accounting--System of bookkeeping
  - G. Basis--Value of an asset when it is first acquired; this value is used for depreciation purposes and may differ from market value
  - H. Salvage value--The amount an asset will be worth after it has come to the end of its useful life for a particular agribusiness
  - I. Depreciable value--Value of an asset used for depreciation purposes
  - J. Tangible property--Any property that can be seen or touched
  - K. Collateral--Assets used to guarantee payment of a loan
  - L. Deplete--To decrease or use up something, especially a natural resource
  - M. Working life--Period of time an asset is productive
  - N. Inflation--Rise in price caused by an expansion in money or a decline in production
  - O. Deflation--Decrease in price caused by a reduction in money or overproduction  
(Note: There are many possible causes of inflation and deflation.)
  - P. Depreciation or recovery--Allocation of property costs over a period of time
  - Q. Recovery allowance--The amount property may be reduced in value each year for tax purposes

II. Reasons for keeping records

- A. Measure financial success and progress
- B. Fulfill tax requirements
- C. Analyze business for future improvement
- D. Assist in obtaining credit
- E. Reduce misunderstandings about past business transactions

III. Types of records

- A. Income and expense--Record showing the cash transactions that take place during the year
- B. Cash-flow--Record showing sources of income and showing the time of year income is received and expenses occur
- C. Inventory--Record of all physical assets at a particular point in time
- D. Depreciation--Record showing the decrease in value of assets
- E. Enterprise account--Record kept on a particular activity of the agribusiness
- F. Accounts receivable and payable--Record of money due from others and owed to others
- G. Production--Record of that which is grown or created by the business  
Example: Pounds of milk, pounds gained or tons of hay
- H. Labor--Record of amount and cost of man-hours used in different enterprises within the agribusiness

IV. Methods of accounting

(Note: The different methods basically affect how income will be distributed for income tax purposes.)

- A. Cash--Income and expenses are entered when payment is made or received
- B. Accrual--Income and expenses are entered when they are earned or committed, regardless of when they are received or paid  
Example: Income tax for a steer would be paid on the value of the gain during the year even if the steer was not sold

- V. Basic systems of keeping books (Transparency 1)
  - A. Single entry system
    - 1. Simplest method
    - 2. Item is entered either as an expense or receipt
  - B. Double entry system
    - 1. Item is entered as an expense and as a receipt
      - Example: Selling a steer would reduce the livestock account and increase the cash account
    - 2. Provides a record of transactions between enterprises
      - Example: Feed expense could be subtracted from the livestock enterprise and added to the crop enterprise
    - 3. Protects against errors
- VI. Purposes for calculating depreciation
  - A. Adjusts taxable income--required for tax purposes  
(Note: It is not legal to deduct the entire amount of a long-term asset in the year it is purchased.)
  - B. Provides a method to assign non-cash expenses to the various enterprises
  - C. Provides an estimate of current value
- VII. Criteria of depreciable property for tax purposes
  - A. Must be used in business or held for the production of income (such as to earn rent or royalty income)
  - B. Must have a determinable life and that life must be longer than one year (the life of a piece of property is an estimate of how long you can expect to use it in your business or to earn rent or royalty income)
  - C. Must be something that wears out, decays, gets used up, becomes obsolete or loses value from natural causes
- VIII. The basis of an asset
  - A. Cash paid for an asset if bought outright

## 660H-8

B. Cash paid plus the actual value of the asset traded

|          |  |          |
|----------|--|----------|
| Example: | Cash paid on new tractor                       | \$64,000 |
|          | Actual value of old tractor that was traded in | \$20,000 |
|          | Basis of the new tractor                       | \$84,000 |

IX. Information needed to figure depreciation (Transparency 2)

A. Basis of the asset

B. When asset was placed in service

(Note: Property is considered placed in service when it is in a condition or state of readiness and available for use.)

C. Which method of depreciation you are permitted to use

X. Purposes of an inventory

A. Helps determine net worth and therefore progress that has been made

B. Helps to show how much production occurred during the year

Example: How many calves were born

C. Helps plan cash flow by indicating assets that will be available for sale and assets that will need to be purchased

D. Helps in documenting collateral for credit purposes

XI. Principles in taking an inventory

(Note: An inventory is a "picture" of all assets at a specific point in time.)

A. Usually taken at the end of the year as of December 31

B. Quantities should be measured in units that are commonly used

Examples: Bushels for small grain, hundred weight or number of animals for livestock

C. Items should be grouped into like categories

Examples: Feed, crops for sale, seed, machinery

D. All assets should be assigned a value

XII. Methods for determining the value of assets

(Note: No one method is best for every situation. Many items can be valued several different ways.)

A. Market cost

1. Price at which an item was purchased on the market
2. Used for items purchased recently and scheduled for use in a short time

Example: Feed, fuel, fertilizer, seed

B. Net market price

1. Money a farmer could actually bring home from the sale of a product (Note: This would be market price less transportation and marketing costs.)
2. Used for items held primarily for sale or for which a market price is well established

Example: Market livestock, farm-produced crops, machinery, breeding livestock

C. Cost or market value

1. The cost of producing an item, or its original purchase price, is compared with the current market price, and the lower of the two amounts is chosen
2. Used for items primarily held for sale or for supplies to be used, but is generally more conservative than the net market price  
Examples: Seed, fertilizer, fuel

D. Farm production cost

1. Cost of producing an asset on the farm
2. Used for assets that have been produced and will be used in future production

Example: Breeding stock, standing crops

E. Cost less depreciation--Used for assets with a limited life over one year

Example: Machinery, breeding stock, fences

F. Cost less depletion

1. Value of an asset less the amount of it that has been used
2. Used for natural resources that are gradually used or depleted

Example: Timber stand, mineral deposits, oil wells

XIII. Difference between inventory values and depreciation values

- A. Inventory gives current value of an asset for determining net worth
- B. Depreciation provides a method of spreading the cost of an asset over the working life of the asset
- C. Differences usually occur because of inflation or deflation

Example: A truck depreciates \$2,000 from the original purchase price for tax purposes and for the purpose of assigning costs to the enterprises involved, but actually could be sold for the purchase price because of inflation. The inventory value would then be higher than the depreciable balance

# Systems of Keeping Books

## Single Entry

| DATE  | ITEM             | RECEIPT |    | EXPENSE |    |
|-------|------------------|---------|----|---------|----|
| 9-24  | Barley for steer |         |    | 63      | 00 |
| 11-24 | Steer            | 450     | 00 |         |    |

## Double Entry

### CASH RECORD

| DATE  | ITEM       | DEBIT |    | CREDIT |  |
|-------|------------|-------|----|--------|--|
| 11-24 | Steer sale | 300   | 00 |        |  |

### CROP RECORD

| DATE | ITEM                | DEBIT |  | CREDIT |    |
|------|---------------------|-------|--|--------|----|
| 9-24 | Barley to Livestock |       |  | 63     | 00 |

### LIVESTOCK RECORD

| DATE  | ITEM             | DEBIT |    | CREDIT |    |
|-------|------------------|-------|----|--------|----|
| 9-24  | Barley for steer | 63    | 00 |        |    |
| 11-24 | Steer sale       |       |    | 300    | 00 |

# Average Expected Life of Farm Assets

Estimated wear-out life and repair costs for specified farm machines

| Machine                     | Estimated wear-out life in hours | Years to Trade | Repairs per hour per \$ of list price |
|-----------------------------|----------------------------------|----------------|---------------------------------------|
| <b>Tractor:</b>             |                                  |                |                                       |
| 2-wheel drive               | 10,000                           | 10             | \$.000144                             |
| 4-wheel drive               | 10,000                           | 10             | .0001                                 |
| Crawler                     | 15,000                           | 15             | .000067                               |
| Combine                     | 2,000                            | 10             | .000182                               |
| Swather, self-propelled     | 2,500                            | 10             | .000401                               |
| Windrower                   | 2,500                            | 10             | .000401                               |
| Mower-conditioner           | 2,000                            | 10             | .000719                               |
| Hay rake                    | 2,500                            | 10             | .999401                               |
| Baler                       | 2,000                            | 10             | .00032                                |
| Bean cutter                 | 2,000                            | 10             | .000719                               |
| <b>Harvester:</b>           |                                  |                |                                       |
| Potato                      | 2,500                            | 10             | .000256                               |
| Sugarbeet                   | 2,500                            | 10             | .000256                               |
| Forage, pull type           | 2,000                            | 10             | .00032                                |
| Forage, self-propelled      | 2,000                            | 10             | .000182                               |
| <b>Seeding equipment:</b>   |                                  |                |                                       |
| Drill, disc                 | 1,500                            | 10             | .000669                               |
| Drill, no-till              | 2,500                            | 15             | .000385                               |
| Planter                     | 1,500                            | 10             | .000669                               |
| Fertilizer equipment        | 1,200                            | 12             | .001                                  |
| Power chemical incorporator | 2,000                            | 10             | .000182                               |
| Tillage implements          | 2,500                            | 15             | .000557                               |
| Corrugator                  | 2,500                            | 15             | .000557                               |
| V-Ditcher                   | 2,500                            | 15             | .000558                               |
| Land plane                  | 2,500                            | 15             | .000557                               |
| Manure spreader             | 2,500                            | 15             | .00024                                |
| Sprayer, mounted            | 1,200                            | 15             | .000776                               |
| Farm truck                  | 2,000                            | 10             | .00032                                |
| Pickup truck                | 2,000                            | 10             | .000182                               |

These are estimates only

## AGRICULTURAL RECORDS

AG 660 - H

## ASSIGNMENT SHEET #1--COMPLETE AN INVENTORY RECORD

Name \_\_\_\_\_ Score \_\_\_\_\_

Inventories are important records for agribusiness management. They are necessary for determining net worth and determining future direction for the business. The first inventory is usually the hardest, but once it has been completed, future inventories become simpler since they simply become revisions of the first one. An inventory should be a record of those assets owned on a particular day. The inventory is not changed the next day because something is bought or sold.

Using the following list of assets, complete the inventory record on the next page. You will have to determine prices using the guidelines mentioned in this unit and local information from machinery dealers, farmers, bankers, market reports, publications, etc. Assume an inventory date of January 1.

(Note: Instead of using the assets listed here, the student could take an actual inventory of an available agribusiness. The following list is not meant to be representative. It is only a practice exercise.)

- 1 grain combine, 2 years old
- 1 grain combine, 8 years old
- 1 new grain drill
- 1 plow, 4 years old
- 1 intermediate size tractor, 5 years old
- 1 large 4-wheel drive tractor, 3 years old
- 5 sections of flex harrow, 4 years old
- 1 mature beef bull, 3 years old
- 15 beef cows, 3 years old
- 15 beef heifers, yearlings
- 1 portable hay manger
- 6 tons of barley
- 15 tons of corn silage
- veterinary supplies, \$300.00 worth
- 1 hay baler, 2 years old
- 20 acres of winter wheat
- 1 hay piler
- 4 irrigating shovels
- 200 gallons of diesel

(Note: **Answers to Assignment Sheet #1:** Prices will vary depending on inflation and local conditions.)

(Note: You will not be using the ending inventory in this exercise.)

INVENTORY RECORD

| Item             | Beginning | Ending |
|------------------|-----------|--------|
| <u>Machinery</u> |           |        |
|                  |           |        |
|                  |           |        |
|                  |           |        |
|                  |           |        |
|                  |           |        |
|                  |           |        |
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|                  |           |        |
|                  |           |        |
|                  |           |        |

INVENTORY RECORD

| Item                 | Beginning | Ending |
|----------------------|-----------|--------|
| <u>Miscellaneous</u> |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |
|                      |           |        |

## AGRICULTURAL RECORDS

AG 660 - H

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |  |     |                          |
|----------|--|-----|--------------------------|
| _____ a. | System of bookkeeping  | 1.  | Man-hour                 |
| _____ b. | Any property that can be seen or touched   | 2.  | Collateral               |
| _____ c. | Rise in price caused by an expansion in money or a decline in production   | 3.  | Income                   |
| _____ d. | Value of an asset used for depreciation purposes   | 4.  | Deflation                |
| _____ e. | Assets used to guarantee payment of a loan   | 5.  | Transaction              |
| _____ f. | Value of an asset when it is first acquired; this value is used for depreciation purposes and may differ from market value | 6.  | Basis                    |
| _____ g. | The amount an asset will be worth after it has come to the end of its useful life for a particular agribusiness            | 7.  | Tangible property        |
| _____ h. | Items that are owned and have a monetary value   | 8.  | Depreciable value        |
| _____ i. | Money coming in that is not borrowed   | 9.  | Inflation                |
| _____ j. | Allocation of property costs over a period of time   | 10. | Assets                   |
| _____ k. | Money going out  | 11. | Salvage value            |
| _____ l. | The time worked by one person for one hour   | 12. | Expense                  |
| _____ m. | To decrease or use up something, especially a natural resource   | 13. | Deplete                  |
| _____ n. | Period of time an asset is productive  | 14. | Accounting               |
| _____ o. | The act of carrying out to a conclusion or settlement  | 15. | Working life             |
|          |  | 16. | Recovery allowance       |
|          |  | 17. | Depreciation or recovery |

- \_\_\_\_\_ p. Decrease in price caused by a reduction in money or overproduction
- \_\_\_\_\_ q. The amount property may be reduced in value each year for tax purposes

2. List four reasons for keeping records.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

3. Match the types of records listed on the right to their definitions. Write the correct numbers in the blanks provided.

- |  |                                    |
|--|------------------------------------|
| _____ a. Record of all physical assets at a particular point in time   | 1. Labor                           |
| _____ b. Record of that which is grown or created by the business  | 2. Inventory                       |
| _____ c. Record showing the cash transactions that take place during the year                                | 3. Income and expense              |
| _____ d. Record of money due from others and owed to others  | 4. Depreciation                    |
| _____ e. Record kept on a particular activity of the agribusiness  | 5. Production                      |
| _____ f. Record showing sources of income and showing the time of year income is received and expenses occur | 6. Cash-flow                       |
| _____ g. Record of amount and cost of man-hours used in different enterprises within the agribusiness        | 7. Accounts receivable and payable |
| _____ h. Record showing the decrease in value of assets  | 8. Enterprise account              |

4. Distinguish between the two methods of accounting by writing "accrual" or "cash" in front of the appropriate description.

- \_\_\_\_\_ a. Income and expenses are entered when they are earned or committed, regardless of when they are received or paid
- \_\_\_\_\_ b. Income and expenses are entered when payment is made or received

5. Describe the two basic systems of keeping books listed below.
- a. Single-entry system \_\_\_\_\_  
\_\_\_\_\_
- b. Double-entry system \_\_\_\_\_  
\_\_\_\_\_
6. List three purposes for calculating depreciation.
- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
7. Describe the criteria of depreciable property.
- a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Describe how to determine the basis of an asset.
- \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Describe the information needed to figure depreciation.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_

10. List four purposes of an inventory.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

11. List four principles in taking an inventory.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

12. Describe methods listed below for determining the value of various assets for an inventory.

- a. Market cost \_\_\_\_\_  
\_\_\_\_\_
- b. Net market price \_\_\_\_\_  
\_\_\_\_\_
- c. Cost or market value \_\_\_\_\_  
\_\_\_\_\_
- d. Farm production cost \_\_\_\_\_  
\_\_\_\_\_

- e. Cost less depreciation \_\_\_\_\_  
\_\_\_\_\_
- f. Cost less depletion \_\_\_\_\_  
\_\_\_\_\_
13. Distinguish between inventory values and depreciation values by writing "depreciation" or "inventory" in the appropriate blank.
- \_\_\_\_\_ a. Gives current value of an asset for determining worth
- \_\_\_\_\_ b. Provides a method of spreading the cost of an asset over the working life of the asset

## AGRICULTURAL RECORDS

## AG 660 - H

## ANSWERS TO TEST

1.
 

|       |       |       |       |
|-------|-------|-------|-------|
| a. 14 | f. 6  | j. 17 | n. 15 |
| b. 7  | g. 11 | k. 12 | o. 5  |
| c. 9  | h. 10 | l. 1  | p. 4  |
| d. 8  | i. 3  | m. 13 | q. 16 |
| e. 2  |       |       |       |
  
2. Answer should include four of the following:  
  
 Measure financial success and progress; Fulfill tax requirements; Analyze business for future improvement; Assist in obtaining credit; Reduce misunderstandings about past business transactions
  
3.
 

|      |      |      |
|------|------|------|
| a. 2 | d. 7 | g. 1 |
| b. 5 | e. 8 | h. 4 |
| c. 3 | f. 6 |      |
  
4. a. accrual      b. cash
  
5.
  - a. Simplest method where item is entered as an expense or a receipt
  - b. Item is entered as an expense and as a receipt; provides a record of transactions between enterprises and protects against errors
  
6. Adjusts taxable income--required for tax purposes; Provides a method to assign non-cash expenses to the various enterprises; Provides an estimate of current value
  
7. Must be used in business or held for the production of income (such as to earn rent or royalty income); Must have a determinable life and that life must be longer than one year (the life of a piece of property is an estimate of how long you can expect to use it in your business or to earn rent or royalty income); Must be something that wears out, decays, gets used up, becomes obsolete or loses value from natural causes
  
8. The basis is the cash paid for an asset if it is bought outright or it is the cash paid plus the actual value of the asset traded
  
9. Basis of the asset; When asset was placed in service; Which method of depreciation you are permitted to use
  
10. Helps determine net worth and therefore progress that has been made; Helps to show how much production occurred during the year; Helps plan cash flow by indicating assets which will be available for sale and assets that will need to be purchased; Helps in documenting collateral for credit purposes
  
11. Usually taken at the end of the year as of December 31; Quantities should be measured in units that are commonly used; Items should be grouped into like categories; All assets should be assigned a value

12.
  - a. Price at which an item was purchased on the market; used for items purchased recently and scheduled for use in a short time
  - b. Money a farmer could actually bring home from the sale of a product; used for items held primarily for sale or for which a market price is well established
  - c. The cost of producing an item, or its original purchase price, is compared with the current market price, and then the lower of the two amounts is chosen; used for items primarily held for sale or for supplies to be used, but is generally more conservative than the net market price
  - d. Cost of producing an asset on the farm; used for assets that have been produced and will be used in future production
  - e. Used for assets with a limited life over one year
  - f. Value of an asset less the amount of it that has been used; used for natural resources that are gradually used or depleted
14.
  - a. Inventory
  - b. Depreciation

# 660I-1

## BUDGETING

### AG 660 - I

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe the purposes, benefits and limitations of budgeting. Students should also be able to distinguish among and use the various types of budgets. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with budgeting to their correct definitions.
2. List four purposes of budgeting.
3. Describe the limitations of budgeting.
4. List and describe the four types of budgets.
5. Arrange in order the steps in developing a budget.
6. List four types of physical data used in developing a budget.
7. List five methods used to arrive at price estimates.
8. Distinguish between fixed and operating costs.
9. Distinguish among factors needed for long and short-term budgeting.
10. List seven components of a typical partial budget.
11. Complete an enterprise budget for an agribusiness.
12. Complete a partial budget for an agribusiness.

## BUDGETING

## AG 660 - I

## SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
- A. Order materials to supplement unit.
1. Literature
- a. The following publications are available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).
- |      |     |  |             |
|------|-----|--|-------------|
| CIS  | 590 | <i>Idaho Enterprise Budget Generator</i>                                     | \$ .35      |
| CIS  | 791 | <i>Budgeting--A Management Tool</i>  | \$ .35      |
| MS   | 101 | <i>1990-91 Northern Idaho Crop Enterprise Budgets (16)</i>                   | \$ .35 each |
| MS   | 102 | <i>1990-91 Southwestern Idaho Crop Enterprise Budgets (16)</i>               | \$ .35 each |
| MS   | 103 | <i>1990-91 Southcentral Idaho Crop Enterprise Budgets (30)</i>               | \$ .35 each |
| MS   | 104 | <i>1990-91 Southeastern Idaho Crop Enterprise Budgets (15)</i>               | \$ .35 each |
| MS   | 110 | <i>1989-90 Livestock Enterprise Budgets (29)</i>                             | \$ .35 each |
| WREP | 104 | <i>Financial Analysis of Proposed Farm Adjustments with a Partial Budget</i> | \$ .50      |
| PNW  | 237 | <i>A Guide to Budgeting for the Family</i>                                   | \$ .50      |
2. Filmstrips, slideshows, etc.
- a. *Analyzing Business Adjustments: Whole Farm Budgeting*, Program #377; 26 minutes; discusses how to evaluate the success of a farm based on measures of profitability, liquidity and solvency. Shows how to identify emerging problems in each category and strategies to improve them; available from Agricultural Communications Center, 10 Ag Science Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
- B. Make transparencies and necessary copies of materials.
- C. Provide students with objectives and discuss.

- D. Provide students with information and assignment sheets and discuss.
- E. Invite a person involved in an agribusiness to show examples to the class of the various types of budgets used in an agribusiness
- F. Invite a loan officer from a bank or a local PCA to present information to the class on budgeting from a lender's point of view.
- G. Assign students to bring information from home on a specific enterprise to develop a budget.
- H. Assign the class to make a budget for a class or FFA project.
- I. Obtain samples of different forms for developing budgets.
- J. Take a field trip to the county extension office and ask the agent to demonstrate the computerized budget generator.
- K. Have students collect information on current prices for machinery, land, crops, livestock, credit, fertilizer, seed, fuel and other items important for a budget. A complete list could then be made available to the entire department and even parents to assist in making budgets.
- L. Review and give test.
- M. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet
- D. Transparency masters
  - 1. TM 1--Components of a Partial Budget
  - 2. TM 2--Complete Budget
  - 3. TM 3--Enterprise Budget
  - 4. TM 4--Partial Budget
- E. Assignment sheets
  - 1. AS 1--Complete an Enterprise Budget for an Agribusiness
  - 2. AS 2--Complete a Partial Budget for an Agribusiness
- F. Answers to assignment sheets
- G. Test

- H. Answers to test
- III. Unit references
- A. *Agricultural Management Guide*, Vocational Instructional Services, Texas A & M University, College Station, Texas.
  - B. *Basic Core Curriculum III*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - C. *Farm Business Management Curriculum Guide, Instructional Material Year 1*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - D. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - E. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
  - F. Meyer, Neil L. and Powell, Timothy, *Idaho Enterprise Budget Generator*, University of Idaho Cooperative Extension Service, Current Information Series No. 590.
  - G. Prigge, G. Ray, Dallimore, C.E., Hillman, Russell, York, Aaron, Alldaffer, Cecil and Hanson, J., *Estimated Costs and Returns for a 100 Acre Seed Potato Enterprise*, Idaho Farm Business Management Series, University of Idaho Cooperative Extension Service, Number 10.
  - H. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
  - I. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

BUDGETING

AG 660 - I

INFORMATION SHEET

- I. Terms and definitions
  - A. Budgeting--The process of estimating future income and expenses
  - B. Feasibility--The likelihood of something working out
  - C. Resources--Land, labor, capital and management that are necessary to an agribusiness
  - D. Estimation--Judgment or opinion based on available information
  - E. Enterprise--A specific phase of an agricultural business or farm  
Example: Wheat, feeder cattle, lentils
  - F. Management--The planning, decision making and directing of a business
  - G. Inventory--A list of available resources
  - H. Economist--One who studies the allocation of scarce resources for the production of economic goods and services
  - I. Speculative market--A market where contracts specifying delivery or acceptance of specified commodities at a specified future date are bought or sold
  - J. Depreciation--Reduction in value of an asset over a period of time
  - K. Interest--A charge for the use of money or capital
  - L. Fixed costs--Costs which do not vary with the level of production
  - M. Operating or variable costs--Costs which change with the level of production
  - N. Receipt--Income; acknowledgement of receiving money, goods or other valuable consideration
  - O. Expense--Cost
  - P. Return--Money coming in or income
- II. Purposes of budgeting
  - A. To make basic decisions on the feasibility of adding a new enterprise or starting an entirely new business
  - B. To evaluate and plan for the use of the available resources

- C. To reduce the likelihood of missing hidden costs
- D. To plan credit needs
- E. To assist in obtaining credit
- F. To assist in making decisions about non-business activities

Example: A business budget will estimate how much profit there will be at the end of the year so a family can determine if they can afford to buy a new car

III. Limitations of budgeting--Budgets rely on predictions and estimations of future expenses and receipts which are difficult to determine with much accuracy

IV. Types of budgets

- A. Complete--Budget for the entire agribusiness which takes into account total expenses and receipts, both cash and non-cash
- B. Enterprise--Budget for a particular enterprise which takes into account total expenses and receipts, both cash and non-cash
- C. Partial--Budget for a limited part of the business that evaluates the change in receipts and expenses that would occur with a particular management decision

Example: Buying equipment instead of leasing

- D. Cash-flow--Budget that identifies the sources and timing of cash income and outgo during the year; includes farm and non-farm cash flows

V. Steps in developing a budget

- A. Evaluate goals and objectives
- B. Inventory the available resources

(Note: This inventory should include information on land capabilities as well as buildings, equipment and money.)

- C. Select the type of budget needed

(Note: More than one type may be needed, depending on the situation.)

- D. Select the items necessary to complete the budget

- E. Assign a value to those items based on the best information available  
(Note: Previous records are often the best source of information. Information is also available from credit institutions, government publications, other farmers and university publications.)

- F. Calculate costs and income

- VI. Physical data used in developing a budget
  - A. Crop yield estimates
  - B. Estimated livestock feed requirements and production rates
  - C. Estimated labor requirements
  - D. Estimated fertilizer and spray responses
  - E. Estimated seeding responses
  - F. Estimated fuel and oil requirements
  - G. Equipment durability and estimated repair costs
  - H. Land capabilities and erosion potential
  
- VII. Methods used to arrive at price estimates
  - A. Actual prices for the previous year
  - B. Projected price based on trends, production cycles, competition or technology
  - C. Published predictions by economists
  - D. Minimum guaranteed price based on a contract or sale on the futures market
  - E. Arbitrary decision
  
- VIII. Types of costs
  - A. Fixed costs  

(Note: These are costs which do not vary with the level of production during a planning period.)

    - 1. Depreciation
    - 2. Interest on investment
    - 3. Shelter
    - 4. Certain types of taxes  

Example: Property taxes
    - 5. Insurance

B. Operating or variable costs

(Note: These are costs which vary with the level of production.)

1. Fuel, oil and grease
2. Repairs

(Note: A portion of this cost could be considered fixed.)

3. Labor

(Note: This could be fixed if permanent help is hired.)

4. Seed, feed, fertilizer and pesticides
5. Interest on operating capital

IX. Factors needed for long and short-term budgeting

A. Long-term budgeting

1. Average prices
2. Normal yields
3. All receipts
4. All expenses

B. Short-term budgeting

1. Current or expected prices
2. Expected yields
3. All receipts
4. All expenses

(Note: A partial budget would only include those receipts and expenses that change.)

X. Components of a partial budget (Transparency 1)

(Note: These components are typical of a partial budget that is used to evaluate the feasibility of making some change in the agribusiness operation.)

- A. Additional costs
- B. Reduced returns
- C. Reduced costs

- D. Additional returns
- E. Additional costs + reduced returns
- F. Reduced costs + additional returns
- G. Net difference between the two totals

**XI. Completing budgets (Transparencies 2, 3, 4)**

- A. Complete budget--Determine all income and costs for the entire agribusiness**

**Example: Basically just a combination of all the enterprise budgets**

- B. Enterprise budget--Determine return above cash and non-cash expenses for a particular enterprise**

**Twin Falls County large farm growing spring wheat/per acre**

| Category                          | Unit | Price or<br>cost/unit | Quantity | Value or<br>cost |
|-----------------------------------|------|-----------------------|----------|------------------|
| 1. Gross receipts from production |      |                       |          |                  |
| Spring wheat                      | bu   | 4.00                  | 75.00    | \$ 300.00        |
| Total                             |      |                       |          | \$ 300.00        |
| 2. Variable costs                 |      |                       |          |                  |
| Preharvest                        |      |                       |          |                  |
| Wheat seed                        | lb   | 0.10                  | 100.00   | \$ 10.00         |
| Nitrogen                          | lb   | 0.25                  | 70.00    | 17.50            |
| Phosphate                         | lb   | 0.25                  | 50.00    | 12.50            |
| Apply fertilizer                  | acre | 3.75                  | 1.00     | 3.75             |
| 2,4-D                             | qt   | 2.65                  | 2.00     | 5.30             |
| Water assessment                  | acre | 7.00                  | 1.00     | 7.00             |
| Machinery                         | acre | 9.26                  | 1.00     | 9.26             |
| Tractors                          | acre | 6.38                  | 1.00     | 6.38             |
| Irrigation machinery              | acre | 1.12                  | 1.00     | 1.12             |
| Labor (tractor and machinery)     | hour | 4.25                  | 1.93     | 8.21             |
| Labor (irrigation)                | hour | 3.75                  | 1.60     | 6.00             |
| Interest on operating capital     | \$   | 0.12                  | 30.35    | <u>3.64</u>      |
| Subtotal, preharvest              |      |                       |          | \$ 90.66         |
| Harvest costs                     |      |                       |          |                  |
| Custom combine                    | acre | 21.00                 | 1.00     | \$ 21.00         |
| Machinery                         | acre | 7.91                  | 1.00     | 7.91             |
| Labor (tractor and machinery)     | hour | 4.25                  | 0.70     | <u>2.98</u>      |
| Subtotal, harvest                 |      |                       |          | <u>31.89</u>     |
| Total variable cost               |      |                       |          | \$ 122.55        |
| 3. Income above variable costs    |      |                       |          | \$ 177.45        |

| Category                                     | Unit | Price or cost/unit | Quantity | Value or cost |
|--|------|--------------------|----------|---------------|
| 4. Fixed costs                               |      |                    |          |               |
| Machinery                                    | acre | 25.40              | 1.00     | \$ 25.40      |
| Tractors                                     | acre | 7.89               | 1.00     | 7.89          |
| Irrigation machinery                         | acre | 17.44              | 1.00     | 5.70          |
| Taxes (land, water)                          | acre | 5.70               | 1.00     | 17.44         |
| Overhead                                     | acre | 4.50               | 1.00     | <u>4.50</u>   |
| Total fixed costs                            |      |                    |          | \$ 60.93      |
| 5. Return to management and land investment  |      |                    |          | \$ 116.52     |
| 6. Return on land investment                 | acre | 0.08               | 1500.00  | \$ 120.00     |
| 7. Management                                |      | 0.05               | 300.00   | \$ 15.00      |
| 8. Total costs                               |      |                    |          | \$ 318.48     |
| 9. Net returns to risk                       |      |                    |          |               |
| Irrigated surface                            |      |                    |          | \$ -18.48     |
| 10. Break-even prices                        |      |                    |          |               |
| If 75.00 bu spring wheat are produced:       |      |                    |          |               |
| To cover variable inputs                     |      | 1.356              |          |               |
| To cover variable inputs, interest and labor |      | 1.634              |          |               |
| To cover all costs except risk               |      | <u>4.246</u>       |          |               |

- C. Partial budgets--Determine only the costs and returns that will be affected by the change and then determine the net change in income

Example:

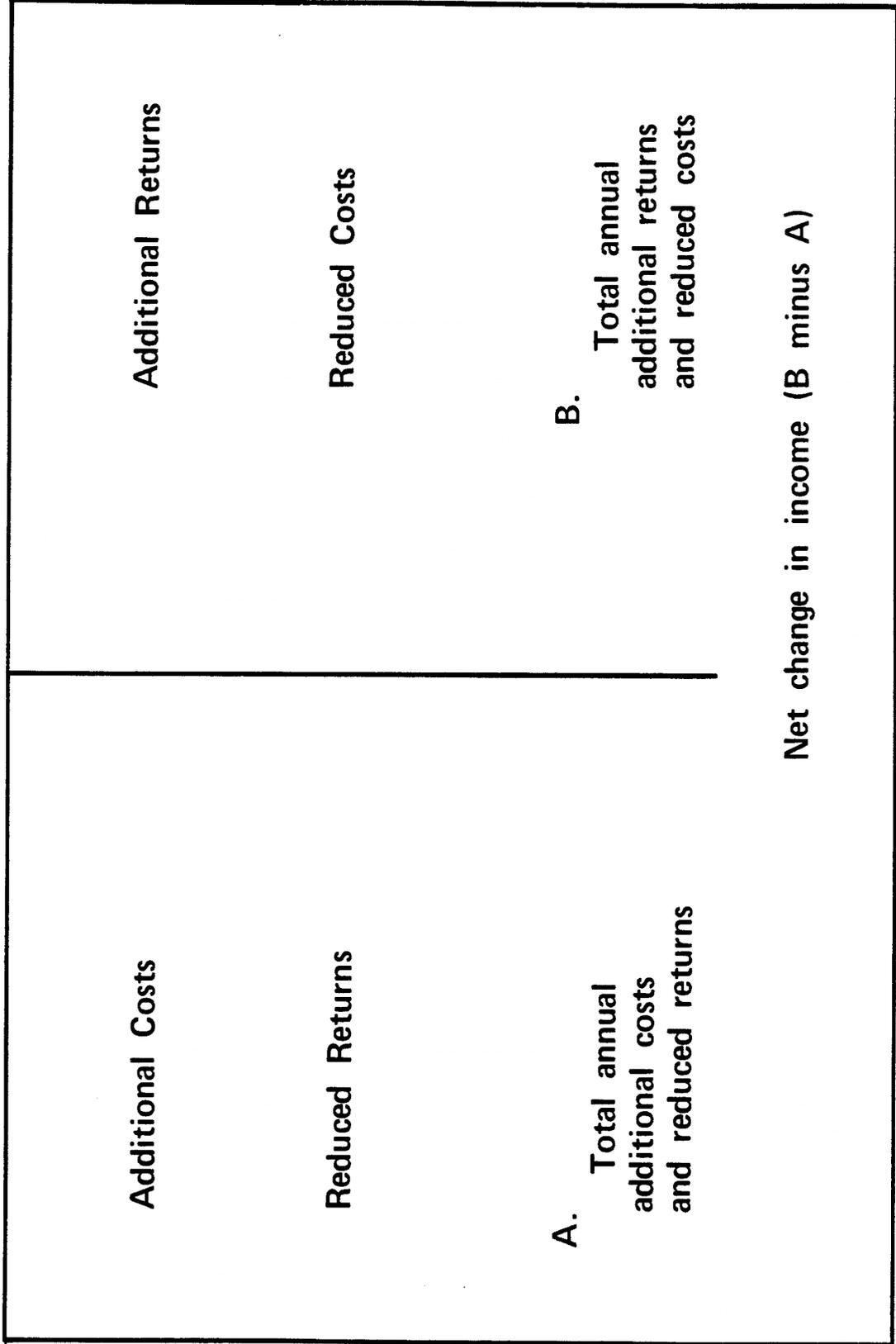
You want to set up a partial budget to help decide whether it will pay to include more roughage in the rotation and feed an additional 40 steers for which you have space, equipment and labor. Assume that the latter items have no alternative use and therefore do not charge for them. The value of production (sales value - purchase cost) will amount to \$125 per steer, but the reduced value of grain production will amount to \$1,750 for the farm. (Estimating \$125 as value of production per steer is another shortcut, rather than subtracting purchase cost from sales value.) Each steer will be fed \$70 worth of concentrates plus hay, which has no other use. (Since the hay would not be sold or otherwise used, do not include a value for it in the partial budget.)

Interest will amount to \$10 per steer. Taxes and miscellaneous costs are estimated at \$3 per head. Fertilizer costs and fuel and repair costs on machinery will be reduced by \$450 as a result of the change in the cropping system. Determine the effect the described change will have on the net income of the farm

Solution:

| <u>Additional Costs</u>                                    |         | <u>Additional Returns</u>                                     |                 |
|--|---------|---|-----------------|
| Concentrates   |         | Value of production   |                 |
| \$70 x 40 steers   | \$2,800 | \$125 x 40 steers   | \$ 5,000        |
| Interest   |         |   |                 |
| \$10 x 40 steers   | 400     |   |                 |
| Taxes and miscellaneous                                    |         |   |                 |
| \$3 x 40 steers  | 120     |   |                 |
| <u>Reduced Returns</u>                                     |         | <u>Reduced Costs</u>  |                 |
| Reduced grain production                                   | \$1,750 | Fertilizer costs and<br>fuel and repair costs<br>on machinery | \$ 450          |
| A. Total annual<br>additional costs and<br>reduced returns | \$5,070 | B. Total annual additional<br>costs and reduced<br>returns    | \$ <u>5,450</u> |
|  |         |   | 5,450           |
|  |         |   | <u>-5,070</u>   |
|  |         | Net change in income (B minus A)                              | +\$ 380         |

# Components of a Partial Budget



# COMPLETE BUDGET

| ITEM                           | RECEIPTS        | ITEM                                   | EXPENSES        |
|--------------------------------|-----------------|--|-----------------|
| <b>LIVESTOCK</b>               |                 | <b>OPERATING OR<br/>VARIABLE COSTS</b> |                 |
| B.F. of milk                   | \$ 4,018        | Livestock direct                       | \$ 1,859        |
| Cattle                         | 990             | Crop direct                            | 1,034           |
| Hogs                           | 2,829           | Other tractor                          | 231             |
| Poultry or eggs                | 413             | Equipment upkeep                       | 198             |
|                                | _____           | Other hired labor                      | 600             |
| <b>TOTAL L.S. RECEIPTS</b>     | <b>\$ 8,250</b> | Electricity                            | 199             |
| <b>CROPS</b>                   |                 | Miscellaneous                          | 325             |
| Corn                           | \$ 140          |  |                 |
|                                | _____           | <b>TOTAL OPERATING<br/>EXPENSES</b>    | <b>\$ 4,446</b> |
| <b>TOTAL CROP<br/>RECEIPTS</b> | <b>\$ 140</b>   | <b>FIXED EXPENSES</b>                  |                 |
| <b>HOME USE</b>                |                 | Taxes                                  | \$ 220          |
| Dairy                          | \$ 128          | Interest                               | 150             |
| Beef and veal                  | 57              | Insurance                              | 45              |
| Eggs and poultry               | 123             | Improvements                           | 314             |
|                                | _____           |  |                 |
| <b>TOTAL HOME USE</b>          | <b>\$ 308</b>   | <b>TOTAL FIXED<br/>EXPENSES</b>        | <b>\$ 729</b>   |
|                                | _____           |  |                 |
| <b>TOTAL GROSS<br/>INCOME</b>  | <b>\$ 8,698</b> | <b>TOTAL EXPENSES</b>                  | <b>\$ 5,175</b> |
|                                |                 |  | _____           |
|                                |                 | <b>NET FARM INCOME</b>                 | <b>\$ 3,523</b> |

# ENTERPRISE BUDGET

(All costs figured per acre)

## Variable Costs

|                               |          |                  |
|-------------------------------|----------|------------------|
| Wheat seed                    | \$ 10.00 |                  |
| Fertilizer and pesticides     | 39.05    |                  |
| Irrigation                    | 8.12     |                  |
| Labor                         | 17.19    |                  |
| Machinery                     | 23.55    |                  |
| Custom combining              | 21.00    |                  |
| Interest on operating capital | 3.64     |                  |
| <b>Total variable costs</b>   |          | <b>\$ 122.55</b> |

## Fixed Costs

|                          |       |                        |
|--------------------------|-------|------------------------|
| Machinery                | 50.73 |                        |
| Taxes                    | 5.70  |                        |
| Overhead                 | 4.50  |                        |
| <b>Total fixed costs</b> |       | <b><u>\$ 60.93</u></b> |

|             |  |           |
|-------------|--|-----------|
| Total costs |  | \$ 183.48 |
|-------------|--|-----------|

## Income

|  |  |                  |
|--|--|------------------|
| Total receipts   |  | \$ 300.00        |
| <b><u>Return to management and land investment</u></b> |  | <b>\$ 116.52</b> |
| <b><u>Return on land investment</u></b>                |  | <b>\$ 120.00</b> |
| <b><u>Return to management and risk</u></b>            |  | <b>-\$ 3.48</b>  |

## PARTIAL BUDGET

|  |   |
|--|---|
| <p><b>Additional Costs</b></p> <p><b>Concentrates</b><br/>           \$70 x 40 steers       <b>\$2,800</b></p> <p><b>Interest \$10 x 40 steers \$ 400</b></p> <p><b>Taxes and miscellaneous</b><br/>           \$3 x 40 steers       <b>\$ 120</b></p> <p><b>Reduced Returns</b></p> <p><b>Reduced grain</b><br/>           production               <b>\$1,750</b></p> <p><b>A.</b></p> <p><b>Total annual</b><br/> <b>additional costs</b><br/> <b>and reduced returns \$5,070</b></p> | <p><b>Additional Returns</b></p> <p><b>Value of Production</b><br/>           \$125 x 40 steers       <b>\$5,000</b></p> <p><b>Reduced Costs</b></p> <p><b>Fertilizer, fuel and machinery</b><br/>           repair<br/>           Costs                       <b>\$ 450</b></p> <p><b>B.</b></p> <p><b>Total annual</b><br/> <b>additional returns</b><br/> <b>and reduced costs \$5,450</b></p> |
| <p><b>Net change in income (B minus A)</b></p> <p><b>\$5,450 - \$5,070 = \$380</b></p>   |   |

## BUDGETING

AG 660 - I

ASSIGNMENT SHEET #1--COMPLETE AN ENTERPRISE BUDGET FOR  
AN AGRIBUSINESS

Name \_\_\_\_\_ Score \_\_\_\_\_

Using the following information, complete the budget on the next page. The budget is for 100 acres of seed potatoes. Fifteen of the acres are in a seed plot and will not be available for sale.

You expect to raise 190 cwt per acre of potatoes and expect the price to be \$5.00 per cwt. Expenses per acre are expected to be as follows:

|                          |         |
|--------------------------|---------|
| Electricity              | \$34.00 |
| Chemicals and fertilizer | 98.30   |
| Seed for seedplot        | 36.00   |

(Note: Although this seed is only for 15 acres, the expense is spread out over the entire 100 acres. The total seed expense would therefore be \$3,600.)

|   |        |
|---|--------|
| Hired labor                               | 109.00 |
| Maintenance of cellar and machinery       | 69.00  |
| Fuel and oil                              | 24.00  |
| Insurance                                 | 16.00  |
| Interest on operating capital             | 25.95  |
| Miscellaneous operating costs             | 15.45  |
| Taxes                                     | 30.82  |
| Depreciation                              | 174.00 |
| Non-cash operating costs for family labor | 60.00  |

ENTERPRISE BUDGET FOR 100 ACRES  
SEED POTATOES

---

Income \_\_\_\_\_

Cash Operating Expenses \_\_\_\_\_

Foundation seed \_\_\_\_\_

Fertilizer and chemicals \_\_\_\_\_

Fuel and oil \_\_\_\_\_

Maintenance on machinery \_\_\_\_\_

Hired labor \_\_\_\_\_

Electricity \_\_\_\_\_

Insurance \_\_\_\_\_

Taxes \_\_\_\_\_

Interest on operating capital \_\_\_\_\_

Miscellaneous operating expenses \_\_\_\_\_

Total Cash Operating Expenses \_\_\_\_\_

Non-Cash Operating Expenses

Family labor \_\_\_\_\_

Total Non-Cash Operating Expenses \_\_\_\_\_

Total Operating Expenses \_\_\_\_\_

Return Above Operating Expenses \_\_\_\_\_

Depreciation \_\_\_\_\_

Return to Capital Investment and Management \_\_\_\_\_



A. Total Annual Additional Costs  
and Reduced Returns (per acre) \_\_\_\_\_

B. Total Annual Additional Returns  
and Reduced Costs (per acre) \_\_\_\_\_

NET CHANGE IN INCOME (B MINUS A) \_\_\_\_\_

Conclusion: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## BUDGETING

AG 660 - I

## ANSWERS TO ASSIGNMENT SHEETS

## Assignment Sheet #1

**ENTERPRISE BUDGET FOR 100 ACRES  
SEED POTATOES**

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|  |  |                        |
|--|--|------------------------|
| <u>Income</u>                                      |  | \$80,750               |
| <u>Cash Operating Expenses</u>                     |  |                        |
| Foundation seed                                    |  | 3,600                  |
| Fertilizer and chemicals                           |  | 9,830                  |
| Fuel and oil                                       |  | 2,400                  |
| Maintenance on machinery                           |  | 6,900                  |
| Hired labor  |  | 10,900                 |
| Electricity  |  | 3,400                  |
| Insurance  |  | 1,600                  |
| Taxes  |  | 3,082                  |
| Interest on operating capital                      |  | 2,595                  |
| Miscellaneous operating expenses                   |  | <u>1,545</u>           |
|  | <b>Total Cash Operating Expenses</b>     | <u><b>\$45,852</b></u> |
| <u>Non-Cash Operating Expenses</u>                 |  |                        |
| Family labor                                       |  | <u>6,000</u>           |
|  | <b>Total Non-Cash Operating Expenses</b> | <b>\$6,000</b>         |
| <u>Total Operating Expenses</u>                    |  | <b>51,852</b>          |
| <u>Return Above Operating Expenses</u>             |  | <b>28,898</b>          |
| <u>Depreciation</u>                                |  | <b>17,400</b>          |
| <u>Return to Capital Investment and Management</u> |  | <b>11,498</b>          |

Assignment sheet #2

## PARTIAL BUDGET FORM

Situation: Purchase combine or have wheat custom harvested

Additional Costs

|                             |             |
|-----------------------------|-------------|
| Fixed Costs                 | \$ 12.37    |
| Variable Costs              | 4.70        |
| Hauling (75 bu. @ \$.06/bu) | 4.50        |
| Labor (.20 hr @ \$7.50/hr)  | <u>1.50</u> |

Subtotal \$23.07

Reduced Returns

-0-

A. Total annual additional costs  
and reduced returns \$23.25Additional Returns

Wheat (5 bu. @ \$3.50) \$17.50

Subtotal \$17.50

Reduced Costs

|                                      |             |
|--------------------------------------|-------------|
| Custom Cutting                       | \$13.50     |
| Custom Hauling<br>(70 bu @ \$.10/bu) | <u>7.00</u> |

Subtotal \$20.50

B. Total annual additional  
returns and reduced costs \$38.00

NET CHANGE IN INCOME (B MINUS A) \$ 14.75

Conclusion: From an economic standpoint, you should buy the combine, cut your own wheat and do the hauling yourself

## BUDGETING

AG 660 - I

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |   |                                |
|----------|---|--------------------------------|
| _____ a. | Judgement or opinion based on available information   | 1. Receipt                     |
| _____ b. | Income; acknowledgement of receiving money, goods or other valuable consideration   | 2. Management                  |
| _____ c. | Cost  | 3. Economist                   |
| _____ d. | Money coming in or income   | 4. Feasibility                 |
| _____ e. | A list of available resources   | 5. Operating or variable costs |
| _____ f. | The process of estimating future income and expenses  | 6. Budgeting                   |
| _____ g. | A market where contracts specifying delivery or acceptance of specified commodities at a specified future date are bought or sold | 7. Resources                   |
| _____ h. | The planning, decision making and directing of a business   | 8. Expense                     |
| _____ i. | A charge for the use of money or capital  | 9. Fixed costs                 |
| _____ j. | Reduction in value of an asset over a period of time  | 10. Speculative market         |
| _____ k. | One who studies the allocation of scarce resources for the production of economic goods and services                              | 11. Inventory                  |
| _____ l. | Costs which do not vary with the level of production  | 12. Return                     |
| _____ m. | A specific phase of an agricultural business or farm  | 13. Interest                   |
| _____ n. | Costs which change with the level of production   | 14. Enterprise                 |
| _____ o. | The likelihood of something working out   | 15. Estimation                 |
| _____ p. | Land, labor, capital and management that are necessary to an agribusiness   | 16. Depreciation               |

2. List four purposes of budgeting.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

3. Describe the limitations of budgeting.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. List and describe the four types of markets.

- a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- d. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Arrange in order the steps in developing a budget. A "1" would indicate the first step while a "6" would indicate the last.
- \_\_\_\_ a. Calculate costs and income
  - \_\_\_\_ b. Inventory the available resources
  - \_\_\_\_ c. Select the items necessary to complete the budget
  - \_\_\_\_ d. Assign a value to those items based on the best information available
  - \_\_\_\_ e. Select the type of budget needed
  - \_\_\_\_ f. Evaluate goals and objectives
6. List four types of physical data used in developing a budget.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
7. List five methods used to arrive at price estimates.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
8. Distinguish between fixed (F) and operating (O) costs by placing the correct abbreviation in front of the appropriate statements below.
- \_\_\_\_ a. Shelter
  - \_\_\_\_ b. Labor (hired by the hour)
  - \_\_\_\_ c. Certain types of taxes such as property tax
  - \_\_\_\_ d. Repairs
  - \_\_\_\_ e. Seed, feed, fertilizer and pesticides
  - \_\_\_\_ f. Insurance
  - \_\_\_\_ g. Fuel, oil and grease

- \_\_\_\_ h. Depreciation
  - \_\_\_\_ i. Interest on operating capital
  - \_\_\_\_ j. Interest on investment
9. Distinguish among the factors needed for long and short-term budgeting by placing an "L" for long, "S" for short and a "B" for both in front of the factors listed below.
- \_\_\_\_ a. Current or expected prices
  - \_\_\_\_ b. All expenses
  - \_\_\_\_ c. Average prices
  - \_\_\_\_ d. Normal yields
  - \_\_\_\_ e. All receipts
  - \_\_\_\_ f. Expected yields
10. List the seven components of a partial budget.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
  - g. \_\_\_\_\_

## BUDGETING

## AG 660 - I

## ANSWERS TO TEST

1.    a. 15                    e. 11                    i. 13                    m. 14  
       b. 1                    f. 6                    j. 16                    n. 5  
       c. 8                    g. 10                    k. 3                    o. 4  
       d. 12                    h. 2                    l. 9                    p. 7
  
2.    Answer should include four of the following:  
       To help make basic decisions on the feasibility of adding a new enterprise or starting an entirely new business; To evaluate and plan for the use of the available resources; To reduce the likelihood of missing hidden costs; To plan credit needs; To assist in obtaining credit; To assist in making decisions about non-business activities
  
3.    Budgets rely on predictions and estimations of future expenses and receipts, which are difficult to determine with much accuracy
  
4.    Partial: Budget for a limited part of the business that evaluates the change in receipts and expenses that would occur with a particular management decision; Enterprise: Budget for a particular enterprise which takes into account total expenses and receipts, both cash and non-cash; Complete: Budget for the entire agribusiness which takes into account total expenses and receipts, both cash and non-cash; Cash-flow: Budget that identifies the sources and timing of cash income and outgo during the year--includes farm and non-farm cash flows
  
5.    a. 6                    d. 5  
       b. 2                    e. 3  
       c. 4                    f. 1
  
6.    Answer should include four of the following:  
       Crop yield estimates; Estimated livestock feed requirements and production rates; Estimated labor requirements; Estimated fertilizer and spray responses; Estimated seeding responses; Estimated fuel and oil requirements; Equipment durability and estimated repair costs; Land capabilities and erosion potential
  
7.    Actual prices for the previous year; Projected price based on trends, production cycles, competition or technology; Published predictions by economists; Minimum guaranteed price based on a contract or sale on the futures market; Arbitrary decision
  
8.    a. F                    d. O                    g. O                    j. F  
       b. O                    e. O                    h. F  
       c. F                    f. F                    i. O

---

9.    a. S                    c. L                    e. B  
       b. B                    d. L                    f. S
  
10.    Additional costs; Reduced returns; Reduced costs; Additional returns; Additional costs + reduced returns; Reduced costs + additional returns; Net difference between the two totals

## 660J-1

### CASH FLOW

AG 660 - J

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe components of a cash flow statement. Students should also be able to describe factors that affect cash flow and complete a cash flow statement. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Define cash flow summary and cash flow estimate.
2. Select characteristics of cash flow records.
3. Describe benefits of cash flow planning.
4. Describe the disadvantages of cash flow planning.
5. Match alternate approaches to constructing cash flow estimates to their correct descriptions.
6. Describe four steps in making a cash flow estimate.
7. List four methods for altering cash flow.
8. Complete an example cash flow estimate.
9. Develop a cash flow estimate.

CASH FLOW

AG 660 - J

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Make transparencies and necessary copies of materials.
  - B. Provide students with objectives and discuss.
  - C. Provide students with information and assignment sheets and discuss.
  - D. Invite an agricultural lender from a local bank to bring in examples of cash flow records and explain how they are used.
  - E. Review and give test.
  - F. Reteach and retest if necessary.
  
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency master
    1. TM 1--Cash Flow Statement
  - E. Assignment sheets
    1. AS 1--Complete an Example Cash Flow Estimate
    2. AS 2--Develop a Cash Flow Estimate
  - F. Answers to assignment sheets
  - G. Test
  - H. Answers to test
  
- III. Unit references
  - A. *Cash Flow Analysis Computer Input Form*, Oklahoma State University, Cooperative Extension/Agricultural Economic Department, Stillwater, Oklahoma, N.D.
  - B. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.

- C. *Farm Business Analysis--Instructors Handbook*, Missouri/Instructional Materials Laboratory, Columbia, Missouri, 1975.
- D. Oklahoma Crop and Livestock Budgets, Oklahoma State University, Cooperative Extension/Agricultural Economics Department, Stillwater, Oklahoma, N.D.
- E. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agricultural Management*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1978.
- F. Roush, Clint E., *Cash Flow Planning: How?* Oklahoma State University, Oklahoma State University Extension Facts No. 708, Stillwater, Oklahoma, 1975.
- G. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- H. Tubs, Alan R. and Wegenhoft, Kenneth N., *Cash Flow Planning: Why?* Oklahoma State University, Oklahoma State University Extension Facts No. 707, Stillwater, Oklahoma, 1973.
- I. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

CASH FLOW

AG 660 - J

INFORMATION SHEET

I. Terms and definitions (Transparency 1)

(Note: A comparison of actual cash flows with a cash flow estimate can be useful for comparing performance with plans. It also can serve as a tool for communication between borrower and lender.)

- A. Cash flow summary--A dated record of actual receipts and expenses
- B. Cash flow estimate--Projected cash receipts and expenses throughout the year and the times those receipts and expenses are expected to occur

II. Characteristics of cash flow records

- A. Record only cash income and expenses
- B. Do not serve as a substitute for other financial records  
(Note: Net worth and income statements provide a record of what has been accomplished in the past and where the business currently stands financially.)
- C. Are not a record of how profitable the business will be since there are many non-cash factors which affect profitability
- D. Takes into account cash which is not generated by the business, but which will be used in the business

Example: Cash from a non-farm job

III. Benefits of cash flow planning

- A. Shows when excess cash is expected to be available and when to expect cash deficits  
  
(Note: This allows the operator to anticipate how much and when borrowing will be necessary, when repayment is possible, and how much cash will be available for repayment.)
- B. Makes possible a budgeted loan in which money is borrowed only for periods in which it is needed, thus saving unnecessary interest expense
- C. Provides a way for operator to financially plan for combined personal and business expenses--Family living expense is planned and no longer has to come after production needs

- D. Allows operator to line up production supplies in advance, thus increasing flexibility for shopping around to find the best prices and taking advantage of discounts, which may be available for paying cash
- E. Allows manager to compare the effect of various enterprises and how they affect the availability of cash  
  
Example: The manager might find that certain combinations of enterprises require large amounts of cash all at once, while other combinations spread the need out over the year and therefore require less borrowed money
- F. Provides means to make a sound financial plan at the beginning of the year, thus avoiding problems encountered by haphazard, last minute planning
- G. Helps determine if too much short-term debt is going to be needed
- H. Shows cash position throughout the year, providing the manager with immediate information on whether or not the cash is available to make a proposed expenditure or to meet unanticipated expenses or investments
- I. Becomes essential for tax planning by allowing planning of income and expenses to take advantage of depreciation deductions and to make use of year-end tax management

IV. Disadvantages of cash flow planning

- A. Requires a large amount of work and detail to project cash flow  
  
(Note: Time is required to locate and organize past records and to make required calculations.)
- B. Manager must keep a complete and accurate set of records
- C. Use of cash flow procedures does not guarantee financial success  
  
(Note: Use only helps increase the managerial capacity of the operator.)
- D. Requires constant review and revision since inventories, prices, projected crop yields and interest rates may change during the year

V. Alternate approaches to constructing cash flow estimates

- A. Whole farm estimates--Group expenses and income by item  
  
(Note: This may be more convenient to use if previous records are being utilized as the basis for a cash flow estimate.)  
  
Example: All fertilizer expenses for all crops would be grouped as one item under fertilizer expense

- B. Enterprise estimates--Group expenses under the enterprise which incurred the expense

(Note: This is desirable when records are kept by enterprises or consideration is being given to adding another enterprise. When an additional enterprise is being considered, the enterprise approach is most useful to determine the amount and timing of cash used and generated by the enterprise. If considerable credit is required to get into the new enterprise, the enterprise approach will indicate if there is an adequate cash flow to service the debt. If not, existing enterprises must be in a cash surplus position. If this cash surplus is not available, the entire operation could experience a squeeze on cash.)

Example: Fertilizer expenses would be listed under the various crop enterprises using fertilizer

VI. Steps in making a cash flow estimate

- A. Plan farm organization for the coming year by determining the number of acres of each crop enterprise and the number of head of each livestock enterprise to be included in next year's farm plans
- B. Estimate the amount and timing of cash inflows that are expected to occur throughout the coming year
- C. Using past records, experience and enterprise budgets, estimate the timing and amount of cash outflows that are expected to occur during the coming year
- D. Make the necessary calculations after the expected cash inflows and outflows are entered for each period of the year, to determine whether the cash position for a given period will be positive or negative

(Note: For periods showing a negative cash position, money will need to be borrowed. In surplus months, money can be paid on the operating loan or accumulated in the cash balance.)

VII. Methods for altering cash flow

(Note: A cash flow projection is only an estimate of how an individual wants the operation to work. It is up to the individual to make it work. Keeping an actual cash flow throughout the year and comparing it to the budget will permit a more accurate estimate next year. Putting the cash flow projection on a computer spread sheet will considerably reduce time and mathematical errors.)

- A. Rearrange purchases and sales of crops, livestock and supplies
- B. Rearrange capital expenditures by deferring new buildings, equipment purchases and land improvements
- C. Seek off-farm employment, part or full-time

- D. Solicit custom work using available equipment
- E. Introduce short-term livestock enterprises which will generate income quickly  
(Note: It is important to be aware of any increased risk when introducing a new enterprise.)
- F. Refinance short-term debt using land equity  
(Note: This should be done only after careful consideration.)

|    | January   | February | March | April | May | June |
|----|---|----------|-------|-------|-----|------|
| 1  | Beginning cash balance  |          |       |       |     |      |
| 2  | <b>Operating Receipts: Crops and feed</b>                         |          |       |       |     |      |
| 3  | Livestock and poultry   |          |       |       |     |      |
| 4  | <b>Products: Livestock and poultry</b>                            |          |       |       |     |      |
| 5  | Custom work   |          |       |       |     |      |
| 6  | Government payments and patronage dividends                       |          |       |       |     |      |
| 7  | Hedging account withdrawals                                       |          |       |       |     |      |
| 8  | <b>Other:</b>   |          |       |       |     |      |
| 9  | <b>Capital Receipts: Breeding stock</b>                           |          |       |       |     |      |
| 10 | Machinery and equipment   |          |       |       |     |      |
| 11 | <b>Non-Farm Income: Off-farm wages</b>                            |          |       |       |     |      |
| 12 | Interest and dividends  |          |       |       |     |      |
| 13 | <b>Other:</b>   |          |       |       |     |      |
| 14 | <b>TOTAL CASH AVAILABLE</b> (add lines 1 thru 13)                 |          |       |       |     |      |
| 15 | <b>Operating Expenses: Labor hired (including employer taxes)</b> |          |       |       |     |      |
| 16 | Repairs   |          |       |       |     |      |
| 17 | Rents and leases  |          |       |       |     |      |
| 18 | Seed  |          |       |       |     |      |
| 19 | Fertilizer and lime   |          |       |       |     |      |
| 20 | Chemicals   |          |       |       |     |      |
| 21 | Custom machine hire   |          |       |       |     |      |
| 22 | Supplies  |          |       |       |     |      |
| 23 | Livestock expense (breeding, vet., etc.)                          |          |       |       |     |      |
| 24 | Gas, fuel, oil  |          |       |       |     |      |
| 25 | Taxes (property)  |          |       |       |     |      |
| 26 | Insurance   |          |       |       |     |      |
| 27 | Utilities (electricity, gas, telephone)                           |          |       |       |     |      |
| 28 | Miscellaneous   |          |       |       |     |      |
| 29 | <b>TOTAL CASH OPERATING EXPENSES</b> (add lines 15 thru 28)       |          |       |       |     |      |
| 30 | <b>Livestock and Feed Purchases: Feeder livestock</b>             |          |       |       |     |      |
| 31 | Breeding livestock  |          |       |       |     |      |
| 32 | Feed purchased  |          |       |       |     |      |
| 33 | <b>Capital Expenses: Machinery and equipment</b>                  |          |       |       |     |      |
| 34 | Building and improvements   |          |       |       |     |      |
| 35 | <b>Other Expenses: Hedging account deposits</b>                   |          |       |       |     |      |
| 36 | Gross family living withdrawals                                   |          |       |       |     |      |
| 37 | Non-farm business and investments                                 |          |       |       |     |      |
| 38 | Income tax and social security                                    |          |       |       |     |      |
| 39 | Intermediate and long term loan payments — principal              |          |       |       |     |      |
| 40 | Intermediate and long term loan payments — interest               |          |       |       |     |      |
| 41 | <b>TOTAL CASH REQUIRED</b> (add lines 29 thru 40)                 |          |       |       |     |      |
| 42 | <b>CASH AVAILABLE LESS CASH REQUIRED</b> (line 14 minus 41)       |          |       |       |     |      |
| 43 | Operating loan needed   |          |       |       |     |      |
| 44 | Cash plus loan  |          |       |       |     |      |
| 45 | Operating loan payments — principal                               |          |       |       |     |      |
| 46 | Operating loan payments — interest                                |          |       |       |     |      |
| 47 | Ending cash balance   |          |       |       |     |      |
| 48 | <b>Loan Balances: Intermediate and long term</b>                  |          |       |       |     |      |
| 49 | Operating loan  |          |       |       |     |      |
| 50 | <b>TOTAL LOANS</b>  |          |       |       |     |      |

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

## CASH FLOW

AG 660 - J

## ASSIGNMENT SHEET #1--COMPLETE AN EXAMPLE CASH FLOW ESTIMATE

Name \_\_\_\_\_ Score \_\_\_\_\_

Using the monthly information listed below, complete an estimated cash flow for a farmer raising 480 acres of wheat, 366 acres of barley and 200 acres of bluegrass seed. You have set up an operating line of credit with the local bank and can borrow as you need to. Your limit on borrowing is \$40,000. When you borrow money, you will need to borrow to the nearest one thousand dollars above what you need. You have a beginning cash balance of \$5,000 and a long term loan of \$85,000. Monthly projections: (Use blank forms on pages 460J-15 and 16.)

**January**Income

1. Will sell 5,000 bushels of wheat that is contracted for a net price of \$3.50/bushel
2. Bank account interest -- \$36

Expenses

1. Repairs -- \$100
2. Supplies -- \$80
3. Fuel and oil -- \$140
4. Insurance -- \$3,600
5. Utilities -- \$250
6. Family living -- \$1,500

**February**Income

1. Checking account interest -- \$125

Expenses

1. Repairs -- \$250
2. Supplies -- \$50
3. Fuel and oil -- \$450
4. Utilities -- \$300
5. Miscellaneous -- \$50
6. Family living -- \$1,000
7. Federal income tax and social security tax -- \$12,000

**March**Income

1. Bank account interest -- \$45

Expenses

1. Repairs on truck -- \$400
2. Repairs on combine -- \$600
3. Supplies -- \$100
4. Fuel and oil -- \$250
5. Utilities -- \$300
6. Family living -- \$1,100
7. Miscellaneous -- \$100

**April**Income

1. Government payment -- \$6,250
2. Bluegrass sales -- 50,000 lbs at \$.50/lb
3. Bank account interest -- \$60

Expenses

1. Repairs -- \$200
2. Supplies -- \$150
3. Utilities -- \$250
4. State income taxes -- \$2,500
5. Family living -- \$1,500
6. Miscellaneous -- \$125

**May**Income

1. Bank account interest -- \$75

Expenses

1. Repairs -- \$150
2. Barley seed -- \$5,490
3. Top dress (fertilizer) wheat -- \$2,898
4. Fertilize barley -- \$5,490
5. Fargo chemical (barley) -- \$3,660
6. Chemical to spray wheat for weeds -- \$5,760
7. Machine hire to spray wheat, fertilize wheat and fertilize barley -- \$5,427
8. Supplies -- \$100
9. Fuel and oil -- \$600
10. Utilities -- \$250
11. Miscellaneous -- \$100
12. Family living -- \$1,300

**June**Income

1. Bank account interest -- \$10

Expenses

1. Repairs -- \$200
2. Chemicals to spray barley for weeds -- \$2,928
3. Machine hire to spray barley -- \$1,647
4. Supplies -- \$100
5. Fuel and oil -- \$1,200
6. Property taxes -- \$2,000
7. Crop insurance -- \$5,200
8. Utilities -- \$250
9. Miscellaneous -- \$50
10. Family living -- \$1,000

**July**Income

1. Bank account interest -- \$8

(July)

Expenses

1. Repairs -- \$100
2. Chemicals to spray field borders and spot spray -- \$200
3. Supplies -- \$150
4. Utilities -- \$250
5. Family living -- \$1,000

**August**Income

1. Sell contracted wheat -- 14,000 bu at \$3.05/bu
2. Bank account interest -- \$132

Expenses

1. Hired labor -- \$1,000
2. Repairs -- \$750
3. Supplies -- \$200
4. Fuel -- \$1,200
5. Utilities -- \$250
6. Miscellaneous -- \$50
7. Family living -- \$1,300
8. Hedging deposit -- \$1,200
9. Pay operating loan balance: Principle -- \$21,000, Interest -- \$460

**September**Income

1. Sell part of barley -- 366 ton at \$93/ton
2. Bank account interest -- \$45

Expenses

1. Repairs -- \$1,000
2. Supplies -- \$100
3. Fuel and oil -- \$1,700
4. Utilities -- \$250
5. Miscellaneous -- \$50
6. Family living -- \$1,200
7. Long-term debt payment: Principle -- \$5,000, Interest -- \$8,925

**October**Income

1. Sell part of bluegrass -- 62,220 lbs at \$.50/lb
2. Bank account interest -- \$176

Expenses

1. Repairs -- \$250
2. Wheat seed (400 acres) -- \$4,000
3. Wheat fertilizer -- \$12,000
4. Fargo chemical for wheat -- \$4,800
5. Machine hire for fertilizer and chemical application -- \$1,800
6. Supplies -- \$100
7. Utilities -- \$150
8. Family living -- \$1,500

**November**

Income

1. Bank account interest -- \$80

Expenses

1. Repairs -- \$100
2. Supplies -- \$250
3. Fuel and oil -- \$230
4. Utilities -- \$250
5. Family living -- \$1,500
6. Bluegrass fertilizer -- \$10,000

**December**

Income

1. Government payment -- \$12,000
2. Bank account interest -- \$75

Expenses

1. Repairs -- \$250
2. Supplies -- \$200
3. Property taxes -- \$2,000
4. Utilities -- \$300
5. Family living -- \$1,500
6. Cash rent -- 550 acres at \$60/acre

(Note: The current year's crop which has not been sold will be held to sell in the following year.)

660J-13

CASH FLOW

AG 660 - J

ASSIGNMENT SHEET #2--DEVELOP A CASH FLOW ESTIMATE

Name \_\_\_\_\_ Score \_\_\_\_\_

Even small enterprises can benefit from a cash flow estimate. Using this next year, develop a cash flow estimate for your supervised agricultural experience program. Be sure to include all expected cash income and expenditures, not just those directly related to your project. A form is included to help you estimate possible living expenses. Some of them might not apply and you might need to add some categories, but it should provide you with a guideline to follow. Complete the living expense form (p. 14) first and then decide when those expenses will occur and enter those amounts by "Family Living" on the cash flow form under the appropriate month.

ESTIMATING FAMILY LIVING EXPENDITURES

| FAMILY LIVING EXPENDITURES   | EXPEND. LAST YEAR | CURRENT EST. EXPEND. |
|--|-------------------|----------------------|
| 1. Food  |                   |                      |
| 2. Clothing  |                   |                      |
| 3. Household Operating Expenses                                    |                   |                      |
| 4. Telephone & Electricity   |                   |                      |
| 5. Rent  |                   |                      |
| 6. Non-Farm Interest & Principal Payments                          |                   |                      |
| 7. Life Insurance, Non-Medical, Non-Farm                           |                   |                      |
| 8. Health and Accident Insurance                                   |                   |                      |
| 9. Doctors & Dentists  |                   |                      |
| 10. Prescription Drugs & Medicines                                 |                   |                      |
| 11. Household Equipment, Furnishings, & Improvements               |                   |                      |
| 12. Personal Items   |                   |                      |
| 13. Entertainment, Recreation, Gifts, Tax Deductible Contributions |                   |                      |
| 14. Education and Reading  |                   |                      |
| 15. Personal Car & Travel, H. S.                                   |                   |                      |
| 16. Gifts  |                   |                      |
| 17. Church & Charity   |                   |                      |
| 18. Taxes  |                   |                      |
| TOTAL EXPENDITURES ALLOCATED OVER THE MONTHS                       |                   |                      |

|    | January   | February | March | April | May | June |
|----|---|----------|-------|-------|-----|------|
| 1  | Beginning cash balance  |          |       |       |     |      |
| 2  | <b>Operating Receipts: Crops and feed</b>                         |          |       |       |     |      |
| 3  | Livestock and poultry   |          |       |       |     |      |
| 4  | <b>Products: Livestock and poultry</b>                            |          |       |       |     |      |
| 5  | Custom work   |          |       |       |     |      |
| 6  | Government payments and patronage dividends                       |          |       |       |     |      |
| 7  | Hedging account withdrawals                                       |          |       |       |     |      |
| 8  | <b>Other:</b>   |          |       |       |     |      |
| 9  | <b>Capital Receipts: Breeding stock</b>                           |          |       |       |     |      |
| 10 | Machinery and equipment   |          |       |       |     |      |
| 11 | <b>Non-Farm Income: Off-farm wages</b>                            |          |       |       |     |      |
| 12 | Interest and dividends  |          |       |       |     |      |
| 13 | <b>Other:</b>   |          |       |       |     |      |
| 14 | <b>TOTAL CASH AVAILABLE</b> (add lines 1 thru 13)                 |          |       |       |     |      |
| 15 | <b>Operating Expenses: Labor hired (including employer taxes)</b> |          |       |       |     |      |
| 16 | Repairs   |          |       |       |     |      |
| 17 | Rents and leases  |          |       |       |     |      |
| 18 | Seed  |          |       |       |     |      |
| 19 | Fertilizer and lime   |          |       |       |     |      |
| 20 | Chemicals   |          |       |       |     |      |
| 21 | Custom machine hire   |          |       |       |     |      |
| 22 | Supplies  |          |       |       |     |      |
| 23 | Livestock expense (breeding, vet., etc.)                          |          |       |       |     |      |
| 24 | Gas, fuel, oil  |          |       |       |     |      |
| 25 | Taxes (property)  |          |       |       |     |      |
| 26 | Insurance   |          |       |       |     |      |
| 27 | Utilities (electricity, gas, telephone)                           |          |       |       |     |      |
| 28 | Miscellaneous   |          |       |       |     |      |
| 29 | <b>TOTAL CASH OPERATING EXPENSES</b> (add lines 15 thru 28)       |          |       |       |     |      |
| 30 | <b>Livestock and Feed Purchases: Feeder livestock</b>             |          |       |       |     |      |
| 31 | Breeding livestock  |          |       |       |     |      |
| 32 | Feed purchased  |          |       |       |     |      |
| 33 | <b>Capital Expenses: Machinery and equipment</b>                  |          |       |       |     |      |
| 34 | Building and improvements   |          |       |       |     |      |
| 35 | <b>Other Expenses: Hedging account deposits</b>                   |          |       |       |     |      |
| 36 | Gross family living withdrawals                                   |          |       |       |     |      |
| 37 | Non-farm business and investments                                 |          |       |       |     |      |
| 38 | Income tax and social security                                    |          |       |       |     |      |
| 39 | Intermediate and long term loan payments — principal              |          |       |       |     |      |
| 40 | Intermediate and long term loan payments — interest               |          |       |       |     |      |
| 41 | <b>TOTAL CASH REQUIRED</b> (add lines 29 thru 40)                 |          |       |       |     |      |
| 42 | <b>CASH AVAILABLE LESS CASH REQUIRED</b> (line 14 minus 41)       |          |       |       |     |      |
| 43 | Operating loan needed   |          |       |       |     |      |
| 44 | Cash plus loan  |          |       |       |     |      |
| 45 | Operating loan payments — principal                               |          |       |       |     |      |
| 46 | Operating loan payments — interest                                |          |       |       |     |      |
| 47 | Ending cash balance   |          |       |       |     |      |
| 48 | <b>Loan Balances: Intermediate and long term</b>                  |          |       |       |     |      |
| 49 | Operating loan  |          |       |       |     |      |
| 50 | <b>TOTAL LOANS</b>  |          |       |       |     |      |

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

|    | July  | August | September | October | November | December |
|----|---|--------|-----------|---------|----------|----------|
| 1  | Beginning cash balance  |        |           |         |          |          |
| 2  | <b>Operating Receipts: Crops and feed</b>                         |        |           |         |          |          |
| 3  | Livestock and poultry   |        |           |         |          |          |
| 4  | <b>Products: Livestock and poultry</b>                            |        |           |         |          |          |
| 5  | Custom work   |        |           |         |          |          |
| 6  | Government payments and patronage dividends                       |        |           |         |          |          |
| 7  | Hedging account withdrawals                                       |        |           |         |          |          |
| 8  | <b>Other:</b>   |        |           |         |          |          |
| 9  | <b>Capital Receipts: Breeding stock</b>                           |        |           |         |          |          |
| 10 | Machinery and equipment   |        |           |         |          |          |
| 11 | <b>Non-Farm Income: Off-farm wages</b>                            |        |           |         |          |          |
| 12 | Interest and dividends  |        |           |         |          |          |
| 13 | <b>Other:</b>   |        |           |         |          |          |
| 14 | <b>TOTAL CASH AVAILABLE</b> (add lines 1 thru 13)                 |        |           |         |          |          |
| 15 | <b>Operating Expenses: Labor hired (including employer taxes)</b> |        |           |         |          |          |
| 16 | Repairs   |        |           |         |          |          |
| 17 | Rents and leases  |        |           |         |          |          |
| 18 | Seed  |        |           |         |          |          |
| 19 | Fertilizer and lime   |        |           |         |          |          |
| 20 | Chemicals   |        |           |         |          |          |
| 21 | Custom machine hire   |        |           |         |          |          |
| 22 | Supplies  |        |           |         |          |          |
| 23 | Livestock expense (breeding, vet., etc.)                          |        |           |         |          |          |
| 24 | Gas, fuel, oil  |        |           |         |          |          |
| 25 | Taxes (property)  |        |           |         |          |          |
| 26 | Insurance   |        |           |         |          |          |
| 27 | Utilities (electricity, gas, telephone)                           |        |           |         |          |          |
| 28 | Miscellaneous   |        |           |         |          |          |
| 29 | <b>TOTAL CASH OPERATING EXPENSES</b> (add lines 15 thru 28)       |        |           |         |          |          |
| 30 | <b>Livestock and Feed Purchases: Feeder livestock</b>             |        |           |         |          |          |
| 31 | Breeding livestock  |        |           |         |          |          |
| 32 | Feed purchased  |        |           |         |          |          |
| 33 | <b>Capital Expenses: Machinery and equipment</b>                  |        |           |         |          |          |
| 34 | Building and improvements   |        |           |         |          |          |
| 35 | <b>Other Expenses: Hedging account deposits</b>                   |        |           |         |          |          |
| 36 | Gross family living withdrawals                                   |        |           |         |          |          |
| 37 | Non-farm business and investments                                 |        |           |         |          |          |
| 38 | Income tax and social security                                    |        |           |         |          |          |
| 39 | Intermediate and long term loan payments -- principal             |        |           |         |          |          |
| 40 | Intermediate and long term loan payments -- interest              |        |           |         |          |          |
| 41 | <b>TOTAL CASH REQUIRED</b> (add lines 29 thru 40)                 |        |           |         |          |          |
| 42 | <b>CASH AVAILABLE LESS CASH REQUIRED</b> (Line 14 minus 41)       |        |           |         |          |          |
| 43 | Operating loan needed   |        |           |         |          |          |
| 44 | Cash plus loan  |        |           |         |          |          |
| 45 | Operating loan payments -- principal                              |        |           |         |          |          |
| 46 | Operating loan payments -- interest                               |        |           |         |          |          |
| 47 | Ending cash balance   |        |           |         |          |          |
| 48 | <b>Loan Balances: Intermediate and long term</b>                  |        |           |         |          |          |
| 49 | Operating loan  |        |           |         |          |          |
| 50 | <b>TOTAL LOANS</b>  |        |           |         |          |          |

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

660J-17

CASH FLOW

AG 660 - J

ANSWERS TO ASSIGNMENT SHEETS

**Assignment Sheet #1**

See following pages

**Assignment Sheet #2**

Answered to the satisfaction of the instructor.

|  | January | February | March | April | May   | June   |
|--|---------|----------|-------|-------|-------|--------|
| 1 Beginning cash balance   | 5000    | 16866    | 2891  | 86    | 26671 | 521    |
| 2 <b>Operating Receipts: Crops and feed</b>                          | 17500   |          |       | 25000 |       |        |
| 3 Livestock and poultry  |         |          |       |       |       |        |
| 4 <b>Products: Livestock and poultry</b>                             |         |          |       |       |       |        |
| 5 Custom work  |         |          |       |       |       |        |
| 6 Government payments and patronage dividends                        |         |          |       | 6250  |       |        |
| 7 Hedging account withdrawals  |         |          |       |       |       |        |
| 8 <b>Other:</b>  |         |          |       |       |       |        |
| 9 <b>Capital Receipts: Breeding stock</b>                            |         |          |       |       |       |        |
| 10 Machinery and equipment   |         |          |       |       |       |        |
| 11 <b>Non-Farm Income: Off-farm wages</b>                            |         |          |       |       |       |        |
| 12 Interest and dividends  | 36      | 125      | 45    | 60    | 75    | 10     |
| 13 <b>Other:</b>   |         |          |       |       |       |        |
| 14 <b>TOTAL CASH AVAILABLE</b> (add lines 1 thru 13)                 | 22536   | 16991    | 2936  | 31396 | 26746 | 531    |
| 15 <b>Operating Expenses: Labor hired</b> (including employer taxes) |         |          |       |       |       |        |
| 16 Repairs   | 100     | 250      | 1000  | 200   | 150   | 200    |
| 17 Rents and leases  |         |          |       |       |       |        |
| 18 Seed  |         |          |       |       | 5490  |        |
| 19 Fertilizer and lime   |         |          |       |       | 8388  |        |
| 20 Chemicals   |         |          |       |       | 9420  | 2928   |
| 21 Custom machine hire   |         |          |       |       | 5427  | 1647   |
| 22 Supplies  | 80      | 50       | 100   | 150   | 100   | 100    |
| 23 Livestock expense (breeding, vet., etc.)                          |         |          |       |       |       |        |
| 24 Gas, fuel, oil  | 140     | 450      | 250   |       | 600   | 1200   |
| 25 Taxes (property)  |         |          |       |       |       | 2000   |
| 26 Insurance   | 3600    |          |       |       |       | 5200   |
| 27 Utilities (electricity, gas, telephone)                           | 250     | 300      | 300   | 250   | 250   | 250    |
| 28 Miscellaneous   |         | 50       | 100   | 125   | 100   | 50     |
| 29 <b>TOTAL CASH OPERATING EXPENSES</b> (add lines 15 thru 28)       | 4170    | 1100     | 1750  | 725   | 29925 | 13575  |
| 30 <b>Livestock and Feed Purchases: Feeder livestock</b>             |         |          |       |       |       |        |
| 31 Breeding livestock  |         |          |       |       |       |        |
| 32 Feed purchased  |         |          |       |       |       |        |
| 33 <b>Capital Expenses: Machinery and equipment</b>                  |         |          |       |       |       |        |
| 34 Building and improvements   |         |          |       |       |       |        |
| 35 <b>Other Expenses: Hedging account deposits</b>                   |         |          |       |       |       |        |
| 36 Gross family living withdrawals                                   | 1500    | 1000     | 1100  | 1500  | 1300  | 1000   |
| 37 Non-farm business and investments                                 |         |          |       |       |       |        |
| 38 Income tax and social security                                    |         | 12000    |       | 2500  |       |        |
| 39 Intermediate and long term loan payments — principal              |         |          |       |       |       |        |
| 40 Intermediate and long term loan payments — interest               |         |          |       |       |       |        |
| 41 <b>TOTAL CASH REQUIRED</b> (add lines 29 thru 40)                 | 5670    | 14100    | 2850  | 4725  | 31225 | 14575  |
| 42 <b>CASH AVAILABLE LESS CASH REQUIRED</b> (line 14 minus 41)       | 16866   | 2891     | 86    | 26671 | -4479 | -14044 |
| 43 Operating loan needed   |         |          |       |       | 5000  | 15000  |
| 44 Cash plus loan  | 16866   | 2891     | 86    | 26671 | 521   | 956    |
| 45 Operating loan payments — principal                               |         |          |       |       |       |        |
| 46 Operating loan payments — interest                                |         |          |       |       |       |        |
| 47 Ending cash balance   | 16866   | 2891     | 86    | 26671 | 521   | 956    |
| 48 <b>Loan Balances: Intermediate and long term</b>                  | 85000   | 85000    | 85000 | 85000 | 85000 | 85000  |
| 49 Operating loan  |         |          |       |       | 5000  | 20000  |
| 50 <b>TOTAL LOANS</b>  | 85000   | 85000    | 85000 | 85000 | 90000 | 105000 |

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

|  | July   | August | September | October | November | December |
|--|--------|--------|-----------|---------|----------|----------|
| 1 Beginning cash balance   | 956    | 264    | 15686     | 31544   | 38130    | 25880    |
| 2 <b>Operating Receipts: Crops and feed</b>                          |        | 42700  | 34038     | 31110   |          |          |
| 3 Livestock and poultry  |        |        |           |         |          |          |
| 4 <b>Products: Livestock and poultry</b>                             |        |        |           |         |          |          |
| 5 Custom work  |        |        |           |         |          |          |
| 6 Government payments and patronage dividends                        |        |        |           |         |          | 12000    |
| 7 Hedging account withdrawals  |        |        |           |         |          |          |
| 8 <b>Other:</b>  |        |        |           |         |          |          |
| 9 <b>Capital Receipts: Breeding stock</b>                            |        |        |           |         |          |          |
| 10 Machinery and equipment   |        |        |           |         |          |          |
| 11 <b>Non-Farm Income: Off-farm wages</b>                            |        |        |           |         |          |          |
| 12 Interest and dividends  | 8      | 132    | 45        | 176     | 80       | 75       |
| 13 <b>Other:</b>   |        |        |           |         |          |          |
| 14 <b>TOTAL CASH AVAILABLE</b> (add lines 1 thru 13)                 | 964    | 43096  | 49769     | 62830   | 38210    | 37955    |
| 15 <b>Operating Expenses: Labor hired</b> (including employer taxes) |        | 1000   |           |         |          |          |
| 16 Repairs   | 100    | 750    | 1000      | 250     | 100      | 250      |
| 17 Rents and leases  |        |        |           |         |          | 33000    |
| 18 Seed  |        |        |           | 4000    |          |          |
| 19 Fertilizer and lime   |        |        |           | 12000   | 10000    |          |
| 20 Chemicals   | 200    |        |           | 4800    |          |          |
| 21 Custom machine hire   |        |        |           | 1800    |          |          |
| 22 Supplies  | 150    | 200    | 100       | 100     | 250      | 200      |
| 23 Livestock expense (breeding, vet., etc.)                          |        |        |           |         |          |          |
| 24 Gas, fuel, oil  |        | 1200   | 1700      |         | 230      |          |
| 25 Taxes (property)  |        |        |           |         |          | 2000     |
| 26 Insurance   |        |        |           |         |          |          |
| 27 Utilities (electricity, gas, telephone)                           | 250    | 250    | 250       | 250     | 250      | 300      |
| 28 Miscellaneous   |        | 50     | 50        |         |          |          |
| 29 <b>TOTAL CASH OPERATING EXPENSES</b> (add lines 15 thru 28)       | 700    | 3450   | 3100      | 23200   | 10830    | 35750    |
| 30 <b>Livestock and Feed Purchases: Feeder livestock</b>             |        |        |           |         |          |          |
| 31 Breeding livestock  |        |        |           |         |          |          |
| 32 Feed purchased  |        |        |           |         |          |          |
| 33 <b>Capital Expenses: Machinery and equipment</b>                  |        |        |           |         |          |          |
| 34 Building and improvements   |        |        |           |         |          |          |
| 35 <b>Other Expenses: Hedging account deposits</b>                   |        | 1200   |           |         |          |          |
| 36 Gross family living withdrawals                                   | 1000   | 1300   | 1200      | 1500    | 1500     | 1500     |
| 37 Non-farm business and investments                                 |        |        |           |         |          |          |
| 38 Income tax and social security                                    |        |        |           |         |          |          |
| 39 Intermediate and long term loan payments — principal              |        |        | 5000      |         |          |          |
| 40 Intermediate and long term loan payments — interest               |        |        | 8925      |         |          |          |
| 41 <b>TOTAL CASH REQUIRED</b> (add lines 29 thru 40)                 | 1700   | 5950   | 18225     | 24700   | 12330    | 37250    |
| 42 <b>CASH AVAILABLE LESS CASH REQUIRED</b> (Line 14 minus 41)       | -736   | 37146  | 31544     | 38130   | 25880    | 705      |
| 43 Operating loan needed   | 1000   |        |           |         |          |          |
| 44 Cash plus loan  | 264    | 37146  | 31544     | 38130   | 25880    | 705      |
| 45 Operating loan payments — principal                               |        | 21000  |           |         |          |          |
| 46 Operating loan payments — interest                                |        | 460    |           |         |          |          |
| 47 Ending cash balance   | 264    | 15686  | 31544     | 38130   | 25880    | 705      |
| 48 <b>Loan Balances: Intermediate and long term</b>                  | 85000  | 85000  | 80000     | 80000   | 80000    | 80000    |
| 49 Operating loan  | 21000  |        |           |         |          |          |
| 50 <b>TOTAL LOANS</b>  | 106000 | 85000  | 80000     | 80000   | 80000    | 80000    |

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

CASH FLOW

AG 660 - J

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Define the following terms:

a. Cash flow summary \_\_\_\_\_  
\_\_\_\_\_

b. Cash flow estimate \_\_\_\_\_  
\_\_\_\_\_

2. Select characteristics of cash flow records by checking the correct statements below.

- \_\_\_\_ a. Record only cash income and expenses
- \_\_\_\_ b. Determine the net worth of the business
- \_\_\_\_ c. Are not a record how profitable the business will be since there are many non-cash factors which affect profitability
- \_\_\_\_ d. Do not serve as a substitute for other financial records
- \_\_\_\_ e. Useful for determining depreciation
- \_\_\_\_ f. Only affects cash specifically generated by the farming enterprises

3. Describe five benefits of cash flow planning.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

e. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Describe two disadvantages of cash flow planning.

a. \_\_\_\_\_

b. \_\_\_\_\_

5. Match the alternate approaches to constructing cash flow estimates to their correct definitions.

- |          |  |    |                      |
|----------|--|----|----------------------|
| _____ a. | Group expenses and income by item                              | 1. | Whole farm estimates |
| _____ b. | Group expenses under the enterprise which incurred the expense | 2. | Enterprise estimates |

6. Describe four steps in making a cash flow estimate.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

7. List four methods for altering cash flow.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

## CASH FLOW

AG 660 - J

## ANSWERS TO TEST

1.
  - a. A dated record of actual receipts and expenses
  - b. Projected cash receipts and expenses throughout the year and the times those receipts and expenses are expected to occur
  
2. a, c, d
  
3. Answer should include five of the following:
  - Shows when excess cash is expected to be available and when to expect cash deficits
  - Makes possible a budgeted loan in which money is borrowed only for periods in which it is needed, thus saving unnecessary interest expense; provides a way for operator to financially plan for combined personal and business expenses--family living expense is planned and no longer has to come after production needs
  - Allows operator to line up production supplies in advance, thus increasing flexibility for shopping around to find the best prices and taking advantage of discounts which may be available for paying cash
  - Allows manager to compare the effect of various enterprises and how they affect the availability of cash
  - Provides means to make a sound financial plan at the beginning of the year, thus avoiding problems encountered by haphazard, last-minute planning
  - Helps determine if too much short-term debt is going to be needed
  - Shows cash position throughout the year, providing the manager with immediate information on whether or not the cash is available to make a proposed expenditure or to meet unanticipated expenses or investments
  - Becomes essential for tax planning by allowing planning of income and expenses to take advantage of depreciation deductions and to make use of year-end tax management
  
4. Answer should include two of the following:
 

Requires a large amount of work and detail to project cash flow; Manager must keep a complete and accurate set of records; Use of cash flow procedures does not guarantee financial success; Requires constant review and revision since inventories, prices, projected crop yields and interest rates may change during the year
  
5.
  - a. 1
  - b. 2
  
6.
  - Plan farm organization for the coming year by determining the number of acres of each crop enterprise and the number of head of each livestock enterprise to be included in next year's farm plans
  - Estimate the amount and timing of cash inflows that are expected to occur throughout the coming year
  - Using past records, experience and enterprise budgets, estimate the timing and amount of cash outflows that are expected to occur during the coming year
  - Make the necessary calculations after the expected cash inflows and outflows are entered for each period of the year to determine whether the cash position for a given period will be positive or negative

7. Answer should include four of the following:

Rearrange purchases and sales of crops, livestock and supplies; Rearrange capital expenditures by deferring new buildings, equipment purchases and land improvement; Seek off-farm employment, part or full-time; Solicit custom work using available equipment; Introduce short-term livestock enterprises which will generate income quickly; Refinance short-term debt using land equity

USING RECORDS FOR PLANNING AND ANALYSIS

AG 660 - K

UNIT OBJECTIVE

After completion of this unit, students should be able to describe information that can be included in enterprise records. Students should also be able to describe analysis methods and be able to make necessary efficiency calculations. This knowledge will be demonstrated by completion of the assignment sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with using records for planning and analysis to their correct definitions.
2. Describe three purposes of enterprise records.
3. List five items of planning information that can be included in enterprise records.
4. List three reasons for keeping records of farm products used at home.
5. Describe three ways to allocate overhead expenses to the various enterprises.
6. List four steps in finding and correcting errors in records.
7. Select factors for measuring livestock and crop efficiency.
8. Calculate efficiency factors for crops and livestock.
9. Compare the efficiency of two agribusiness enterprises.

USING RECORDS FOR PLANNING AND ANALYSIS

AG 660 - K

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Financial Analysis of Proposed Farm Adjustments with a Partial Budget*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$.50; order no. WREP 104.
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.
  - E. Obtain copies of production records and enterprise records to show to the students. A possible source could be the local Production Credit Association.
  - F. Invite an agribusiness person who uses detailed production and/or enterprise records to bring them in and show the students how they are used to improve business decisions.
  - G. Invite the manager of a local PCA to demonstrate the use of records for determining whether a particular loan is a good risk.
  - H. Have several students with livestock records bring their weight and breeding records to class and show how they can be compared to measure efficiency.
  - I. Arrange a demonstration of a computer analysis of records.
  - J. Have students analyze the efficiency of their own SOE project.
  - K. Review and give test.
  - L. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet

- D. Transparency masters
    - 1. TM 1--Enterprise Records/Livestock
    - 2. TM 2--Enterprise Records/Livestock Breeding and Mortality
    - 3. TM 3--Enterprise Records/Crops
    - 4. TM 4--Enterprise Records/Daily
  - E. Assignment sheet
    - 1. AS 1--Compare the Efficiency of Two Agribusiness Enterprises
  - F. Answers to assignment sheet
  - G. Test
  - H. Answers to test
- III. Unit references
- A. *Farm Business Management Curriculum Guide, Instructional Material Year I*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - B. *Farm Business Management Curriculum Guide, Instructional Material Year II*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - C. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.

USING RECORDS FOR PLANNING AND ANALYSIS

AG 660 - K

INFORMATION SHEET

- I. Terms and definitions
  - A. Enterprise--An individual, recognizable part of an agribusiness  
Examples: Cow-calf operation, wheat crop, feeder pigs
  - B. Enterprise analysis--Careful study of an enterprise to determine how efficient it really is
  - C. Enterprise records--Records kept on an individual part of the agribusiness
  - D. Production--That which is actually generated on the farm  
Examples: Weight gained by steers, bushels of crop produced
  - E. Mortality rate--Relative frequency of death
  - F. Overhead--Costs not distinctly related to a single enterprise or portion of an enterprise; ordinarily, they occur regardless of the quantity of production within a specified time period  
Examples: Taxes on real estate, mortgage interest, depreciation and upkeep or improvements on machinery, labor of the operator or the family, general farm utility bills
  - G. Efficiency--Relative ability of an enterprise to turn resources such as land, labor and capital into a product
  - H. Allocate--To assign a certain resource to a specific enterprise
  - I. Weaning weight--Animal weight at the time the animal is taken away from its mother
  - J. Transaction--Business exchange, usually involving money
- II. Purposes of enterprise records
  - A. Show how much each part of the business is contributing to the total profit
  - B. Provide comparison of an enterprise to the same enterprise on other farms or to industry standards

- C. Help manager decide how to use scarce resources such as land, labor and capital
    - Example: If enterprise records indicate sheep are making more profit than the cattle, the manager might decide to cut back on the cattle enterprise and increase the sheep enterprise
  - D. Help manager pinpoint practices which improve profit
- III. Information useful for planning (Transparencies 1, 2, 3, 4)
- A. Amount of feed used
  - B. Amount of production obtained
    - Examples: Weight gain, crop yield
  - C. Amount of space, buildings or land used
  - D. Health practices applied
    - Example: Records could show a high calf mortality rate caused by pneumonia. This might point to a need for better shelter or nutrition
  - E. Amount of labor used
  - F. Amount and types of fertilizer applied
    - (Note: Records can show what has been applied in the past and what response was obtained.)
  - G. Amount and types of pesticides applied
  - H. Type of crop rotation and cultivation practices used
  - I. Varieties of crop planted
    - Example: A good record could show a certain variety of wheat did well when planted early in the spring, but did poorly when planted later while another variety was not as affected by time of planting
  - J. Amount of money or credit used
- IV. Reasons for keeping records of farm products used at home
- A. Needed for balancing other records such as the livestock production summary
    - (Note: If products used at home are not included in the enterprise records, then production expenses will be overstated and returns will be understated.)

B. Needed for figuring income tax

(Note: Products used at home are not considered taxable income. If the products are not reported as income, however, expenses incurred in production are not deductible. If the expenses are deducted then the products must be considered as income.)

C. Needed for calculating total farm production or net farm income

V. Methods of allocating overhead expenses to enterprises

(Note: Overhead expenses are costs that are not directly linked to an enterprise, such as property taxes, electricity or building costs. There is no perfect method of allocating these costs, but a true picture of profitability cannot be obtained unless these costs are considered.)

A. In proportion to the total value of production generated by each enterprise

Example: If wheat, sheep and cattle contributed 60, 20 and 20 percent of the total value of production respectively, then overhead expenses such as property taxes would be allocated 60% to the wheat, 20% to the sheep and 20% to the cattle

B. According to the percentage of space used by the enterprise

C. According to custom rates

Example: If the custom rate for combining is \$25 per acre and the wheat enterprise is 150 acres and the barley enterprise is 250 acres, then the combining costs allocated to the wheat would be \$3,750 (150 x 25) and the combining costs allocated to the barley would be \$6,250 (250 x 25)

VI. Steps to take in finding and correcting errors in records

A. Look over totals to determine if they are reasonable

Example: The sheep enterprise consists of 3 sheep, but the expenses recorded for hauling sheep are \$300.00

B. Check mathematical calculations

C. Check to see if figures were transferred correctly

D. Correct mistakes and make sure they are corrected in all affected places in the record book

Example: A mistake in the mortality record could also result in an incorrect closing inventory

## VII. Factors for measuring livestock and crop efficiency

(Note: Information used to determine enterprise efficiency is usually kept in production records. These records keep track of actual production items such as weight gained, bushels of grain produced, number of calves weaned, mortality rate and fertilizer applied.)

## A. Crops

1. Yield per acre
2. Value of crops per acre
3. Machinery cost per acre
4. Fertilizer and chemical cost per acre
5. Total production cost per acre
6. Total production cost per unit of production

(Note: Units may be bushels, pounds, tons, etc.)

Example: A cost of \$95 per ton for producing barley

## B. Livestock

1. Total cost to produce 100 pounds of gain
2. Feed cost per 100 pounds of gain
3. Pounds of grain fed per pound of gain
4. Average weaning weight
5. Weight weaned per cow
6. Percent of calf or lamb crop

Example: If 100 cows had 90 calves, the calf crop percentage would be 90%

7. Average daily gain
8. Pigs farrowed per litter
9. Pigs weaned per litter

## C. Dairy

1. Number of cows in production
2. Average milk production per cow

3. Average butterfat production per cow
4. Average butterfat percentage for the herd
5. Feed cost per pound of milk produced

VIII. Calculations for selected efficiency factors

A. Yield per acre =  $\frac{\text{Total yield}}{\text{Number of acres}}$

B. Value of crops per acre =  $\frac{\text{Total value of crops}}{\text{Number of acres}}$

C. Total production cost per unit =  $\frac{\text{Total production costs}}{\text{Number of production units}}$

Example: Total production cost for wheat enterprise--\$15,600

Number of bushels of wheat produced -- 4,800

$$\frac{\$15,600}{4,800} = \$3.25 \text{ production cost per bushel}$$

D. Total cost to produce 100 pounds of gain =  $\frac{\text{Total cost}}{\text{Total gain}} \times 100$

E. Pounds of grain per pound of gain =  $\frac{\text{Total pounds of grain fed}}{\text{Total pounds of gain}}$

F. Average weaning weight =  $\frac{\text{Total pounds of calves weaned}}{\text{Number of calves weaned}}$

G. Average daily gain =  $\frac{\text{Ending weight} - \text{beginning weight}}{\text{Number of days on feed}}$

# Enterprise Records — Livestock

## MANAGEMENT AND EFFICIENCY FACTORS

Circle Enterprise:

Beef    Sheep    Swine

Breed \_\_\_\_\_

Date started \_\_\_\_\_ Date closed \_\_\_\_\_

|                                  | State standards | Local standards | Goals |
|----------------------------------|-----------------|-----------------|-------|
| Number of breeding animals       |                 |                 |       |
| Percent of calf crop             | 90%             |                 |       |
| Percent of lamb crop             | 130%            |                 |       |
| Number of pigs weaned per litter | 9               |                 |       |
| Weight of calves at weaning      | 420 Heifers     |                 |       |
| Weight of pigs at 35 days        | 22 pounds       |                 |       |
| Cost per pound of gain           |                 |                 |       |

## RECORD OF LIVESTOCK YIELD

| Enterprise | Number animals in production | Total production | Average production per animal | Student's share | Landlord's share | Remarks |
|------------|------------------------------|------------------|-------------------------------|-----------------|------------------|---------|
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |
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|            |                              |                  |                               |                 |                  |         |
|            |                              |                  |                               |                 |                  |         |

# Enterprise Records Livestock Breeding and Mortality

## BREEDING RECORD

| Name of dam | Sire used | Date bred | Date due | Date born | Number born | Number raised |
|-------------|-----------|-----------|----------|-----------|-------------|---------------|
|             |           |           |          |           |             |               |
|             |           |           |          |           |             |               |
|             |           |           |          |           |             |               |
|             |           |           |          |           |             |               |
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|             |           |           |          |           |             |               |
|             |           |           |          |           |             |               |
|             |           |           |          |           |             |               |

## LOSS RECORD

| Date | Number and kind of animals | Cause of loss | Date | Number and kind of animals | Cause of loss |
|------|----------------------------|---------------|------|----------------------------|---------------|
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
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|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |
|      |                            |               |      |                            |               |

# Enterprise Records — Crops

## CROP ENTERPRISE MANAGEMENT AND EFFICIENCY FACTORS

Type of crop \_\_\_\_\_ Current school year \_\_\_\_\_ Date started \_\_\_\_\_ Date closed \_\_\_\_\_

|                               | Local standards | Goals |
|-------------------------------|-----------------|-------|
| Number of acres in enterprise |                 |       |
| Amount of seed used per acre  |                 |       |
| Cost of seed per acre         |                 |       |
| Fertilizer used — Kind:       |                 |       |
| Pounds per acre:              |                 |       |
| Cost per acre:                |                 |       |
| Chemicals used — Kind:        |                 |       |
| Pounds per acre:              |                 |       |
| Cost per acre:                |                 |       |
| Tillage cost per acre         |                 |       |
| Other costs                   |                 |       |
| Yield per acre                |                 |       |
| Cost per bushel, pounds, tons |                 |       |

### RECORD OF CROP YIELD

| Enterprise | Number of acres | Total yield | Yield per acre | Student's share | Landlord's share | Remarks |
|------------|-----------------|-------------|----------------|-----------------|------------------|---------|
|            |                 |             |                |                 |                  |         |
|            |                 |             |                |                 |                  |         |
|            |                 |             |                |                 |                  |         |
|            |                 |             |                |                 |                  |         |
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|            |                 |             |                |                 |                  |         |



## USING RECORDS FOR PLANNING AND ANALYSIS

## AG 660 - K

## ASSIGNMENT SHEET #1--COMPARE THE EFFICIENCY OF TWO AGRIBUSINESS ENTERPRISES

Name \_\_\_\_\_ Score \_\_\_\_\_

Size and total money coming in are not necessarily the best methods of determining the efficiency of an agribusiness. A large operation may be making costly mistakes that reduce its potential even though it may be making more total dollars than a smaller business. A smaller business may be spending more money to produce each unit because of inefficient use of machinery or labor. The following exercise should help you learn to analyze the "real" efficiency of agribusiness enterprises.

Using the information provided in the unit, make the necessary calculations on the two beef enterprises described. Then decide which enterprise is the most efficient and write a short paragraph supporting your decision.

The Tummy-Tickling Beef Company and the Insta-Steak Feeders are two agribusinesses involved in raising feeder beef for slaughter. The following information was compiled on these operations for the past year:

|  | Tummy-Tickling<br>Beef Company | Insta-Steak<br>Feeders |
|--|--------------------------------|------------------------|
| Total animals purchased                        | 75                             | 150                    |
| Purchase price per cwt                         | \$70.00                        | \$68.00                |
| Purchase weight per animal                     | 450 lbs                        | 450 lbs                |
| Total feed cost                                | \$17,865.00                    | \$42,540.00            |
| Days on feed                                   | 230                            | 250                    |
| Selling weight per animal                      | 1,050 lbs                      | 1,100 lbs              |
| Selling price per cwt                          | \$62.00                        | \$62.00                |
| Other production costs<br>(not including feed) | \$4,500.00                     | \$10,635.00            |
| Total pounds of grain                          | 261,000 lbs                    | 636,000 lbs            |
| Gross income                                   | \$48,825.00                    | \$102,300.00           |

(Note: Tummy-Tickling fed 1.4 tons of corn silage at \$15/ton, 1.5 tons of corn at \$100/ton and 480 lbs of supplement at \$14/cwt to each animal. Insta-Steak fed .4 tons of alfalfa hay at \$75/ton, 2 tons of barley at \$110/ton and 240 pounds of supplement at \$14/cwt to each animal.)

Calculations necessary for making comparisons of efficiency:

|   | <u>Tummy-Tickling<br/>Beef Company</u> | <u>Insta-Steak<br/>Feeders</u> |
|---|--|--------------------------------|
| Total net income  | _____                                  | _____                          |
| Total production cost<br>(Does not include purchase price)            | _____                                  | _____                          |
| Total production cost per animal<br>(Does not include purchase price) | _____                                  | _____                          |
| Total pounds gained per animal  | _____                                  | _____                          |
| Total pounds gained   | _____                                  | _____                          |
| Average daily gain per animal   | _____                                  | _____                          |
| Pounds of grain per pound of gain                                     | _____                                  | _____                          |
| Total cost per pound gained<br>(cost does not include purchase price) | _____                                  | _____                          |

Which operation was the most efficient \_\_\_\_\_

Explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## USING RECORDS FOR PLANNING AND ANALYSIS

AG 660 - K

## ANSWERS TO ASSIGNMENT SHEET

**Assignment Sheet #1**

|   | <u>Tummy-Tickling<br/>Beef Company</u> | <u>Insta-Steak<br/>Feeders</u> |
|---|--|--------------------------------|
| Total net income                                    | \$2,835.00                             | \$3,225.00                     |
| Total production cost<br>(feed cost and other cost) | \$22,365.00                            | \$53,175.00                    |
| Total production cost per animal                    | \$298.20                               | \$354.50                       |
| Total pounds gained per animal                      | 600 lbs                                | 650 lbs                        |
| Total pounds gained                                 | 45,000 lbs                             | 97,500 lbs                     |
| Average daily gain per animal                       | 2.61 lbs                               | 2.6 lbs                        |
| Pounds of grain per pound of gain                   | 5.8 lbs                                | 6.5 lbs                        |
| Total cost per pound gained                         | \$.50                                  | \$.55                          |

Tummy-Tickling Beef Company was most efficient.

The Tummy-Tickling Company used less grain per pound of gain than did the other company. Tummy-Tickling also had less cost per pound gained than did the other company. The two companies had about the same weight gain per day, although Tummy Tickling was slightly better. This would be expected, however, since the Insta-Steak Company fed their animals to a heavier weight and animals are less efficient grain users, as they get heavier.

USING RECORDS FOR PLANNING AND ANALYSIS

AG 660 - K

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |   |                        |
|----------|---|------------------------|
| _____ a. | An individual, recognizable part of an agribusiness   | 1. Production          |
| _____ b. | Careful study of an enterprise to determine how efficient it really is  | 2. Allocate            |
| _____ c. | To assign a certain resource to a specific enterprise   | 3. Overhead            |
| _____ d. | Animal weight at the time the animal is taken away from its mother  | 4. Enterprise analysis |
| _____ e. | Relative ability of an enterprise to turn resources such as land, labor and capital into a product  | 5. Enterprise records  |
| _____ f. | Records kept on an individual part of the agribusiness  | 6. Transaction         |
| _____ g. | Business exchange, usually involving money  | 7. Weaning weight      |
| _____ h. | That which is actually generated on the farm  | 8. Efficiency          |
| _____ i. | Relative frequency of death   | 9. Mortality rate      |
| _____ j. | Costs not distinctly related to a single enterprise or portion of an enterprise; ordinarily, they occur regardless of the quantity of production within a specified time period | 10. Enterprise         |

2. Describe three purposes of enterprise records.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

3. List five items of planning information that can be included in enterprise records.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

4. List three reasons for keeping records of farm products used at home.

a. \_\_\_\_\_

b. \_\_\_\_\_

5. Describe three ways of allocating overhead expenses to the various enterprises.

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

6. List four steps in finding and correcting errors in records.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

7. Select factors for measuring livestock and crop efficiency by placing a "C" before the statements indicating a crop efficiency measure and an "L" before the statements indicating a livestock efficiency measure. Some of the statements are not measures of efficiency.

- \_\_\_ a. Number of acres
- \_\_\_ b. Total production cost per acre
- \_\_\_ c. Average weaning weight
- \_\_\_ d. Pounds of grain fed per pound of gain
- \_\_\_ e. Pigs weaned per litter
- \_\_\_ f. Percent of calf or lamb crop
- \_\_\_ g. Animal selling weight
- \_\_\_ h. Gross income
- \_\_\_ i. Fertilizer and chemical cost per acre
- \_\_\_ j. Value of crops per acre
- \_\_\_ k. Cost to produce 100 pounds of gain
- \_\_\_ l. Yield per acre
- \_\_\_ m. Average daily gain
- \_\_\_ n. Animal purchase price
- \_\_\_ o. Pigs farrowed per litter
- \_\_\_ p. Machinery cost per acre
- \_\_\_ q. Total weight of crop
- \_\_\_ r. Feed cost per 100 pounds of gain
- \_\_\_ s. Animal sale price
- \_\_\_ t. Weight weaned per cow

8. Calculate efficiency factors for crops and livestock in the examples below.

- a. 100 tons of barley was produced on 50 acres of land.

Yield per acre = \_\_\_\_\_

- b. 6,000 bushels of wheat were produced on 100 acres of land and sold for \$4.00 per bushel.

Value of crops per acre = \_\_\_\_\_

- c. 50,000 pounds of beans were produced. The total production cost was \$9,000.

Total production cost per unit = \_\_\_\_\_

- d. 3,000 pounds of grain were fed to get a weight gain of 500 pounds.

Pounds of grain per pound of gain = \_\_\_\_\_

- e. The beginning weight was 300 pounds and the ending weight was 810 pounds. The number of days on feed was 170 days.

Average daily gain = \_\_\_\_\_

## USING RECORDS FOR PLANNING AND ANALYSIS

## AG 660 - K

## ANSWERS TO TEST

1.    a. 10            d. 7            g. 6            j. 3  
       b. 4            e. 8            h. 1  
       c. 2            f. 5            i. 9
  
2.    Answer should include three of the following:  
  
       Show how much each part of the business is contributing to the total profit; Provide comparison of an enterprise to the same enterprise on other farms or to industry standards; Help manager decide how to use scarce resources such as land, labor and capital; Help manager pinpoint practices which improve profit
  
3.    Answer should include five of the following:  
  
       Amount of feed used; Amount of production obtained; Amount of space, buildings or land used; Health practices applied; Amount of labor used; Amount and types of fertilizer applied; Amount and types of pesticides applied; Type of crop rotation and cultivation practices used; Varieties of crop planted; Amount of money or credit used
  
4.    Needed for balancing other records such as the livestock production summary; Needed for figuring income tax; Needed for calculating total farm production or net farm income
  
5.    In proportion to the total value of production generated by each enterprise; According to the percentage of space used by the enterprise; According to custom rates
  
6.    Look over totals to determine if they are reasonable; Check mathematical calculations; Check to see figures were transferred correctly; Correct mistakes and make sure they are corrected in all affected places in the record book
  
7.    a. ---            h. ---            o. L  
       b. C            i. C            p. C  
       c. L            j. C            q. ---  
       d. L            k. L            r. L  
       e. L            l. C            s. ---  
       f. L            m. L            t. L  
       g. ---            n. ---
  
8.    a.        2 tons (100 tons/50 acres)  
       b.        \$240 (6,000 bu x \$4.00/100 acres)  
       c.        \$.18 (\$9,000/50,000 pounds)  
       d.        6 pounds (3,000 pounds of grain/500 pounds of gain)  
       e.        3 pounds (810 pounds - 300 pounds = 510 pounds/170 days)

MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

UNIT OBJECTIVE

After completion of this unit, students should be able to describe the factors involved in selecting machinery and make calculations that facilitate the selection of machinery. This knowledge will be demonstrated by completion of assignment sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with machinery management to their correct definitions.
2. List ways machinery can be obtained for use on the farm.
3. List factors that affect the purchase of machinery.
4. List two advantages and two disadvantages of two-wheel drive tractors.
5. List two advantages and two disadvantages of four-wheel drive tractors.
6. Calculate the theoretical capacity of a farm machine.
7. Select general rules concerning field efficiency.
8. Calculate estimated field capacity of a farm machine.
9. Distinguish between types of costs of machinery ownership.
10. Select statements showing how cost and machine use are related.
11. Calculate estimated salvage value of a farm machine.
12. Calculate average machine investment of a farm machine.
13. Calculate estimated annual fixed cost of a farm machine.
14. Calculate estimated repair cost for a farm machine.
15. Calculate estimated fuel and lubrication cost for a tractor.
16. Calculate estimated labor cost for a farm machine.
17. List four causes of fatal tractor accidents.
18. List eight procedures for safe machine operation.
19. List five reasons for efficiency in tractor operation.
20. List four reasons for preventative maintenance.

21. List five areas of servicing machinery.
22. Calculate estimated variable cost of a farm machine.
23. Calculate overall cost per acre for farm machinery.
24. Calculate equipment width (size) to match tractor horsepower.

MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Costs of Owning and Operating Farm Machinery in the Pacific Northwest*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$2.75; order no. PNW 346.
      - b. *Machinery Management*, available from John Deere Distribution Service Center, Service Publications, Department 150, 1400-13th Street, East Moline, Illinois 61244, (1-800-544-2122).
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.
  - E. Obtain a copy of the *Machine Cost Analysis* Apple computer program available through the University of Idaho Extension Service. This program does many of the calculations in this unit and is easy to use. If a teacher wanted to cut down on the number of calculations students needed to do, the concepts could be presented using the material in this unit and the actual calculations could be made using the computer program. The calculations may be slightly different from those in the unit because of different estimates used for repairs and fixed costs.

(Note: The program is set up for an Apple 2+ with a 3.3 Disk Operating System or DOS. If your computer is different, be sure to specify when ordering.)
  - F. Find someone (such as the school, a local business or a farmer) who is planning an equipment purchase and evaluate the situation as to what size of equipment should be obtained, whether it should be rented, purchased or custom hired, what the cost would be per year, etc.
  - G. Take an inventory of an average farm in the area to determine just how much money that farm has tied up in machinery.
  - H. Obtain information on custom rates and arrangements in the area.
  - I. Have a custom operator or farmer present information on the problems of machinery ownership and management.

- J. You may want to provide the students with the correct formulas for the required calculations when they take the unit test.
  - K. Review and give test.
  - L. Reteach and retest if necessary.
- II. Instructional materials
- A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency master
    - 1. TM 1--Example Computer Printout of Machine Costs
  - E. Handouts
    - 1. HO 1--Operating Speeds and Field Efficiencies
    - 2. HO 2--Salvage Values as Percentages of New Cost
    - 3. HO 3--Percentage Costs for Taxes, Housing, Interest and Insurance
    - 4. HO 4--Repair Costs
  - F. Assignment sheets
    - 1. AS 1--Calculate Estimated Field Capacity of a Farm Machine
    - 2. AS 2--Calculate Estimated Annual Fixed Cost of a Farm Machine
    - 3. AS 3--Calculate Estimated Variable Cost of a Farm Machine
    - 4. AS 4--Calculate Overall Cost Per Acre for Farm Machinery
    - 5. AS 5--Calculate Equipment Width to Match Tractor Horsepower
  - G. Answers to assignment sheets
  - H. Test
  - I. Answers to test

## III. Unit references

- A. Bowers, Wendell, *Machinery Management*, Deere and Company, Moline, Illinois, 1987.
- B. *Farm Business Management* Curriculum Guide, Instructional Material Year 1, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
- C. *Farm Business Management* Curriculum Guide, Instructional Material Year 2, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
- D. Herbst, J.H., *Farm Management: Principles, Budgets, Plans*, Stripes Publishing Co., Champaign, Illinois. 1980.
- E. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.
- F. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- G. Merrill, Keith, *The Tractor and Shop Book*, Agricultural Extension Department, College of Agriculture, University of Idaho, Moscow, Idaho.
- H. Prigge, G. Ray, *Idaho Farm Machinery Ownership and Operating Costs*, Miscellaneous Series No. 47, Cooperative Extension Service, University of Idaho, 1978.
- I. *Safe Tractor Operation and Daily Care*, American Association for Vocational Instructional Materials, Engineering Center, Athens, Georgia, 1981.
- J. *Tractor Maintenance*, American Association for Vocational Instructional Materials, Engineering Center, Athens, Georgia, 1975.
- K. *The Costs of Owning and Operating Farm Machinery in the Pacific Northwest*, Pacific Northwest Extension Publication, (Idaho, Washington and Oregon) #346, September, 1989.
- L. *The Costs of Owning and Operating Farm Machinery in Washington*, Proposed Extension Bulletin, Cooperative Extension, Washington State University, 1982.

MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

INFORMATION SHEET

- I. Terms and definitions
  - A. Machinery management--Making and implementing decisions in all aspects of acquiring and using machines
  - B. Facilitate--Make possible or easier
  - C. Custom hiring--Paying a person to provide the equipment and labor to do a specific job
  - D. Leasing--Renting equipment for a relatively long period of time
  - E. Salvage value--Value of machine at the end of its useful life in an agribusiness
  - F. Compatibility--Ability to fit or be used together
  - G. Tillage equipment--Equipment used to work the soil
  - H. Draft--The act of pulling; that which is pulled; force needed to pull implement
  - I. Variable costs--Costs which increase with increased machine usage
  - J. Fixed costs--Costs which do not change with machine use
  - K. PTO--Power take-off
  - L. MPH--Miles per hour
  - M. Field efficiency--Percentage of theoretical field work accomplished after deducting losses which result from failure to use full width of the machine, turning, idle travel at the ends of rows, clogging, adjusting seed or fertilizer, unloading harvested crops, machine adjustments, minor repairs, lubrication and other minor interruptions
  - N. Theoretical capacity--Number of acres per hour a machine can work when no time is lost due to turns, unused width, stopping, plugging and breakdowns
  - O. Drawbar horsepower--Power transmitted to the implement by the tractor  
  
(Note: This averages about 85% of PTO horsepower.)
- II. Ways machinery can be obtained
  - A. Purchase of new machinery

B. Purchase of used machinery

(Note: Used machinery can help reduce cash outflows and interest costs. Average costs per hour can be used to make comparisons with new machinery. The agribusiness manager must also be able to correctly evaluate machinery condition and take into account the extra effort required to keep used machinery in good operating condition.)

C. Custom hiring

(Note: Custom hiring is useful in situations where the number of acres is too small to justify owning the machinery. It can also be used when an agribusiness does not have a good enough cash flow to buy equipment or needs to supplement existing equipment. The major considerations besides cost are whether custom operators will be available when they are needed and how good of a job they do.)

D. Leasing

(Note: Leasing allows the operator to use the machine for a specific period of time. Leases are usually for 5 to 7 years. Leasing can help to reduce costs and increase flexibility. The person leasing the machinery is responsible for all costs such as maintenance, housing and insurance. Repairs are covered by the original warranty if the machine is new, but after the warranty expires repairs are the responsibility of the person leasing the equipment.)

E. Renting

(Note: Renting is most useful for short-term jobs that are done infrequently such as using a backhoe to put in drainage pipe. It is usually cheaper than custom hiring since the renter provides the labor.)

F. Joint ownership

(Note: Joint ownership helps spread machinery costs over a larger number of acres. It also increases sources of cash and improves the chances of obtaining credit. Both producers must be able to get along well and specific, written agreements need to be made for time of use, maintenance schedule and cost distribution.)

III. Factors that affect the purchase of machinery

(Note: Basic power units and tillage equipment should be purchased before buying specialized harvesting equipment.)

A. Price and quality of machinery

B. Availability of parts and service from the dealer

C. Efficiency of design

D. Ease of making adjustments and minor repairs

E. Resale or salvage value

F. Compatibility of machine with present equipment

Example: A large tractor would also require heavy duty implements

G. Ability of the machine to get the job done on time

(Note: Crop value can be lost if best planting and harvesting times are missed.)

H. Machine cost per acre being justifiable in light of production

(Note: A great big tractor may certainly be able to get the job done, but if the amount of production cannot support the cost of the tractor or if a smaller tractor could still get the job done, then the large tractor would not be the best choice.)

IV. Comparing two and four-wheel drive tractors

A. Two-wheel drive

1. Advantages

- a. Has a wide variety of sizes and types available
- b. Has a good selection of equipment to match with other tractors
- c. Has lower cost per horsepower

2. Disadvantages

- a. Has traction and ballasting problems with large units
- b. Is restricted to smaller units, meaning higher labor costs due to more hours
- c. Has a limit on size from a practical standpoint
- d. Has traction problems pulling high draft tools

B. Four-wheel drive

1. Advantages

- a. Provides means for increased capacity
- b. Saves labor
- c. Gets important jobs done faster
- d. Has better ballasting for traction

- e. Is well-suited to high draft tools
- f. Is well-suited to steep ground

2. Disadvantages

- a. Requires high capital outlay
- b. May have high individual repair bills
- c. Creates a greater concentration of risk because of its higher cost
- d. Requires special hitches
- e. Is not well-suited for row crops or irrigation farming

V. Calculating the theoretical capacity of a farm machine

- A. Theoretical capacity is figured for the number of acres a machine can cover in an hour if there is no overlap or slowing down for turning
- B. Theoretical capacity =  $\frac{(\text{Speed in miles per hour}) \times (\text{Width in feet})}{8.25}$

Example: The theoretical capacity of a combine with a 24-foot header traveling 4 m.p.h. is

$$\frac{(4 \text{ m.p.h.}) \times (24 \text{ feet})}{8.25} = 11.64 \text{ acres per hour}$$

(Note: 8.25 is a conversion factor found by dividing the square feet per acre by the number of feet in a mile or 43,560 divided by 5,280 = 8.25.)

- C. Miles per hour =  $\frac{(\text{Distance traveled in feet})}{(\text{Time in minutes}) \times (88)}$

VI. General rules concerning field efficiency

- A. A normal turn at the end of the row should be made with one continuous motion
- B. When space at the end of the row is too narrow for a complete turn and requires backing for completion, as much as 50 percent more time is needed
- C. If there is not any space at the end of the row for a turn and the entire operation must be completed by backing, turning time may be two and one-fourth times that of a normal turn
- D. Operators may increase field efficiency by 10 percent or more by simply trying to eliminate unnecessary time the implement is down at the end of a furrow or row
- E. Other time increases include 11 percent for rough field conditions, 29 percent for obstructions and 25 percent for ditches

VII. Calculating estimated field capacity of a farm machine (Handout 1 and Assignment Sheet #1)

$$\text{Effective Capacity} = \text{Theoretical capacity} \times \frac{\text{Field efficiency in percent}}{100}$$

Example: The effective field capacity for a 50-foot sprayer traveling at 6 m.p.h. with a 60% efficiency is—

$$\frac{50 \times 6}{8.25} - 36.36 \times \frac{60}{100} = 21.8 \text{ acres per hour}$$

VIII. Types of costs of machinery ownership

A. Fixed costs

1. Depreciation
2. Interest on investment

(Note: This is the amount of money you would be earning if you had the money invested elsewhere. If the money was borrowed, it would be the interest paid on that money.)

3. Insurance
4. Taxes
5. Housing for machinery

B. Variable costs

1. Repairs and maintenance

(Note: Repair costs normally rise with increased usage of the machine. Estimation of repair costs for identical machines using the same number of hours is difficult to determine because of variances in work, management, individual handling of the machinery, level of maintenance, operating conditions, nature of work done, and local costs for parts and labor. Excessive repair costs may be traced to overloading, too much speed, poor maintenance or abuse of machinery and equipment. Once the expected useful life of a machine is reached, repair costs usually increase.)

2. Fuel and lubrication

3. Machinery labor hours

(Note: This factor needs to be considered in machinery costs so comparisons can be made to custom hiring since custom operators provide their own labor.)

4. Dependability

(Note: These costs are extremely difficult to determine because they are the losses of profit by a machine being broken down resulting in a job not being accomplished on time.)

IX. Relationship between cost and machine use

- A. Machine costs are highly correlated to the extent of machine use
- B. As machine use increases, total cost increases because of increased variable costs
- C. As machine use increases, average cost initially declines because fixed costs are spread over more units of production
- D. At some point of increased use, the average cost will begin to increase again because repair and dependability costs will outweigh the advantages of spreading the fixed costs out over more production

(Note: Good management is choosing machinery that will result in the lowest average cost.)

X. Calculating estimated salvage value (Handout 2)

(Note: Handout 2 lists salvage values for different types and ages of machinery. These values are expressed as a percent of the new cost and are estimates only.)

- A. Determine the new cost of the machine
- B. Determine the expected life of the machine
- C. Find the salvage value percentage in the salvage value table on Handout 2
- D. Multiply the salvage value percentage by the new cost to find the salvage value

Example: New cost of a round baler is \$14,500 and expected life is 15 years. The table percentage of the new cost is 9.0% (Category 3, Hay baler)

$$\$14,500 \times .09 = \$1,305.00$$

## XI. Calculating average machine investment (Handout 2)

(Note: Average machine investment is the average yearly amount the machine is worth over the time it is owned.)

$$\text{Average machine investment} = \frac{\text{New cost} + \text{salvage value}}{2}$$

Example: A new combine costing \$135,000 with an expected life of 10 years has an average machine investment of--

$$\frac{\$135,000 + (135,000 \times .189)}{2} = \$80,257.50$$

(Note: The .189 was taken from the table of salvage values on Handout 2.)

## XII. Calculating annual fixed cost of a farm machine (Handouts 2, 3 and Assignment Sheet #2)

(Note: Handout 3 lists the percentages of average machine investment for fixed costs of taxes, housing, interest and insurance--THII. These are estimates based on the experiences of other farmers in Idaho. They should be changed if your own records show these costs are not correct.)

## A. Calculate depreciation (Handout 2)

$$\text{Annual depreciation} = \frac{\text{New cost} - \text{salvage value}}{\text{Years of expected life}}$$

Example: A round baler with a purchase price of \$14,500 and an expected life of 10 years

$$\frac{\$14,500 - (14,500 \times .165)}{10} = \$1,210.75 \text{ annual depreciation}$$

## B. Calculate costs for taxes, housing, interest on investment and insurance (Handouts 2, 3)

$$\text{THII} = \text{Average machine investment} \times \text{table percentage for THII}$$

Example: A round baler with a purchase price of \$14,500 and an expected life of 10 years

$$\frac{\$14,500 + (14,500 \times .165)}{2} = \$8,446.25 \text{ average machine investment}$$

$$\$8446.25 \times .161 = \$1,359.85 \text{ amount of fixed cost for THII}$$

## C. Add depreciation cost and THII costs together

Example: Using the same round baler in the preceding examples

$$\$1,210.75 + \$1,359.85 = \$2,570.60 \text{ total annual fixed costs}$$

- D. Calculate annual fixed cost per acre

$$\frac{\text{Annual fixed cost}}{\text{Acres of annual use}} = \text{Annual fixed cost per acre}$$

- E. Calculate fixed cost per hour

$$\frac{\text{Annual fixed cost}}{\text{Hours of annual use}} = \text{Fixed cost per hour}$$

- XIII. Calculating estimated repair costs for a farm machine (Handout 4)  
(Note: Repair costs per hour per dollar of new machine price are listed in Handout 4. These are estimates based on surveys conducted by the American Society of Agricultural Engineers. Your own personal records of machinery repairs may indicate different amounts and those amounts should be used if your records are up-to-date and complete.)

- A. Repair costs per hour =

$$\text{New machine price} \times \text{Repairs per hour per dollar of new machine price (from table)}$$

Example: A self-propelled combine with a new price of \$135,000

$$\$135,000 \times .000182 = \$24.57 \text{ per hour in repair costs}$$

- B. Repair costs per acre =  $\frac{\text{Repair costs per hour}}{\text{Acres per hour}}$

- XIV. Calculating fuel and lubrication cost for a tractor

$$\text{Fuel and lubrication costs per hour} = \text{PTO hp} \times \text{fuel use}^* \times \text{price per gallon} \times 1.15$$

\*Fuel use in gallons per hour per horsepower

|                  | <u>Tractors under 100 hp</u> | <u>Tractors 100 hp and over</u> |
|------------------|------------------------------|---------------------------------|
| Gasoline engines | .0774                        | .0893                           |
| Diesel engines   | .0580                        | .0670                           |

Example: A 300 PTO horsepower diesel tractor is operated using fuel costing \$1.07 per gallon

$$300 \times .067 \times \$1.07 \times 1.15 = \$24.73 \text{ fuel and lubrication costs per hour}$$

- XV. Calculating estimated machinery labor cost

$$\text{Tractor time} \times 1.1 = \text{total labor time}$$

(Note: The tractor time is increased by 10 percent to take into account labor time when tractor is not actually operating.)

XVI. Causes of fatal tractor accidents

- A. Tractor overturns
- B. Falling from tractor
- C. Crushing
- D. Being run over by tractor
- E. Highway accidents
- F. Getting caught in the power take-off
- G. Passengers

XVII. Safe machine operation procedure

- A. Make sure all safety shields and guards are in place before operation
- B. Never attempt to adjust or repair machine until it is turned off and the key is removed
- C. Never fill fuel tank while motor is running or while smoking
- D. Do not turn sharp at high speeds
- E. Never attach pull chain to axle or above axle for pulling or towing--this could flip the tractor over backwards. Only attach to and pull from drawbar
- F. Do not make extra short turns with trailing implements--implement may ride up over the rear tire
- G. Always disengage power take-off before dismounting tractor
- H. Be concerned for the safety of yourself and others
- I. Be alert to danger at all times
- J. Observe conditions which threaten safety and then remedy the conditions
- K. When operating machinery for long periods of time, frequently take short breaks
- L. Attach slow-moving vehicle signs on the back of all machinery that will be driven on public roads

XVIII. Reasons for efficiency in tractor operation

- A. Reduces energy consumption
- B. Saves fuel costs
- C. Requires less labor

- D. Reduces down time
  - E. Results in less waste
  - F. Saves on repair bills
  - G. Helps machinery and equipment to last longer
  - H. Results in better quality crop
  - I. Increases yields
  - J. Results in fewer accidents
- XIX. Reasons for preventative maintenance
- A. Identifies wearing problems or damage before they become serious
  - B. Increases maximum power
  - C. Saves money and time from costly breakdowns
  - D. Extends life of machinery and equipment
  - E. Maintains horsepower
  - F. Increases trade-in or salvage value
- XX. Servicing machinery
- A. Crankcase oil
  - B. Hydraulic oil
  - C. Air cleaner
  - D. Cooling system
  - E. Battery
  - F. Chassis lubrication
  - G. Diesel fuel filter system
  - H. Fuel level

# EXAMPLE COMPUTER PRINTOUT FOR MACHINE COSTS

## TRACTOR (150D)

|                              | \$/HR              | \$/AC              |
|------------------------------|--------------------|--------------------|
| <b>OWNERSHIP COSTS</b>       |                    |                    |
| DEPRECIATION                 | 5.06               | 0.68               |
| INTEREST                     | 6.64               | 0.89               |
| TAXES, HOUS, INS.            | <u>1.33</u>        | <u>0.18</u>        |
| <b>TOTAL OWNERSHIP COSTS</b> | <b>13.03</b>       | <b>1.74</b>        |
| <b>OPERATING COSTS</b>       |                    |                    |
| REPAIRS & MAINTENANCE        | 1.89               | 0.25               |
| FUEL                         | 8.21               | 1.10               |
| LUBRICANTS                   | <u>1.23</u>        | <u>0.16</u>        |
| <b>TOTAL OPERATING COSTS</b> | <b>11.34</b>       | <b>1.51</b>        |
| <b>LABOR</b>                 | <b><u>6.05</u></b> | <b><u>0.81</u></b> |
| <b>TOTAL COSTS</b>           | <b>30.42</b>       | <b>4.06</b>        |

\*\*\* PRESS RETURN TO CONTINUE \*\*\*

## MLBD PLOW (6B)

|                              | \$/HR              | \$/AC              |
|------------------------------|--------------------|--------------------|
| <b>OWNERSHIP COSTS</b>       |                    |                    |
| DEPRECIATION                 | 6.55               | 0.87               |
| INTEREST                     | 4.03               | 0.54               |
| TAXES, HOUS, INS.            | <u>0.64</u>        | <u>0.09</u>        |
| <b>TOTAL OWNERSHIP COSTS</b> | <b>11.22</b>       | <b>1.50</b>        |
| <b>OPERATING COSTS</b>       |                    |                    |
| REPAIRS & MAINTENANCE        | 3.69               | 0.49               |
| FUEL                         | 0.00               | 0.00               |
| LUBRICANTS                   | <u>0.00</u>        | <u>0.00</u>        |
| <b>TOTAL OPERATING COSTS</b> | <b>3.69</b>        | <b>0.49</b>        |
| <b>LABOR</b>                 | <b><u>0.00</u></b> | <b><u>0.00</u></b> |
| <b>TOTAL COSTS</b>           | <b>14.92</b>       | <b>1.99</b>        |

\*\*\* PRESS RETURN TO CONTINUE \*\*\*

# OPERATING SPEEDS AND FIELD EFFICIENCIES

| <u>ITEM</u>             | <u>SPEED (mph)</u> | <u>EFFICIENCY (%)</u> |
|-------------------------|--------------------|-----------------------|
| Moldboard plow          | 3.5 - 6            | 70 - 90               |
| Tandem disc             | 3 - 6              | 70 - 90               |
| Offset, or heavy disc   | 3 - 6              | 70 - 90               |
| Chisel plow             | 4 - 6.5            | 70 - 90               |
| Subsoiler-bedder        | 3 - 5              | 70 - 90               |
| Rotary hoe              | 5 - 10             | 70 - 90               |
| Planter                 | 3 - 6              | 50 - 85               |
| Field cultivator        | 3 - 8              | 70 - 90               |
| Row crop cultivator:    |                    |                       |
| Shallow                 | 2 - 5.5            | 70 - 90               |
| Deep                    | 1.5 - 3            | 70 - 90               |
| Anhydrous ammonia appl. | 3 - 5              | 60 - 75               |
| Sprayer                 | 3 - 5              | 50 - 80               |
| Hay conditioner         | 5 - 7              | 75 - 85               |
| Mower-conditioner       | 4 - 6              | 60 - 85               |
| Hay baler               | 3 - 10 tons per hr | 60 - 85               |
| Combine, small grain    | 2 - 4              | 65 - 80               |

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Adapted with permission of the American Society of Agricultural Engineers, Agricultural Machinery Management Data, ASAE D230.3, rev. December 1977. Complete data is available from ASAE, St. Joseph, Michigan.

These are estimates only.

# SALVAGE VALUES AS PERCENTAGES OF NEW COST

| Salvage value group number and selected machines in each group |   |  |                                  |  |
|--|---|--|----------------------------------|--|
|  | 1   | 2  | 3                                | 4  |
| Machinery<br>Life<br>(years)                                   | Combine<br>S.P. Windrower<br>Wagon & box<br>Automatic bale<br>wagon | Potato harvester<br>Bean cutter<br>Hay rake<br>Seeding equip.<br>Tillage equip.<br>Truck | Hay baler<br>Forage<br>harvester | Tractor, 2-wheel dr<br>Tractor, 4-wheel dr<br>Tractor, crawler |
| 1  | 56.6  | 53.1   | 49.6                             | 62.6   |
| 2  | 50.1  | 47.0   | 43.9                             | 57.6   |
| 3  | 44.4  | 41.6   | 38.8                             | 53.0   |
| 4  | 39.3  | 36.8   | 34.4                             | 48.7   |
| 5  | 34.8  | 32.6   | 30.4                             | 44.8   |
| 6  | 30.8  | 28.8   | 26.9                             | 41.2   |
| 7  | 27.2  | 25.5   | 23.8                             | 37.9   |
| 8  | 24.1  | 22.6   | 21.1                             | 34.9   |
| 9  | 21.3  | 20.0   | 18.7                             | 32.1   |
| 10   | 18.9  | 17.7   | 16.5                             | 29.5   |
| 11   | 16.7  | 15.7   | 14.6                             | 27.2   |
| 12   | 14.8  | 13.9   | 12.9                             | 25.0   |
| 13   | 13.1  | 12.3   | 11.4                             | 23.0   |
| 14   | 11.6  | 10.8   | 10.1                             | 21.2   |
| 15   | 10.2  | 9.6  | 9.0                              | 19.5   |

**SOURCE:** Derived from American Society of Agricultural Engineers, "1979 Agricultural Engineer's Yearbook".

These are estimates only.

HO 2

# PERCENTAGE COSTS FOR TAXES, HOUSING, INTEREST AND INSURANCE

| Machinery                           | Cost Item |         |               |           |       |
|-------------------------------------|-----------|---------|---------------|-----------|-------|
|                                     | Taxes     | Housing | Interest<br>% | Insurance | Total |
| Wheel tractor                       | 1.6       | .3      | 12.0          | .9        | 14.8  |
| Crawler tractor                     | 1.6       | .2      | 12.0          | .9        | 14.7  |
| Combine                             | 1.6       | .5      | 12.0          | 2.1       | 16.2  |
| Potato and sugarbeet harvester      | 1.6       | 1.4     | 12.0          | .6        | 15.6  |
| Self-propelled forage harvester     | 1.6       | 1.3     | 12.0          | 2.1       | 17.0  |
| Pull-type forage harvester          | 1.6       | 1.3     | 12.0          | .6        | 15.5  |
| Self-propelled windrower            | 1.6       | 1.1     | 12.0          | 2.1       | 16.8  |
| Hay rake                            | 1.6       | ---     | 12.0          | .6        | 14.2  |
| Hay baler                           | 1.6       | 1.9     | 12.0          | .6        | 16.1  |
| Self-propelled automatic bale wagon | 1.6       | 1.0     | 12.0          | 2.1       | 16.7  |
| Pull-type automatic bale wagon      | 1.6       | 1.0     | 12.0          | .6        | 15.2  |
| Self-unloading forage wagon         | 1.6       | ---     | 12.0          | .6        | 15.0  |
| Stackmaker                          | 1.6       | 1.3     | 12.0          | .6        | 15.5  |
| Stackmover                          | 1.6       | .4      | 12.0          | .6        | 14.6  |
| Drills and planters                 | 1.6       | 2.4     | 12.0          | .6        | 16.6  |
| Tillage equipment                   | 1.6       | ---     | 12.0          | .6        | 14.2  |
| Sugarbeet topper                    | 1.6       | ---     | 12.0          | .6        | 14.2  |
| Pickup                              | 1.6       | 1.2     | 12.0          | 5.2       | 20.0  |
| Truck                               | 1.6       | 1.2     | 12.0          | 8.5       | 23.3  |

These are estimates only.

# REPAIR COSTS

Estimated wear-out life and repair costs for specified farm machines.

| Machine                     | Estimated wear-out life in hours | Years to trade | Repairs per hour per \$ of list price |
|-----------------------------|----------------------------------|----------------|---------------------------------------|
| <b>Tractor:</b>             |                                  |                |                                       |
| 2-wheel drive               | 10,000                           | 10             | \$.000144                             |
| 4-wheel drive               | 10,000                           | 10             | .0001                                 |
| Crawler                     | 15,000                           | 15             | .000067                               |
| Combine                     | 2,000                            | 10             | .000182                               |
| Swather, self-propelled     | 2,500                            | 10             | .000401                               |
| Windrower                   | 2,500                            | 10             | .000401                               |
| Mower-conditioner           | 2,000                            | 10             | .000719                               |
| Hay rake                    | 2,500                            | 10             | .999401                               |
| Baler                       | 2,000                            | 10             | .00032                                |
| Bean cutter                 | 2,000                            | 10             | .000719                               |
| <b>Harvester:</b>           |                                  |                |                                       |
| Potato                      | 2,500                            | 10             | .000256                               |
| Sugarbeet                   | 2,500                            | 10             | .000256                               |
| Forage, pull-type           | 2,000                            | 10             | .00032                                |
| Forage, self-propelled      | 2,000                            | 10             | .000182                               |
| <b>Seeding equipment:</b>   |                                  |                |                                       |
| Drill, disc                 | 1,500                            | 10             | .000669                               |
| Drill, no-till              | 2,500                            | 15             | .000385                               |
| Planter                     | 1,500                            | 10             | .000669                               |
| Fertilizer equipment        | 1,200                            | 12             | .001                                  |
| Power chemical incorporator | 2,000                            | 10             | .000182                               |
| Tillage implements          | 2,500                            | 15             | .000557                               |
| Corrugator                  | 2,500                            | 15             | .000557                               |
| V-Ditcher                   | 2,500                            | 15             | .000558                               |
| Land plane                  | 2,500                            | 15             | .000557                               |
| Manure spreader             | 2,500                            | 15             | .00024                                |
| Sprayer, mounted            | 1,200                            | 10             | .000776                               |
| Farm truck                  | 2,000                            | 10             | .00032                                |
| Pickup truck                | 2,000                            | 10             | .000182                               |

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

ASSIGNMENT SHEET #1--CALCULATE ESTIMATED FIELD CAPACITY OF  
A FARM MACHINE

Name \_\_\_\_\_ Score \_\_\_\_\_

The size of equipment needed depends on how much time is available to do the necessary work. Generally speaking, the equipment should be just large enough to take care of the work in the amount of time available. Equipment that is too small will either be subjected to unnecessary wear and tear or else cause the farmer to lose money by not getting the work done in time. Equipment that is too large will reduce profit because of the unnecessary capital tied up in the equipment.

Calculate the estimated field capacity of an 18-foot tandem disc that has an estimated 80 percent field efficiency. The disk will be pulled at 5 miles per hour. Theoretical capacity will have to be calculated first.

(Note: The disc does not have a 100 percent efficiency because of overlap, etc.)

a. Theoretical capacity \_\_\_\_\_  
in acres per hour

$$\frac{\text{Speed (m.p.h.)} \times \text{width (feet)}}{8.25}$$

b. Estimated field capacity \_\_\_\_\_  
in acres per hour

$$\text{Theoretical capacity} \times \frac{\text{field efficiency in percent}}{100}$$

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

ASSIGNMENT SHEET #2--CALCULATE ESTIMATED ANNUAL FIXED COST OF  
A FARM MACHINE

Name \_\_\_\_\_ Score \_\_\_\_\_

Fixed costs are costs that exist whether the machine is used or not. Fixed costs generally determine the level at which a machine must be used in order to make it economical to own.

Calculate the estimated annual fixed cost of a 160 hp wheel tractor with a new cost of \$82,000 and an estimated life of 10 years. You will need to use the tables on Handouts 2 and 3.

a. Depreciation \_\_\_\_\_

$$\frac{\text{New cost - salvage value}}{\text{Years of expected life}}$$

(Note: Salvage value is calculated by multiplying the new cost by the appropriate percentage in the table on Handout 2.)

b. Taxes, housing, interest and insurance \_\_\_\_\_

$$\text{Average machine investment} \times \text{Table value for THII}$$

(Note: Average machine investment is calculated by adding new cost to salvage value and dividing by 2.)

c. Total annual fixed costs \_\_\_\_\_

$$\text{Depreciation} + \text{THII}$$

Assuming the tractor is being used 1,000 hours per year, what would be the fixed cost per hour?

d. Fixed cost per hour \_\_\_\_\_

$$\frac{\text{Total annual fixed costs}}{\text{Hours of annual use}}$$

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

ASSIGNMENT SHEET #3--CALCULATE ESTIMATED VARIABLE COST OF  
A FARM MACHINE

Name \_\_\_\_\_ Score \_\_\_\_\_

Variable costs are costs which increase with increased machine usage. Variable costs are usually calculated by the acre or by the hour.

Calculate the variable costs per hour and per acre for a 175 hp 4-wheel drive diesel tractor with a new cost of \$87,000. Diesel cost is \$1.07 per gallon. Wage rate per hour is \$6.50. You will need to use information on Handout 4 and on Table 1.

Table 1. Fuel use in gallons per hour per horsepower

|                  | Tractors under 100 hp | Tractors 100 hp and over |
|------------------|-----------------------|--------------------------|
| Gasoline engines | .0774                 | .0893                    |
| Diesel engines   | .0580                 | .0670                    |

a. Repair costs per hour \_\_\_\_\_

$$\text{New machine cost} \times \text{Repairs per hour per dollar of new machine cost}$$

b. Fuel and lubrication cost per hour \_\_\_\_\_

$$\text{PTO hp} \times \text{Fuel use} \times \text{Price per gallon} \times 1.15$$

c. Labor cost per hour \_\_\_\_\_

d. Total variable cost per hour \_\_\_\_\_

Assuming the tractor is being used for spraying and the sprayer is covering 22 acres per hour, what would be the tractor cost per acre?

e. Tractor cost per acre \_\_\_\_\_

$$\frac{\text{Variable cost per hour}}{\text{Acres per hour}}$$

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

ASSIGNMENT SHEET #4--CALCULATE OVERALL COST PER ACRE FOR  
FARM MACHINERY

Name \_\_\_\_\_ Score \_\_\_\_\_

Calculate the cost per acre for a 45 hp gasoline 2-wheel drive tractor pulling a 6 row cultivator. The cultivator cost \$5,400 new and has an estimated life of 15 years. The cultivator is set on 16 inch rows (a total of 8 feet) and has an efficiency of 80%. It will be pulled at 4 miles per hour (mph). The tractor cost \$16,500 new and has an estimated life of 10 years. Gasoline cost is \$1.10 per gallon. The tractor is used 25% of the time for cultivating. The equipment is being used on 200 acres and the acreage will be cultivated twice. The wage rate is \$6.50 per hour.

You will need to use the information provided in the handouts and in Table 1.

Table 1. Fuel use in gallons per hour per horsepower

|                  | Tractors under 100 hp | Tractors 100 hp and over |
|------------------|-----------------------|--------------------------|
| Gasoline engines | .0774                 | .0893                    |
| Diesel engines   | .0580                 | .0670                    |

Estimated Field Capacity

a. Theoretical capacity in acres per hour \_\_\_\_\_

$$\frac{\text{Speed (m.p.h.)} \times \text{width (feet)}}{8.25}$$

b. Estimated field capacity in acres per hour \_\_\_\_\_

$$\text{Theoretical capacity} \times \frac{\text{field efficiency in percent}}{100}$$

c. Total number of hours used \_\_\_\_\_

$$\frac{\text{Acres}}{\text{Acres per hour}} \times \text{number of times cultivated}$$

Cultivator Cost

Fixed Costs

d. Depreciation \_\_\_\_\_

$$\frac{\text{New cost - salvage value}}{\text{Years of expected life}}$$

(Note: The salvage value is figured by multiplying the new cost by the appropriate percentage in the table on Handout 2.)

e. Taxes, housing, interest, insurance \_\_\_\_\_

$$\frac{\text{New cost + salvage value}}{2} \times \text{THII Table Value}$$

f. Total annual fixed cost \_\_\_\_\_

g. Total fixed cost per hour \_\_\_\_\_

$$\frac{\text{Total fixed cost}}{\text{Total number of hours}}$$

Variable Costs

h. Repair costs per hour \_\_\_\_\_

$$\text{New machine price} \times \text{Repairs per hour per dollar of new machine price}$$

i. Total cultivator cost per hour \_\_\_\_\_

Tractor Cost

Fixed Costs

j. Depreciation \_\_\_\_\_

k. Taxes, housing, interest and insurance \_\_\_\_\_

l. Total annual fixed cost \_\_\_\_\_

m. Total fixed cost per hour \_\_\_\_\_

$$\frac{\text{Total fixed cost}}{\text{Number of hours}} \times \text{Percentage of time used for cultivating}$$

Variable Costs

n. Repair costs per hour \_\_\_\_\_

o. Fuel and lubrication costs per hour \_\_\_\_\_

$$\text{PTO hp} \times \text{fuel use} \times \text{price per gallon} \times 1.15$$

p. Labor cost per hour

$$\text{Wage per hour} \times 1.1$$

q. Total variable costs per hour \_\_\_\_\_

r. Total tractor cost per hour \_\_\_\_\_

s. Total equipment cost per hour \_\_\_\_\_

t. Equipment cost per acre \_\_\_\_\_

$$\frac{\text{Total cost per hour}}{\text{Acres per hour}}$$

u. Annual equipment cost for the cultivator and tractor \_\_\_\_\_

$$\text{Acres} \times \text{cost per acre} \times \text{number of times cultivated}$$

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

ASSIGNMENT SHEET #5--CALCULATE EQUIPMENT WIDTH TO MATCH  
TRACTOR HORSEPOWER

Name \_\_\_\_\_ Score \_\_\_\_\_

Larger tractors most often are purchased with the intent of increasing field capacity, and in turn, improving the timeliness of field operations. One of the major problems associated with large tractors is that of accurately matching the implement size to the available power. Large tractors, even though they are rugged, can be overloaded and be subject to mechanical failure. At the other extreme, there is often a tendency to pull available, smaller tools at too high a speed resulting in a shortened implement life. Proper field speed is necessary to give best results.

The procedure for matching equipment to the tractor is:

STEP 1: Determine usable drawbar horsepower

$$\text{Usable drawbar horsepower} = (\text{Maximum P.T.O. horsepower}) \times (\text{Table 1 conversion factor})$$

Table 1. Horsepower conversions

(Note: The following data converts maximum P.T.O. horsepower to usable drawbar horsepower)

| Soil Condition         | Usable hp as a percentage of maximum PTO hp |
|------------------------|---|
| Firm, untilled soil    | 62.5%                                       |
| Previously tilled soil | 55.6%                                       |
| Soft or sandy soil     | 47.6%                                       |

(continued on next page)

STEP 2: Select the desired speed in miles per hour (m.p.h.) and the soil resistance in pounds per foot (draft) for the implement from Table 2

Table 2. Typical Speeds and Draft of Farm Equipment per Foot of Width\*

| Implement               | Speed           | Type of Soil                     |                |               |                |
|-------------------------|-----------------|----------------------------------|----------------|---------------|----------------|
|                         |                 | Sandy                            | Sandy          | Clay          | Clay           |
|                         | mph             | 6 in.<br>depth                   | 10 in<br>depth | 6 in<br>depth | 10 in<br>depth |
|                         |                 | Draft (pounds per foot of width) |                |               |                |
| Moldboard plow          | 3.5-6           | 360                              | 700            | 600           | 1,100          |
|                         |                 | Average Depth                    |                |               |                |
|                         |                 | Sandy Soil                       |                | Clay Soil     |                |
|                         |                 | Draft (pounds per foot of width) |                |               |                |
| Tandem disc             | 3-6             | 150                              |                | 250           |                |
| Offset, or heavy disc   | 3-6             | 250                              |                | 400           |                |
| Chisel plow             | 4-6.5           | 300                              |                | 500           |                |
| Subsoiler - bedder      | 3-5             | 30 hp per row                    |                | 40 hp per row |                |
| Rotary hoe              | 5-10            | 40                               |                | 70            |                |
| Field cultivator        | 3-8             | 200                              |                | 350           |                |
| Potato digger           | 2-4             | 500 - 800 pounds per row         |                |               |                |
| Row crop cultivator:    |                 |                                  |                |               |                |
| Shallow                 | 2.5-5           | 40                               |                | 70            |                |
| Deep                    | 1.5-3           | 20-40 lbs per ft per inch depth  |                |               |                |
| Anhydrous ammonia appl. | 3-5             | 420 lbs per knife                |                |               |                |
| Hay conditioner         | 5-7             | 2.0 PTO hp per ft                |                |               |                |
| Mower conditioner       | 4-6             | 2.0-2.5 PTO hp per ft            |                |               |                |
| Hay baler               | 3-10 T. per hr. | 1.5-2.5 hp hr per ton            |                |               |                |
| Combine, small grain    | 2-4             | 1 PTO hp per inch cylinder width |                |               |                |

\*Unless otherwise indicated

Adapted with permission of the American Society of Agricultural Engineers, Agricultural Machinery Management Data, ASAE D230.3, rev. December 1977. Complete data is available from ASAE, St. Joseph, Michigan.

(Note: Data in this table are based on research data and are intended to serve primarily as guidelines in selecting equipment size. If data are not available for individual on-the-farm situations, these data can be used to approximate values for the individual farm.)

STEP 3: Calculate proper width of equipment

$$\text{Width (feet)} = \frac{375 \times \text{Usable horsepower}}{\text{Speed (m.p.h.)} \times \text{Draft (lbs per foot)}}$$

(Note: This formula gives the units of horsepower to use in sizing equipment for varying soil conditions. It is intended to serve as a guide in matching equipment with the tractor.)

PROBLEM:

A tractor you are considering purchasing is rated 210 maximum PTO horsepower. Using the following worksheet, compute the size offset disc which can be pulled at 5 m.p.h. on sandy soil.

MATCHING EQUIPMENT WIDTH TO TRACTOR HORSEPOWER WORKSHEET

1. Determine Usable Drawbar Horsepower

| <u>Soil Condition</u>                                 | <u>Usable hp as a percentage of maximum PTO horsepower*</u> |
|---|---|
| Firm, untilled soil                                   | 62.5%   |
| Previously untilled soil                              | 55.6%   |
| Soft or sandy soil                                    | 47.6%   |
| Usable drawbar horsepower =                           |   |
| = _____ max. PTO hp x _____ conversion factor = _____ |   |
|   | 100   |

2. a. Speed desired (mph) \_\_\_\_\_

b. Draft (lbs per ft -- Table 2) \_\_\_\_\_

3. Width (feet) =  $\frac{375 \times \text{Usable drawbar hp}}{\text{Speed (mph)} \times \text{Draft (lb per ft)}}$

=  $\frac{375 \times ( \quad ) \text{ Usable drawbar hp}}{( \quad ) \text{ mph} \times ( \quad ) \text{ draft}}$

= \_\_\_\_\_

\*Used with permission of Oklahoma State University, From *Selection and Management of Big Tractor Systems* by Wendell Bowers, Stillwater, Oklahoma.

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

## ANSWERS TO ASSIGNMENT SHEETS

**Assignment Sheet #1**

- a. 10.9 acres per hour
- b. 8.72 acres per hour

**Assignment Sheet #2**

- a. \$5,781 (salvage value - \$24,190)
- b. \$7,858.06 (average machine investment = \$53,095)
- c. \$13,639.06
- d. \$13.64 per hour

**Assignment Sheet #3**

- a. \$8.70 per hour
- b. \$14.43 per hour
- c. \$7.15 per hour
- d. \$30.28 per hour
- e. \$1.38 per acre

**Assignment Sheet #4**

- |  |  |
|--|--|
| a. 3.88 acres per hour                     | l. \$2,744.45                          |
| b. 3.1 acres per hour                      | m. \$5.32 per hour                     |
| c. 129 hours                               | n. \$2.38 per hour                     |
| d. \$325.44 (salvage value = \$518.40)     | o. \$4.41 per hour                     |
| e. \$420.21                                | p. \$7.15 per hour                     |
| f. \$745.65                                | q. \$13.94 per hour                    |
| g. \$5.78 per hour                         | r. \$19.26 per hour                    |
| h. \$3.01 per hour                         | s. \$28.05 per hour                    |
| i. \$8.79 per hour                         | t. \$9.05 per acre                     |
| j. \$1,163.25 (salvage value = \$4,867.50) | u. \$3,620 total annual equipment cost |
| k. \$1,581.20                              |  |

**Assignment Sheet #5**

1. Usable drawbar horsepower =  

$$= 210 \text{ max. PTO hp} \times \frac{.476}{100} \text{ conversion factor} = \underline{99.96}$$
  
2. a. Speed desired (mph)  $\underline{5}$   
 b. Draft (lb per ft -- Table 2)  $\underline{250}$
  
3. Width (feet) =  $\frac{375 \times \text{Usable drawbar hp}}{\text{Speed (mph)} \times \text{Draft (lb per ft)}}$   

$$= \frac{375 \times (99.96) \text{ Usable hp}}{(5) \text{ mph} \times (250) \text{ draft}}$$
  

$$= 30 \text{ foot (29.99)}$$

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |   |                          |
|----------|---|--------------------------|
| _____ a. | Equipment used to work the soil   | 1. Fixed costs           |
| _____ b. | Percentage of theoretical field work accomplished after deducting losses which result from failure to use full width of the machine, turning, idle travel at the ends of rows, clogging, adjusting seed or fertilizer, unloading harvested crops, machine adjustments, minor repairs, lubrication and other minor interruptions | 2. Leasing               |
| _____ c. | Paying a person to provide the equipment and labor to do a specific job   | 3. PTO                   |
| _____ d. | The act of pulling; that which is pulled; force needed to pull implement  | 4. MPH                   |
| _____ e. | Power take-off  | 5. Facilitate            |
| _____ f. | Costs which increase with increased machine usage   | 6. Machinery management  |
| _____ g. | Costs which do not change with machine use  | 7. Compatibility         |
| _____ h. | Number of acres per hour a machine can work when no time is lost due to turns, unused width, stopping, plugging and breakdowns  | 8. Tillage equipment     |
| _____ i. | Make possible or easier   | 9. Salvage value         |
| _____ j. | Miles per hour  | 10. Theoretical capacity |
| _____ k. | Ability to fit or be used together  | 11. Field efficiency     |
| _____ l. | Value of machine at the end of its useful life in an agribusiness   | 12. Variable costs       |
| _____ m. | Renting equipment for a relatively long period of time  | 13. Custom hiring        |
| _____ n. | Making and implementing decisions in all aspects of acquiring and using machines  | 14. Draft                |
| _____ o. | Power transmitted to the implement by the tractor   | 15. Drawbar horsepower   |

2. List five ways machinery can be obtained for use on the farm.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

3. List five factors that affect the purchase of machinery.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

4. List two advantages and two disadvantages of two-wheel drive tractors.

Advantages

- a. \_\_\_\_\_
- b. \_\_\_\_\_

Disadvantages

- a. \_\_\_\_\_
- b. \_\_\_\_\_

5. List two advantages and two disadvantages of four-wheel drive tractors.

Advantages

- a. \_\_\_\_\_
- b. \_\_\_\_\_

Disadvantages

- a. \_\_\_\_\_
- b. \_\_\_\_\_

6. Calculate the theoretical capacity of two 12-foot drills traveling at 6.5 mph.

\_\_\_\_\_ acres per hour

7. Select general rules concerning field efficiency from the list below. Write an "X" in the blank before each correct answer.

- \_\_\_\_ a. A normal turn at the end of the row should be made with one continuous motion
- \_\_\_\_ b. When space at the end of a row is too narrow for a complete turn and requires backing for completion, as much as 50 percent more time is needed
- \_\_\_\_ c. If there is not any space at the end of the row for a turn and the entire operation must be completed by backing, turning time may be increased by 100 percent
- \_\_\_\_ d. Operators may increase field efficiency by 10 percent or more by simply trying to eliminate unnecessary time the implement is down at the end of the furrow or row
- \_\_\_\_ e. Other time increases include 11 percent for rough field conditions, 29 percent for obstructions and 25 percent for ditches

8. Calculate the estimated field capacity of a combine with a 20-foot header traveling at 4 mph with a field efficiency of 80 percent. Theoretical capacity must be calculated first.

\_\_\_\_\_ acres per hour

9. Distinguish between the types of cost of machinery ownership by placing an "F" in front of the fixed costs and a "V" in front of the variable costs.

- \_\_\_\_ a. Repairs and maintenance
- \_\_\_\_ b. Depreciation
- \_\_\_\_ c. Dependability
- \_\_\_\_ d. Machinery labor hours
- \_\_\_\_ e. Taxes
- \_\_\_\_ f. Insurance
- \_\_\_\_ g. Housing for machinery
- \_\_\_\_ h. Fuel and lubrication
- \_\_\_\_ i. Interest on investment

10. Select the statements showing the correct relationship between cost and machine use from the list below. Write an "X" in the blank before each correct answer.
- \_\_\_\_ a. As machine use increases, average cost initially declines because fixed costs are spread over more units of production
- \_\_\_\_ b. As machine use increases, total cost remains the same
- \_\_\_\_ c. Machine costs are highly correlated to the extent of machine use
- \_\_\_\_ d. The average cost will continue to decrease as machine use is increased
11. Calculate estimated salvage value of a hay baler costing \$15,000 new, having an estimated life of 10 years, and having a salvage value of 16.5% of new cost.
- \$ \_\_\_\_\_ salvage value
12. Calculate the average machine investment of the baler in question 10.
- \$ \_\_\_\_\_ average machine investment
13. Calculate the estimated annual fixed cost of the baler in question 10. The percentage of average machine investment for taxes, housing, insurance and interest (THII) is 16.1% The baler will be used 200 hours.
- a. Depreciation \_\_\_\_\_
- b. THII \_\_\_\_\_
- c. Total annual fixed cost \_\_\_\_\_
- d. Fixed cost per hour \_\_\_\_\_
14. Calculate the estimated repair cost for the baler in question 10. The estimated repair cost per hour per dollar of list price of \$.00032. The baler can bale 4.5 acres per hour.
- \$ \_\_\_\_\_ repair cost per hour
- \$ \_\_\_\_\_ repair cost per acre
15. Calculate the estimated fuel and lubrication cost for a 120 hp diesel tractor if the fuel use in gallons per hour per horsepower is .067 and the price of diesel is \$1.05 per gallon.
- \$ \_\_\_\_\_ fuel and lubrication cost per hour
16. Calculate the estimated machinery labor cost per hour if the wage rate is \$6.00 per hour.
- \$ \_\_\_\_\_ estimated machinery labor cost per hour

17. List four causes of fatal tractor accidents.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

18. List eight procedures for safe machine operation.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_
- d. \_\_\_\_\_  
\_\_\_\_\_
- e. \_\_\_\_\_  
\_\_\_\_\_
- f. \_\_\_\_\_  
\_\_\_\_\_
- h. \_\_\_\_\_  
\_\_\_\_\_

19. List five reasons for efficiency in tractor operations.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

20. List four reasons for preventative maintenance.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

21. List five areas of servicing machinery.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

## MACHINERY AND EQUIPMENT MANAGEMENT

AG 660 - L

## ANSWERS TO TEST

1.     a. 8                   e. 3                   i. 5                   m. 2  
        b. 11               f. 12               j. 4                   n. 6  
        c. 13               g. 1               k. 7                   o. 15  
        d. 14               h. 10              l. 9
  
2.     Answer should include five of the following:  
        Purchase of new machinery; Purchase of used machinery; Custom hiring; Leasing; Renting; Joint ownership
  
3.     Answer should include five of the following:  
        Price and quality of machinery; Availability of parts and service from the dealer; Efficiency of design; Ease of making adjustments and minor repairs; Resale or salvage value; Compatibility of machine with present equipment; Ability of the machine to get the job done on time; Machine cost per acre being justifiable in light of production
  
4.     Answer should include two of the following advantages and two disadvantages:  
        Advantages: Has a wide variety of sizes and types available; Has a good selection of equipment to match with other tractors; Has lower cost per horsepower  
        Disadvantages: Has traction and ballasting problems with large units; Is restricted to smaller units, meaning higher labor costs due to more hours; Has a limit on size from a practical standpoint; Has traction problems pulling high draft tools
  
5.     Answer should include two of the following advantages and two disadvantages:  
        Advantages: Provides means for increased capacity; Saves labor; Gets important jobs done faster; Has better ballasting for traction; Is well-suited to high draft tools; Is well-suited to steep ground  
        Disadvantages: Requires high capital outlay; May have high individual repair bills; Creates a greater concentration of risk because of its higher cost; Requires special hitches; Is not well-suited for row crops or irrigation farming
  
6.     18.9 acres per hour
  
7.     a, b, d, e
  
8.     7.76 acres per hour
  
9.     a. V                   d. V                   g. F  
        b. F                   e. F                   h. V  
        c. V                   f. F                   i. F
  
10.    a, c
  
11.    \$2,475

12. \$8,737.50
13. a. \$1,252.50  
b. \$1,406.74  
c. \$2,659.24  
d. \$13.30
14. a. \$4.80 cost per hour  
b. \$1.07 cost per acre
15. \$9.71 per hour
16. \$6.60 per hour
17. Answer should include four of the following:  
  
Tractor overturns; Falling from tractor; Crushing; Being run over by tractor; Highway accidents; Getting caught in the power take-off; Passengers
18. Answer should include eight of the following:  
  
Make sure all safety shields and guards are in place before operation; Never attempt to adjust or repair machine until it is turned off and the key is removed; Never fill fuel tank while motor is running or while smoking; Do not turn sharp at high speeds; Never attach pull chain to axle or above axle for pulling or towing--this could flip the tractor over backwards. Only attach to and pull from drawbar; Do not make extra short turns with trailing implements--implement may ride up over the rear tire; Always disengage power take-off before dismounting tractor; Be concerned for the safety of yourself and others; Be alert to danger at all times; Observe conditions which threaten safety and then remedy the conditions; When operating machinery for long periods of time, frequently take short breaks; Attach slow-moving vehicle signs on the back of all machinery that will be driven on public roads
19. Answer should include five of the following:  
  
Reduces energy consumption; Saves fuel costs; Requires less labor; Reduces down time; Results in less waste; Saves on repair bills; Helps machinery and equipment to last longer; Results in better quality crop; Increases yields; Results in fewer accidents
20. Answer should include four of the following:  
  
Identify wearing problems or damage before they become serious; Increase maximum power; Saves money and time from costly breakdowns; Extends life of machinery and equipment; Maintains horsepower; Increases trade-in or salvage value
21. Answer should include five of the following:  
  
Crankcase oil; Hydraulic oil; Air cleaner; Cooling system; Battery; Chassis lubrication; Diesel fuel filter system; Fuel level

# 660M-1

## TAXES

### AG 660 - M

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe types of taxes, the reasons for tax planning and general factors important to understanding tax management. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with taxes to their correct definitions.
2. Describe the purpose of taxes.
3. List three purposes of tax planning.
4. Match the types of taxes to their descriptions.
5. Select statements true about the progressive income tax.
6. Select the types of property subject to property tax.
7. List six types of records and information helpful for tax management.
8. Describe the options available for tax accounting periods.
9. Describe the four methods of reporting income for tax purposes.
10. Describe the time requirements in income tax payment.
11. Distinguish between taxable and non-taxable items.
12. List deductible business expenses.
13. Distinguish between tax management strategies to increase and decrease income.
14. Complete a Schedule F federal tax form and transfer information to a Form 1040.

TAXES

AG 660 - M

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor

- A. Make necessary copies of materials.
- B. Provide students with objectives and discuss.
- C. Provide students with information and assignment sheets and discuss.
- D. Obtain current information from the Internal Revenue Service on income tax and information from the local and state offices on property and other state and local taxes.

(Note: Tax management requires up-to-date information as laws and other regulations change frequently. All information in this unit should be checked for accuracy before using.)

- E. Obtain the Farmer's Tax Guide from the Internal Revenue Service.
- F. Invite a tax accountant to the class to discuss tax management.
- G. Obtain information on the average property tax paid in the local area.
- H. Lead a discussion on the purpose of taxes and the advantages and disadvantages of different types of taxes.

(Note: One interesting angle might be to ask students if property and sales taxes should be eliminated and students be required to pay the tuition necessary for their education.)

- I. Obtain tax forms and information bulletins for use by the students.
- J. Coordinate tax instruction with other teachers in the district. Often other teachers such as math and government teachers have an instructional unit on taxes.
- K. Review and give test.
- L. Reteach and retest if necessary.

II. Instructional materials

- A. Objective sheet
- B. Suggested activities
- C. Information sheet

- D. Instructor notes for assignment sheet
  - E. Assignment sheet
    - 1. AS 1--Complete Schedule F Federal Tax Form and Transfer Information to a Form 1040
  - F. Answers to assignment sheet
  - G. Test
  - H. Answers to test
- III. Unit references
- A. *Farm Business Management Curriculum Guide*, Instructional Material Year I, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - B. *Farm Business Management Curriculum Guide*, Instructional Material Year II, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - C. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - D. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.
  - E. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
  - F. *Vocational Agriculture III*, Oklahoma Curriculum and Instructional Materials Center, Stillwater, Oklahoma, 1978.
  - G. *Vocational Agriculture IV*, Oklahoma Curriculum and Instructional Materials Center, Stillwater, Oklahoma, 1973.
  - H. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

TAXES

AG 660 - M

INFORMATION SHEET

- I. Terms and definitions
  - A. Levy--To impose a tax
  - B. Asset--Something of value that is owned by or in possession of the user
  - C. Commodity--Product that can be traded or bought and sold
  - D. Capital--An asset capable of generating income
  - E. Estate--Property or possessions, especially of a deceased person
  - F. Verification--Proof
  - G. Dividends--Money paid to shareholders of a corporation out of profits
  - H. Royalty--Money paid to the owner of a right such as a mineral right or to the creator of some idea or to the author of a book, etc.
  - I. Trust--Property or other assets held by one person for the benefit of another
  - J. Commission--Money allowed for an agent for a specific service, usually involving selling a product
  - K. Easement--Legal right to make use of another person's property for a specific purpose
  - L. Capital asset--Asset that has a long-term value
  - M. Futures--A market based on selling a product at a set time in the future for a set price
  - N. Hedge--Protection against a downturn in prices
- II. Purpose of taxes--Taxes are charges levied by the government on its people in order to accomplish tasks for the public good that would be impossible or very difficult for a single individual to accomplish
- III. Purposes of tax planning
  - A. Maximize after tax income
  - B. Best fit tax payments into overall cash flow plan for the agribusiness
  - C. Establish proof of proper accounting procedures

IV. Types of taxes

- A. Income--Based on the amount of money a person or business makes
- B. Property--Based on the value of certain physical assets owned
- C. Sales--Based on the value of receipts from sales; collected when the sale is made
- D. Excise--Tax on certain commodities  
Examples: Gas tax, cigarette tax
- E. Capital gains--Based on the amount a physical asset increases in value during the time a person owns the asset
- F. Inheritance--Based on the value of assets transferred from the estate of a deceased person to another person
- G. Self-employment--Tax on the income of a person who is the primary owner of a business
- H. Social Security--Tax based on income; used for paying retirement and other benefits; payment entitles a person to receive benefits from Social Security when certain conditions are met

V. Progressive income tax

- A. An individual's income is divided into categories or brackets
- B. Each bracket is assigned a percentage of taxes to be charged
- C. The highest taxable income brackets are normally charged the highest tax percentage

VI. Types of property subject to property tax

(Note: Property tax is based on an assessed valuation of the property. The assessment is done by the county assessor. The tax is then calculated as a percentage of the assessed value. This percentage is usually expressed in mills. A mill is 1/1000 of one dollar.)

- A. Land
- B. Machinery
- C. Buildings
- D. House
- E. Business equipment

(Note: Licensed vehicles such as trucks and cars are not taxed. Neither are personal belongings such as household goods. Inventory is also not subject to property tax.)

VII. Records and information helpful for tax management

A. All receipts and expenses by type

(Note: The type is important since some expenses are deductible while others are not.)

B. Inventory records

C. Depreciation records

D. Dates of transactions

E. Verification of transactions

(Note: This would include receipts, canceled checks, etc.)

F. Non-farm income

G. Loan information

H. Capital improvement records

I. Charitable donations

J. Previous tax information such as amount of taxes paid

K. Current year's tax rules

VIII. Accounting periods allowable for record keeping

A. Calendar year--January 1 to December 31

B. Fiscal year--A one year period starting on a specified date

(Note: This period must remain consistent from year to year.)

IX. Methods of reporting income for tax purposes

A. Cash method

(Note: This is the method used on most farms.)

1. Income and expenses are recorded in the year they were received or paid out
2. Simplest method
3. Most flexible method for determining when to receive income or incur expenses

Example: Sale of crop could be postponed until the next tax year if it were desirable to delay income

4. May cause income to be erratic or fluctuate

B. Accrual method

1. Income and expenses are recorded in the year in which they occur regardless of when payment is received or made
2. Levels out income
3. Requires very detailed records
4. Makes actual cash position hard to determine

C. Crop method

1. Used for a crop that takes more than one year from planting to harvest
2. Profit or loss is not determined until the crop is sold

D. Combination (hybrid) method

1. Any combination of cash, accrual or crop methods of accounting
2. The combination used must clearly show income and be used consistently
3. The same method must be used for reporting income and expenses

Example: You may specifically use the accrual method for purchases and sales and the cash method for all other items of income and expense

X. Time requirement in income tax payment

- A. Normally, income tax must be paid as you progress through the year
- B. Sole proprietor farmers may pay the entire tax due for the previous year on February 28

(Note: Tax laws are constantly being revised. Check current tax laws for specific requirements and methods of payment.)

XI. Taxable and non-taxable items

A. Taxable

1. Compensation for services
2. Dividends received from business dealings
3. Income from royalties
4. Income from estates and trusts

5. Commissions
6. Income from interest
7. Rent income
8. Income from partnerships
9. Profits from sales or exchanges of property
10. Gross income from the farm or ranch business
11. Government program payments
12. Gasoline tax refunds
13. Insurance proceeds received for crop damage or farm building damage
14. Easement payments and other unearned income

B. Non-taxable items

(Note: Other items are non-taxable under certain circumstances.)

1. Exchanges of business property
2. Commodity credit loans  

(Note: These would become income when the commodity is sold or turned over to the government.)
3. Social security benefits, railroad retirement pensions and war veteran's disability pensions
4. Fair market value of produce or livestock raised and consumed by the farmer's family
5. Life insurance paid by reason of death
6. Gifts and inheritances
7. Loans
8. Income tax refunds  

(Note: Interest paid on the refund is taxable.)
9. The value of work performed by farmer or the farmer's family on the farm
10. Increase in the value of crops, livestock or other assets unless sold or exchanged when using the cash method of accounting

(Note: Accrual taxpayers must reflect the increase in value.)

11. Sickness and injury benefits, if received as damages in settlement of a claim or under a health and accident insurance policy

12. Educational grants and scholarships

(Note: This only includes grants and scholarships for tuition and fees to enroll at or attend an educational institution or for fees, books, supplies and equipment required for courses at the educational institution.)

XII. Deductible farm business expenses

(Note: Deductible farm expenses are ordinary and necessary costs of operating a farm for a profit. All deductible expenses should be recorded to reduce the amount of taxes that will have to be paid.)

A. Prepaid farm supplies

(Note: This includes expenses for feed, seed, fertilizer and similar farm supplies that will not be used or consumed until a later tax year. There are limitations on the amount that can be deducted.)

B. Livestock feed

C. Labor hired

(Note: This includes reasonable wages paid for regular farm labor, piecework, contract labor and other forms of labor hired to perform the farming operation.)

D. Repairs and maintenance

(Note: Repairs to depreciable property that substantially prolong the life of the property or increase its value or adapt it to a different use are capital expenses. If you repair the barn roof, it is deductible; if you replace the roof, it is a capital expense.)

E. Interest

(Note: Interest paid on farm mortgages and other obligations incurred to carry on farming and ranching.)

F. Breeding fees

G. Fertilizer and lime

H. Fuels and oils

I. Taxes

(Note: Real estate and personal property taxes on farm business assets, such as farm equipment, animals, farmland and farm buildings, are deductible as a farm business expense. State and federal income taxes are not deductible as farm business expenses; however, state income taxes are deductible as itemized expenses.)

J. Insurance

(Note: Premiums on fire, storm, crop, theft, liability and other insurance on farm business items are deductible as a business expense. Health and accident insurance premiums are also deductible when carried on employees.)

K. Commodity futures contracts (hedging)

(Note: Futures contracts entered into solely for protection against the risk of unfavorable price fluctuations are a form of business insurance and are considered a hedge. Any loss sustained from a closed hedging futures transaction is deductible as a normal and ordinary business expense. Any profit is treated as normal income. If farmers trade futures in their range of production, the transactions are generally considered hedges. If they trade futures outside their range of production, they would be considered to be speculating.)

L. Cash rent

(Note: Rent paid in crop shares is not deductible because the costs of raising the crops are deductible.)

M. Depreciation

(Note: If property in the farming business has a useful life of more than one year, its cost must usually be spread over more than one year--with a part of it being deducted each year.)

N. Truck and car expenses

(Note: The cost of operating a truck or car used in the farming business may be deducted.)

O. Travel expenses

(Note: Ordinary and necessary expenses incurred when traveling away from home for the farming business are deductible.)

P. Soil and water conservation expenses

Q. Tenant house expenses

(Note: The expenses of maintaining houses and their furnishings for tenants or hired labor are deductible farm business expenses.)

R. Retirement plans

(Note: Retirement plans are savings arrangements that allow someone to set aside money for their and their employees' retirement.)

## S. Losses from operating a farm

(Note: If a farmer has a loss in the operation of his farm during the year, or had a casualty or theft loss that was more than his income, he may have a net operating loss that can be used to reduce income in other years.)

## T. Other expenses

1. Accounting fees
2. Advertising
3. Chemicals
4. Custom hire (machine work)
5. Educational expenses (maintain and improve farming skills)
6. Farm attorney fees
7. Farm magazines
8. Farm organization dues
9. Freight and trucking
10. Record keeping expenses
11. Service charges
12. Small tools (with useful life on one year or less)
13. Stamps and stationary
14. Storage and warehousing
15. Tying material, storage containers
16. Veterinary fees and medicine

## XIII. Tax management strategies used to increase or decrease income

(Note: Tax management strategies should only be used if consistent with other good farm management decisions. Regular farm management techniques should take tax management decisions into account. Strategies assume manager is a cash method taxpayer. Manager should consider strategies as a method of leveling income from year to year.)

## A. To increase current year income

1. Do some off-farm or custom work
2. Do not claim cost of property acquired for use in trade or business

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3. Work with suppliers to pay bills after beginning of next fiscal year
  4. Sell marketable grain and livestock before end of fiscal year
  5. Postpone expenditures and investments until after beginning of next fiscal year
- B. To decrease income
1. Postpone some sales to next year
  2. Make advance purchases of feed and fertilizer
  3. Contract to sell products in the next tax year
  4. Use maximum depreciation methods  
  
(Note: Method of depreciation must be consistent from year to year on a particular piece of equipment.)
  5. Claim maximum dollars allowed of cost of property acquired for use in trade or business
  6. Buy needed machinery, equipment and other supplies before end of the year to get some depreciation

TAXES

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INSTRUCTOR NOTES FOR ASSIGNMENT SHEET

You should order the *Guide to Free Tax Services* from the IRS at the beginning of the semester by calling 1-800-829-3676. After receiving the guide, compile a list of current publications, schedules and forms for the students to order. You should probably allow at least a month to make sure all students receive their publications. Since tax laws change yearly, it is important to have up-to-date information. *The Farmers Tax Guide and Your Federal Income Tax* publications have examples to illustrate how to complete the schedules and forms.

You may use the information listed in Assignment Sheet #1, compile new information or have students use their personal information to complete a current schedule F Federal Tax Form and Form 1040. If you have questions concerning current tax laws, you may need to consult a tax accountant or call the IRS Free Person-to Person Assistance number, which is listed in the *Guide to Free Tax Services*.

(Note: Assignment Sheet #1 uses straight-line depreciation. At the time of this publication, straight-line is rarely used. However, current depreciation laws are very complicated. You may wish to have the students use straight line depreciation just to give them an idea of what depreciation is, or you may wish to teach the current depreciation laws so they can use the current method of determining depreciation.)

## TAXES

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ASSIGNMENT SHEET #1--COMPLETE A SCHEDULE F FEDERAL TAX FORM AND  
TRANSFER THE INFORMATION TO A FORM 1040

Name \_\_\_\_\_ Score \_\_\_\_\_

Use the following information to complete schedule F parts I and II and transfer this information to a 1040 form.

- A. Amy Starfarmer is a student who lives with her parents in Fairfield, Idaho.
- B. Amy's social security number is 519-74-5160.
- C. Amy worked at the local elevator and earned \$2,000.00, of which \$117.00 was withheld for social security and \$155.00 was withheld for federal income taxes.
- D. According to Amy's record book she has the following items set up on a straight line depreciation schedule.

Note: Annual depreciation =  $\frac{\text{original cost} - \text{salvage value}}{\text{Years of useful life}}$

- 1. Hog house
  - a. 1 year old
  - b. Original cost \$240.00
  - c. Useful life--10 years
  - d. Salvage value--\$10
- 2. Fence
  - a. 5 years old
  - b. Original cost--\$150.00
  - c. Useful life--5 years
  - d. Salvage value--\$0
- 3. Hog house
  - a. New
  - b. Cost--\$300.00

- c. Useful life--10 years
  - d. Salvage value--\$30.00
4. Hog feeder
- a. 3 years old
  - b. Original cost--\$450.00
  - c. Useful life--10 years
  - d. Salvage value--\$50.00
- E. Amy has two sows which farrow twice per year. She feeds all her pigs out to market weight.
- F. Amy's record book shows the following sales and expenses for the year.

**EXPENSES**

| Date  | Item of Expense and Description             | Total Expense | Charge to Enterprise |   |   |   |   |   |  |
|-------|---|---------------|----------------------|---|---|---|---|---|--|
|       |   |               | 1                    | 2 | 3 | 4 | 5 | 6 |  |
|       |   |               | SWINE                |   |   |   |   |   |  |
| 1-22  | 2,500 # Supplement @ 17.00 cwt              | 425.00        | 425.00               |   |   |   |   |   |  |
| 1-22  | 10,000 # Barley @5.00/cwt                   | 500.00        | 500.00               |   |   |   |   |   |  |
| 4-15  | Medicine for pigs                           | 19.00         | 19.00                |   |   |   |   |   |  |
| 3-01  | Breeding fee                                | 30.00         | 30.00                |   |   |   |   |   |  |
| 5-29  | Materials for hog house                     | 42.00         | 42.00                |   |   |   |   |   |  |
| 7-01  | 13,000 # Barley @ 5.50/cwt                  | 715.00        | 715.00               |   |   |   |   |   |  |
| 7-01  | 3,000 # Supplement @ 17.00 cwt              | 510.00        | 510.00               |   |   |   |   |   |  |
| 9-01  | Breeding fee                                | 30.00         | 30.00                |   |   |   |   |   |  |
| 10-10 | Medicine                                    | 20.00         | 20.00                |   |   |   |   |   |  |
| 12-31 | Cost of grain storage<br>23,000 # @ .15/cwt | 34.50         | 34.50                |   |   |   |   |   |  |

## SALES AND OTHER INCOME

| Date  | Item of Sale and<br>Description | Total<br>Credit | Charge to Enterprise |   |   |   |   |   |  |
|-------|---------------------------------|-----------------|----------------------|---|---|---|---|---|--|
|       |                                 |                 | 1                    | 2 | 3 | 4 | 5 | 6 |  |
| 6-23  | 15 pigs -- 3,300 # @ 60/cwt     | 1980.00         | 1980.00              |   |   |   |   |   |  |
| 12-21 | 17 pigs -- 4,080 # @ 55/cwt     | 2244.00         | 2244.00              |   |   |   |   |   |  |

TAXES

AG 660 - M

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match terms associated with taxes on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |  |                  |
|----------|--|------------------|
| _____ a. | Product that can be traded or bought and sold  | 1. Futures       |
| _____ b. | A market based on selling a product at a set time in the future for a set price  | 2. Capital       |
| _____ c. | Money allowed for an agent for a specific service, usually involving selling a product                                     | 3. Levy          |
| _____ d. | Money paid to the owner of a right such as a mineral right or to the creator of some idea or to the author of a book, etc. | 4. Verification  |
| _____ e. | Protection against a downturn in prices  | 5. Hedge         |
| _____ f. | Money paid to shareholders of a corporation out of profits   | 6. Estate        |
| _____ g. | Asset that has a long-term value   | 7. Trust         |
| _____ h. | Property or possessions, especially of a deceased person   | 8. Easement      |
| _____ i. | Property or other assets held by one person for the benefit of another   | 9. Capital asset |
| _____ j. | Proof  | 10. Commission   |
| _____ k. | To impose a tax  | 11. Commodity    |
| _____ l. | Something of value that is owned by or in possession of the user   | 12. Royalty      |
| _____ m. | Legal right to make use of another person's property for a specific purpose  | 13. Dividends    |
| _____ n. | An asset capable of generating income  | 14. Asset        |

2. Describe the purpose of taxes.

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3. List three purposes of tax planning.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

4. Match the types of taxes on the right to their descriptions. Write the correct numbers in the blanks provided.

- |          |  |                    |
|----------|--|--------------------|
| _____ a. | Tax based on income; used for paying retirement and other benefits; payment entitles a person to receive benefits from Social Security when certain conditions are met | 1. Income          |
| _____ b. | Based on the value of certain physical assets owned  | 2. Inheritance     |
| _____ c. | Based on the value of receipts from sales; collected when the sale is made   | 3. Excise          |
| _____ d. | Based on the amount a physical asset increases in value during the time a person owns the asset  | 4. Sales           |
| _____ e. | Tax on the income of a person who is the primary owner of a business   | 5. Social Security |
| _____ f. | Tax on certain commodities   | 6. Self-employment |
| _____ g. | Based on the amount of money a person or business makes  | 7. Property        |
| _____ h. | Based on the value of assets transferred from the estate of a deceased person to another person  | 8. Capital gains   |

5. Describe the progressive income tax.

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6. Select items from the list below subject to the property tax. Write an "X" in the blank before each correct answer.

- \_\_\_ a. Houses
- \_\_\_ b. Land
- \_\_\_ c. Inventory
- \_\_\_ d. Buildings
- \_\_\_ e. Machinery
- \_\_\_ f. Business equipment
- \_\_\_ g. Farm trucks
- \_\_\_ h. Household goods

7. List six types of records and information helpful for tax management.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

8. Describe the options available for tax accounting periods.

- a. \_\_\_\_\_
- b. \_\_\_\_\_

9. Describe the four methods of reporting income for tax purposes.

- a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Describe the time requirements in income tax payment.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Distinguish between taxable and non-taxable items by putting a "T" or an "N" in front of the appropriate items.

- \_\_\_\_ a. Compensation for services
- \_\_\_\_ b. Dividends received from business dealings
- \_\_\_\_ c. Exchanges of business property
- \_\_\_\_ d. Commodity credit loans
- \_\_\_\_ e. Social Security benefits, railroad retirement pensions and war veteran's disability pensions
- \_\_\_\_ f. Fair market value of produce or livestock raised and consumed by the farmer's family
- \_\_\_\_ g. Income from royalties
- \_\_\_\_ h. Income from estates and trusts
- \_\_\_\_ i. Life insurance paid by reason of death
- \_\_\_\_ j. Commissions
- \_\_\_\_ k. Gifts and inheritances
- \_\_\_\_ l. Loans
- \_\_\_\_ m. Income tax refunds
- \_\_\_\_ n. The value of work performed by farmer or the farmer's family on the farm

- \_\_\_\_ o. Increase in the value of crops, livestock or other assets unless sold or exchanged when using the cash method of accounting
- \_\_\_\_ p. Income from interest
- \_\_\_\_ q. Rent income
- \_\_\_\_ r. Sickness and injury benefits, if received as damages in settlement of a claim or under a health and accident insurance policy
- \_\_\_\_ s. Income from partnerships
- \_\_\_\_ t. Profits from sales or exchanges of property
- \_\_\_\_ u. Gross income from the farm or ranch business
- \_\_\_\_ v. Educational grants and scholarships
- \_\_\_\_ w. Easement payments and other unearned income
- \_\_\_\_ x. Government program payments
- \_\_\_\_ y. Gasoline tax refunds
- \_\_\_\_ z. Insurance proceeds received for crop damage or farm building damage

12. List five deductible business expenses.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

13. Distinguish between tax management strategies to increase (I) and decrease (D) income by putting an "I" or a "D" in front of each strategy.

- \_\_\_\_ a. Postpone some sales to next year
- \_\_\_\_ b. Make advance purchases of feed and fertilizer
- \_\_\_\_ c. Do some off-farm or custom work
- \_\_\_\_ d. Contract to sell products in the next tax year
- \_\_\_\_ e. Do not claim cost of property acquired for use in trade or business
- \_\_\_\_ f. Buy needed machinery equipment and other supplies before the end of the year to get some depreciation

- \_\_\_\_g. Work with suppliers to pay bills after beginning of next fiscal year
- \_\_\_\_h. Sell marketable grain and livestock before end of fiscal year
- \_\_\_\_i. Postpone expenditures and investments until after beginning of next fiscal year
- \_\_\_\_j. Use maximum depreciation methods
- \_\_\_\_k. Claim the maximum dollars allowed of cost of property acquired for use in trade or business

## TAXES

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## ANSWERS TO TEST

1.     a. 11           d. 12           g. 9           j. 4           m. 8  
        b. 1           e. 5           h. 6           k. 3           n. 2  
        c. 10          f. 13          i. 7           l. 14
2.     Taxes are charges levied by the government on its people in order to accomplish tasks for the public good that would be impossible or very difficult for a single individual to accomplish
3.     Maximize after tax income; Best fit tax payments into overall cash flow plan for the agribusiness; Establish proof of proper accounting procedures
4.     a. 5           e. 6  
        b. 7           f. 3  
        c. 4           g. 1  
        d. 8           h. 2
5.     An individual's income is divided into categories or brackets; Each bracket is assigned a percentage of taxes to be changed; The highest taxable income brackets are normally charged the highest tax percentage
6.     a, b, d, e, f
7.     Answer should include six of the following:  
        All receipts and expenses by type; Inventory records; Depreciation records; Dates of transactions; Verification of transactions; Non-farm income; Loan information; Capital improvement records; Charitable donations; Previous tax information such as amount of taxes paid; Current year's tax rules
8.     Calendar year--January 1 to December 31 or Fiscal year--A one year period starting on a specified date
9.     Cash method: Income and expenses are recorded in the year they were received or paid out; Simplest method; Most flexible method for determining when to receive income or incur expenses; May cause income to be erratic or fluctuate  
        Accrual method: Income and expenses are recorded in the year in which they occur regardless of when payment is received or made; Levels out income; Requires very detailed records; Makes actual cash position hard to determine  
        Crop method: Used for a crop that takes more than one year from planting to harvest; Profit or loss is not determined until the crop is sold  
        Combination (hybrid) method: Any combination of cash, accrual or crop methods of accounting; The combination used must clearly show income and be used consistently; The same method must be used for reporting income and expenses
10.    Normally, income tax must be paid as you progress through the year; Sole proprietor farmers may pay the entire tax due for the previous year on February 28

11.    a. T            g. T            m. N            s. T            y. T  
        b. T            h. T            n. N            t. T            z. T  
        c. N            i. N            o. N            u. T  
        d. N            j. T            p. T            v. N  
        e. N            k. N            q. T            w. T  
        f. N            l. N            r. N            x. T

12.    Answer should include five of the following:

Prepaid farm supplies; Livestock feed; Labor hired; Repairs and maintenance; Interest; Breeding fees; Fertilizer and lime; Fuels and oils; Taxes; Insurance; Commodity futures contracts; Cash rent; Depreciation; Truck and car expenses; Travel expenses; Soil and water conservation expenses; Tenant house expenses; Retirement plans; Losses from operating a farm; Miscellaneous expenses (see page 460L - 11)

13.    a. D            d. D            g. I            j. D  
        b. D            e. I            h. I            k. D  
        c. I            f. D            i. I

# 660N-1

## INSURANCE

AG 660 - N

### UNIT OBJECTIVE

After completion of this unit, students should be able to describe the purposes of insurance and the kinds of insurance available. Students should also be able to describe the various factors involved in selecting different types of insurance. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with insurance to their correct definitions.
2. Write the basic purpose of insurance.
3. Match the types of insurance to their descriptions.
4. List three questions to answer in deciding whether to insure against a loss.
5. List four circumstances or actions for which a farmer could be liable.
6. Describe the types of health insurance.
7. Distinguish between the two basic types of life insurance.
8. Select items that influence the cost of property insurance.
9. List three basic rules for buying property insurance.
10. Describe four benefits of crop insurance.
11. Select features of insurance provided by the Federal Crop Insurance Corporation.
12. Select characteristics of livestock insurance.
13. Match type of automobile insurance coverages to their descriptions.
14. Evaluate an insurance program and make recommendations for improvements.

INSURANCE

AG 660 - N

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Buying Health Insurance*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$.35; order no. CIS 462.
  - B. Make necessary copies of material.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.
  - E. Invite an insurance agent to speak to the class.
  - F. Lead a discussion on the risks involved in farming. One question could be, "How much of a gamble is farming without insurance?"
  - G. Review and give test.
  - H. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Assignment sheet
    1. AS 1--Evaluate an Insurance Program and Make Recommendations for Improvements
  - E. Test
  - F. Answers to test

## III. Unit references

- A. *Farm Business Management Curriculum Guide, Instructional Material Year 1*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
- B. *Farm Business Management Curriculum Guide, Instructional Material Year 2*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
- C. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- D. *Illinois Agricultural Core Curriculum*, University of Illinois, Urbana, Illinois, 1989.
- E. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.
- F. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- G. Roy, Ewell P., Corty, Floyd L. and Sullivan, Gene D., *Economics: Applications to Agriculture and Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1981.
- H. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- I. *Vocational Agriculture IV*, Oklahoma Curriculum and Instructional Materials Center, Stillwater, Oklahoma, 1973.
- J. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

INSURANCE

AG 660 - N

INFORMATION SHEET

- I. Terms and definitions
  - A. Insurance--Purchased protection against the risk of loss due to unforeseen occurrences
  - B. Risk--Exposure to the chance of injury or loss
  - C. Liable--Legally responsible for  
  
(Note: Liability is legal responsibility for a situation or occurrence.)
  - D. Negligent--Guilty of neglect or carelessness
  - E. Compensation--Payment made to replace money lost through some accident or misfortune
  - F. Deductible--Amount of money a policyholder has to pay before the insurance begins to make payments
  - G. Catastrophe--Sudden disaster
  - H. Comprehensive--All encompassing
  - I. Disability--Injury or illness preventing or hampering a person from functioning normally in a job
  - J. Beneficiary--Person named in a life insurance policy to receive proceeds at death of the insured
  - K. Double indemnity--An accidental death benefit to pay double face amount of life insurance in case of death by accident
  - L. Cash value--Amount available in cash upon voluntary termination of a life insurance policy before death
  - M. Premium--Cost to the insured for a specific type of insurance and amount of coverage for a specific time
  - N. Replacement cost--The actual cost to replace property
  - O. Actual value--The depreciated value of property
  - P. Claim--Request for payment by the insured to the insurer as a result of an occurrence causing financial hardship or lost.

Q. Policy limit--The maximum specified amount a given insurance policy will pay a specified policy holder under a specific set of circumstances for a particular occurrence

II. Basic purpose of insurance--To reduce the risk of suffering a major loss

(Note: Buying insurance creates a small, guaranteed loss in order to avoid a large potential loss.)

III. Types of insurance

(Note: "Owner" in the following descriptions refers to the person owning the insurance.)

A. Liability--Financial protection for the owner against harm caused to another person or another person's property through the negligence or direct fault of the owner

B. Life insurance--Protection against loss of income due to the death of the owner

C. Health insurance--Protection against medical bills that would affect the efficient operation of the agribusiness and against loss of income due to illness

D. Workman's compensation--An employee insurance protecting against loss of income due to illness, injury or accidental loss of life

E. Automobile insurance--Insurance specifically covering motor vehicles which may include protection for liability, theft, collision or other misfortunes that may occur

F. Property insurance--Financial protection for the owner to help replace or restore buildings, land, equipment or other physical assets damaged or destroyed by fire, wind, floods, etc.

G. Crop insurance--Financial protection against crop loss due to factors outside the owner's control

H. Livestock insurance--Financial protection against loss of livestock due to factors outside the owner's control

IV. Questions to answer in deciding whether to insure against a loss

A. What is the risk of a loss occurring?

B. What will be the financial burden if a loss occurs?

C. What is the cost of insuring against a particular loss?

V. Circumstances or actions for which a farmer could be held liable

A. Personal negligent acts

B. Negligent acts of members of his or her family

- C. Injury occurring on the farmer's property
- D. Damage caused by the farmer's livestock
- E. Negligence resulting in harm to employees
- F. Negligent use of machinery owned by the farmer

(Note: This could be true whether the farmer is operating the machinery or not.)

VI. Types of health insurance

- A. Hospital, surgical and medical--Covers normal medical expenses due to injury or illness and usually has a small deductible and specified maximum limits on benefits
- B. Major medical--Covers costs of a major illness or injury; deductibles are usually larger and payment is usually limited to a certain percentage of the total cost

(Note: This type of insurance is usually purchased in conjunction with a normal coverage policy and takes over when the limits of the normal policy are exceeded.)

- C. Disability income--Pays a person who is unable to work a percentage of that person's normal income

VII. Life insurance

- A. Whole life
  - 1. More expensive for the same amount of coverage
  - 2. Premiums remain consistent throughout the life of the coverage
  - 3. Accumulates a cash value
  - 4. Cash value may be borrowed by policyholder at reasonably low interest

- B. Term
  - 1. Least expensive way to get maximum coverage
  - 2. Premiums increase as the policyholder gets older
  - 3. Does not accumulate a cash value
  - 4. Cost is prohibitive for older policyholder

(Note: If term insurance is used, the policyholder should have another system of saving to build protection as the policyholder gets older.)

VIII. Items that influence the cost of property insurance

(Note: The probability of loss as calculated by insurance companies determines the cost.)

- A. Amount of protection
- B. Type of construction  
Example: Wood, brick
- C. Location  
Example: On a flood plain
- D. Distance from fire department
- E. Length of time covered
- F. History of weather problems

IX. Basic rules for buying property insurance

- A. Only insure property important to the operation of the business or comfort of the family and which cannot be easily replaced out of the operating budget
- B. Insure if there is a loan on the property
- C. Buy enough insurance so that operations can be restored if a catastrophe occurs

X. Benefits of crop insurance

- A. Money that would otherwise have to be reserved in case of a crop failure can be used for investment
- B. Protects against the added risk of specializing in one or two crops  
  
(Note: The likelihood of several different crops all being destroyed is much less than the likelihood of one crop being destroyed.)
- C. Provides protection for a lender, which makes credit easier to obtain
- D. Allows farmer to make long-term investments with greater assurance that the income will be there to service the debt
- E. Protects livestock investment for the farmer who raises home-grown feed for livestock
- F. Protects family savings and future financial security

XI. Federal Crop Insurance Corporation

(Note: The Federal Crop Insurance Corporation is a part of the federal government and was started to assist farmers in the case of crop failure. It is financed by premiums from farmers who buy the insurance.)

- A. Insures yield and quality required to cover production expenses; it does not guarantee profits
- B. Pays up to a certain guaranteed yield
- C. Does not pay for losses due to poor farming practices

XII. Characteristics of livestock insurance

(Note: Individual policies will vary.)

- A. Usually only covers death of the livestock
- B. Insures investment in animal--not profit
- C. Usually does not cover veterinary costs or other normal maintenance expenses
- D. Does not cover required slaughter by governmental order
- E. Compensation is set by an impartial judge

(Note: The price is generally conservative.)

- F. Policies may not be transferred without permission of the company

XIII. Types of automobile insurance coverages

- A. Bodily injury liability--Protects the policyholder financially if he or a member of his family injures someone while operating his vehicle

(Note: State law requires everyone to have liability insurance.)

- B. Property damage liability--Protects the policyholder financially if he or a member of his family damages someone's automobile or other property

(Note: Most policies also offer liability protection for a person driving a borrowed car or loaning one's car to someone else.)

- C. Medical reimbursement--Pays for any medical, dental, hospital, nursing or funeral expenses incurred as the result of an auto or truck accident involving the insured vehicle regardless of fault
- D. Comprehensive physical damage--Insures auto against glass breakage, fire, theft and all weather elements

- E. Collision--Insurance pays for damage to one's car regardless of the burden of negligence

(Note: Most policies have a deductible amount that must be paid by the policyholder.)

- F. Protection against the uninsured motorist--Coverage for holder to recover loss for bodily injury caused by a person having no liability insurance

INSURANCE

AG 660 - N

ASSIGNMENT SHEET #1--EVALUATE AN INSURANCE PROGRAM AND MAKE RECOMMENDATIONS FOR IMPROVEMENTS

Name \_\_\_\_\_ Score \_\_\_\_\_

With the help of your parents, complete the following information in regard to your family insurance program (Note: When making recommendations for changes, you must take into account the changes in cost of insurance.)

I. Review of your automobile insurance

| Auto Description | Liability Limits | Medical | Comprehensive | Collision |
|------------------|------------------|---------|---------------|-----------|
|                  |                  |         |               |           |
|                  |                  |         |               |           |
|                  |                  |         |               |           |
|                  |                  |         |               |           |
|                  |                  |         |               |           |
|                  |                  |         |               |           |

- a. Liability limits are the same on each vehicle. Yes \_\_\_\_\_ No \_\_\_\_\_
- b. Liability limits are at least equal to family assets Yes \_\_\_\_\_ No \_\_\_\_\_
- c. Each vehicle has medical coverage Yes \_\_\_\_\_ No \_\_\_\_\_
- d. Comprehensive and collision should be dropped on older vehicles Yes \_\_\_\_\_ No \_\_\_\_\_
- e. Comprehensive and collision should be added to one or more vehicles Yes \_\_\_\_\_ No \_\_\_\_\_
- f. All vehicles have liability coverage Yes \_\_\_\_\_ No \_\_\_\_\_

- g. Using the information and recommendations included in this unit, what changes would you recommend in the coverages of your family vehicles?

2. Review of your property insurance program.

| Description                          | Amount of Coverage |
|--------------------------------------|--------------------|
| Dwelling                             | _____              |
| Contents                             | _____              |
| Garage                               | _____              |
| Barn                                 | _____              |
| Other Building #1                    | _____              |
| Other Building #2                    | _____              |
| Other Building #3                    | _____              |
| Farm liability or personal liability | _____              |
| Machinery                            | _____              |
| Tools                                | _____              |
| Livestock                            | _____              |
| Grain                                | _____              |
| Hay                                  | _____              |
| Other                                | _____              |

- a. Our property is fully insured Yes \_\_\_\_\_ No \_\_\_\_\_

(Note: To be fully insured and avoid co-insurance on the dwelling, it must be insured for at least eighty percent of replacement cost.)

- b. In the event house and contents were lost to fire, insurance would replace same house, all clothes, furniture, appliances, books, etc. Yes \_\_\_\_\_ No \_\_\_\_\_

- c. All barns vital to farm operation are insured Yes\_\_\_\_\_ No\_\_\_\_\_
- d. All tools, machinery, hay and grain vital to the farm operation are insured Yes\_\_\_\_\_ No\_\_\_\_\_
- e. Liability limits are adequate to protect farm or property in the event of a suit Yes\_\_\_\_\_ No\_\_\_\_\_
- f. Liability coverage includes protection for employees Yes\_\_\_\_\_ No\_\_\_\_\_
- g. Crop, hail or federal crop insurance is used on our farm Yes\_\_\_\_\_ No\_\_\_\_\_
- h. Based on information and recommendations in this unit, what suggestions would you make for your family's property insurance coverages?

3. Review your family's life insurance program.

|                | Amount of Policy | Kind of Policy |
|----------------|------------------|----------------|
| Father         | _____            | _____          |
| Mother         | _____            | _____          |
| Yourself       | _____            | _____          |
| Brother/Sister | _____            | _____          |
| Brother/Sister | _____            | _____          |
| Brother/Sister | _____            | _____          |

- a. In event of death of a member of the family, would there be enough cash, including life insurance proceeds, to pay all appropriate debts, funeral expenses, etc.? Yes\_\_\_\_\_ No\_\_\_\_\_
- b. After paying debts and expenses, family income would be adequate Yes\_\_\_\_\_ No\_\_\_\_\_
- c. Enough cash to pay state and federal estate taxes will be available in the event of death of mother or father Yes\_\_\_\_\_ No\_\_\_\_\_

- d. Using the information and recommendations included in this unit, what changes would you recommend in your family's life insurance coverages?

4. Review of health insurance and social security.

- a. All members of family are covered by health insurance      Yes\_\_\_      No\_\_\_
- b. Hospital, surgical-type coverage is included in our policy      Yes\_\_\_      No\_\_\_
- c. Major medical coverage is included in our policy      Yes\_\_\_      No\_\_\_
- d. At least one member of family is covered by disability  
income or workmen's compensation      Yes\_\_\_      No\_\_\_
- e. Based on information and recommendations in this unit, what suggestions would you  
make for your family's health insurance coverages?

## INSURANCE

AG 660 - N

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |  |                      |
|----------|--|----------------------|
| _____ a. | Legally responsible for  | 1. Beneficiary       |
| _____ b. | Amount of money a policyholder has to pay before the insurance begins to make payments               | 2. Insurance         |
| _____ c. | Sudden disaster  | 3. Premium           |
| _____ d. | Purchased protection against the risk of loss due to unforeseen occurrences                          | 4. Deductible        |
| _____ e. | Amount available in cash upon voluntary termination of a life insurance policy before death          | 5. Liable            |
| _____ f. | Payment made to replace money lost through some accident or misfortune                               | 6. Comprehensive     |
| _____ g. | Exposure to the chance of injury or loss   | 7. Risk              |
| _____ h. | Injury or illness preventing or hampering a person from functioning normally in a job                | 8. Double indemnity  |
| _____ i. | Guilty of neglect or carelessness  | 9. Compensation      |
| _____ j. | All encompassing   | 10. Cash value       |
| _____ k. | Person named in a life insurance policy to receive proceeds at death of the insured                  | 11. Catastrophe      |
| _____ l. | An accidental death benefit to pay double face amount of life insurance in case of death by accident | 12. Negligent        |
| _____ m. | Cost to the insured for a specific type of insurance and amount of coverage for a specific time      | 13. Disability       |
| _____ n. | The actual cost to replace property  | 14. Replacement cost |
|          |  | 15. Actual value     |
|          |  | 16. Claim            |
|          |  | 17. Policy limit     |

- \_\_\_\_\_ o. The maximum specified amount a given insurance policy will pay a specified policy holder under a specific set of circumstances for a particular occurrence
- \_\_\_\_\_ p. The depreciated value of property
- \_\_\_\_\_ q. Request for payment by the insured to the insurer as a result of an occurrence causing financial hardship or loss
2. Write the basic purpose of insurance \_\_\_\_\_
- 
3. Match the types of insurance on the right to their descriptions. Write the correct numbers in the blanks provided.
- |   |                           |
|---|---------------------------|
| _____ a. Financial protection for the owner against harm caused to another person or another person's property through the negligence or direct fault of the owner          | 1. Livestock insurance    |
| _____ b. An employee insurance protecting against loss of income due to illness, injury or accidental loss of life  | 2. Crop insurance         |
| _____ c. Financial protection against crop loss due to factors outside the owner's control  | 3. Property insurance     |
| _____ d. Financial protection against loss of livestock due to factors outside the owner's control  | 4. Liability              |
| _____ e. Protection against loss of income due to the death of the owner  | 5. Life insurance         |
| _____ f. Insurance specifically covering motor vehicles which may include protection for liability, theft, collision or other misfortunes that may occur                    | 6. Health insurance       |
| _____ g. Protection against medical bills that would affect the efficient operation of the agribusiness and against loss of income due to illness                           | 7. Workman's compensation |
| _____ h. Financial protection for the owner to help replace or restore buildings, land, equipment or other physical assets damaged or destroyed by fire, wind, floods, etc. | 8. Automobile insurance   |

4. List three questions to answer in deciding whether to insure against a loss.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
5. List four circumstances or actions for which a farmer could be liable.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
6. Describe the types of health insurance listed below.
- a. Hospital, surgical and medical \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Major medical \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - c. Disability income \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Distinguish between the two basic types of life insurance by placing a "WL" by the statements true of whole life and a "T" by the statements true of term.
- \_\_\_\_ a. Least expensive way to get maximum coverage
  - \_\_\_\_ b. Accumulates a cash value
  - \_\_\_\_ c. More expensive for the same amount of coverage
  - \_\_\_\_ d. Cash value may be borrowed by policyholder at reasonably low interest
  - \_\_\_\_ e. Premiums increase as the policyholder gets older
  - \_\_\_\_ f. Cost is prohibitive for older policyholders

8. Select items that influence the cost of property insurance from the list below. Write an "X" in the blank before each correct answer.

- a. Age of owners
- b. Length of time covered
- c. Marital status of owners
- d. Amount of protection
- e. Type of construction
- f. Location
- g. Distance from fire department

9. List three basic rules for buying property insurance.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

10. Describe four benefits of crop insurance.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_
- d. \_\_\_\_\_  
\_\_\_\_\_

11. Select features of insurance provided by the Federal Crop Insurance Corporation from the list below. Write an "X" in the blank before each correct answer.

- a. Financed by federal taxes
- b. Pays up to a certain guaranteed yield
- c. Pays for crop failure due to any cause
- d. Insures yield and quality required to cover production expenses; does not guarantee a profit

12. Select characteristics of livestock insurance from the list below. Write an "X" in the blank before each correct answer.

- \_\_\_\_ a. Pays owner, upon death of animal, what would have been a reasonable profit
- \_\_\_\_ b. Usually only covers death of the livestock
- \_\_\_\_ c. Compensation is set by an impartial judge
- \_\_\_\_ d. Policy is transferred with the sale of the livestock
- \_\_\_\_ e. Does not cover required slaughter by governmental order
- \_\_\_\_ f. Usually does not cover veterinary costs or other normal maintenance expenses

13. Match the types of automobile insurance coverages on the right to their descriptions. Write the correct numbers in the blanks provided.

- |   |  |
|---|--|
| ____ a. Pays for any medical, dental, hospital, nursing or funeral expenses incurred as the result of an auto or truck accident involving the insured vehicle regardless of fault | 1. Property damage liability                 |
| ____ b. Coverage for holder to recover loss for bodily injury caused by a person having no liability insurance  | 2. Protection against the uninsured motorist |
| ____ c. Protects the policyholder financially if he or a member of his family injures someone while operating his vehicle   | 3. Bodily injury liability                   |
| ____ d. Protects the policyholder financially if he or a member of his family damages someone's automobile or other property  | 4. Medical reimbursement                     |
| ____ e. Insurance pays for damage to one's car regardless of the burden of negligence   | 5. Collision                                 |
| ____ f. Insures auto against glass breakage, fire, theft and all weather elements   | 6. Comprehensive physical damage             |

## INSURANCE

## AG 660 - N

## ANSWERS TO TEST

1.
 

|       |       |      |       |
|-------|-------|------|-------|
| a. 5  | f. 9  | j. 6 | n. 14 |
| b. 4  | g. 7  | k. 1 | o. 17 |
| c. 11 | h. 13 | l. 8 | p. 15 |
| d. 2  | i. 12 | m. 3 | q. 16 |
| e. 10 |       |      |       |
  
2. To reduce the risk of suffering a major loss
  
3.
 

|      |      |      |
|------|------|------|
| a. 4 | d. 1 | g. 6 |
| b. 7 | e. 5 | h. 3 |
| c. 2 | f. 8 |      |
  
4. What is the risk of a loss occurring?; What will be the financial burden if a loss occurs?; What is the cost of insuring against a particular loss?
  
5. Answer should include four of the following:  
  
 Personal negligent acts; Negligent acts of members of his or her family; Injury occurring on the farmer's property; Damage caused by the farmer's livestock; Negligence resulting in harm to employees; Negligent use of machinery owned by the farmer
  
6.
  - a. Covers normal medical expenses due to injury or illness and usually has a small deductible and specified maximum limits on benefits
  - b. Covers costs of a major illness or injury; deductibles are usually larger and payment is usually limited to a certain percentage of the total cost
  - c. Pays a person who is unable to work a percentage of that person's normal income
  
7.
 

|       |       |
|-------|-------|
| a. T  | d. WL |
| b. WL | e. T  |
| c. WL | f. T  |
  
8. b, d, e, f, g
  
9.
  - a. Only insure property important to the operation of the business or comfort of the family and which cannot be easily replaced out of the operating budget
  - b. Insure if there is a loan on the property
  - c. Buy enough insurance so that operations can be restored if a catastrophe occurs
  
10. Answer should include four of the following:  
  
 Money that would otherwise have to be reserved in case of a crop failure can be used for investment; Protects against the added risk of specializing in one or two crops; Provides protection for a lender which makes credit easier to obtain; Allows farmer to make long-term investments with greater assurance that the income will be there to service the debt; Protects livestock investment for the farmer who raises home-grown feed for livestock; Protects family savings and future financial security
  
11. b, d

12. b, c, e, f

13. a. 4            d. 1  
b. 2            e. 5  
c. 3            f. 6

# 660O-1

## MARKETING

### AG 660 - O

#### UNIT OBJECTIVE

After completion of this unit, students should be able to describe key factors involved in marketing. Students should also be able to describe marketing tools including forward contracting and hedging. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with marketing to their correct definitions.
2. Describe the twelve types of marketing functions.
3. List five tools of marketing.
4. Match the jobs involved with buying and selling to their descriptions.
5. Describe four types of markets.
6. Describe the importance of grades and standards.
7. Describe how the conditions of time, location and form affect the market price.
8. List three characteristics of price cycles.
9. Select characteristics of marketing orders.
10. List four factors affecting grain quality and price.
11. List three marketing strategies.
12. Match the types of costs that need to be evaluated when determining marketing strategy to their descriptions.
13. List six points to consider when forward contracting.
14. List five guidelines for developing a forward contract.
15. Distinguish between hedging and speculation.
16. Select characteristics of the futures market.
17. Select guidelines to follow when hedging.
18. List five sources of market outlook information.
19. List five characteristics of marketers.

20. Define perfect competition, pure monopoly, oligopoly and monopolistic competitions market situations.
21. List five characteristics of a free enterprise system.
22. Conduct a survey of local marketing practices.
23. Develop a marketing plan for a commodity.

## MARKETING

AG 660 - O

## SUGGESTED ACTIVITIES

## I. Suggested activities for the instructor

## A. Order materials to supplement unit.

## 1. Literature

- a. *Farm and Ranch Business Management*, available from John Deere Distribution Service Center, Service Publications, Department 150, 1400 - 13th Street, East Moline, Illinois 61244; textbook: cost \$20.71, order no. FBM10102B; instructor guide: cost \$13.88, order no. FBM10502T; student guide: cost \$6.91, order no. FBM10602W; slide set: cost \$105.48, order no. FBM10202S.
- b. *Marketing for Farmers*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$24.95; order no. Doanes MFF-1.
- c. The following publications are available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).

|      |     |  |        |
|------|-----|--|--------|
| EXT  | 649 | <i>Marketing Idaho's Dry Edible Beans</i>  | \$1.00 |
| CIS  | 348 | <i>Buying and Selling Alfalfa Hay, Corn Silage, Barley</i>                                       | \$.25  |
| CIS  | 449 | <i>Buying and Selling High-Moisture Grain</i>  | \$.25  |
| PNW  | 230 | <i>Waterway User Fees and Wheat Transportation</i>   | \$.35  |
| EXP  | 636 | <i>Idaho Grain Producers: Adoption of New Marketing Methods</i>                                  | \$1.50 |
| EXP  | 653 | <i>Transporting and Marketing Idaho's Wheat and Barleys</i>                                      | \$.75  |
| WREP | 1   | <i>Farmer Use of Wheat Futures in the Pacific Northwest</i>                                      | \$.50  |
| CIS  | 539 | <i>Setting a Price for Alfalfa Feeds</i>   | \$.35  |
| EXP  | 619 | <i>Northwest Export Shipping of Potato Products--Hinterland Delineation and Growth Potential</i> | \$1.00 |
| EXP  | 710 | <i>The Potato Export Market</i>  | \$.50  |

|     |     |   |
|-----|-----|---|
| CIS | 818 | <i>Production, Processing and Marketing Potential for Rapeseed in the Pacific Northwest</i> \$.35       |
| EXT | 660 | <i>An International Market Profile: Rapeseed</i> \$1.00   |
| EXT | 667 | <i>Transporting and Marketing Idaho's Dry Edible Peas and Lentils</i> \$.50                             |
| MS  | 93  | <i>Farm Management and Marketing Publications</i> (NC)  |
| CIS | 683 | <i>Agricultural Trade Policy: Who Are the Actors?</i> \$.35   |
| CIS | 715 | <i>Electronic Marketing--What, How and Why?</i> \$.35   |
| CIS | 724 | <i>Countertrade: Is it the Answer for Agricultural Exporters?</i> \$.45                                 |
| CIS | 806 | <i>Considering the Export Market?</i> \$.35   |
| PNW | 241 | <i>Developing a Marketing Plan for Fresh Produce</i> \$.75  |
| EXP | 585 | <i>Containerized Movements of Kentucky Bluegrass Seed Exports Through Pacific Northwest Ports</i> \$.50 |
| CIS | 843 | <i>Market Development in the Beef Industry: The Stakes for Producers and Consumers</i> \$.35            |
| EXP | 689 | <i>Management, Marketing Practices and Problems of Idaho Beef Cattle Producers</i> \$1.50               |
| EXP | 696 | <i>The U.S. - Japanese Beef Agreement: Some Implications for the U.S. Beef Industry</i> \$1.50          |

2. Filmstrips, slideshows, etc.

- a. *Agricultural Marketing*, sound filmstrip; provides insight into the workings of hedging, cash forward contracts, cooperative bargaining and commodity groups; available from Vocational Educations Productions, California Polytechnic State University, San Luis Obispo, California 93407, (1-800-235-4146); cost \$19.95; order no. 1-810-133J.
- b. *Green Light for Grain*, Program #252; 26 minutes, VHS or Beta format; reviews grain transportation problems and their effect on farm prices; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).

- c. Hedging: A Potato Marketing Tool, Program #2; 27 minutes, VHS or Beta format; explains the process of "hedging" a commodity such as potatoes on the Chicago Mercantile Exchange; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436); purchase cost \$25; rental cost: \$10 for 14 days.
  - d. Merchants of Grain, Program #146; 60 minutes, VHS or Beta format; focuses on world grain movements and makes a parallel between grain and petroleum while describing how grain marketing decisions are controlled by the "Big 5" world companies that move grain; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
  - e. Ocean Barge Transportation, Program #3; 29 minutes, VHS or Beta format; illustrates marine transportation in ocean barges and harbor improvement; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
- B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and assignment sheets and discuss.
  - E. Obtain a film on marketing and use it to generate discussion.
  - F. Lead a discussion on how things would be without any of our modern marketing functions--in other words, without any "middlemen".
  - G. Develop a class project around marketing some sort of product. Have students plan marketing strategies and discuss the factors that affected the success of the project.
  - H. Have students collect market reports and graph market trends.
  - I. Invite a broker who deals in the futures market to talk to the class.
  - J. Speculate on the futures market using a small amount of imaginary capital. Have students keep track of price trends and make decisions on when to buy and sell based on marketing information obtained from available sources.
  - K. Invite a progressive farmer to discuss marketing techniques with the class.
  - L. Review and give test.
  - M. Reteach and retest if necessary

- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Types of Marketing Functions
    - 2. TM 2--People and Agencies Involved in Marketing
    - 3. TM 3--Livestock Marketing Channels
    - 4. TM 4--Factors That Affect Production Cycles
    - 5. TM 5--Factors That Cause Seasonal Price Variation
    - 6. TM 6--Factors Causing a Grain Discount
    - 7. TM 7--Hedging Examples
  - E. Assignment sheets
    - 1. AS 1--Conduct a Survey of Local Marketing Practices
    - 2. AS 2--Develop a Marketing Plan for a Commodity
  - F. Test
  - G. Answers to test
- III. Unit references
  - A. *Doane's Farm Management Guide*, Doane's Agricultural Services, St. Louis, Missouri, 1978.
  - B. *Farm Business Management Curriculum Guide, Instructional Material Year I*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - C. *Farm Business Management Curriculum Guide, Instructional Material Year II*, State Department of Vocational and Technical Education, Instructional Materials Center, Stillwater, Oklahoma.
  - D. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
  - E. *Instructional Materials for Vocational Agriculture III and IV*, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.

- F. Lowe, Ross E., et al., *Consumer Education and Economics*, 3<sup>rd</sup> edition, Glencoe Publishing Company, Mission Hills, California, 1990.
- G. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
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- I. Mortenson, W.P., *Modern Marketing of Farm Products*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1977.
- J. Peterson, H. Craig, *Economics of Work*, 2<sup>nd</sup> edition, South-Western Publishing Company, Cincinnati, Ohio, 1988.
- K. Roy, Ewell Paul, *Exploring Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1980.
- L. Roy, Ewell P., Corty, Floyd L. and Sullivan, Gene D., *Economics: Applications to Agriculture and Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1981.
- M. Smith, Robert F., et al., *The American Economic System*, 3<sup>rd</sup> edition, Laidlaw Brothers, Publishers, River Forest, Illinois, 1987.
- N. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- O. Swanson, Bettye B.k, *Consumer Challenges and Issues*, South-Western Publishing Co., Cincinnati, Ohio, 1987.
- P. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

MARKETING

AG 660 - O

INFORMATION SHEET

- I. Terms and definitions
  - A. Marketing--Processes involved in getting agricultural products from the farm to the consumer
  - B. Disseminating--Distributing
  - C. Contract--Legally binding agreement
  - D. Price chart--Graph showing rises and falls of prices for a particular commodity over a period of time; used to make predictions about price movements in the future
  - E. Commission--A fee given to an agent in exchange for a service, usually a service provided in selling a product
  - F. Consumer--Final buyer and user of a product
  - G. Facilitate--Make easier
  - H. Price posting--A practice required of some handlers under a marketing order that requires them to report their selling prices; they are not allowed to sell their products for less than the price they have filed
  - I. Referendum--A vote to gain the opinion of the voters on a particular issue
  - J. Confirmation--Verification or making sure something is true
  - K. Forward contract--An agreement to sell a specified quantity of a product for a specified price at a specified time in the future
  - L. Futures market--An exchange where futures contracts for commodities are bought and sold
  - M. Futures contract--A contract to deliver a specified quantity and grade of a commodity at a specific future month
  - N. Hedge--A contract entered into for protection of an investment
  - O. Speculate--Attempt to make a profit by predicting what the market will do and buying or selling based on that prediction
  - P. Margin--Deposit made with a brokerage firm when a position is taken on the futures market as a guarantee that the person taking the position will be able to cover any losses he might incur in the market

Q. Margin call--A request made to a buyer or seller on the futures market to bring the margin back in line with the value of the product

(Note: The minimum margin is usually 5 percent of the contract value. Brokers often require more.)

R. Basis--Difference between a cash price at a specific location and the price of a particular futures contract; may refer to a specific futures contract or marketing location

S. Commodity--Agricultural product

II. Types of marketing functions (Transparency 1)

A. Assembling--Collecting products from individual farmers and combining them with products of other farmers so that they can be economically processed, transported and sold

B. Storing--Keeping agricultural products on hand until they are needed or sold

C. Transporting--Moving the products from where they are produced to where they are consumed

D. Standardizing and grading--Setting minimum requirements for agricultural products, checking to see the requirements are met and labeling the products appropriately

E. Processing--Changing the form of the product so that it can be better used by the consumer

F. Packaging--Wrapping the product so that it can be more easily marketed

G. Financing--Providing the capital to facilitate the marketing process

H. Risk bearing--Taking or sharing the financial responsibility for the product in its various stages on its way to the consumer

(Note: This function is performed by whoever buys the product, but can be shared by others through insurance or the futures market.)

I. Providing market information--Collecting and disseminating facts about agricultural products, prices and other market conditions

J. Advertising and promoting--Presenting the product to the public in such a way as to increase demand

K. Buying and selling--Transferring the product from one person or business to another in exchange for money

- III. Tools of marketing
  - A. Cash contracts
  - B. Futures market
  - C. Price charts
  - D. Weather forecasts
  - E. On-farm storage
- IV. Jobs involved with buying and selling (Transparency 2)
  - A. Commission person--One who sells a product for someone else in return for a fee  

(Note: This person does not take ownership of the product.)
  - B. Wholesaler--One who purchases the product in large quantities and sells the product to a jobber or retailer
  - C. Jobber--One who buys in large quantities and breaks the product down into smaller quantities for the retailer
  - D. Broker--One who brings the buyer and seller together  

(Note: This person does not take ownership of the product.)
  - E. Retailer--One who sells the product to the final consumer
- V. Types of markets (Transparency 3)
  - A. Direct purchase--Product is obtained directly from the farmer by the processing plant or by the consumer
  - B. Central or terminal market--Products are shipped to a common location where products and buyers are brought together
  - C. Auction--Products are brought together by farmers where they are sold through competitive, verbal bidding  

(Note: Electronic auctions are becoming more popular with the auction being conducted over the telephone or closed circuit television.)
  - D. Cooperative markets--Farmers band together to combine their products and market them collectively
- VI. Importance of grades and standards--Facilitates marketing of products since the buyer does not actually have to see the product to know what the product is like; standards also protect the consumer from getting substandard or inferior products

VII. How the conditions of time, location and form affect the market price

A. Time

1. Some products are more in demand during certain times of the year
2. Most agricultural products are more plentiful during a certain season

B. Location--A product is worth more if it is located near demand centers

C. Form

1. As a product is changed into a more convenient form, it becomes more valuable
2. Larger quantities are usually sold for less since there is less cost involved in marketing

VIII. Price cycles (Transparencies 4, 5)

A. Rise and fall in price due to a variety of factors, usually production patterns

B. Tend to repeat themselves

C. Short-term cycles repeat themselves during a single month or year

Example: Prices for many products are lower close to harvest and higher during the rest of the year; demand for "hot-house" lambs is greater during March and April

D. Long-term cycles span several years

Example: As the price for meat rises, farmers tend to hold back more breeding animals in order to increase their production. This causes the supply to drop even lower and therefore increase the price. When the additional meat gets to the market several years later, the price is forced down because of an excess supply. This low price forces farmers to sell additional breeding animals, forcing the price even lower. Once the breeding animals are sold, the supply of meat becomes scarce again causing the price to go up and the cycle to start all over

IX. Marketing orders

(Note: A marketing agreement is similar to a marketing order except that the agreement is a voluntary contract between a handler of a commodity and a governmental agency while a marketing order applies to every handler of a certain commodity in a designated market area. Marketing orders have been used primarily for fruits, vegetables and dairy products.)

A. Marketing orders are designed to improve returns to the growers through orderly marketing

- B. Marketing orders may include items regulating quality, quantity, surplus control, containers, research projects, trade practices and price posting, and other terms necessary to carry out the goals of the program
  - C. Two-thirds of the producers of a certain product voting in a referendum must agree to the order  

(Note: The two-thirds can be by number or by volume of commodity produced.)
  - D. Fifty percent of the handlers of a certain commodity must sign the agreement  

(Note: If fifty percent of the handlers do not sign the agreement, then the order can still be issued if the Director in charge of the order deems the order necessary to advance the interests of the producers.)
  - E. Orders are legally binding on the handlers or those who market the product, but not the producers  

(Note: If the producer markets his own product, then the order would apply to that producer as a handler.)
- X. Factors affecting grain quality and price (Transparency 6)
- A. Excessive moisture
  - B. Low test weight
  - C. Foreign material
  - D. Heat damage
  - E. Insect infestation
  - F. Loss of condition from storage
- XI. Marketing strategies
- A. Buy and sell at current cash prices
  - B. Buy and store, or store and sell
  - C. Deliver and defer price
  - D. Fix price before delivery (forward contract)
  - E. Forward price with futures contract (hedging)
  - F. Sell (buy) on the cash market and speculate in the futures market

XII. Types of costs that need to be evaluated when determining market strategy

- A. Production costs--Expenses associated with producing a commodity
- B. Variable costs--Costs that increase with increasing production and which may be eliminated entirely if nothing is produced

(Note: A producer must make enough money to cover these costs or else the producer better look at producing something else.)

- C. Fixed costs--Costs that are the same regardless of the level of production and which will need to be paid whether anything is produced or not

(Note: A producer might conceivably go ahead and produce even if the profit was not high enough to cover all of the fixed costs since any money at all over variable costs would help offset the fixed costs.)

- D. Management costs--The amount the producer assigns to the management effort or pays to a hired manager

- E. Profit objective--The amount of return acceptable for taking the risks of production

(Note: In many farming operations, management costs and profit objective are lumped together.)

XIII. Points to consider when forward contracting

(Note: Forward contracting is selling a certain amount of a product for a set price at a specific date in the future.)

- A. Level of production costs
- B. Desired return to management
- C. What the market is offering

(Note: Be sure to check more than one source to obtain the best price information.)

- D. The best time to contract
- E. Amount of product available to contract

(Note: Because of the uncertainty of agricultural production, no more than two-thirds of the expected amount of production should be forward contracted.)

- F. Reputation of contractor
- G. Legality and fairness of the contract

(Note: Expert advice should be obtained unless the producer is very familiar with contracts, the law and the contractor.)

H. Time to make a careful decision

(Note: Don't be rushed into a contract. Make sure all your questions are answered satisfactorily.)

XIV. Guidelines for developing a forward contract

A. Put contract in writing

(Note: Do not simply disregard written confirmations of oral contracts sent to you by a buyer. If you don't want the contract and you don't return a rejection within ten days, the contract may be considered legally binding. On the other hand, if you do want the contract and don't send it in, you may not have a legally binding contract.)

B. Set the price, quantity and quality of the product to be delivered

C. Specify the place and time of delivery

D. Specify procedure and/or penalties should the seller not be able to deliver or the buyer not be able to accept the product on the specified date

(Note: Due to the uncertainty of production and transportation, some flexibility should be written into the contract on this point.)

E. Specify procedure for settling disputes

XV. Hedging versus speculation

A. Hedging--A person who hedges owns the product or is prepared to accept delivery of the product and is trading on the futures market to protect against an unfavorable price movement

B. Speculating--A person who speculates does not own the product and attempts to make money by anticipating the rise and fall of the market; the speculator assumes the risk the hedger is trying to avoid

XVI. Characteristics of the futures market

A. Enables a producer to guarantee, within limits, a certain price for a product

B. Insures against downward price movement, but also prevents gains from an upward price movement

C. Involves a promise to deliver or receive a commodity at some specified date in the future for a specified price

D. Products are not usually delivered--offsetting contracts are simply bought or sold to cancel the original contract

Example: If you sold your wheat on the April futures then you would simply buy back that contract when you sold your wheat for cash

- E. Prices for the futures market are determined through highly competitive bidding
- F. Trading is accomplished through a broker who has the legal right to represent his clients
- G. Contracts may be bought and sold at any time
- H. A margin or percentage of the contract is used to guarantee the broker that the person buying or selling a futures contract will be able to pay for losses which might incur

(Note: If the market moves against the person buying or selling futures, then the broker will issue a margin call and the person will be required to deposit additional margin money.)

XVII. Guidelines to follow when hedging (Transparency 7)

- A. Study past differences between the cash price and the futures price to determine the "basis" for the product
- B. Size of futures contract should be no larger than amount of actual product for sale or product needed
- C. Select a competent broker who understands agriculture and hedging
- D. Select a banker who understands and is willing to support your hedging effort
- E. Have sufficient cash available to meet margin calls
- F. Close out the futures contract at the same time you buy or sell the actual commodity
- G. Do not lift the hedge before you are ready to buy or sell the actual product unless you are prepared to speculate
- H. Study example hedges (Transparency 7)

Example: Assume you expect the basis for slaughter cattle to be -\$1.45 from the April futures price of \$75.00. An expected hedged price of \$73.55 is obtained ( $\$75.00 - \$1.45$ ). This is above the asking price of \$65.00. The hedge is initiated by selling April futures in November at \$75.00. In April, you complete the hedge by buying back April futures and selling the cattle on the local market

| Date                         | Cash Market                  | Futures Market     | Basis             |
|------------------------------|------------------------------|--------------------|-------------------|
| Nov. 1<br>price @ \$73.55    | Expected hedged<br>@ \$75.00 | Sell April futures | Expected - \$1.45 |
| April 1<br>locally @ \$83.70 | Sell cattle<br>@ \$85.00     | Buy April futures  | Realized - \$1.30 |
|                              |                              |                    |                   |
|                              | Difference                   | + \$10.15          | - \$10.00         |
|                              |                              |                    | + \$0.15          |

**PRICING RESULTS**

|                                 |               |
|---------------------------------|---------------|
| Local price for cattle.....     | \$83.70       |
| Futures gain .....              | <u>-10.00</u> |
| Net realized hedged price ..... | \$73.70       |

Your original price for the cattle was \$73.55. This was not realized because of some fluctuation in basis. Of course, you could have made more by not hedging at all; but because most individuals cannot predict future prices accurately, the decision to hedge may have been a wise one. Even though you got a lower price, the price was very near the price at which you were willing to sell when the hedge was placed.

Example: Again assume a basis of -\$1.45. Initial prices are the same, however, prices are lower in April. If prices were lower, it would have looked like this:

| <u>Date</u> | <u>Cash Market</u>              | <u>Futures Market</u>        | <u>Basis</u>      |
|-------------|---------------------------------|------------------------------|-------------------|
| Nov. 1      | Expected hedged price @ \$73.55 | Sell April futures @ \$75.00 | Expected - \$1.45 |
| April 1     | Sell cattle locally @ \$67.00   | Buy April futures @ \$68.30  | Realized - \$1.30 |
| Difference  | - \$6.55                        | + \$6.70                     | + \$0.15          |

**PRICING RESULTS**

|                                 |               |
|---------------------------------|---------------|
| Local price for cattle.....     | \$67.00       |
| Futures gain .....              | <u>+ 6.70</u> |
| Net realized hedged price ..... | \$73.70       |

If you did not hedge in this instance, the amount realized would have been much less than expected. The future's transaction enabled you to remain very close to the hedging objective

XVIII. Sources of market outlook information

- A. Radio and TV
- B. Newspapers
- C. U.S. Department of Agriculture reports
- D. University Extension Service reports
- E. Idaho Department of Agriculture reports
- F. Farm magazines

- G. Local elevators or markets
  - H. Feed stores
  - I. Subscription services
  - J. Professional agricultural consultants
- XIX. Characteristics of marketers
- A. Marketing orientation--Aggressively look for new sources of inputs, new places to market, opportunities for new products and new combinations of marketing strategies
  - B. Knowledge of marketing institutions--Know the marketing system and technical terms used in marketing
  - C. Knowledge of production costs--Keep good records in order to know bottom line price
  - D. Marketing plan--Develop written plan that lists all potential marketing strategies
  - E. Market information--Keep informed about national and international developments that affect input and commodity prices
  - F. Professional assistance--Seek information from others, such as brokers, elevator managers, salespeople, private consultants, extension personnel and researchers, before making marketing decisions
  - G. Discipline--Use self-discipline in avoiding emotional involvement with the market and by being profit-oriented to the market without letting greed dominate
  - H. Negotiating skills--Always look for opportunities and negotiate to buy at the lower end of the price range and sell at the upper end
- XX. Market situations
- A. Perfect competition—Market situation in which there are numerous buyers and sellers, and thus no one buyer or seller has control over price.
  - B. Pure monopoly—Market situation in which a single seller controls the supply of a product, and thus has control over price
  - C. Oligopoly—Industry dominated by a few suppliers that exercise some control over price
  - D. Monopolistic competition—Market situation in which there are numerous sellers, each with some control over price

XXI. Characteristics of a free enterprise system

- A. Private property
- B. Freedom of choice
- C. Competition
- D. Profits
- E. Self-interest

# **TYPES OF MARKETING FUNCTIONS**

**Assembling**

**Storing**

**Transporting**

**Standardizing and grading**

**Processing**

**Packaging**

**Financing**

**Risk bearing**

**Providing market information**

**Advertising and promoting**

**Buying and selling**

# **PEOPLE AND AGENCIES INVOLVED IN MARKETING**

**Commission person**

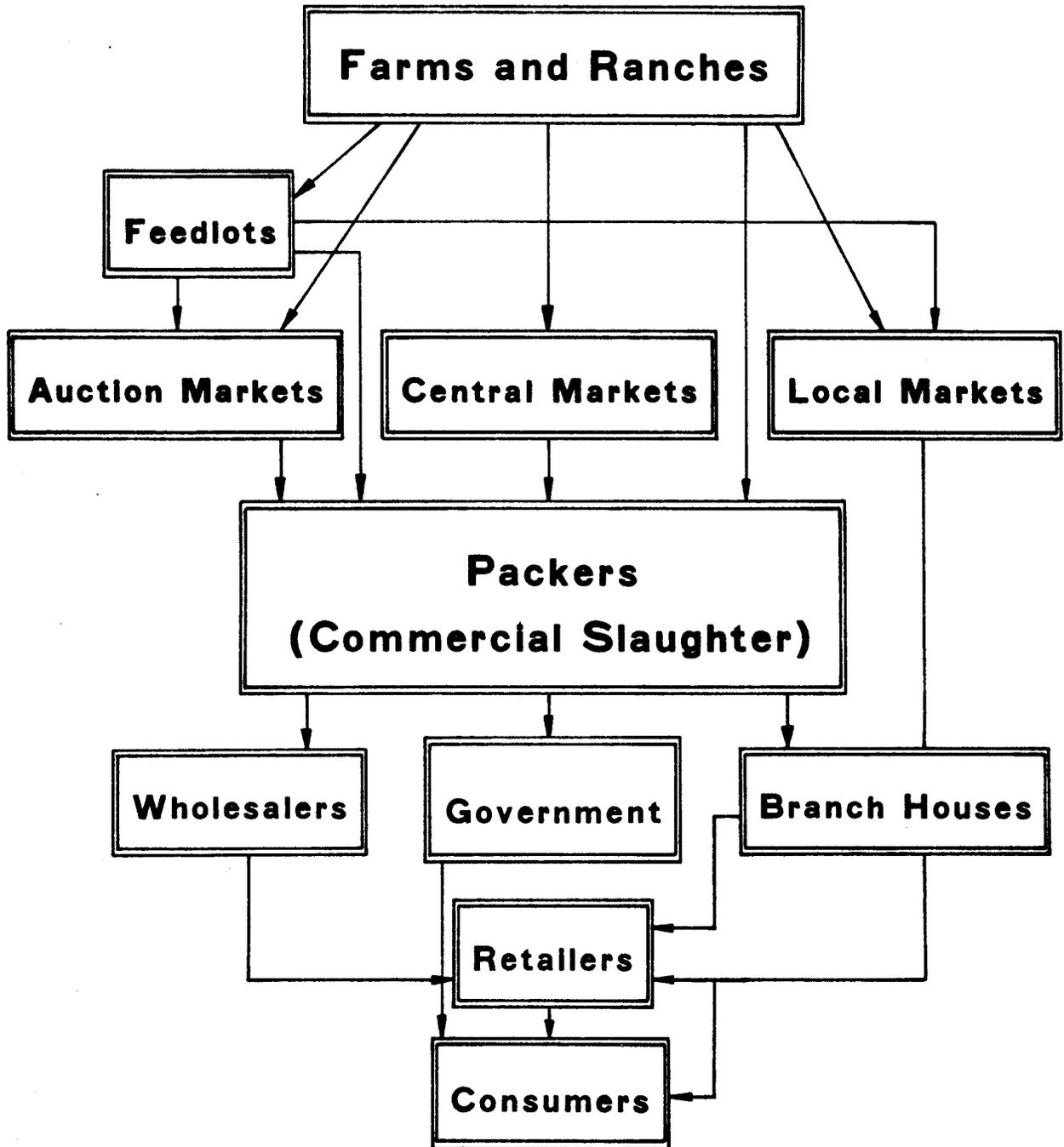
**Wholesalers**

**Jobbers**

**Brokers**

**Retailers**

# Livestock Marketing Channels



# **FACTORS THAT AFFECT PRODUCTION CYCLES**

**Length of gestation period**

**Wars**

**Credit and finances**

**Climatic conditions**

**General economic conditions**

**Availability of certain supplies**

**Trends in consumption**

**Competition from other products**

# **FACTORS THAT CAUSE SEASONAL PRICE VARIATION**

**Production**

**Demand**

**Location of production**

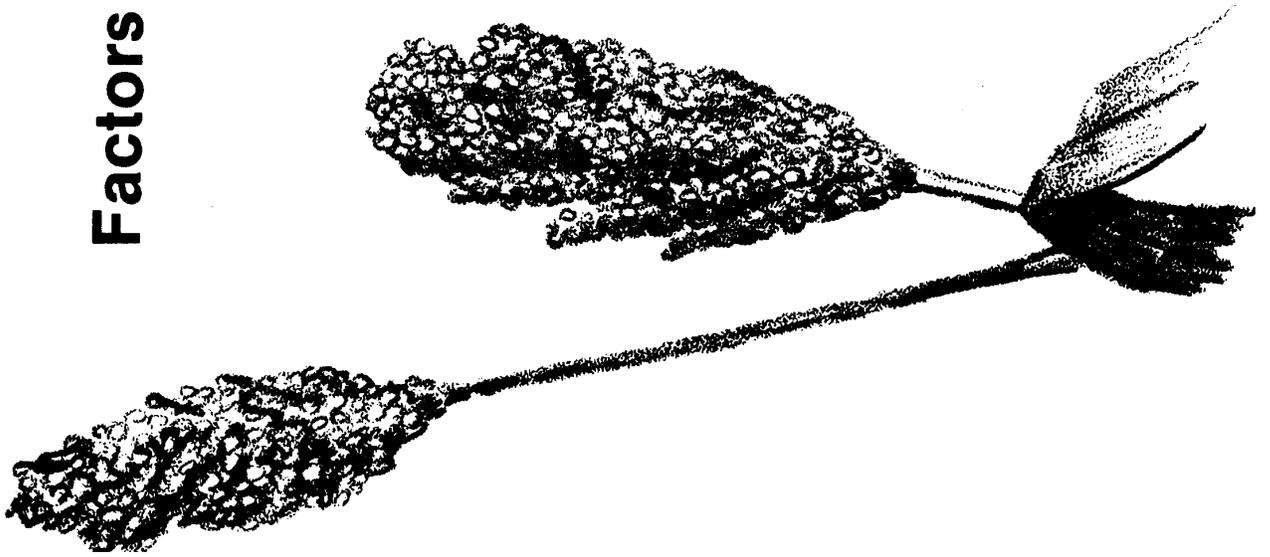
**Amount of processing**

**Type of product**

**Changes in production methods**

# Factors Causing A Grain Discount

- **EXCESSIVE MOISTURE**
- **TEST WEIGHT**
- **FOREIGN MATERIAL**
- **HEAT DAMAGE**
- **INSECT INFESTATION**
- **LOSS OF CONDITION**



## HEDGING EXAMPLES

| <u>DATE</u> | <u>CASH MARKET</u>              | <u>FUTURES MARKET</u>        | <u>BASIS</u>      |
|-------------|---------------------------------|------------------------------|-------------------|
| Nov. 1      | Expected hedged price @ \$73.55 | Sell April futures @ \$75.00 | Expected - \$1.45 |
| April 1     | Sell cattle locally @ \$83.70   | Buy April futures @ \$85.00  | Realized - \$1.30 |
| Difference  | + \$10.15                       | - \$10.00                    | + \$0.15          |

### PRICING RESULTS

|                                 |                  |
|---------------------------------|------------------|
| Local price for cattle.....     | \$83.70          |
| Futures loss.....               | - <u>\$10.00</u> |
| Net realized hedged price ..... | \$73.70          |

| <u>DATE</u> | <u>CASH MARKET</u>              | <u>FUTURES MARKET</u>        | <u>BASIS</u>      |
|-------------|---------------------------------|------------------------------|-------------------|
| Nov. 1      | Expected hedged price @ \$73.55 | Sell April futures @ \$75.00 | Expected - \$1.45 |
| April 1     | Sell cattle locally @ \$67.00   | Buy April futures @ \$68.30  | Realized - \$1.30 |
| Difference  | - \$6.55                        | + \$6.70                     | + \$0.15          |

### PRICING RESULTS

|                                 |                 |
|---------------------------------|-----------------|
| Local price for cattle.....     | \$67.00         |
| Futures gain.....               | + <u>\$6.70</u> |
| Net realized hedged price ..... | \$73.70         |

MARKETING

AG 660 - O

ASSIGNMENT SHEET #1--CONDUCT A SURVEY OF LOCAL MARKETING PRACTICES

Name \_\_\_\_\_ Score \_\_\_\_\_

Many farmers in Idaho have adopted progressive marketing techniques that have improved their ability to make a profit. Many others, however, are still using the same methods they have always used. Knowing what the local practices and options are will help you to increase your understanding of marketing and help you to make decisions about the effectiveness of different marketing techniques.

Using local farmers, farm suppliers, people in farm cooperatives, bankers, extension personnel and others involved in agriculture, study the various marketing methods used in your local area. Then organize those methods in writing and analyze the effectiveness of those methods. Keep in mind ways marketing techniques could be improved. You may want to limit your survey to a particular product or group of products.

Consider the following in your survey:

Where are most of the products processed?

Where are the products consumed?

How do the producers market their products?

Are marketing cooperatives utilized?

What happens to the product after the producer sells it?

How much future contracting is used?

How much is selling on the futures market used?

Are local prices above or below the state average?

How close to major markets is your area located?

How much assistance do farmers receive in utilizing marketing techniques?

660O-27

MARKETING

AG 660 - O

ASSIGNMENT SHEET #2--DEVELOP A MARKETING PLAN FOR A COMMODITY

Name \_\_\_\_\_ Score \_\_\_\_\_

Research the marketing techniques and methods available in your local situation and then choose a commodity to market. Decide on how much of the commodity you are going to produce and when it will be available to sell. Then decide how you will market the commodity. Use a variety of different methods such as forward contracting, selling on the futures market, putting some in storage, etc. Keep track of market conditions during the year and see how your decisions affected the overall selling price for the commodity.

## MARKETING

AG 660 - O

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.

- |          |  |                      |
|----------|--|----------------------|
| _____ a. | A contract to deliver a specified quantity and grade of a commodity at a specific future month   | 1. Margin            |
| _____ b. | Graph showing rises and falls of prices for a particular commodity over a period of time; used to make predictions about price movements in the future   | 2. Marketing         |
| _____ c. | Difference between a cash price at a specific location and the price of a particular futures contract; may refer to a specific futures contract or marketing location                              | 3. Hedge             |
| _____ d. | Final buyer and user of a product  | 4. Price posting     |
| _____ e. | Attempt to make a profit by predicting what the market will do and buying or selling based on that prediction  | 5. Speculate         |
| _____ f. | Deposit made with a brokerage firm when a position is taken on the futures market as a guarantee that the person taking the position will be able to cover any losses he might incur in the market | 6. Consumer          |
| _____ g. | An agreement to sell a specified quantity of a product for a specified price at a specified time in the future   | 7. Facilitate        |
| _____ h. | Make easier  | 8. Referendum        |
| _____ i. | Processes involved in getting agricultural products from the farm to the consumer  | 9. Contract          |
| _____ j. | Distributing   | 10. Commodity        |
| _____ k. | A vote to gain the opinion of the voters on a particular issue   | 11. Forward contract |
| _____ l. | A request made to a buyer or seller on the futures market to bring the margin back in line with the value of the product   | 12. Disseminating    |
|          |  | 13. Confirmation     |
|          |  | 14. Price chart      |
|          |  | 15. Margin call      |
|          |  | 16. Futures contract |
|          |  | 17. Futures market   |
|          |  | 18. Commission       |
|          |  | 19. Basis            |

- \_\_\_\_ m. Verification or making sure something is true
- \_\_\_\_ n. A practice required of some handlers under a marketing order that requires them to report their selling prices; they are not allowed to sell their products for less than the price they have filed
- \_\_\_\_ o. Legally binding agreement
- \_\_\_\_ p. A contract entered into for protection of an investment
- \_\_\_\_ q. An exchange where futures contracts for commodities are bought and sold
- \_\_\_\_ r. A fee given to an agent in exchange for a service, usually a service provided in selling a product
- \_\_\_\_ s. Agricultural product

2. Describe the types of marketing functions listed below.

- a. Assembling \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b. Storing \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- c. Transporting \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- d. Standardizing and grading \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- e. Processing \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- f. Packaging \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- g. Financing \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- h. Risk bearing \_\_\_\_\_  
\_\_\_\_\_
- i. Providing market information \_\_\_\_\_  
\_\_\_\_\_
- j. Advertising and promoting \_\_\_\_\_  
\_\_\_\_\_
- k. Buying and selling \_\_\_\_\_  
\_\_\_\_\_

3. List five tools of marketing.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

4. Match the jobs involved with buying and selling on the right to their descriptions. Place the correct number in the blank provided.

- |  |                      |
|--|----------------------|
| _____ a. One who buys in large quantities and breaks the product down into smaller quantities for the retailer | 1. Commission person |
| _____ b. One who sells a product for someone else in return for a fee  | 2. Wholesaler        |
| _____ c. One who brings the buyer and seller together  | 3. Jobber            |
| _____ d. One who purchases the product in large quantities and sells the product to a jobber or retailer       | 4. Retailer          |
| _____ e. One who sells the product to the final consumer   | 5. Broker            |

5. Describe the types of markets listed below.

- a. Direct purchase \_\_\_\_\_  
\_\_\_\_\_
- b. Central Market \_\_\_\_\_  
\_\_\_\_\_

c. Auction \_\_\_\_\_  
\_\_\_\_\_

d. Cooperative markets \_\_\_\_\_  
\_\_\_\_\_

6. Describe the importance of grades and standards.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Describe how the conditions listed below affect the market price.

a. Time \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Location \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. Form \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. List three characteristics of price cycles.

a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_

9. Select characteristics of marketing orders from the list below. Write an "X" in the blank before each correct answer.
- a. Marketing orders are implemented by a vote of Congress
  - b. Marketing orders are designed to improve returns to the growers through orderly marketing
  - c. Marketing orders involve the price of a product only
  - d. Orders are voluntary agreements between handlers and a governmental agency
  - e. Fifty percent of the handlers of a certain commodity must sign the agreement or else it can be signed by the director in charge
  - f. Two-thirds of the producers of a certain product voting in a referendum must agree to the order
10. List four factors which affect grain quality and price.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
11. List three marketing strategies.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
12. Match the types of costs that need to be evaluated when determining marketing strategy on the right to their descriptions.
- |  |                     |
|--|---------------------|
| <input type="checkbox"/> a. Expenses associated with producing a commodity   | 1. Profit objective |
| <input type="checkbox"/> b. Costs that are the same regardless of the level of production and which will need to be paid whether anything is produced or not | 2. Management costs |
| <input type="checkbox"/> c. The amount of return acceptable for taking the risks of production   | 3. Fixed costs      |
| <input type="checkbox"/> d. Costs that increase with increasing production and which may be eliminated entirely if nothing is produced                       | 4. Variable costs   |
| <input type="checkbox"/> e. The amount the producer assigns to the management effort or pays to a hired manager  | 5. Production costs |

13. List six points to consider when forward contracting.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
14. List five guidelines for developing a forward contract.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
15. Distinguish between hedging (H) and speculation (S) by writing the correct letter in front of the correct statements.
- \_\_\_\_ a. Person owns the product
  - \_\_\_\_ b. Protects against unfavorable price movement
  - \_\_\_\_ c. Person does not own the product
  - \_\_\_\_ d. Person is trying to reduce the risk
  - \_\_\_\_ e. Person is assuming the risk
16. Select characteristics of the futures markets from the list below. Write an "X" in the blank before each correct answer.
- \_\_\_\_ a. Guarantee an exact price for the product
  - \_\_\_\_ b. Contracts may be bought and sold at any time
  - \_\_\_\_ c. The margin is the amount of profit the broker makes for his services
  - \_\_\_\_ d. Involves a promise to deliver or receive a commodity at some specified date in the future for a specified price
  - \_\_\_\_ e. Trading is accomplished through a broker who has the legal right to represent his clients

- \_\_\_\_ f. Products are delivered and picked up similar to a central market
- \_\_\_\_ g. Prices are determined by the board of trade
- \_\_\_\_ h. Insures against downward price movement, but also prevents gains from an upward price movement

17. Select guidelines to follow when hedging from the list below. Write an "X" in the blank before each correct answer.

- \_\_\_\_ a. Have sufficient cash available to meet margin calls
- \_\_\_\_ b. Close out the futures contract at the same time you buy or sell the actual commodity
- \_\_\_\_ c. Futures contract should be double the amount of the actual product for sale
- \_\_\_\_ d. Study past differences between the cash price and the futures price to determine the "basis" for the product
- \_\_\_\_ e. Select a banker who understands and is willing to support your hedging effort
- \_\_\_\_ f. Select a competent broker who understands agriculture and hedging
- \_\_\_\_ g. Lift the hedge if prices are rising

18. List five sources of market outlook information.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

19. List five characteristics of marketers.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

20. Define perfect competition, pure monopoly, oligopoly and monopolistic competition market situations.

Perfect competition \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Pure monopoly \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Oligopoly \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Monopolistic competition \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21. List five characteristics of a free enterprise system.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

## MARKETING

AG 660 - O

## ANSWERS TO TEST

- |    |       |       |       |       |
|----|-------|-------|-------|-------|
| 1. | a. 16 | f. 1  | k. 8  | p. 3  |
|    | b. 14 | g. 11 | l. 15 | q. 17 |
|    | c. 19 | h. 7  | m. 13 | r. 18 |
|    | d. 6  | i. 2  | n. 4  | s. 10 |
|    | e. 5  | j. 12 | o. 9  |       |
- 2.
- Collecting products from individual farmers and combining them with products of other farmers so that they can be economically processed, transported or sold
  - Keeping agricultural products on hand until they are needed or sold
  - Moving the products from where they are produced to where they are consumed
  - Setting minimum requirements for agricultural products, checking to see the requirements are met and labeling the products appropriately
  - Changing the form of the product so that it can be better used by the consumer
  - Wrapping the product so that it can be more easily marketed
  - Providing the capital to facilitate the marketing process
  - Taking or sharing the financial responsibility for the product in its various stages on its way to the consumer
  - Collecting and disseminating facts about agricultural products, prices and other market conditions
  - Presenting the product to the public in such a way as to increase demand
  - Transferring the product from one person or business to another in exchange for money
3. Cash contracts; Futures market; Price charts; Weather forecasts; On-farm storage
- 4.
- |      |      |      |      |      |
|------|------|------|------|------|
| a. 3 | b. 1 | c. 5 | d. 2 | e. 4 |
|------|------|------|------|------|
- 5.
- Product is obtained directly from the farmer by the processing plant or by the consumer
  - Products are shipped to a common location where products and buyers are brought together
  - Products are brought together by farmers when they are sold through competitive, verbal bidding
  - Farmers band together to combine their products and market them collectively
6. Facilitates marketing of products since the buyer does not actually have to see the product to know what the product is like; standards also protect the consumer from getting substandard or inferior products
- 7.
- Some products are more in demand during certain times of the year; most agricultural products are more plentiful during a certain season
  - A product is worth more if it is located near demand centers
  - As a product is changed into a more convenient form, it becomes more valuable; larger quantities are usually sold for less since there is less cost involved in marketing

8. Answer should include three of the following:  
Rise and fall in price due to a variety of factors, usually production patterns; Tend to repeat themselves; Short-term cycles repeat themselves during a single month or year; Long-term cycles span several years
9. b, e, f
10. Answer should include four of the following:  
Excessive moisture; Low test weight; Foreign material; Heat damage; Insect infestation; Loss of condition from storage
11. Answer should include three of the following:  
Buy and sell at current cash prices; Buy and store, or store and sell; Deliver and defer price; Fix price before delivery (forward contract); Forward price with futures contract (hedging); Sell (buy) on the cash market and speculate in the futures market
12. a. 5                      b. 3                      c. 1                      d. 4                      e. 2
13. Answer should include six of the following:  
Level of production costs; Desired return to management; What the market is offering; The best time to contract; Amount of product available to contract; Reputation of contractor; Legality and fairness of the contract; Time to make a careful decision
14. Put contract in writing; Set the price, quantity and quality of the product to be delivered; Specify the place and time of delivery; Specify procedure and/or penalties should the seller not be able to deliver or the buyer not be able to accept the product on the specified date; Specify procedure for settling disputes
15. a. H                      b. H                      c. S                      d. H                      e. S
16. b, d, e, h
17. a, b, d, e, f
18. Answer should include five of the following:  
Radio and TV; Newspapers; U.S. Department of Agriculture reports; University Extension Service reports; Idaho Department of Agriculture reports; Farm magazines; Local elevators or markets; Feed stores; Subscription services; Professional agricultural consultants
19. Answer should include five of the following:  
Marketing orientation; Knowledge of marketing institutions; Knowledge of production costs; Marketing plan; Market information; Professional assistance; Discipline; Negotiating skills

20. Perfect competition—Market situation in which there are numerous buyers and sellers, and thus no one buyer or seller has control over price.  
Pure monopoly—Market situation in which a single seller controls the supply of a product, and thus has control over price  
Oligopoly—Industry dominated by a few suppliers that exercise some control over price  
Monopolistic competition—Market situation in which there are numerous sellers, each with some control over price
21. Private property; Freedom of choice; Competition; Profits; Self-interest

## 660P-1

### PURCHASING

#### AG 660 - P

#### UNIT OBJECTIVE

After completion of this unit, students should be able to list advantages and disadvantages of purchasing new and used equipment. Students should also be able to describe typical machinery and equipment rental practices and situations in which purchasing, rental and leasing may be the best alternative. This knowledge will be demonstrated by completion of an assignment sheet and unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. List three advantages and three disadvantages of purchasing new equipment.
2. List three advantages and three disadvantages of purchasing used equipment.
3. Define the terms lease and rental (when referring to machinery and equipment).
4. Describe four typical machinery and equipment rental practices.
5. Describe three situations in which renting machinery may be beneficial.
6. Describe three situations in which owning machinery is the best alternative.
7. Describe five situations in which leasing machinery is the best alternative.
8. List seven factors to consider when deciding to trade machinery and equipment.
9. List five factors to consider when renting or leasing land.
10. Research costs involved with purchasing, renting and leasing machinery and equipment.

PURCHASING

AG 660 - P

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Costs of Owning and Operating Farm Machinery in the Pacific Northwest*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$2.75; order no. PNW 346.
      - b. *Custom Rates for Idaho Agriculture - 1986*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$.50; order no. MS 67.
      - c. *Machinery Management*, 3rd edition; available from John Deere Distribution Service Center, Service Publications, Dept. 150, 1400-13th Street, East Moline, Illinois 61244, (1-800-544-2122); approximate cost \$18.00; order no. FMW10102B.
      - d. *Used Farm Equipment*, teaches the potential buyer of used farm equipment how to inspect the purchase for its component reliability and the quality of its safety features; compares costs of owning and operating a new or used machine; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$4.75; order no. NRAES-25.
    2. Filmstrips, slideshows, etc.
      - a. *Farm Machinery and Equipment: Buy, Lease, or Custom Hire?*, Program #432; 29 minutes; discusses the basic ways of obtaining machinery and equipment and the advantages and disadvantages of each; available from Agricultural Communications Center, 10 Ag Science Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
      - b. *Machinery Management*, slide set; available from John Deere Distribution Service Center, Service Publications, Dept. 150, 1400-13th Street, East Moline, Illinois 61244, (1-800-544-2122); approximate cost \$117.00; order no. FBM17203S.
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.

- D. Provide students with information and assignment sheets and discuss.
  - E. Invite a local farmer to speak to the class about the decisions he makes and factors he considers when acquiring new machinery and equipment.
  - F. Invite a local farmer to speak to the class about factors he considers when deciding to buy, lease or rent.
  - G. Plan a field trip to a local machinery and equipment dealership for a tour. Ask the salesperson to talk to the class about the costs involved when buying, leasing or renting.
  - H. Review and give test.
  - I. Reteach and retest if necessary.
- II. Instructional materials
- A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Advantages of Purchasing New Equipment
    - 2. TM 2--Disadvantages of Purchasing New Equipment
    - 3. TM 3--Advantages of Purchasing Used Equipment
    - 4. TM 4--Disadvantages of Purchasing Used Equipment
    - 5. TM 5--Factors to Consider When Deciding to Trade
  - E. Assignment sheet
    - 1. AS 1--Research Costs Involved with Purchasing, Renting and Leasing Machinery and Equipment
  - F. Test
  - G. Answers to test

III. Unit references

- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- B. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- C. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

PURCHASING

AG 660 - P

INFORMATION SHEET

- I. Advantages and disadvantages of purchasing new equipment (Transparencies 1, 2)
  - A. Advantages (Transparency 1)
    - 1. Reliability
    - 2. Warranty
    - 3. Lower repair costs
    - 4. May be more efficient than older models (for example: More capacity)
    - 5. Reduced down-time
  - B. Disadvantages (Transparency 2)
    - 1. High purchase cost
    - 2. Higher fixed costs per acre
    - 3. May cause cash flow problems (high payments)
    - 4. Higher debt load
  
- II. Advantages and disadvantages of purchasing used equipment (Transparencies 3, 4)
  - A. Advantages (Transparency 3)
    - 1. Lower purchase cost
    - 2. Lower fixed costs per acre
    - 3. Less likely to cause cash flow problems
    - 4. Lower debt load
  - B. Disadvantages (Transparency 4)
    - 1. May be unreliable
    - 2. Higher repair costs
    - 3. Probably not under warranty
    - 4. May be less efficient than new models
    - 5. May become obsolete soon

6. Increased down-time

- III. Leasing and renting machinery and equipment
  - A. Lease--An arrangement lasting longer than one year--usually two or more years
  - B. Rental--A short-term arrangement usually lasting less than one year--one day, a week, a month or several months
- IV. Typical rental practices
  - A. Rental rate may be by the hour, acre, day, week or month  
(Note: A day is 8 hours, a week is 40 hours and a month is 176 hours.)
  - B. The customer is responsible for maintenance, service, fuel and lubricants
  - C. The dealer is responsible for furnishing equipment in good operating condition  
(Note: Most rental rates are based on new or nearly new equipment.)
  - D. The customer pays the delivery costs
- V. Renting machinery may be beneficial for
  - A. Low annual use, specialized operations
  - B. Deferring capital expenditure
  - C. Use in periods of uncertainty
  - D. Helping complete important operations on time
- VI. Owning is the best alternative when
  - A. Capital is not a limiting factor
  - B. Business size is fairly stable
  - C. There is little chance of the machinery or equipment becoming obsolete by size or capability before it is worn out
- VII. Situations when leasing is the best alternative
  - A. Short on capital, such as in expanding the size of the business
  - B. A short-term opportunity investment in the business occurs that will yield a greater return on capital than financing costs for purchasing equipment
  - C. The rate of return of the business is considerably higher than interest rates on borrowed capital

- D. The future is uncertain and it is preferred to defer long-run commitments  
  
(Note: The commitment to lease is the same as signing a sales contract as far as financial obligations are concerned.)
- E. There is a definite reliability and operational advantage in having new late-model equipment, such as with leasing
- F. There is uncertainty as to what size or model is needed in your farming situation
- G. The owner is phasing out of business

VIII. Factors to consider when deciding to trade (Transparency 5)

- A. Machine capacity  
  
(Note: Machines should be properly matched and fitted into available working time. Timeliness can be very critical in farming.)
- B. Matching machines and power units  
  
(Note: An oversize machine can overload and shorten the life of the tractor, resulting in excessive down-time and high repair bills. Equipment will usually last from 25-50% longer if sized correctly.)
- C. Fuel, lubricant and repair costs  
  
(Note: These costs will help a farmer decide when to trade and when to use a custom operator, as well as how much it costs to own and operate a machine to figure a price for renting out a machine or doing custom work.)
- D. Optimum time to trade  
  
(Note: The best time to trade for most machinery is between one-half and three-fourths of its useful mechanical life. The more a machine is used per year, the more nearly you would trade at one-half life.)
- E. Machinery size to fit farming operation  
  
(Note: Machinery size needs to be matched to the heavy tillage of the farming operation, the number of acres farmed and the amount of time normally available to complete the field work.)
- F. Possibility of custom work  
  
(Note: It can sometimes pay to have access to custom operators to help get a crop harvested in time. Farmers may also reduce costs and justify ownership by doing custom work.)
- G. Possible advantages and disadvantages of renting or leasing

IX. Factors to consider when renting or leasing land

- A. Share crop or cash rent
- B. Percentage of crop or amount of cash rent
- C. Proximity to other land already farming
- D. Quality of land and soil
- E. Type of land (for example: Pasture, farm ground, etc.)
- F. Soil Conservation Service classification (highly erodible or non highly erodible)
- G. Machinery and equipment capacity

(For example: Whether or not the extra ground would be farmed with machinery and equipment currently used in farming operation and the costs involved if different machinery and equipment would be needed.)

- H. Labor requirements

(For example: Whether or not the extra ground could be farmed with labor already available to the operation and the costs involved if more labor would be needed.)

# **ADVANTAGES OF PURCHASING NEW EQUIPMENT**

**Reliability**

**Warranty**

**Lower repair costs**

**Efficiency**

**Reduced down-time**

# **DISADVANTAGES OF PURCHASING NEW EQUIPMENT**

**High purchase cost**

**Higher fixed costs per acre**

**May cause cash flow problems**

**Higher debt load**

# **ADVANTAGES OF PURCHASING USED EQUIPMENT**

**Lower purchase cost**

**Lower fixed costs per acre**

**Less likely to cause cash flow problems**

**Lower debt load**

# **DISADVANTAGES OF PURCHASING USED EQUIPMENT**

**Less reliable**

**Higher repair costs**

**No warranty**

**Less efficient**

**May become obsolete soon**

**Increased down-time**

# **FACTORS TO CONSIDER WHEN DECIDING TO TRADE**

**Machine capacity**

**Matching machines and power units**

**Fuel, lubricant and repair costs**

**Optimum time to trade**

**Machinery size to fit farming operation**

**Possibility of custom work**

**Consideration of renting or leasing**

PURCHASING

AG 660 - P

ASSIGNMENT SHEET #1--Research Costs Involved With Purchasing, Renting and Leasing Machinery and Equipment

Name \_\_\_\_\_ Score \_\_\_\_\_

Select two pieces of machinery or equipment used in your area for farming. Contact a local machinery and equipment salesman to obtain information regarding purchase, rental and leasing costs, as well as the renting and leasing terms (such as who is responsible for repairs, etc.).

A. Description of machinery and equipment (be specific--include make, year, model, use, etc.)

\_\_\_\_\_  
\_\_\_\_\_

1. Purchase price \_\_\_\_\_

2. Rental price and terms \_\_\_\_\_

\_\_\_\_\_

3. Leasing price and terms \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B. Description of machinery and equipment:

\_\_\_\_\_  
\_\_\_\_\_

1. Purchase price \_\_\_\_\_

2. Rental price and terms \_\_\_\_\_

\_\_\_\_\_

3. Leasing price and terms \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PURCHASING

AG 660 - P

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. List three advantages and three disadvantages of purchasing new equipment.

Advantages

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

Disadvantages

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

2. List three advantages and three disadvantages of purchasing used equipment.

Advantages

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

Disadvantages

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

3. Define the terms lease and rental.

Lease \_\_\_\_\_

\_\_\_\_\_

Rental \_\_\_\_\_

\_\_\_\_\_

4. Describe four typical machinery and equipment rental practices.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

5. Describe three situations in which renting machinery may be beneficial.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

6. Describe three situations in which owning machinery is the best alternative.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

7. Describe five situations in which leasing machinery is the best alternative.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

e. \_\_\_\_\_  
\_\_\_\_\_

8 List seven factors to consider when deciding to trade machinery and equipment.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

g. \_\_\_\_\_

9. List five factors to consider when renting or leasing land.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

PURCHASING

AG 660 - P

ANSWERS TO TEST

1. Answer should include three each of the following advantages and disadvantages:  
Advantages: Reliability; Warranty; Lower repair costs; May be more efficient than older models; Reduced down-time  
Disadvantages: High purchase cost; Higher fixed costs per acre; May cause cash flow problems; Higher debt load
2. Answer should include three each of the following advantages and disadvantages:  
Advantages: Lower purchase cost; Lower fixed costs per acre; Less likely to cause cash flow problems; Lower debt load  
Disadvantages: May be unreliable; Higher repair costs; Probably not under warranty; May be less efficient than new models; May become obsolete soon; Increased down-time
3. Lease: An arrangement lasting longer than one year--usually two or more years  
Rental: A short-term arrangement usually lasting less than one year--one day, a week, a month or several months
4. Rental rate may be by the hour, acre, day, week or month; The customer is responsible for maintenance, service, fuel and lubricants; The dealer is responsible for furnishing equipment in good operating condition; The customer pays the delivery costs
5. Answer should include three of the following:  
Low annual use, specialized operations; Deferring capital expenditure; Use in periods of uncertainty; Helping complete important operations on time
6. Capital is not a limiting factor; Business size is fairly stable; There is little chance of the machinery or equipment becoming obsolete by size or capability before it is worn out
7. Answer should include five of the following:  
--Short on capital, such as in expanding the size of the business  
--A short-term opportunity investment in the business occurs that will yield a greater return on capital than financing costs for purchasing equipment  
--The rate of return of the business is considerably higher than interest rates on borrowed capital  
--The future is uncertain and it is preferred to defer long-run commitments  
--There is a definite reliability and operational advantage in having new late-model equipment, such as with leasing  
--There is uncertainty as to what size or model is needed in your farming situation  
--The owner is phasing out of business
8. Machine capacity; Matching machines and power units; Fuel, lubricant and repair costs; Optimum time to trade; Machinery size to fit farming operation; Possibility of custom work; Possible advantages and disadvantages of renting or leasing
9. Answer should include five of the following:  
Share crop or cash rent; Percentage of crop or amount of cash rent; Proximity to other land already farming; Quality of land and soil; Type of land; Soil Conservation Service classification; Machinery and equipment capacity; Labor requirements

# 660Q-1

## AGRICULTURAL LAW

### AG 660 - Q

#### UNIT OBJECTIVE

After completion of this unit, students should be able to discuss laws related to agriculture and landowners. Students should also be able to discuss contracts and ways that farmers can protect themselves regarding commodities and general liability. This knowledge will be demonstrated by completion of a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms related to agricultural law to their correct definitions.
2. List four sources of law.
3. List and define the two types of contracts.
4. List the four elements necessary for a contract.
5. Select types of contracts which fall under the statute of fraud.
6. Identify three situations in which farmers risk nonpayment for their farm commodities.
7. Describe in detail the definition of float and its effect on sellers.
8. Define forward contract.
9. Discuss the risk that farmers face when forward contracting if the buyer declares bankruptcy.
10. State four ways that farmers can protect their commodities.
11. Discuss cash farm leases, including the definition, two advantages and two disadvantages for the landlord, and two advantages and two disadvantages for the tenant.
12. Discuss crop share farm leases, including the definition, two advantages and two disadvantages for the landlord, and two advantages and two disadvantages for the tenant.
13. Describe in detail a farmer's liability by negligence.
14. List and describe the three types of farm visitors, their responsibilities and the landowners responsibilities concerning injury liability.

15. Discuss the Doctrine of Attractive Nuisance.
16. List and define the three types of employees and outline employer liabilities for the acts of each.
17. List four employer responsibilities to employees.

AGRICULTURAL LAW

AG 660 - Q

SUGGESTED ACTIVITIES

- I. Suggested activities for the instructor
  - A. Make transparencies and necessary copies of materials.
  - B. Provide students with objectives and discuss.
  - C. Provide students with information sheets and discuss.
  - D. Invite a lawyer who deals with agriculture to class to discuss laws that affect agriculture.
  - E. Have students collect newspaper and magazine articles concerning agricultural law and give a brief summary of their articles to the class.
  - F. Review and give test.
  - G. Reteach and retest if necessary.
  
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Elements of a Contract
    - 2. TM 2--Farmers' Commodity Protection
    - 3. TM 3--Farm Visitors: Invitee
    - 4. TM 4--Farm Visitors: Licensee
    - 5. TM 5--Farm Visitors: Trespasser
    - 6. TM 6--Types of Employees
    - 7. TM 7--Employer Responsibilities
  - E. Test
  - F. Answers to test

III. Unit references

- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- B. Steward, Jim and Jobs, Raleigh. *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- C. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

AGRICULTURAL LAW

AG 660 - Q

INFORMATION SHEET

- I. Terms and definitions
  - A. Contract--A legally enforceable agreement or arrangement between two or more parties
  - B. Law--The entire body of customs or practices of a society. Binding rules of conduct or action prescribed by or enforced by a controlling authority such as the courts
  - C. Common law--A body of unwritten law that has developed from social custom, precedence and opinions handed down from our legal system
  - D. Leases--Formal agreements that allow land or facilities to be rented for a specific time and use
  - E. Statute of Frauds--Law that requires certain agreements to be written before they are considered a legal contract
- II. Sources of law
  - A. Custom--Rules that develop through custom and usage
  - B. Lawmaking bodies--Statutory and constitutional laws that are written by the Congress, and city, county and state legislatures
  - C. Judges--Opinions from judges are put on record and used in court cases by other judges to establish precedents which may become common law
  - D. Administrative rules--Passed by government regulatory bodies
- III. Types of contracts
  - A. Expressed--Parties state the terms of the contract orally or in writing
  - B. Inferred--The actions or conduct of the parties indicate an intention to contract
- IV. Elements of a contract (Transparency 1)
  - A. Two or more legal parties
    - 1. Legal capacity to act
    - 2. Mentally competent
    - 3. Legal age under state law

- B. Offer and acceptance
    - 1. Evidence that all parties intend to be bound by the agreement
    - 2. Usually involves an offer or proposal made by one party which is accepted by the other party
  - C. Sufficient consideration
    - 1. Usually the promise of each party to fulfill the contract
    - 2. Consideration may be money, goods or a promise for a promise
  - D. Must not offend public policy or morals
- V. Types of contracts which fall under the Statute of Fraud
- A. Contracts or agreements to pay commission for sale of real estate
  - B. Contracts for more than one year
  - C. Promises to answer for debt, default or misdoing of another person
  - D. Agreements made upon the consideration of marriage (except mutual promise to marry)
  - E. Promise of executor or administrator to pay deceased's debts out of their own property
  - F. Contracts for sale of goods above a certain value (unless a portion of the price is paid or a portion of the goods are delivered)
  - G. Land leases
- (Note: These contracts would not be enforceable if not in writing.)
- VI. Farmers' risk of nonpayment of farm commodities
- A. Crops/livestock delivered and sold; payment not received
  - B. Crops/livestock contracted for later delivery
  - C. Harvested crops delivered for storage only
- VII. Float
- A. Amount of time that a check takes to clear the purchaser's account
  - B. Buyers use distant banks to gain use of seller's money interest free while checks are in transit
  - C. Seller does not have immediate use of funds

- D. Seller risks losing payment if buyer goes out of business before check clears

(Note: The seller can protect himself by insisting on a certified check, cash or check from a local bank.)

VIII. Forward contract

- A. Written agreement that specifies that a commodity will be delivered at a future time for a specific price
- B. Bankruptcy risk
  - 1. Buyer may take commodity, use it, go bankrupt and never pay seller
  - 2. If buyer goes bankrupt, court can force seller to deliver commodity contracted and receive percentage of settlement

IX. Ways that farmers can protect their commodities (Transparency 2)

- A. Deal only with licensed warehousemen, brokers or dealers
  - B. Investigate the financial condition of the buyer
  - C. Demand a scale ticket marked "sold" or "storage" with each delivered load
  - D. Demand payment immediately by local bank when delivery is completed (get a partial payment prior to completion of delivery if commodity will be delivered over a lengthy period of time)
  - E. Demand a warehouse receipt immediately for stored commodities
- (Note: A warehouse receipt proves that a person is entitled to the goods that it represents. If it is negotiable, it can be sold. It can also be used for collateral.)
- F. Be alert for questionable practices that may indicate financial instability--report any to the appropriate licensing agency

X. Cash farm leases

- A. Tenant pays landlord an agreed upon cash payment for use of land. Tenant receives all the income and pays all expenses except taxes, building insurance and major building repairs
- B. Advantages for landlord
  - 1. Less risk
  - 2. Guaranteed income
  - 3. Fixed rent
  - 4. Free of managerial responsibility

- C. Disadvantages for landlord
  - 1. Generally provides lower income
  - 2. Has less control of land
  - 3. May be difficult to collect rent if crop fails (unless advance rent was required)
- D. Advantages for tenant
  - 1. Provides more profit when yields and/or prices are high
  - 2. Gains managerial independence
  - 3. Can expand business size and lower fixed costs
- E. Disadvantages for tenant
  - 1. Assumes more risk--especially in years of low yields and/or prices
  - 2. May be difficult to pay advance rent, if required by landlord
  - 3. Required to pay all crop expenses throughout the year--may be difficult if tenant has inadequate cash flow

(Note: Tenant is ultimately responsible for labor and management for all leases unless otherwise specified in contract.)

XI. Crop share lease

- A. Landlord usually contributes the land and improvements (and associated expenses such as property taxes, insurance and repairs, etc.) as well as a certain share of certain variable costs. The tenant usually contributes machinery and equipment (and related expenses such as depreciation, repairs, fuel, supplies, etc.) and a share of certain variable costs. The landlord and tenant each receive a pre-determined share of the crop harvested
- B. Advantages for landlord
  - 1. More opportunity for supervision of land than with cash lease
  - 2. Rental will probably come closer to value of land
  - 3. Opportunity for greater income in years of high yields and/or prices
- C. Disadvantages for landlord
  - 1. Must have sound cash flow to pay share variable expenses throughout the year
  - 2. No guaranteed income

- D. Advantages for tenant
  - 1. Less capital required than with cash lease
  - 2. Landlord has more incentive to improve farm and increase productivity
  - 3. Less risk--especially if crop fails
  - 4. Landlord shares risk as well as returns
- E. Disadvantages for tenant
  - 1. Provides less profit when yields and/or prices are high
  - 2. May not have total managerial independence

XII. Liability--negligence

- A. Generally considered to be the omission by an individual to do something which a "responsible person" would do under similar circumstances
- B. A farmer is expected to be acquainted with the ordinary hazards of farm life and to take precautions against them
- C. Examples
  - 1. Failure to repair a hole in the barn floor
  - 2. Poor upkeep on fences that allow livestock to roam free
  - 3. Injury caused to person because safety shields had been removed

XIII. Liability--injuries to farm visitors (Transparencies 3, 4, 5)

- A. Invitee (Transparency 3)
  - 1. Person who enters property for business reasons, has owner's permission to be on the property, and enters for the owner's benefit or their mutual benefit
  - 2. Examples
    - a. Hay buyer
    - b. Veterinarian
    - c. Salesman
    - d. Postman
    - e. Hunter who pays a fee

3. Responsibilities of land owner
  - a. Inspect property for hidden dangers
  - b. Warn invitee of all dangerous conditions
- B. Licensee (Transparency 4)
  1. Person who enters property for own benefit, with the owner's consent
  2. Examples
    - a. Social guest
    - b. Hunter who does not pay a fee
    - c. Neighbor visiting to borrow tools
  3. Responsibilities of licensee
    - a. Must be on the lookout for dangers
    - b. Must exercise care around obviously dangerous conditions
  4. Responsibilities of land owner
    - a. Warn licensee of any hidden dangers he is aware of
    - b. No obligation to make land safe or inspect property for dangers
- C. Trespasser (Transparency 5)
  1. Person who enters property for own benefit without consent of property owner
  2. Responsibilities of land owner
    - a. Only responsible for personal injuries that owner intentionally inflicted
    - b. No obligation to make land safe or warn of hidden dangers
    - c. May use reasonable force to remove trespasser
    - d. May use deadly force (force that could cause death or serious bodily injury) only if owner's life or family safety is threatened

(Note: If property owner sees person on land without permission and does not tell him to leave, he is no longer considered a trespasser, but a licensee.)

XIV. Liability--Doctrine of Attractive Nuisance

- A. Protects children by holding landowners responsible for a child's injury from an object or condition on property that is attractive and dangerous to children. Landowner must know that children trespass where object or condition is located
- B. Examples
  - 1. Old cars
  - 2. Combines
  - 3. Old refrigerators
  - 4. Old piles of lumber
  - 5. Old wells or cisterns
- C. Usually does not apply to natural conditions on land such as natural ponds; but could apply to constructed ponds

XV. Employer liability for acts of employees (Transparency 6)

- A. Servant
  - 1. An employee whose work is completely subject to control by the employer, such as a farm laborer
  - 2. Employer is responsible for a servant's acts while servant is engaged in work for the employer's benefit
  - 3. For example: If a servant causes injury to a neighbor's property while working for the employer, the employer is liable
- B. Agent
  - 1. An employee who carries out business on behalf of an employer and exercises more discretion than an employee. An example of an agent is a hired ranch manager
  - 2. Employer is responsible for agent's acts while agent is doing employer's work
  - 3. For example: If an employer gives money to agent to buy farm supplies and agent keeps money and charges the supplies at the local feed store, the employer is responsible for paying the bill at the local feed store

- C. Independent contractor
  - 1. Person or organization performing a job without control from the employer. Examples include custom harvesters, crop dusters and well drillers
  - 2. Employer is not responsible for acts of independent contractor unless:
    - a. Employer was negligent in selecting a competent contractor
    - b. Employer furnished contractor with faulty plans or specifications
    - c. Employer interfered with contractor
    - d. Employer hired independent contractor to perform dangerous task
    - e. Employer was negligent in maintaining the area or tools in which or with which the job was to be performed

XVI. Employer responsibilities to employees (Transparency 7)

- A. Provide safe place to work
- B. Provide reasonably safe tools, machinery and equipment
- C. Warn and instruct employees of dangers they could not be reasonably expected to discover
- D. Provide competent fellow employees
- E. Make reasonable rules for the conduct of the employee while at work

## **ELEMENTS OF A CONTRACT**

**Two or more legal parties**

**Offer and acceptance**

**Sufficient consideration**

**Does not offend public policy/morals**

## **Farmers' Commodity Protection**

- \* Deal with licensed warehouseman, broker, dealer**
- \* Investigate buyer's financial condition**
- \* Obtain scale ticket for each load**
- \* Demand immediate payment from local bank**
- \* Demand warehouse receipt for stored commodities**
- \* Be alert and report questionable practices**

## **FARM VISITORS: INVITEE**

**Has owner's permission to be on property**

**Enters for owner's/mutual benefit**

**Landowner must inspect property for  
hidden dangers**

**Landowner must warn of all dangerous  
conditions**

## **FARM VISITORS: LICENSEE**

**Has owner's permission to be on property**

**Enters for own benefit**

**Must be on lookout for dangers**

**Must exercise care around dangerous  
conditions**

**Landowner must warn of dangers he is  
aware of**

## **FARM VISITORS: TRESPASSER**

**Does not have owner's permission**

**Enters for own benefit**

**Landowner only responsible for personal injuries inflicted intentionally**

**Landowner may use reasonable force to remove**

**Landowner may use deadly force if own life or family safety threatened**

## **TYPES OF EMPLOYEES**

### **Servant**

**Work is completely subject to control by employer**

**Farm Laborer**

### **Agent**

**Carries out business on behalf of employer**

**Hired Ranch Manager**

### **Independent Contractor**

**Performs job without control from employer**

**Custom Harvester**

**Crop Duster**

# **EMPLOYER RESPONSIBILITIES**

**Provide safe place to work**

**Provide safe tools, machinery, equipment**

**Warn/instruct employees of dangers**

**Provide competent fellow employees**

**Make rules of conduct**

AGRICULTURAL LAW

AG 660 - Q

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match terms related to agricultural law to their correct definitions. Write the correct numbers in the blanks provided.

- |          |   |                      |
|----------|---|----------------------|
| _____ a. | A body of unwritten law that has developed from social custom, precedence and opinions handed down from our legal system                      | 1. Contract          |
| _____ b. | A legally enforceable agreement or arrangement between two or more parties  | 2. Law               |
| _____ c. | Law that requires certain agreements to be written before they are considered a legal contract  | 3. Common law        |
| _____ d. | Formal agreements that allow land or facilities to be rented for a specific time and use  | 4. Leases            |
| _____ e. | The entire body of customs or practices of a society; binding rules of conduct or action prescribed by or enforced by a controlling authority | 5. Statute of Frauds |

2. List four sources of law.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

3. List and define the two types of contracts.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_

4. List the four elements necessary for a contract.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
5. Select types of contracts which fall under the statute of fraud. Write an "X" in the blank before each correct answer.
- \_\_\_\_\_ a. Contracts for one year
  - \_\_\_\_\_ b. Agreements made upon the consideration of marriage (except mutual promise to marry)
  - \_\_\_\_\_ c. Contracts to pay commission for sale of real estate
  - \_\_\_\_\_ d. Promises to answer for personal debt
  - \_\_\_\_\_ e. Contracts for more than one year
  - \_\_\_\_\_ f. Promise of executor to pay deceased's debts out of deceased's estate
  - \_\_\_\_\_ g. Land leases
  - \_\_\_\_\_ h. Promise of executor to pay deceased's debts of their own property
6. Identify three situations in which farmers risk nonpayment for their farm commodities.
- a. \_\_\_\_\_  
\_\_\_\_\_
  - b. \_\_\_\_\_  
\_\_\_\_\_
  - c. \_\_\_\_\_  
\_\_\_\_\_
  - d. \_\_\_\_\_  
\_\_\_\_\_

7. Describe in detail the definition of float and its effect on sellers.

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8. Define forward contract.

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9. Discuss the risk that farmers face when forward contracting if the buyer declares bankruptcy.

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10. State four ways that farmers can protect their commodities.

a. 

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b. 

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c. 

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d. 

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11. Discuss cash farm leases, including the definition, two advantages and two disadvantages for the landlord, and two advantages and disadvantages for the tenant.

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12. Discuss crop share farm leases, including the definition, two advantages and two disadvantages for the landlord, and two advantages and two disadvantages for the tenant.

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13. Describe in detail a farmer's liability by negligence.

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14. List and describe the three types of farm visitors, their responsibilities and the landowners responsibilities concerning injury liability.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15. Discuss the Doctrine of Attractive Nuisance.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. List and define the three types of employees and outline employer liabilities for the acts of each.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. List four employer responsibilities to employees.

a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_

## AGRICULTURAL LAW

## AG 660 - Q

## ANSWERS TO TEST

1. a. 3                      b. 1                      c. 5                      d. 4                      e. 2
2. Custom; Lawmaking bodies; Judges; Administrative rules
3. Expressed--Parties state the terms of the contract orally or in writing; Inferred--The actions or conduct of the parties indicate an intention to contract
4. Two or more legal parties; Offer and acceptance; Sufficient consideration; Must not offend public policy or morals
5. b, c, e, g, h
6. Crops/livestock delivered and sold; payment not received; Crops/livestock contracted for later delivery; Harvested crops delivered for storage only
7. Amount of time that a check takes to clear the purchaser's account; Buyers use distant banks to gain use of seller's money interest free while checks are in transit; Seller does not have immediate use of funds; Seller risks losing payment if buyer goes out of business before check clears; (Note: The seller can protect himself by insisting on a certified check, cash or check from a local bank.)
8. Written agreement that specifies that a commodity will be delivered at a future time for a specific price
9. Buyer may take commodity, use it, go bankrupt and never pay seller; If buyer goes bankrupt, court can force seller to deliver commodity contracted and receive percentage of settlement
10. Answer should include four of the following:  
  
Deal only with licensed warehousemen, brokers or dealers; Investigate the financial condition of the buyer; Demand a scale ticket marked "sold" or "storage" with each delivered load; Demand payment immediately by local bank when delivery is completed (get a partial payment prior to completion of delivery if commodity will be delivered over a lengthy period of time); Demand a warehouse receipt immediately for stored commodities; Be alert for questionable practices that may indicate financial instability--report any to the appropriate licensing agency
11. Answer should include the definition of a cash farm lease, as well as two advantages and two disadvantages each for the landlord and tenant:  
  
Tenant pays landlord an agreed upon cash payment for use of land. Tenant receives all the income and pays all expenses except taxes, building insurance and major building repairs  
Advantages for landlord: Less risk; Guaranteed income; Fixed rent; Free of managerial responsibility; Disadvantages for landlord: Generally provides lower income; Has less control of land; May be difficult to collect rent if crop fails (unless advance rent was required)

Advantages for tenant: Provides more profit when yields and/or prices are high; Gains managerial independence; Can expand business size and lower fixed costs; Disadvantages for tenant: Assumes more risk--especially in years of low yields and/or prices; May be difficult to pay advance rent, if required by landlord; Required to pay all crop expenses throughout the year--may be difficult if tenant has inadequate cash flow

12. Answer should include the definition of a crop share farm lease, as well as two advantages and two disadvantages each for the landlord and tenant:

Landlord usually contributes the land and improvements (and associated expenses such as property taxes, insurance and repairs, etc.) as well as a certain share of certain variable costs. The tenant usually contributes machinery and equipment (and related expenses such as depreciation, repairs, fuel, supplies, etc.) and a share of certain variable costs. The landlord and tenant each receive a pre-determined share of the crop harvested

Advantages for landlord: More opportunity for supervision of land than with cash lease; Rental will probably come closer to value of land; Opportunity for greater income in years of high yields and/or prices; Disadvantages for landlord: Must have sound cash flow to pay share variable expenses throughout the year; No guaranteed income;

Advantages for tenant: Less capital required than with cash lease; Landlord has more incentive to improve farm and increase productivity; Less risk--especially if crop fails; Landlord shares risk as well as returns; Disadvantages for tenant: Provides less profit when yields and/or prices are high; May not have total managerial independence

13. Generally considered to be the omission by an individual to do something which a "responsible person" would do under similar circumstances; A farmer is expected to be acquainted with the ordinary hazards of farm life and to take precautions against them; Examples: Failure to repair a hole in the barn floor; Poor upkeep on fences that allow livestock to roam free; Injury caused to person because safety shields had been removed

14. Invitee: Person who enters property for business reasons, has owner's permission to be on the property, and enters for the owner's benefit or their mutual benefit; **Responsibilities of land owner:** Inspect property for hidden dangers; Warn invitee of all dangerous conditions  
Licensee: Person who enters property for own benefit, with the owner's consent; Responsibilities of licensee: Must be on the lookout for dangers; Must exercise care around obviously dangerous conditions; **Responsibilities of land owner:** Warn licensee of any hidden dangers he is aware of; No obligation to make land safe or inspect property for dangers  
Trespasser: Person who enters property for own benefit without consent of property owner; **Responsibilities of land owner:** Only responsible for personal injuries that owner intentionally inflicted; No obligation to make land safe or warn of hidden dangers; May use reasonable force to remove trespasser; May use deadly force (force that could cause death or serious bodily injury) only if owner's life or family safety is threatened

15. Protects children by holding landowners responsible for a child's injury from an object or condition on property that is attractive and dangerous to children. Landowner must know that children trespass where object or condition is located; Examples: Old cars; Combines; Old refrigerators; Old piles of lumber; Old wells or cisterns; Usually does not apply to natural conditions on land such as natural ponds; but could apply to constructed ponds

16. Servant: An employee whose work is completely subject to control by the employer, such as a farm laborer; Employer is responsible for a servant's acts while servant is engaged in work for the employer's benefit

Agent: An employee who carries out business on behalf of an employer and exercises more discretion than an employee. An example of an agent is a hired ranch manager; Employer is responsible for agent's acts while agent is doing employer's work

Independent contractor: Person or organization performing a job without control from the employer. Examples include custom harvesters, crop dusters and well drillers; Employer is not responsible for acts of independent contractor unless: Employer was negligent in selecting a competent contractor; Employer furnished contractor with faulty plans or specifications; Employer interfered with contractor; Employer hired independent contractor to perform dangerous task; Employer was negligent in maintaining the area or tools in which or with which the job was to be performed

17. Answer should include four of the following:

Provide safe place to work; Provide reasonably safe tools, machinery and equipment; Warn and instruct employees of dangers they could not be reasonably expected to discover; Provide competent fellow employees; Make reasonable rules for the conduct of the employee while at work

REAL PROPERTY OWNERSHIP

AG 660 - R

UNIT OBJECTIVE

After completion of this unit, students should be able to discuss the types of real property estates and list methods of acquiring real property ownership. Students should also be able to discuss deeds and list methods of discussing real property. This knowledge will be demonstrated by completion of a unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Define real property.
2. Define estate.
3. List and define the two types of real property estates.
4. List five methods of acquiring real property ownership.
5. Define deed.
6. List and define the two major types of deeds.
7. List the six characteristics of a deed.
8. Describe an abstract of title.
9. Describe title insurance.
10. List two methods of describing real property.
11. List four reasons for appraising land and buildings.
12. List three factors necessary to determine real property values.

REAL PROPERTY OWNERSHIP

AG 660 - R

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    1. Filmstrips, slideshows, etc.
      - a. *Analyzing Land Investment, Program #431*; 47 minutes; discusses what land is worth to the farm or ranch business and how much a farmer or rancher can afford to pay for land and still have it provide cash flow; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objective sheet and discuss.
  - D. Provide students with information sheets and discuss.
  - E. Obtain local maps from the county courthouse, ASCS or other agency and have students determine the legal descriptions of their homes or farms and other farms in the area.
  - F. Invite an appraiser to speak to the class about how he or she determines the value of real property in the area.
  - G. Have students collect newspaper advertisements and talk to local farmers to determine the average value per acre of farm ground in the local area.
  - H. Invite an attorney to speak to the class about the legal paperwork and requirements for purchasing real property.
  - I. Invite a local agricultural lender to speak to the class about current, local land values and the process he or she uses to determine land values.
  - J. Review and give test.
  - K. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet

- D. Transparency masters
  - 1. TM 1--Methods of Acquiring Real Property Ownership
  - 2. TM 2--Characteristics of a Deed
  - 3. TM 3--Reasons for Appraising Land and Buildings
- E. Test
- F. Answers to test

III. Unit references

- A. Ashcroft, John D. and Ashcroft, Janet E., *College Law for Business*, 9th edition, South-Western Publishing Co., Cincinnati, Ohio, 1981.
- B. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- C. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- D. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

REAL PROPERTY OWNERSHIP

AG 660 - R

INFORMATION SHEET

- I. Terms and definitions
  - A. Real property--Consists of land, which includes the actual soil and all permanent attachments to the land, such as fences, walls, other additions and improvements, timber and other growing things. It also includes minerals under the soil and the waters upon it
- II. Estate--An interest in property
- III. Real property estates
  - A. Fee simple estate
    - 1. Largest and most complete right which one may possess in real property
    - 2. Gives owner the right to the land surface, all air above the land and the subsoil beneath the surface (to the earth's center)  
  
(Note: It is possible for a person to only own the land surface--not the minerals, oil, gas or other valuable property under the topsoil. A person may also own the soil but not the timber.)
  - B. Life estate
    - 1. An estate in land in which the land is owned for a lifetime
    - 2. At the death of the owner, the title passes as directed by the original owner
- IV. Methods of acquiring real property ownership (Transparency 1)
  - A. Purchase  
  
(Note: The buyer pays the seller and the seller conveys to the buyer.)
  - B. Will  
  
(Note: Title is not transferred by will until the person who made the will dies and appropriate judicial proceedings have taken place.)
  - C. Gift  
  
(Note: A gift is a transfer made without consideration in return.)

D. Descent

(Note: When a person dies without leaving a will, the person's heirs acquire title to the real property according to the law of descent in the state where the land is located.)

E. Accession

(Note: Accession is the acquiring of property by means of an addition to, or increase in, the property owned, such as the produce of land.)

F. Accretion

(Note: Accretion usually takes place when the boundary line of property is a stream, river, lake or ocean. For example, one's land extends to the low water mark of a navigable stream, title to some land may be acquired by the shifting of the river's flow. This occurs slowly by the deposit of silt.)

G. Adverse possession

(Note: An individual may acquire title to real property by occupying the land for a period fixed by statute. Occupancy must be continuous, open, hostile, visible and exclusive.)

V. Deed--A writing signed by the seller conveying title to real property

(Note: The parties to the deed are the grantor (seller) and the grantee (buyer).)

VI. Types of deeds

A. Quitclaim deed

1. The grantor gives up any claim which the grantor may have to the real property
2. Conveys only the interest of the grantor and no more--contains no warranty that the grantor's title is good
3. Cannot be used in most real estate transactions because the contract will specify that a warranty deed must be delivered

B. Warranty deed

1. Conveys the grantor's interest in the real property
2. Makes certain warranties or guarantees
3. General warranty deed--Warrants that all prior grantors had good title and that there are no defects in any prior grantor's title. The grantee is asked to assume any risks as the new owner of the property

4. Special warranty deed--Warrants that the grantor has the right to sell the real property

(Note: This is used by trustees and sheriffs who sell land at a foreclosure sale.)

VII. Characteristics of a deed (Transparency 2)

- A. Parties

(Note: The grantor and the grantee must be named in the deed.)

- B. Consideration

(Note: The consideration is the amount paid to the grantor for the property; however, the amount specified does not need to be the actual price paid. A nominal amount, such as \$1.00, may be stated to keep the sale price from being a matter of public record.)

- C. Covenants

(Note: Affirmative covenants obligate the grantee to do something; negative covenants require the grantee to refrain from doing something.)

- D. Description

(Note: The description may be by lots and blocks if the property is in the city; or it may be by metes and bounds, section, range and township if the property is in a rural area.)

- E. Signature

(Note: The signature should be signed by the grantor and by the spouse if the grantor is married.)

- F. Acknowledgement

(Note: The acknowledgement is a declaration made by the properly authorized officer, such as a notary public, that the grantor has acknowledged the instrument as a free act and deed.)

VIII. Abstract of title

(Note: Before buying real estate, the buyer should always have an abstract of title prepared by an abstract company or an attorney. If an abstracting company makes the abstract, it is advisable to have an attorney read the abstract to see if it reveals any flaws in the title.)

- A. Gives a complete history of the real estate in question

- B. Shows whether or not there are any unpaid taxes and assessments, mortgages or deeds of trust outstanding, and any unpaid judgements or other unsatisfied liens of any type against the property

IX. Title insurance

- A. Covers defects in the title to real estate that cannot be detected by an abstract

Examples: Forgery of signatures in prior conveyances; claims by adverse possession; incompetency to contract by any prior party; fraud; duress; undue influence; defective wills; loss of real property by accretion; errors by title examiner, tax officials, surveyors and other public officials

- B. The policy may expressly exclude any possible defects, which the insurance company does not wish to be covered by the policy

- C. The insured is covered as long as he or she owns the property by paying one premium

X. Methods of describing real property

- A. Metes and bounds--A description of boundaries used mostly in the eastern United States

1. Description starts at a given point called the "point of beginning"
2. Tract outline is started at the "point of beginning" and then followed by using certain measurements and reference points such as trees, stakes, stones, roads and rivers until it ends at the same "point of beginning"
3. All directions are oriented either north or south when plotting metes and bounds descriptions
  - a. Four quadrants
  - b. Any direction from 0 to 90 degrees and 270 to 360 degrees is referred to as being so many degrees either east or west of north
  - c. Any direction normally thought of as being between 90 and 270 degrees is referred to as being so many degrees east or west of south

Example: Beginning at the pine tree on the property of the old Parks farm and its intersection with Central Ridge Road; thence S 65 degrees W 600, thence N 23 degrees W 641; thence N 14 degrees E 264; thence S 34 degrees E 489; thence S 65 degrees E 501, to the point of beginning, containing 5.52 acres or less

- B. Rectangular survey system

1. Set up in 1787 as the United States System of Surveying Public Lands
2. Includes 30 states located mainly west and south from Ohio
3. Land divided into townships, sections, quarter sections and quarter-quarter sections

4. The starting points are meridians and base lines
  - a. Meridians are arbitrarily chosen north and south lines from which measurements are made to the east or west
  - b. Base lines are arbitrarily chosen east and west lines from which measurements are made to the north or south
  - c. Each meridian has its own base line intersecting it
5. Legal descriptions of property identify the location in relation to meridian and base line, measured in units of one township or one range
  - a. A township is 36 square miles. Townships are divided into sections of one square mile or 640 acres  

(Note: In a legal description, the word township represents the distance north or south from the base line.)
  - b. "Range" represents the distance east or west from the meridian

Example legal description of farm:

Section 3, Township 35 North Range 1 East of the Boise Meridian, Lewis County, Idaho: Lots Two (2) and Three (3); the Southwest Quarter of the Northeast Quarter (SW 1/4 NE 1/4) the Southeast Quarter of the Northwest Quarter (SE 1/4 NW 1/4); the Northeast Quarter of the Southwest Quarter (NE 1/4 SW 1/4) (Less 3 acres); 4 acres in the Northwest Quarter of the Southeast Quarter (NW 1/4 SE 1/4) (.5 acres road)

- XI. Reasons for appraising land and buildings (Transparency 3)
  - A. Property taxes
  - B. Estate planning
  - C. Insurance (amount to insure buildings)
  - D. Collateral for bank loan
  - E. Determine purchase price
  - F. Determine selling price
  - G. Required by bank to obtain loan to purchase
  - H. Determine net worth

- XII. Factors necessary to determine real property values
  - A. Quality of land (such as soil type, SCS highly erodible or non-highly erodible classification, etc.)
  - B. Recent land sales in area
  - C. Use of land (farming, grazing, logging, etc.)
  - D. Potential income from land

# **METHODS OF ACQUIRING REAL PROPERTY OWNERSHIP**

**Purchase**

**Will**

**Gift**

**Descent**

**Accession**

**Accretion**

**Adverse possession**

# **CHARACTERISTICS OF A DEED**

**Parties**

**Consideration**

**Covenants**

**Description**

**Signature**

**Acknowledgement**

# **REASONS FOR APPRAISING LAND AND BUILDINGS**

**Property taxes**

**Estate planning**

**Insurance**

**Collateral for bank loan**

**Determine purchase price**

**Determine selling price**

**Obtain purchase loan**

**Determine net worth**

REAL PROPERTY OWNERSHIP

AG 660 - R

UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Define real property.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Define estate.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. List and define the two types of real property estates.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. List five methods of acquiring real property ownership.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

5. Define deed.

\_\_\_\_\_  
\_\_\_\_\_

6. List and define two major types of deeds.

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. List the six characteristics of a deed.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

8. Describe an abstract of title.

\_\_\_\_\_

\_\_\_\_\_

9. Describe title insurance.

\_\_\_\_\_

\_\_\_\_\_

10. List two methods of describing real property.

a. \_\_\_\_\_

b. \_\_\_\_\_

11. List four reasons for appraising land and buildings.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

12. List three factors necessary to determine real property values.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

REAL PROPERTY OWNERSHIP

AG 660 - R

ANSWERS TO TEST

1. Consists of land, which includes the actual soil and all permanent attachments to the land, such as fences, walls, other additions and improvements, timber and other growing things. It also includes minerals under the soil and the waters upon it
2. An interest in property
3. Fee simple estate: Largest and most complete right which one may possess in real property; Gives owner the right to the land surface, all air above the land and the subsoil beneath the surface (to the earth's center)  
Life estate: An estate in land in which the land is owned for a lifetime; At the death of the owner, the title passes as directed by the original owner
4. Answer should include five of the following:  
  
Purchase; Will; Gift; Descent; Accession; Accretion; Adverse possession
5. A writing signed by the seller conveying title to real property
6. Quitclaim deed: The grantor gives up any claim which the grantor may have to the real property; Conveys only the interest of the grantor and no more--contains no warranty that the grantor's title is good  
Warranty deed: Conveys the grantor's interest in the real property; Makes certain warranties or guarantees
7. Parties; Consideration; Covenants; Description; Signature; Acknowledgement
8. Gives a complete history of the real estate in question; Shows whether or not there are any unpaid taxes and assessments, mortgages or deeds of trust outstanding, and any unpaid judgments or other unsatisfied liens of any type against the property
9. Covers defects in the title to real estate that cannot be detected by an abstract; The policy may expressly exclude any possible defects which the insurance company does not wish to be covered by the policy; The insured is covered as long as he or she owns the property by paying one premium
10. Metes and bounds; Rectangular survey system
11. Answer should include four of the following:  
  
Property taxes; Estate planning; Insurance; Collateral for bank loan; Determine purchase price; Determine selling price; Required by bank to obtain loan to purchase; Determine net worth
12. Answer should include three of the following:  
  
Quality of land; Recent land sales in area; Use of land; Potential income from land

ESTATE PLANNING

AG 660 - S

UNIT OBJECTIVE

After completion of this unit, students should be able to describe estate planning, including problems caused by lack of estate planning, steps involved and factors to consider. Students should also be able to discuss reasons for having a will and the components of a will. This knowledge will be demonstrated by completion of a unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with estate planning to their correct definitions.
2. Define estate planning.
3. Discuss five problems caused by lack of estate planning.
4. Discuss three steps involved in estate planning.
5. List five factors to consider in estate planning.
6. Define real property and personal property.
7. List four factors influencing choice of ownership type.
8. Describe sole ownership and its effects on estate planning.
9. Describe life estates and remainders and their effects on estate planning.
10. Describe tenancy in common and its effects on estate planning.
11. Describe joint tenancy and its effects on estate planning.
12. Describe tenancy by entirety and its effects on estate planning.
13. Select true statements concerning community property.
14. List five ways to transfer legal ownership of property.
15. Select true statements concerning tax laws related to estate planning.
16. List four reasons for having a will.
17. Discuss four components of a will.

ESTATE PLANNING

AG 660 - S

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    1. Filmstrips, slideshows, etc.
      - a. *Money Smart #13--Your Will and Estate, Program #447*; 25 minutes; covers what should be included in a will, factors to consider in choosing executors and guardians, the role of a trust fund, and necessary updates and revisions; available from Agricultural Communications Center, 10 Ag Science Bldg., University of Idaho, Moscow, Idaho 83843-4196, (208-885-6436).
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information sheets and discuss.
  - E. Obtain background information on estate planning.
  - F. Invite an attorney to speak to the class about estate planning and tax laws concerning estate planning.
  - G. Divide the students into groups and have them develop a simple estate plan for an imaginary farmer.
  - H. Review and give test.
  - I. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    1. TM 1--Objectives for Developing an Estate Plan
    2. TM 2--Types of Property Ownership
    3. TM 3--Community Property States

- 4. TM 4--Transferring Property Ownership
  - 5. TM 5--Components of a Will
  - E. Test
  - F. Answers to test
- III. Unit references
- A. Ashcroft, John D. and Ashcroft, Janet E., *College Law for Business*, South-Western Publishing Co., Cincinnati, Ohio, 1981.
  - B. *Farm Management Guide* - Seventeenth Edition, Doane Information Services, St. Louis, Missouri, 1989.
  - C. Harl, Neil E., *Farm Estate and Business Planning*, Century Communications Inc., Niles, Illinois, 1988.
  - D. Kagele, Jerry L., *Notes from Estate Planning Seminar at 1990 Spokane Ag Expo/Pacific Northwest Farm Forum*, Spokane, Washington, 1990.
  - E. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company, Moline, Illinois, 1987.
  - F. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

ESTATE PLANNING

AG 660 - S

INFORMATION SHEET

- I. Terms and definitions
  - A. Executor--Person named in a will as the one to administer the estate
  - B. Estate--The total value of a person's property, both real and personal
  - C. Will--An instrument prepared in the form prescribed by law, which provides for the disposition of a person's property to take affect after death
  - D. Intestate--One who dies without having made a valid will
  - E. Administrator--Person appointed by a court to settle the affairs of an intestate
  - F. Probate--The procedure or process of establishing the validity of a will and administering or settling an estate
  - G. Trust--A transfer of property by one person to another with the understanding or declaration that such property be held for the benefit of another
  - H. Testate--The condition of leaving a will upon death
  - I. Testator--A person who makes a will
  - J. Codicil--A separate writing that modifies a will. Except for the part modified, the original will remains the same
  - K. Assets--All types of property which can be made available for the payment of debts
  - L. Beneficiary--A person or institution who derives benefit from the creation of a trust, proceeds of an insurance policy or property designated by a will
  - M. Decedent--A deceased person
  - N. Guardian--A person legally empowered and charged with the duty of taking care of another who is incapable of taking care of himself because of age, intellect or health
  - O. Conservator--A person legally empowered and charged with the duty of managing the property of another who is incapable of managing his own property because of age, intellect or health
  - P. Inherit--To receive property from a deceased person
  - Q. Trust--The legal relationship created by virtue of one party holding legal title to property for the benefit of another

- II. Estate planning--A branch of law that is used to arrange a person's property. It takes into account the laws of wills, taxes, insurance, property and trusts and carries out a person's wishes for the disposition of property at death
- III. Problems caused by lack of estate planning
  - A. Ill feelings and bitterness among heirs
  - B. Uncertainty of eventual owners
  - C. Unequitable treatment of children
  - D. State-appointed guardian for minor children if both parents die
  - E. A farm being sold or split into small, uneconomical units
  - F. Surviving spouse with young children not being able to adequately provide for family
  - G. High estate and/or inheritance taxes
  - H. High probate costs (including attorney fees, executor fees and various filing and notice fees)
- IV. Steps involved in estate planning
  - A. Making of a will
  - B. Examination of how property is owned or held
  - C. Review of family insurance program (including policy partnership and beneficiary designations)
  - D. Consideration of the advisability of gifts during life to save income or death taxes and to benefit the recipients
  - E. Possible disposition of property by sale during life including sale for cash, installment sale, a private annuity or a part gift-part sale transaction
  - F. A review of the organization of the family business
- V. Factors to consider in estate planning (Transparency 1)
  - A. Objectives for developing an estate plan
    - 1. Keep a farm in the family
    - 2. Treat all children equitably
    - 3. Help child (or children) start farming
    - 4. Reduce state and federal estate taxes, income taxes and gift taxes
    - 5. To inform heirs what to expect so that they can make plans accordingly

- 6. Other
  - B. The portion of the estate that is required by the surviving spouse to provide a sufficient income
  - C. Plans that will work regardless of who dies first
  - D. Provisions that should be made in case the surviving spouse should remarry
  - E. Necessity of good attorney to review estate plan, to advise and to draw up and execute legal documents
- VI. General kinds of property
  - A. Real property--Includes land and permanent improvements such as houses on the land
  - B. Personal property--Includes moveable items such as livestock, machinery, household goods, bank accounts, bonds, stocks, etc.
- VII. Factors influencing choice of ownership type
  - A. Preferences as to sole ownership or co-ownership
  - B. Desired disposition of property at death
  - C. Estate and inheritance tax effects
  - D. Gift tax implications
  - E. Differences in estate settlement costs
- VIII. Types of property ownerships and effects on estate planning (Transparency 2)
  - A. Sole ownership (fee simple)
    - 1. Ownership is in one name
    - 2. Normally the simplest ownership during life
    - 3. Gives holder most complete ownership possible--owner has unrestricted right to sell, mortgage or dispose of real estate
    - 4. Effects on estate planning
      - a. At death, property passes under a will or according to state law if there is no will
      - b. Federal estate and state inheritance taxes generally reach total value of property
  - B. Life estates and remainders
    - 1. Used to carve up ownership of assets into limited interests

2. Entitles a person (life tenant) to receive income from or use a property for their life only. When the life tenant dies, the property goes back to the original owner or designated owner (remainder)

Example: A farm can be left to a spouse (life tenant) for his/her life with property passing to children (remainders) at life tenant's death

3. Granted life estate

- a. Life tenant did not previously own any of the property
- b. Generally not subject to federal estate tax in estate of life tenant
- c. Used in "generation-skipping"

Example: A grandparent might leave a farm to a child for life with remainder interest to a grandchild. Property would be taxed in grandparent's estate and not again until the death of the grandchild (for federal estate tax purposes)

4. Retained life estate

- a. Life tenant previously owned some interest in property
- b. Entire value of property is usually taxable

C. Co-ownership

1. Undivided ownership of property by two or more persons

2. Tenancy in common

- a. Provides for owners with undivided interests with no rights of survivorship, but with rights to convey, mortgage and otherwise care for as is available through sole ownership
- b. At the death of a tenant in common, that individual's undivided interest passes to that individual's heirs under state law or under the person's will
- c. Only the deceased tenant in common is taxed in the estate

3. Joint tenancy

- a. Provides for owners with undivided interests and with rights of survivorship (property cannot be conveyed by will). Does provide for conveying or mortgaging that owner's interest in the property. If conveyed outside of the joint tenancy, the joint tenancy is broken
- b. When one joint tenant dies, the survivor immediately becomes the full owner

- c. After death of first joint tenant, surviving tenant can usually continue to write checks on a jointly owned bank account and obtain control of jointly owned motor vehicles
  - d. Upon death of a joint tenant, federal tax law rules that the full amount of the joint tenancy property is subjected to death tax except to the extent that the surviving joint tenant can prove that he or she provided part or all of the money when the property was acquired or the mortgage paid off
4. Tenancy by entirety
- a. Provides for owners with undivided interests and with rights of survivorship, but does not allow for conveyance without consent of the other party involved in the tenancy by entirety
  - b. Shares many of the features of joint tenancy--except that it can't be severed by the action of one of the co-owners

IX. Community property (Transparency 3)

- A. All property acquired during marriage (except that acquired by gift or inheritance) becomes community property and is owned essentially half by each
- B. Community property states
  - 1. Idaho
  - 2. Arizona
  - 3. California
  - 4. Louisiana
  - 5. Nevada
  - 6. New Mexico
  - 7. Texas
  - 8. Washington
  - 9. Wisconsin
- C. If all of a couple's assets were acquired during marriage, the estates would be expected to be approximately equal in size
- D. For federal estate tax purposes, generally all of a decedent's separate property and one-half of the community property owned by the decedent and spouse at death are subject to tax

X. Ways to transfer legal ownership of property (Transparency 4)

A. Wills

B. Laws of descent

C. Contracts

(Note: A legal contract is necessary to sell property.)

D. Gifts

(Note: Land may be given away by a deed that is correctly signed, acknowledged and delivered, usually with the help of an attorney.)

E. Combined sale and gift

F. Co-ownership

XI. Tax laws related to estate planning

A. Unified credit allows the first \$600,000 of assets in an estate to be free from federal estate tax

B. 100% marital deduction allows a person to leave any amount to a spouse free of federal gift or estate tax

C. A person can give up to \$10,000 as a gift to each of as many people as he/she wishes without any federal gift tax

Example: A couple could potentially give \$40,000 a year to each married child to reduce the size of their estate (each parent could give \$10,000 each to their child and child's spouse)

XII. Reasons for having a will

A. Distributes your assets as you wish

B. Reduces the costs and time of settling your estate

C. Allows you to name your own executor (which can also save time and money)

D. Allows you to name a guardian for your minor children

E. Allows you to establish trust funds

F. Helps avoid internal conflict among family members

XIII. Components of a will (Transparency 5)

(Note: A husband and wife should each have separate wills.)

A. Property disposition

- B. Nomination of guardians for minor children to function if both parents should die
- C. Testamentary trust to manage the property of minor heirs
- D. Designation of an executor to manage the estate during estate settlement

(Note: A will should be written with an attorney.)

# **OBJECTIVES FOR DEVELOPING AN ESTATE PLAN**

**Keep farm in family**

**Treat children equitably**

**Help child start farming**

**Reduce taxes**

**Inform heirs**

**Other**

# **TYPES OF PROPERTY OWNERSHIP**

## **Sole ownership**

**Life estates and remainders**

## **Co-ownership**

**Tenancy in common**

**Joint tenancy**

**Tenancy by entirety**

# **COMMUNITY PROPERTY STATES**

**Idaho**

**Arizona**

**California**

**Louisiana**

**Nevada**

**New Mexico**

**Texas**

**Washington**

**Wisconsin**

# **TRANSFERRING PROPERTY OWNERSHIP**

**Wills**

**Laws of descent**

**Contracts**

**Gifts**

**Combined sale/gift**

**Co-ownership**

# **COMPONENTS OF A WILL**

**Property disposition**

**Guardians for minor children**

**Testamentary trust**

**Designation of executor**

## ESTATE PLANNING

AG 660 - S

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match terms associated with estate planning to their correct definitions. Write the correct numbers in the blanks provided.
- |          |  |                  |
|----------|--|------------------|
| _____ a. | One who dies without having made a valid will  | 1. Executor      |
| _____ b. | Person or institution who derives benefit from the creation of a trust, proceeds of an insurance policy or property designated by a will                                   | 2. Estate        |
|          |  | 3. Will          |
| _____ c. | A separate writing that modifies a will  | 4. Intestate     |
| _____ d. | Total value of a person's property, both real and personal   | 5. Administrator |
|          |  | 6. Probate       |
| _____ e. | To receive property from a deceased person   | 7. Trust         |
| _____ f. | The legal relationship created by virtue of one party holding legal title to property for the benefit of another   | 8. Testate       |
|          |  | 9. Testator      |
| _____ g. | A person legally empowered and charged with the duty of managing the property of another who is incapable of managing his own property because of age, intellect or health | 10. Codicil      |
|          |  | 11. Assets       |
| _____ h. | An instrument, prepared in the form prescribed by law, which provides for the disposition of a person's property to take affect after death                                | 12. Beneficiary  |
|          |  | 13. Decedent     |
| _____ i. | The condition of leaving a will upon death   | 14. Guardian     |
| _____ j. | A deceased person  | 15. Conservator  |
| _____ k. | All types of property which can be made available for the payment of debts   | 16. Inherit      |
| _____ l. | Person named in a will as the one to administer the estate   |                  |
| _____ m. | Person appointed by a court to settle the affairs of an intestate  |                  |
| _____ n. | A person legally empowered and charged with the duty of taking care of another who is incapable of taking care of himself because of age, intellect or health              |                  |

- \_\_\_\_ o. A person who makes a will
- \_\_\_\_ p. The procedure or process of establishing the validity of a will and administering or settling an estate

2. Define estate planning.

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3. Discuss five problems caused by lack of estate planning.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

4. Discuss three steps involved in estate planning.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_

5. List five factors to consider in estate planning.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

e. \_\_\_\_\_  
\_\_\_\_\_

6. Define real property and personal property.

Real property \_\_\_\_\_  
\_\_\_\_\_

Personal property \_\_\_\_\_  
\_\_\_\_\_

7. List four factors influencing choice of ownership type.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

8. Describe sole ownership and its effects on estate planning.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Describe life estates and remainders and their effects on estate planning.

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10. Describe tenancy in common and its effects on estate planning.

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11. Describe joint tenancy and its effects on estate planning.

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12. Describe tenancy by entirety and its effects on estate planning.

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13. Select true statements concerning community property by writing an "X" in the blank before each correct statement.

- a. All property acquired during marriage (including gifts and inheritance) becomes community property
- b. Idaho is a community property state
- c. If all of a couple's assets were acquired during marriage, the estates would probably be about equal in size
- d. Oregon and California are community property states
- e. Usually all of a decedent's separate property and one-half of the community property owned by the decedent and spouse at death are subject to federal estate tax

14. List five ways to transfer legal ownership of property.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

15. Select true statements concerning tax laws related to estate planning by writing an "X" in the blank before each correct statement.

- a. Unified credit allows the first \$800,000 of assets in an estate to be free from federal estate tax
- b. A father can give up to \$40,000 as a gift to his son each year for 10 years without any federal gift tax
- c. A mother and father together can gift \$20,000 to their daughter without any federal gift tax
- d. 100% marital deduction allows a person to leave any amount to a spouse free of federal gift or estate tax
- e. Unified credit allows the first \$600,000 of assets in an estate to be free from federal estate tax

16. List four reasons for having a will.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

17. Discuss four components of a will.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

## ESTATE PLANNING

## AG 660 - S

## ANSWERS TO TEST

1.
 

|       |       |       |       |
|-------|-------|-------|-------|
| a. 4  | e. 16 | i. 8  | m. 5  |
| b. 12 | f. 7  | j. 13 | n. 14 |
| c. 10 | g. 15 | k. 11 | o. 9  |
| d. 2  | h. 3  | l. 1  | p. 6  |
  
2. A branch of law that is used to arrange a person's property. It takes into account the laws of wills, taxes, insurance, property and trusts and carries out a person's wishes for the disposition of property at death
  
3. Answer should include five of the following:  
  
 Ill feelings and bitterness among heirs; Uncertainty of eventual owners; Unequitable treatment of children; State-appointed guardian for minor children if both parents die; Farm being sold or split into small, uneconomical units; Surviving spouse with young children not being able to adequately provide for family; High estate and/or inheritance taxes; High probate costs
  
4. Answer should include three of the following:  
  
 Making of a will; Examination of how property is owned or held; Review of family insurance program; Consideration of the advisability of gifts during life to save income or death taxes and to benefit the recipients; Possible disposition of property by sale during life including sale for cash, installment sale, a private annuity or a part gift-part sale transaction; A review of the organization of the family business
  
5. Objectives for developing an estate plan; The portion of the estate that is required by the surviving spouse to provide a sufficient income; Plans that will work regardless of who dies first; Provisions that should be made in case the surviving spouse should remarry; Necessity of good attorney to review estate plan, to advise and to draw up and execute legal documents
  
6. Real property--Includes land and permanent improvements such as houses on the land  
Personal property--Includes moveable items such as livestock, machinery, household goods, bank accounts, bonds, stocks, etc.
  
7. Answer should include four of the following:  
  
 Preferences as to sole ownership or co-ownership; Desired disposition of property at death; Estate and inheritance tax effects; Gift tax implications; Differences in estate settlement costs
  
8. Answer should include information from the following:  
  
 Sole ownership (fee simple); Ownership is in one name; Normally the simplest ownership during life; Gives holder most complete ownership possible--owner has unrestricted right to sell, mortgage or dispose of real estate; Effects on estate planning: At death, property passes under a will or according to state law if there is no will; Federal estate and state inheritance taxes generally reach total value of property

9. Answer should include information from the following:

Used to carve up ownership of assets into limited interests; Entitles a person (life tenant) to receive income from or use a property for their life only; When the life tenant dies, the property goes back to the original owner or designated owner (remainder); Granted life estate: Life tenant did not previously own any of the property; Generally not subject to federal estate tax in estate of life tenant; Used in "generation-skipping"; Retained life estate: Life tenant previously owned some interest in property; Entire value of property is usually taxable

10. Answer should include information from the following:

Provides for owners with undivided interests with no rights of survivorship but with rights to convey, mortgage and otherwise care for as is available through sole ownership; At the death of a tenant in common, that individual's undivided interest passes to that individual's heirs under state law or under the person's will; Only the deceased tenant in common is taxed in the estate

11. Answer should include information from the following:

Provides for owners with undivided interests and with rights of survivorship (property cannot be conveyed by will); Does provide for conveying or mortgaging that owner's interest in the property; If conveyed outside of the joint tenancy, the joint tenancy is broken; When one joint tenant dies, the survivor immediately becomes the full owner; After death of first joint tenant, surviving tenant can usually continue to write checks on a jointly owned bank account and obtain control of jointly owned motor vehicles; Upon death of a joint tenant, federal tax law rules that the full amount of the joint tenancy property is subjected to death tax except to the extent that the surviving joint tenant can prove that he or she provided part or all of the money when the property was acquired or the mortgage paid off

12. Answer should include information from the following:

Provides for owners with undivided interests and with rights of survivorship but does not allow for conveyance without consent of the other party involved in the tenancy by entirety; Shares many of the features of joint tenancy--except that it can't be severed by the action of one of the co-owners

13. b, c, e

14. Answer should include five of the following:

Wills; Laws of descent; Contracts; Gifts; Combined sale and gift; Co-ownership

15. c, d, e

16. Answer should include four of the following:

Distributes your assets as you wish; Reduces the costs and time of settling your estate; Allows you to name your own executor; Allows you to name a guardian for your minor children; Allows you to establish trust funds; Helps avoid internal conflict among family members

17. Property disposition; Nomination of guardians for minor children to function if both parents should die; Testamentary trust to manage the property of minor heirs; Designation of an executor to manage the estate during estate settlement

# 660T-1

## COMPUTERS IN AGRICULTURE

### AG 660 - T

#### UNIT OBJECTIVE

After completion of this unit, students should be able to list uses of a farm computer and discuss advantages and disadvantages of buying a computer for a farm or ranch. Students should also be able to complete a budget, cash flow, balance sheet and daily journal records on the computer. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with computers in agriculture to their correct definitions.
2. List four factors to consider before purchasing a farm computer.
3. List five uses for a farm computer.
4. Discuss two disadvantages of buying a computer for a farm or ranch.
5. Discuss three advantages of buying a computer for a farm or ranch.
6. List eight examples of software available for use in agriculture.
7. List and describe five types of general purpose software.
8. List and describe three factors to consider when selecting hardware.
9. List and describe three factors to consider when selecting software.
10. Complete a budget on the computer.
11. Complete a cash flow statement on the computer.
12. Complete a balance sheet on the computer.
13. Enter daily journal records on the computer.

660T-2

COMPUTERS IN AGRICULTURE

AG 660 - T

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    - 1. Literature
      - a. The following publications are available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982).

|      |     |  |        |
|------|-----|--|--------|
| EXT  | 624 | <i>A Microcomputer for the Farm Family?</i>  | \$1.00 |
| CIS  | 786 | <i>Data Bases in Agricultural Applications</i>                                     | \$.35  |
| WREP | 107 | <i>Introduction to Database Management Systems for Agricultural Record Keeping</i> | \$.75  |
| WREP | 108 | <i>Selecting Database Management Systems for Agricultural Record Keeping</i>       | \$1.00 |
      - b. *Microcomputer Applications for Students in Agriculture*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$15.00; order no. H-2755.
      - c. *Microcomputing in Agriculture*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$31.50; order no. R4353-O.
      - d. *The Farm Computer*, available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$30.00; order no. 591861-O.
      - e. *The Farmer's Complete Guide to Ag Computing*, discusses how the computer works and how it can work for a farm or ranch operation; available from Hobar Publications, 1234 Tiller Lane, St. Paul, Minnesota 55112, (612-633-3170); approximate cost \$30.00; order no. AC-1.
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objective sheet and discuss.
  - D. Provide students with information and assignment sheets and discuss.

## 660T-3

- E. Review various agriculture computer programs and select one that will operate on your computer (or a computer that you and your students will have access to). Learn to use the program before teaching this unit.
  - F. Invite a local farmer or rancher who uses a computer to talk to the class about the advantages of a computer in his or her operation, the program he/she uses, the information he/she keeps track of, etc.
  - G. Invite a local banker who works with farmers and ranchers to talk to the class about computer records that are helpful for farmers seeking land and operating loans.
  - H. If you do not have experience operating computers, ask your school computer instructor to assist you in teaching this unit. Computer technology is constantly changing; it is important to keep updated on the new changes.
  - I. Review and give test.
  - J. Reteach and retest if necessary.
- II. Instructional materials
- A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    - 1. TM 1--Uses for a Personal Farm Computer
    - 2. TM 2--Types of General Purpose Software
    - 3. TM 3--Hardware Selection
    - 4. TM 4--Software Selection
  - E. Assignment sheets
    - 1. AS 1--Complete a Budget on the Computer
    - 2. AS 2--Complete a Cash Flow Statement on the Computer
    - 3. AS 3--Complete a Balance Sheet on the Computer
    - 4. AS 4--Enter Daily Journal Records on the Computer
  - F. Test
  - G. Answers to test

III. Unit references

- A. Beasley, Jack O., *Microcomputers on the Farm*, Howard W. Sams & Co., Inc., Indianapolis, Indiana, 1983.
- B. Cross, T.L. and Lane, R.J., *Selecting a Database Management System for Agricultural Record Keeping*, WREP 108, August 1988.
- C. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- D. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- E. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

COMPUTERS IN AGRICULTURE

AG 660 - T

INFORMATION SHEET

- I. Terms and definitions
- A. Back-up--To duplicate a file or a separate piece of media in case the original is lost or damaged
  - B. Basic (Beginner's All-purpose Symbolic Instruction Code)--A procedure-level computer language that is one of the easiest computer programming languages to learn and master. The most popular language for microcomputers
  - C. Binary number system--A numbering system based on 2's (instead of 10's) which uses only the digits 0 and 1 when written  
  
Example: In this system, 4 is written as 0100, 6 as 0110 and 12 as 1100
  - D. Bit (Binary digit)--A unit of data in binary notation. In the binary numbering system, only 2 marks (0 and 1) are used. Each of these is called a binary digit. Bits are used in electronics systems to encode information, instructions and data. Bits are usually grouped in "nibbles" (4 bits), "bytes" (8 bits), "words" (up to 16 bits) or "long words" (up to 32 bits)
  - E. Byte--The basic unit of information in a microcomputer; consists of 8 bits. In the binary system, 8 bits allows one byte to represent at least 128 different combinations
  - F. Character--One symbol of a set of elementary symbols such as those corresponding to the keys on a typewriter. The symbols usually include the decimal digits 0 through 9, the letters A through Z, punctuation marks, operation symbols and any other single symbol that a computer may read, store or write
  - G. Chip--A very small piece of silicone that contains thousands of electronic elements and circuits that provide the computing capacity of a microcomputer; also called a microprocessor
  - H. Computer--A device capable of accepting information, applying prescribed processes to the information, and supplying the results of these processes. It usually incorporates a central processing unit (CPU), a memory, input/output (I/O) facilities and a power supply
  - I. Conversational language--A language utilizing a near-English character set that facilitates communication between the computer and the user  
  
(Note: BASIC is one of the more commonly used conversational languages.)
  - J. CPU (Central Processing Unit)--The computer module in charge of fetching, decoding and executing instructions

## 660T-6

- K. Data--Basic elements of information in the form of words, numbers or other symbols, which are stored or processed by the computer
- L. Density--Amount of space versus the amount of information stored; refers to the compactness of the information stored on the available storage media or the number of tracks per inch
- M. Disk Operating System (DOS)--Program responsible for the housekeeping and communications between the disk storage device and the computer
- N. Hardware--Includes all mechanical and electronic components in a computer such as transformers, chips, wires, circuits, etc.
- O. Language--Refers to any defined set of characters that are used to form symbols, words and the rules for combining these into meaningful communications
- P. Menu--A list of programs or applications that are available by making a selection
- Q. Modem--Device that transforms a computer's electrical pulses into audible tones for transmission over a phone line to another computer or terminal; also receives incoming tones and transforms them into electrical signals that can be processed and stored by the computer or terminal

(Note: Modem is an acronym for MOdulator-DEModulator.)

### II. Factors to consider before purchasing a farm computer

- A. Ability of computer to pay for itself

(Note: Net income should at least remain constant with the purchase of a computer.)

- B. Adequate sources of data to input into computer
- C. Adequate time to collect data, input data and evaluate data
- D. Expectations of computer

(Note: The computer will not be a miraculous cure for an ailing business. In some situations, the cost of the computer could add to the decline of the business.)

### III. Uses for a personal farm computer (Transparency 1)

- A. Accounting

(Note: Computers can replace ledger books.)

- B. Management

(Note: Programs are available that can produce cash flow charts. Least cost ration charts can help organize and analyze data.)

C. Telecommunications

(Note: A MODEM connection can be added from the telephone to the computer to access data banks for stock market and future quotes, weather information, crop information, etc.)

D. Education

(Note: Various correspondence courses are available to computer users.)

E. Word processing

(Note: A computer and printer can be used as a typewriter to write letters, forms, reports, budgets, loan applications, lease agreements, etc.)

F. Recreation

(Note: Teaching games and video and entertainment programs are available.)

IV. Disadvantages of buying a computer for a farm or ranch

A. A computer is only as accurate as the information put into it

B. Time--It is very time-consuming to learn how to use a computer and to actually use it (inputting data, running programs, etc.)

C. Software and hardware may become outdated very quickly

V. Advantages of buying a computer for a farm or ranch

A. The computer can answer immediate "what if" questions

Example: When using a cash flow, you can immediately see what would happen to your cash flow situation throughout the rest of the year purchased a major piece of equipment in May

B. New input of data can be recalculated quickly and accurately

C. Large amounts of numbers can be dealt with in a very short time

D. Integrated software programs are available to save time by using data in several different ways without re-inputting it

VI. Examples of software available for use in agriculture

A. Accounting spreadsheets

B. Word processing programs

C. Whole farm budgets

D. Feeder pig production charts

E. Finishing hog production charts

- F. Enterprise budgets
  - G. Fertilizer use recommendations
  - H. Income tax forms
  - I. Cash flow charts
  - J. Depreciation tables
  - K. Machinery maintenance tables
  - L. Balance sheets
  - M. Income statements
  - N. Marketing plans
  - O. Enterprise records
  - P. Livestock ration formulations
- VII. Types of general purpose software (Transparency 2)
- A. Word processor
    - 1. Electronic typewriter
    - 2. Used for typing letters, records, tables and other information
    - 3. Corrections and changes may be made prior to printing
  - B. Electronic spread sheet
    - 1. Performs calculations and data manipulations, such as creating a farm budget or cash flow projection
    - 2. Especially useful for "what if" tabulations

Example:           Prices and yields can be changed in a cash flow projection to determine their effect on the results
  - C. Data base management programs
    - 1. Turn the computer into a filing cabinet that can receive and store data that can be readily retrieved on user demand
    - 2. The way data are received and how reports are printed can be organized by the user
  - D. Statistical software
    - 1. Used mostly by research people

## 660T-9

2. Used by farmers interested in single point averages, moving averages, variabilities, significant differences, production curves, trend lines and other meaningful statistical data
- E. Plotting software
1. Used by farmers to track prices or production
  2. Used by farmers to see a visual representation of changes
  3. Data can be organized into line graphs, bar charts, pie charts, etc., and printed out complete with descriptions and titles
- VIII. Factors to consider when selecting hardware (Transparency 3)
- A. Operating systems
1. The software must run on the operating system  
  
(For example: Software designed to run on MS-DOS Version 3.1 may not work on MS-DOS Version 2.1)
  2. The program chosen must be distributed on the same disk as the computer uses  
  
(For example: A 5 1/4 inch floppy disk will not work on a 3 1/2 inch disk drive)
- B. Memory capacity
- (Note: Every software package requires a minimum number of kilobytes of Random Access Memory (RAM) to operate properly.)
- C. Disk storage capacity
- (Note: To estimate the amount of disk storage you'll need each year, multiply the estimated characters per record you'll keep by the number of records you'll maintain in one year. Next, multiply the result by the number of years of records you'd like to be able to keep on-line or accessible.)
- D. Printer support
- (Note: Printers vary by width, speed, type of printing and paper feed. An ideal printer for agricultural records prints rapidly on a 15-inch wide paper, using a tractor feed mechanism to maintain a smooth paper flow. It should also offer condensed print, bold and underline features.)
- E. Monitor support
- (Note: If you have a color monitor, make sure your software will support it.)

IX. Factors to consider when selecting software (Transparency 4)

A. Technical specifications

(Note: The technical specifications determine what constraints you face as you work with the program and your records.)

1. Speed of execution

2. Maximum number of fields that can be included in one database

(Note: This can be a problem in working with file management programs, since they allow only one file to be accessed at a time. It is less important in a relational program, which can access multiple files at the same time.)

3. Maximum number of characters that can be stored in each field

(Note: If your program has a remark or memo field, you can ignore the maximum number of characters limit, since you can store long strings of characters in them and you can plug your remaining data into appropriate numeric, character and date fields.)

4. Maximum number of characters per record

(Note: A limit of less than 1,000 characters per record could cause problems in storing your agricultural records. Determine the maximum number of characters per record you require by estimating the number of fields you'll use and the length of each. Add the lengths of each field to obtain the number of characters you require for each record, and allow for future expansion of your record keeping.)

5. Maximum number of files that may be accessed simultaneously

(Note: The ability to open three files at once increases the ease with which you can generate reports.)

B. Flexibility

(Note: The more flexible the program, the more readily it will adapt to future needs.)

1. Types of data

(Note: Agricultural records are most easily kept on a program with five data types: character, date, numeric, logic and remark data.)

2. Ability to change structure

(Note: Select a program that allows you to change the structure of the database files, such as field names, field types, field lengths, etc.)

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### 3. Ability to share data

(Note: Your program should be able to read data in from other programs and output data in a manner that other programs can read.)

### 4. Ability to custom-design reports

(Note: The greater the ability to construct custom reports, the better the chances that the program will function for a wide range of agricultural record keeping applications.)

## C. Programmability

(Note: Programming features useful in agricultural record keeping include a programming language, a query language and the ability to perform calculations in fields and reports.)

## D. Miscellaneous

### 1. Ease of learning

### 2. Good written instructions and supporting materials

### 3. Software support

Examples: Toll-free phone lines, newsletters, training workshops, etc.

### 4. Upgrade policy of the publisher

(Note: New releases of the program will be sold as corrections are made and new features are added; some publishers allow current program users to upgrade their software at little or no cost.)

# **USES FOR A PERSONAL FARM COMPUTER**

**Accounting**

**Management**

**Telecommunications**

**Education**

**Word processing**

**Recreation**

# **TYPES OF GENERAL PURPOSE SOFTWARE**

**Word processor**

**Electronic spread sheet**

**Data base management programs**

**Statistical software**

**Plotting software**

# **HARDWARE SELECTION**

**Operating systems**

**Memory capacity**

**Disk storage capacity**

**Printer support**

**Monitor support**

# SOFTWARE SELECTION

- \* **Technical specifications**
  - Execution speed
  - Maximum number of fields
  - Maximum characters per field
  - Maximum characters per record
  - Maximum files accessed simultaneously
  
- \* **Flexibility**
  - Types of data
  - Change structure
  - Share data
  - Custom-design reports
  
- \* **Programmability**
  - Programming language
  - Query language
  - Field and report calculations
  
- \* **Miscellaneous**
  - Easy to learn
  - Instructions/supporting materials
  - Software support
  - Upgrade policy

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COMPUTERS IN AGRICULTURE

AG 660 - T

ASSIGNMENT SHEET #1--COMPLETE A BUDGET ON THE COMPUTER

Name \_\_\_\_\_ Score \_\_\_\_\_

Use your own personal information or the information below to develop an enterprise budget. Your vo-ag instructor will provide you with a program disk for the computer.

Crop: Winter wheat

Units: Bushels

Price: \$3.00

Quantity (per acre): 78

Total acres: 124

Variable operating costs

Fertilizer: \$6,000

Seed: \$2,000.00

Chemicals: \$2,600.00

Insurance: \$1,000

Fuel: \$1,000

Machine hire: \$850

Supplies: \$400

Repairs: \$1,000

Fixed costs

Machinery (depreciation, taxes, insurance): \$2,000

Land taxes: \$700

Land interest: \$1,400

## COMPUTERS IN AGRICULTURE

AG 660 - T

## ASSIGNMENT SHEET #2--COMPLETE A CASH FLOW STATEMENT ON THE COMPUTER

Name \_\_\_\_\_ Score \_\_\_\_\_

Use your own personal information or the information below to develop a cash flow statement on the computer. Your vo-ag instructor will provide you with a program disk for the computer.

Using the monthly information listed below, complete an estimated cash flow for a farmer raising 480 acres of wheat, 366 acres of barley and 200 acres of bluegrass seed. You have set up an operating line of credit with the local bank and can borrow as you need to. Your limit on borrowing is \$40,000. When you borrow money, you will need to borrow to the nearest one thousand dollars above what you need. You have a beginning cash balance of \$5,000 and a long term loan of \$85,000. Monthly projections:

**January**Income

1. Will sell 5,000 bushels of wheat that is contracted for a net price of \$3.50/bushel
2. Bank account interest -- \$36

Expenses

1. Repairs -- \$100
2. Supplies -- \$80
3. Fuel and oil -- \$140
4. Insurance -- \$3,600
5. Utilities -- \$250
6. Family living -- \$1,500

**February**Income

1. Checking account interest -- \$125

Expenses

1. Repairs -- \$250
2. Supplies -- \$50
3. Fuel and oil -- \$450
4. Utilities -- \$300
5. Miscellaneous -- \$50
6. Family living -- \$1,000
7. Federal income tax and social security tax -- \$12,000

**March**Income

1. Bank account interest -- \$45

Expenses

1. Repairs on truck -- \$400
2. Repairs on combine -- \$600
3. Supplies -- \$100
4. Fuel and oil -- \$250

**(March)**

5. Utilities -- \$300
6. Family living -- \$1,100
7. Miscellaneous -- \$100

**April**Income

1. Government payment -- \$6,250
2. Bluegrass sales -- 50,000 lbs at \$.50/lb
3. Bank account interest -- \$60

Expenses

1. Repairs -- \$200
2. Supplies -- \$150
3. Utilities -- \$250
4. State income taxes -- \$2,500
5. Family living -- \$1,500
6. Miscellaneous -- \$125

**May**Income

1. Bank account interest -- \$75

Expenses

1. Repairs -- \$150
2. Barley seed -- \$5,490
3. Top dress (fertilizer) wheat -- \$2,898
4. Fertilize barley -- \$5,490
5. Fargo chemical (barley) -- \$3,660
6. Chemical to spray wheat for weeds -- \$5,760
7. Machine hire to spray wheat, fertilize wheat and fertilize barley -- \$5,427
8. Supplies -- \$100
9. Fuel and oil -- \$600
10. Utilities -- \$250
11. Miscellaneous -- \$100
12. Family living -- \$1,300

**June**Income

1. Bank account interest -- \$10

Expenses

1. Repairs -- \$200
2. Chemicals to spray barley for weeds -- \$2,928
3. Machine hire to spray barley -- \$1,647
4. Supplies -- \$100
5. Fuel and oil -- \$1,200
6. Property taxes -- \$2,000
7. Crop insurance -- \$5,200
8. Utilities -- \$250
9. Miscellaneous -- \$50
10. Family living -- \$1,000

**July**Income

1. Bank account interest -- \$8

Expenses

1. Repairs -- \$100
2. Chemicals to spray field borders and spot spray -- \$200
3. Supplies -- \$150
4. Utilities -- \$250
5. Family living -- \$1,000

**August**Income

1. Sell contracted wheat -- 14,000 bu at \$3.05/bu
2. Bank account interest -- \$132

Expenses

1. Hired labor -- \$1,000
2. Repairs -- \$750
3. Supplies -- \$200
4. Fuel -- \$1,200
5. Utilities -- \$250
6. Miscellaneous -- \$50
7. Family living -- \$1,300
8. Hedging deposit -- \$1,200
9. Pay operating loan balance: Principle -- \$21,000, Interest -- \$460

**September**Income

1. Sell part of barley -- 366 ton at \$93/ton
2. Bank account interest -- \$45

Expenses

1. Repairs -- \$1,000
2. Supplies -- \$100
3. Fuel and oil -- \$1,700
4. Utilities -- \$250
5. Miscellaneous -- \$50
6. Family living -- \$1,200
7. Long-term debt payment: Principle -- \$5,000, Interest -- \$8,925

**October**Income

1. Sell part of bluegrass -- 62,220 lbs at \$.50/lb
2. Bank account interest -- \$176

Expenses

1. Repairs -- \$250
2. Wheat seed (400 acres) -- \$4,000
3. Wheat fertilizer -- \$12,000
4. Fargo chemical for wheat -- \$4,800
5. Machine hire for fertilizer and chemical application -- \$1,800
6. Supplies -- \$100
7. Utilities -- \$150
8. Family living -- \$1,500

**November**

Income

1. Bank account interest -- \$80

Expenses

1. Repairs -- \$100
2. Supplies -- \$250
3. Fuel and oil -- \$230
4. Utilities -- \$250
5. Family living -- \$1,500
6. Bluegrass fertilizer -- \$10,000

**December**

Income

1. Government payment -- \$12,000
2. Bank account interest -- \$75

Expenses

1. Repairs -- \$250
2. Supplies -- \$200
3. Property taxes -- \$2,000
4. Utilities -- \$300
5. Family living -- \$1,500
6. Cash rent -- 550 acres at \$60/acre

(Note: The current year's crop which has not been sold will be held to sell in the following year.)

## COMPUTERS IN AGRICULTURE

AG 660 - T

## ASSIGNMENT SHEET #3--COMPLETE A BALANCE SHEET ON THE COMPUTER

Name \_\_\_\_\_ Score \_\_\_\_\_

Use your own personal information or the information below to complete a balance sheet on the computer. Your vo-ag instructor will provide you with a program disk for the computer. All figures will be listed as market value. Disregard modified cost (if referred to on your computer program) unless instructed otherwise by your vo-ag instructor. The following information is to be used as an example only--it is not representative of any particular farming operation.

1. Cash in checking account -- \$3,200
2. Savings accounts -- \$2,500
3. Livestock to be sold:  
30 steers with an average weight of 575 lbs worth \$.85/lb
4. Crops and feed:  
10,000 bu wheat worth \$4.20/bu  
80,000 lbs bluegrass seed worth \$.50/lb
5. Cash investment in growing crops:  
500 acres wheat with \$60/acre invested  
110 acres bluegrass with \$50/acre invested
6. Supplies:  
2,000 gallons diesel worth \$1.05/gallon  
Veterinary medicine and supplies worth \$120  
Welding rod worth \$75
7. Prepaid expenses: \$6,000 to local co-op for spring fertilizer
8. Machinery and equipment  
Gleaner combine -- \$49,500  
John Deere tractor -- \$46,000  
Gehl round baler -- \$10,300  
John Deere tractor -- \$12,000  
Hesston swather -- \$26,000  
International disc -- \$5,500  
John Deere drills -- \$3,500  
Calkins rodweeder -- \$12,000  
Ford truck -- \$15,500  
Melroe moldboard plow -- \$5,400  
John Deere harrow and harrow cart -- \$5,200  
International chisel plow -- \$4,650
9. Breeding stock: 40 stock cows -- age 7-9 years; average weight of 1,200 lbs, worth \$.48/lb
10. Cash value of life insurance -- \$8,500
11. Household goods and personal effects -- \$9,500
12. Farm real estate  
400 acres farm ground valued at \$750/acre (75% owned)
13. Loan payments due within 12 months  
Intermediate loan: Principal -- \$5,000; Interest -- \$1,675  
Long loan: Principal -- \$1,079; Interest -- \$5,921
14. Estimated accrued property tax liability -- \$3,240
15. Estimated accrued income and social security tax liability -- \$8,400
16. Principal payments due beyond 12 months -- \$68,000 (Mortgage on farm real estate) - \$68,000

## COMPUTERS IN AGRICULTURE

AG 660 - T

## ASSIGNMENT SHEET #4--ENTER DAILY JOURNAL RECORDS ON THE COMPUTER

Name \_\_\_\_\_ Score \_\_\_\_\_

Use your own personal information from your SOEP record book or the information listed below to enter daily journal records on the computer. Your vo-ag instructor will provide you with a program disk for the computer.

Beginning checking account balance -- \$3,562      Savings account balance -- \$8,000

**January expenses**

1. 1/15--Salt for cattle -- \$50; check #6035 to Patsy's Feed
2. 1/22--Barley chop--\$160; check #6036 to Patsy's Feed
3. 1/30--Diesel--\$500; check #6037 to Cenex

**February income** -- 2/8--Sold 10,000 bu wheat to Stegnar Grain Co. for \$3.92/bu

**February expenses**

1. 2/10--Veterinary expenses (cow prolapsed her uterus)--\$120; check #6038 to Valley Vet Clinic
2. 2/10--Tractor parts--\$376; check #6039 to Bill's Equipment
3. 2/15--Shop supplies (welding rod, paint, acetylene and oxygen, etc.)--\$186.77; check #6040 to Ben's Supply
4. 2/30--Barley chop--\$193.36; check #6041 to Patsy's Feed

**March income** -- 3/17--Sold 75,000 lbs bluegrass seed to Jacklin Seed for \$.60/lb

**March expenses**

1. 3/10--Veterinary expenses (vaccinations)--\$463.72; check #6042 to Valley Vet Clinic
2. 3/17--Barley chop--\$176.36; check #6043 to Patsy's Feed
3. 3/19--Oil and grease--\$266; check #6044 to Cenex
4. 3/24--Stamps--\$29; check #6045 to U.S. Postmaster
5. 3/28--Computer paper--\$21; check #6046 to Katy's Office Supply

**April income**

1. 4/21 Sold 63 tons barley at \$96/ton
2. 4/30 ASCS Government Program Payment--\$5,400

**April expenses**

1. 4/5--Ag magazine subscription--\$12.99; check #6047 to Successful Farming
2. 4/9--Salt for cattle--\$36; check #6048 to Patsy's Feed
3. 4/11--Fence posts--\$280.62; check #6049 to Ben's Supply
4. 4/17--Tractor filters--\$62.90; check #6050 to Bill's Equipment
5. 4/25--Truck battery--\$63.50; check #6051 to NAPA
6. 4/28--Repairs on combine platform auger--\$362; check #6052 to Bill's Equipment
7. 4/30--Barley chop--\$126.32; check #6053 to Patsy's Feed
8. 4/30--Diesel--\$1,082; check #6054 to Cenex
9. 4/30--Farm insurance--\$2,540; check #6055 to Idaho Farm Insurance, Inc.

**May expenses**

1. 5/10--Barley seed--\$3,008; check #6056 to Stegnar Grain Co.
2. 5/10--Fertilizer for barley--\$3,076; check #6057 to Western Farm Service
3. 5/10--Fertilizer to topdress wheat--\$4,021; check #6058 to McGregor Fertilizer Co.
4. 5/10--Chemical--\$2,500 for barley; \$5,600 for wheat; check #6059 to Farmer's Co-op

## COMPUTERS IN AGRICULTURE

AG 660 - T

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match terms associated with computers in agriculture to their correct definitions.

- |          |   |                             |
|----------|---|-----------------------------|
| _____ a. | Refers to any defined set of characters that are used to form symbols, words and the rules for combining these into meaningful communications   | 1. Back-up                  |
| _____ b. | To duplicate a file or a separate piece of media in case the original is lost or damaged  | 2. BASIC                    |
| _____ c. | Basic unit of information in a microcomputer; consists of 8 bits  | 3. Binary number system     |
| _____ d. | Refers to the compactness of the information stored on the available storage media or the number of tracks per inch                             | 4. Bit                      |
| _____ e. | Device that transforms a computer's electrical pulses into audible tones for transmission over a phone line to another computer or terminal     | 5. Byte                     |
| _____ f. | Very small piece of silicone that contains thousands of electronic elements and circuits that provide the computing capacity of a microcomputer | 6. Character                |
| _____ g. | Computer module in charge of fetching, decoding and executing instructions  | 7. Chip                     |
| _____ h. | Most popular language for microcomputers  | 8. Computer                 |
| _____ i. | Program responsible for the housekeeping and communications between disk storage device and computer  | 9. Conversational language  |
| _____ j. | One symbol of a set of elementary symbols, such as those corresponding to the keys on a typewriter  | 10. Central processing unit |
| _____ k. | Basic elements of information which are stored or processed by the computer   | 11. Data                    |
| _____ l. | A numbering system based on 2's which uses only the digits 0 and 1 when written   | 12. Density                 |
| _____ m. | Includes all mechanical and electronic components in a computer   | 13. Disk operating system   |
|          |   | 14. Hardware                |
|          |   | 15. Language                |
|          |   | 16. Menu                    |
|          |   | 17. Modem                   |

- \_\_\_\_\_ n. A list of programs or applications that are available by making a selection
- \_\_\_\_\_ o. A language utilizing a near-English character set that facilitates communication between the computer and user
- \_\_\_\_\_ p. A unit of data in binary notation; used to encode information, instructions and data
- \_\_\_\_\_ q. Device capable of accepting information, applying prescribed processes to the information and supplying the results of these processes

2. List four factors to consider before purchasing a farm computer.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

3. List five uses for a farm computer.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

4. Discuss two disadvantages of buying a computer for a farm or ranch.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_

5. Discuss three advantages of buying a computer for a farm or ranch.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

6. List eight examples of software available for use in agriculture.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

f. \_\_\_\_\_

b. \_\_\_\_\_

g. \_\_\_\_\_

h. \_\_\_\_\_

7. List and describe five types of general purpose software.

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

e. \_\_\_\_\_  
\_\_\_\_\_

8. List and describe three factors to consider when selecting hardware.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

9. List and describe three factors to consider when selecting software.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

## COMPUTERS IN AGRICULTURE

AG 660 - T

## ANSWERS TO TEST

1.
 

|       |       |       |       |
|-------|-------|-------|-------|
| a. 15 | f. 7  | j. 6  | n. 16 |
| b. 1  | g. 10 | k. 11 | o. 9  |
| c. 5  | h. 2  | l. 3  | p. 4  |
| d. 12 | i. 13 | m. 14 | q. 8  |
| e. 17 |       |       |       |
  
2. Ability of computer to pay for itself; Adequate sources of data to input into computer; Adequate time to collect data, input data and evaluate data; Expectations of computer
  
3. Answer should include five of the following:  
Accounting; Management; Telecommunications; Education; Word processing; Recreation
  
4. Answer should include two of the following:  
A computer is only as accurate as the information put into it; Time--It is very time-consuming to learn how to use a computer and to actually use it; Software and hardware may become outdated very quickly
  
5. Answer should include three of the following:  
The computer can answer immediate "what if" questions; New input of data can be recalculated quickly and accurately; Large amounts of numbers can be dealt with in a very short time; Integrated software programs are available to save time by using data in several different ways without re-inputting it
  
6. Answer should include eight of the following:  
Accounting spreadsheets; Word processing programs; Whole farm budgets; Feeder pig production charts; Finishing hog production charts; Enterprise budgets; Fertilizer use recommendations; Income tax forms; Cash flow charts; Depreciation tables; Machinery maintenance tables; Balance sheets; Income statements; Marketing plans; Enterprise records; Livestock ration formulations
  
7. --Word processor: Electronic typewriter; Used for typing letters, records, tables and other information; Corrections and changes may be made prior to printing  
--Electronic spread sheet: Performs calculations and data manipulations, such as creating a farm budget or cash flow projection; Especially useful for "what if" tabulations  
--Data base management programs: Turn the computer into a filing cabinet that can receive and store data that can be readily retrieved on user demand; The way data are received and how reports are printed can be organized by the user  
--Statistical software: Used mostly by research people; Used by farmers interested in single point averages, moving averages, variabilities, significant differences, production curves, trend lines and other meaningful statistical data  
--Plotting software: Used by farmers to track prices or production; Used by farmers to see a visual representation of changes; Data can be organized into line graphs, bar charts, pie charts, etc., and printed out complete with descriptions and titles

8. Answer should include three of the following:

Operating systems: The software must run on the operating system; For example: Software designed to run on MS-DOS Version 3.1 may not work on MS-DOS Version 2.1; The program chosen must be distributed on the same disk as the computer uses; Memory capacity: Every software package requires a minimum number of kilobytes of Random Access Memory to operate properly; Disk storage capacity: To estimate the amount of disk storage you'll need each year, multiply the estimated characters per record you'll keep by the number of records you'll maintain in one year. Next, multiply the result by the number of years of records you'd like to be able to keep on-line or accessible; Printer support: Printers vary by width, speed, type of printing and paper feed. An ideal printer for agricultural records prints rapidly on a 15-inch wide paper, using a tractor feed mechanism to maintain a smooth paper flow. It should also offer condensed print, bold and underline features; Monitor support: If you have a color monitor, make sure your software will support it

9. Technical specifications: Speed of executions; Maximum number of fields that can be included in one database; Maximum number of characters that can be stored in each field; Maximum number of characters per record; Maximum number of files that may be accessed simultaneously; Flexibility: Types of data; Ability to change structure; Ability to share data; Ability to custom-design reports; Programmability: Programming features useful in agricultural record keeping include a programming language, a query language and the ability to perform calculations in fields and reports; Miscellaneous: Ease of learning; Good written instructions and supporting materials; Software support; Upgrade policy of the publisher

## 660U-1

### CONSUMER RIGHTS, RESPONSIBILITIES AND SPENDING

AG 660 - U

#### UNIT OBJECTIVE

After completion of this unit, students should be able to list consumer rights and responsibilities, identify consumer protection laws and list consumer protection agencies. Students should also be able to identify advertising practices harmful to consumers, and objectionable and fraudulent sales practices. This knowledge will be demonstrated by completion of a unit test with a minimum of 85 percent accuracy.

#### SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with consumer rights, responsibilities and spending to their correct definitions.
2. Identify the four periods of the development of the consumer movement.
3. List six consumer rights.
4. List six consumer responsibilities.
5. Name six federal consumer protection laws.
6. List six consumer protection agencies.
7. List three advertising practices considered harmful to consumers.
8. List three objectionable sales practices.
9. List and define two fraudulent sales practices.
10. List four guidelines customers can follow to protect themselves from unfair or fraudulent sales practices.
11. Discuss how to solve consumer problems.
12. List three basic buying principles.

CONSUMER RIGHTS, RESPONSIBILITIES AND SPENDING

AG 660 - U

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Order materials to supplement unit.
    1. Literature
      - a. *Credit or Cash: Equal Credit Opportunity Act, Fair Credit Billing Act*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$.25; order no. CIS 350.
      - b. *Unit Pricing*, available from Agricultural Communications Center, Ag Publications Building, University of Idaho, Moscow, Idaho 83843-4196, (208-885-7982); approximate cost \$.25; order no. CIS 379.
  - B. Make transparencies and necessary copies of materials.
  - C. Provide students with objectives and discuss.
  - D. Provide students with information and discuss.
  - E. Have students watch for advertising harmful to consumers and report their findings to the class.
  - F. Review and give test.
  - G. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    1. TM 1--Consumer Rights
    2. TM 2--Consumer Responsibilities
    3. TM 3--Federal Consumer Protection Laws

- 4. TM 4--Consumer Protection Agencies
  - 5. TM 5--Basic Buying Principles
  - E. Test
  - F. Answers to test
- III. Unit references
- A. Lowe, Ross E., et al., *Consumer Education and Economics*, 3rd edition, Glencoe Publishing Company, Mission Hills, California, 1990.
  - B. Miller, Roger Leroy, *Scribner Economics*, Scribner Educational Publishers, New York, 1988.
  - C. Peterson, H. Craig, *Economics of Work*, 2nd edition, South-Western Publishing Company, Cincinnati, Ohio, 1988.
  - D. Smith, Robert F., et al., *The American Economic System*, 3rd edition, Laidlaw Brothers, Publishers, River Forest, Illinois, 1987.
  - E. Swanson, Bettye B., *Consumer Challenges and Issues*, South-Western Publishing Co., Cincinnati, Ohio, 1987.

CONSUMER RIGHTS, RESPONSIBILITIES AND SPENDING

AG 660 - U

INFORMATION SHEET

- I. Terms and definitions
  - A. Consumer--Person who uses the goods and services produced by workers
  - B. Consumer action panels--Business groups that, in some industries, take care of consumer complaints when individual businesses cannot resolve them
  - C. Consumer affairs departments--Departments set up within firms or business organizations to handle consumer relations programs and consumer complaints
  - D. Consumer credit--Credit extended for personal, not business, purposes
  - E. Consumer finance companies--Small loan or personal finance companies
  - F. Consumer sovereignty--Idea that the consumer determines what goods and services are produced for the marketplace
  - G. Consumerism--Movement to educate consumers about the purchases they make and to demand better and safer products from manufacturers
  - H. Consumer goods--Goods produced for individuals and sold directly to the public to be used as they are
  - I. Goods--Physical objects produced by workers
  - J. Services--Things workers do for consumers
  - K. Redress--Relief or compensation for a wrong; a remedy
  - L. Statute--Law passed by a legislative body
  - M. Puffery--Claims or terms used by advertisers to make a product seem more valuable
  - N. Legal Aid Society--Organization formed to assure that legal services will be available to low-income people
- II. Historical development of the consumer movement
  - A. Origins (1784-1900)
    - 1. Massachusetts legislature passed general food law in 1784
    - 2. New York City passed legislation regulating tenement housing in 1862

3. First federal consumer protection law--the Wholesome Meat Act in 1890
  4. Consumer's League established in New York City in 1891
  5. National Consumer's League formed in 1896
- B. Emergence (1900-1929)
1. Wholesome Meat Act amended to regulate meat production
  2. Consumer education started
  3. Food Trade Commission established in 1914 to protect consumers from misleading and false advertising
- C. Growth (1930-1959)
1. Consumers Union established in 1935
  2. Textile Fibers Product Act passed in 1958
  3. American Council on Consumer Interests was started
- D. Recognition (1950-1980)
1. President John F. Kennedy, Ralph Nader, Esther Peterson and Betty Furness became national spokespersons for the consumer movement in the 1960's
  2. Fire and Auto Safety Legislation passed in 1966
  3. Highway Safety Standards Act passed in 1966
  4. Motor Vehicle Safety Standards Act passed in 1966
  5. Consumer Product Safety Commission established in 1972
  6. Executive order in 1979 required every federal agency to identify and/or develop consumer programs that would strengthen consumer involvement
- III. Consumer rights (Transparency 1)
- A. Right to safety--Consumers should be protected against goods that are hazardous to health or life
  - B. Right to be informed--Consumers should be protected against fraudulent or misleading advertising, labeling or sales practices. They should be given the facts needed to make informed choices
  - C. Right to choose--Consumers should be assured access to a variety of goods and services at competitive prices

- D. Right to be heard--Consumers should be assured that their interests will be considered in the making of laws
  - E. Right to redress--Consumers are entitled to swift and fair remedies for consumer problems
  - F. Right to consumer education--Consumers should be taught about the market system. They should know how to work within that system to get the greatest satisfaction for each dollar spent
- IV. Consumer responsibilities (Transparency 2)
- A. Responsibility to use products safely--Consumers should use products as they were meant to be used and follow recommended procedures for care and maintenance
  - B. Responsibility to use information--Consumers should look for information about products they plan to buy and use it to compare and evaluate various brands and models
  - C. Responsibility to choose carefully--Consumers should use their buying power intelligently to encourage ethical business practices and safe and reliable products
  - D. Responsibility to speak up--Consumers should keep themselves informed on consumer issues and let public officials know their opinions
  - E. Responsibility to seek redress--Consumers should let businesses know when their products and services do not measure up to expectations. They should pursue legal and other available remedies when problems do arise
  - F. Responsibility to learn--Consumers should take advantage of every opportunity to develop consumer skills
- V. Federal consumer protection laws (Transparency 3)
- A. Consumer Credit Protection Act--Law that requires truth in lending. Consumers must be told exactly what the credit charge is on a purchase or loan. Creditors must report these charges in a uniform way; credit charges must be stated both in dollars and cents and as an annual percentage rate
  - B. Fair Packaging and Labeling Act--Statute that requires truth in packaging. Designed to help consumers compare goods. Requires that certain facts be printed clearly on packaging--including net contents, size of serving, list of ingredients in order of decreasing weight, etc.
  - C. Food, Drug and Cosmetic Act--Law designed to assure consumers of the safety, purity and wholesomeness of food products. Covers the safety and effectiveness of drugs and cosmetics. Requires products to be informatively labeled and truthfully advertised
  - D. Automobile Information Disclosures Act--Requires manufacturers to label each car, and list suggested retail price, price of any extras and total price

- E. Child Protection and Toy Safety Act--Bans the shipment and sale of goods and toys dangerous to children from state to state
  - F. Federal Hazardous Substances Labeling Act--Statute requiring warning labels on all products that might be hazardous. Labels must list precautions for use and first-aid procedures in case of accident
  - G. Textile Fiber Products Identification Act--Requires that labels list fiber content by weight, manufacturer's name and address, family name of the fiber and similar items
  - H. Fair Credit Billing Act--Sets out procedure for consumers to follow in having billing errors corrected
  - I. Warranty-Federal Trade Commission Improvements Act--Sets the minimum standards for written warranties, rules for making them available before a product is sold, and provisions for class-action suits if they are not fulfilled
  - J. Equal Credit Opportunity Act--Protects people who apply for credit from discrimination based on sex, marital status, age, race, color, religion, national origin or receipt of public assistance
- VI. Consumer protection agencies (Transparency 4)
- A. United States Department of Agriculture--Sets standards for, inspects and grades meats, poultry and canned fruits and vegetables; publishes numerous booklets and pamphlets on food, clothing, household equipment and other topics of interest to consumers
  - B. Consumer Product Safety Commission--Protects the public against unreasonable risk from consumer products; enforces the Federal Hazardous Substances Labeling Act and the Poison Prevention Packaging Act; works closely with industry in developing safety standards for many household products
  - C. Federal Trade Commission--Works to prevent deceptive practices in advertising and marketing; guardian of consumer rights in credit transaction; enforces labeling laws
  - D. Food and Drug Administration--Enforces laws and regulations on the purity, quality and labeling of food, drugs and cosmetics; certifies new drugs and inspects drug and food-processing plants; regulates the advertising and sale of medical devices such as hearing aids
  - E. Securities and Exchange Commission--Registers and supervises the issue and sale of stocks and bonds; responsible for preventing fraud in the sale of securities to the public through interstate commerce; requires public disclosure of facts in the sale of securities so that investors can make realistic judgements
  - F. Consumer Action Panels--Formed by trade associations to represent a whole industry; takes care of consumer complaints when individual businesses cannot resolve them

- G. Arbitration Services--Provided by some local Better Business Bureaus to settle customer complaints
  - H. Corporate Consumer Departments--Communications link between major firms and their customers; used by customers when they need information or want to register complaints
  - I. Consumers Union--Independent consumer testing agency; buys products on the open market, subjects them to laboratory testing, and then reports the results in its magazine "Consumer Reports"
- VII. Advertising practices considered harmful to consumers
- A. False or misleading statements or exaggerations
  - B. Testimonials that do not show the real choice of a competent witness
  - C. Misleading price claims
  - D. Comparisons that unfairly criticize a competitive product or service
  - E. Claims that are not supported or that distort statements made by professional or scientific authorities
- VIII. Objectionable sales practices
- A. Trading up--Convincing customers to buy a higher-priced item than they originally intended
  - B. Making extravagant claims for a product
  - C. Providing incomplete, vague or misleading information about a product
  - D. Pressuring for an immediate sale
  - E. Displaying excessive friendliness toward the customer
- IX. Fraudulent sales practices
- A. Push money--Money paid to a clerk by a manufacturer or distributor in exchange for the clerk's favoring, or pushing, a certain brand
  - B. Bait-and-switch--Advertising a product at a bargain price, but then persuading customers brought in by the offer to buy a similar item at a higher price
- X. Guidelines for protection against unfair or fraudulent sales practices
- A. Know what you want--insist on only those product features you need and nothing more
  - B. Take your time--don't allow the sales clerk to pressure you into a hasty, ill-considered decision

- C. Think for yourself--make your own comparisons; insist on facts, not opinions, if you need additional information from the salesclerk
  - D. Get things in writing when possible--ask the clerk for a business card and ask him/her to write key product features or sales terms on the reverse side
- XI. Solving consumer problems
- A. Registering a complaint at the local level
    - 1. Telephone
      - a. Usually used to solve problems such as store charge accounts
      - b. Keep a written note of the person who receives your call, the date, the time and what is said
    - 2. Personal visit
      - a. Best way to handle a complaint about defective merchandise or services
      - b. Usually just need to return the defective merchandise
    - 3. Letter of complaint
      - a. Usually not necessary on first attempt to solve a problem
      - b. Sometimes the best way to reach people in authority
      - c. Customer has written record of what has happened in the case (be sure to keep copies of letters you write and receive)
  - B. If unable to receive satisfaction at the local level
    - 1. Write a letter to the consumer affairs officer of the company or manufacturer and state all steps taken to solve the problem
    - 2. If this letter is not answered, write another letter to the company president or owner. Send a copy of this letter to the Better Business Bureau and the local or state government office responsible for consumer protection
  - C. Taking legal action
    - 1. Small-claims court
      - a. Found in most states
      - b. Set up to resolve disputes involving small sums of money (usually from \$500-\$3,000, depending on the state)
      - c. A lawyer is not needed

- d. There is a filing fee (usually small)
  - 2. Hire a lawyer and bring action to a higher court
    - a. Lawyers charge a fee for services
    - b. If you cannot afford to hire a lawyer, the local office of Legal Aid Society may be able to help you
  - 3. Class-action suit--When a group of consumers who have the same complaint against the same firm combine to sue
- XII. Basic buying principles (Transparency 5)
- A. Gather as much information as is worthwhile
  - B. Use advertising wisely
  - C. Comparison shop to get the best deal

# **CONSUMER RIGHTS**

**Right to safety**

**Right to be informed**

**Right to choose**

**Right to be heard**

**Right to redress**

**Right to consumer education**

# **CONSUMER RESPONSIBILITIES**

**Use products safely**

**Use information**

**Choose carefully**

**Speak up**

**Seek redress**

**Learn**

# **FEDERAL CONSUMER PROTECTION LAWS**

**Consumer Credit Protection Act**

**Fair Packaging and Labeling Act**

**Food, Drug and Cosmetic Act**

**Automobile Information Disclosure Act**

**Child Protection and Toy Safety Act**

**Federal Hazardous Substances Labeling Act**

**Textile Fiber Products Identification Act**

**Fair Credit Billing Act**

**Warranty - Federal Trade Commission  
Improvements Act**

**Equal Credit Opportunity Act**

# **CONSUMER PROTECTION AGENCIES**

**United States Department of Agriculture**

**Consumer Product Safety Commission**

**Federal Trade Commission**

**Food and Drug Administration**

**Securities and Exchange Commission**

**Consumer Action Panels**

**Arbitration Services**

**Corporate Consumer Departments**

**Consumers Union**

# **BASIC BUYING PRINCIPLES**

**Gather information**

**Use advertising wisely**

**Comparison shop**

## CONSUMER RIGHTS, RESPONSIBILITIES AND SPENDING

AG 660 - U

## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right to their correct definitions. Write the correct numbers in the blanks provided.
- |          |   |                                 |
|----------|---|---------------------------------|
| _____ a. | Person who uses the goods and services produced by workers  | 1. Consumer finance companies   |
| _____ b. | Business groups that, in some industries, take care of consumer complaints when individual businesses cannot resolve them | 2. Goods                        |
| _____ c. | Departments set up within firms or business organizations to handle consumer relations programs and consumer complaints   | 3. Consumer goods               |
| _____ d. | Credit extended for personal, not business, purposes  | 4. Consumer                     |
| _____ e. | Small loan or personal finance companies  | 5. Legal Aid Society            |
| _____ f. | Idea that the consumer determines what goods and services are produced for the marketplace                                | 6. Statute                      |
| _____ g. | Movement to educate consumers about the purchases they make and to demand better and safer products from manufacturers    | 7. Services                     |
| _____ h. | Goods produced for individuals and sold directly to the public to be used as they are                                     | 8. Consumer affairs departments |
| _____ i. | Physical objects produced by workers  | 9. Consumer credit              |
| _____ j. | Things workers do for consumers   | 10. Puffery                     |
| _____ k. | Relief or compensation for a wrong; a remedy panels   | 11. Consumer sovereignty        |
| _____ l. | Law passed by a legislative body  | 12. Consumerism                 |
| _____ m. | Claims or terms used by advertisers to make a product seem more valuable  | 13. Redress                     |
| _____ n. | Organization formed to assure that legal services will be available to low-income people                                  | 14. Consumer action             |

2. Identify the four periods of the development of the consumer movement.

- a. \_\_\_\_\_ (1950-1980); Fire and Auto Safety legislation passed; High Safety Standards Act passed; Motor Vehicle Safety Standards Act passed; Consumer Product Safety Commission established
- b. \_\_\_\_\_ (1900-1929); Wholesome Meat Act amended to regulate meat production; Consumer education started; Food Trade Commission established
- c. \_\_\_\_\_ (1784-1900); Massachusetts legislature passed general food law; the Wholesome Meat Act passed; National Consumer's League formed
- d. \_\_\_\_\_ (1930-1959); Consumers Union established; Textile Fibers Product Act passed; American Council on Consumer Interests started

3. List six consumer rights.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

4. List six consumer responsibilities.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

5. Name six federal consumer protection laws.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

6. List six consumer protection agencies.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

7. List three advertising practices considered harmful to consumers.

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_

8. List three objectionable sales practices.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

9. List and define two fraudulent sales practices.

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. List four guidelines customers can follow to protect themselves from unfair or fraudulent sales practices.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

11. Discuss how to solve consumer problems.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. List the three basic buying principles.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

## CONSUMER RIGHTS, RESPONSIBILITIES AND SPENDING

AG 660 - U

## ANSWERS TO TEST

1.
 

|       |       |       |       |
|-------|-------|-------|-------|
| a. 4  | e. 1  | i. 2  | l. 6  |
| b. 14 | f. 11 | j. 7  | m. 10 |
| c. 8  | g. 12 | k. 13 | n. 5  |
| d. 9  | h. 3  |       |       |
  
2.
  - a. Recognition
  - b. Emergence
  - c. Origins
  - d. Growth
  
3. Right to safety; Right to be informed; Right to choose; Right to be heard; Right to redress; Right to consumer education
  
4. Responsibility to use products safely; Responsibility to use information; Responsibility to choose carefully; Responsibility to speak up; Responsibility to seek redress; Responsibility to learn
  
5. Answer should include six of the following:  
  
 Consumer Credit Protection Act; Fair Packaging and Labeling Act; Food, Drug and Cosmetic Act; Automobile Information Disclosures Act; Child Protection and Toy Safety Act; Federal Hazardous Substances Labeling Act; Textile Fiber Products Identification Act; Fair Credit Billing Act; Warranty-Federal Trade Commission Improvement Act; Equal Credit Opportunity Act
  
6. Answer should include three of the following:  
  
 United States Department of Agriculture; Consumer Product Safety Commission; Federal Trade Commission; Food and Drug Administration; Securities and Exchange Commission; Consumer Action Panels; Arbitration Services; Corporate Consumer Departments; Consumers Union
  
7. Answer should include three of the following:  
  
 False or misleading statements or exaggerations; Testimonials that do not show the real choice of a competent witness; Misleading price claims; Comparisons that unfairly criticize a competitive product or service; Claims that are not supported or that distort statements made by professional or scientific authorities
  
8. Answer should include three of the following:  
  
 Trading up; Making extravagant claims for a product; Providing incomplete, vague or misleading information about a product; Pressuring for an immediate sale; Displaying excessive friendliness toward the customer

9.
  - a. Push Money--Money paid to a clerk by a manufacturer or distributor in exchange for the clerk's favoring, or pushing, a certain brand
  - b. Bait-and-switch--Advertising a product at a bargain price, but then persuading customers brought in by the offer to buy a similar item at a higher price
10. Know what you want; Take your time; Think for yourself; Get things in writing when possible
11. Discussion should include registering a complaint at the local level by telephone, personal visit, and letter of complaint; what to do if don't receive satisfaction at local level (letter to company consumer affairs officer, letter to business owner/president with copy sent to Better Business Bureau); and, taking legal action through small-claims court, hiring a lawyer and class-action suit
12. Gather as much information as is worthwhile; Use advertising wisely; Comparison shop to get the best deal

NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

AG 660 - V

UNIT OBJECTIVE

After completion of this unit, students should be able to discuss capitalism, socialism and communism. Students should also be able to discuss the business cycle, unemployment, inflation and international trade. This knowledge will be demonstrated by completion of assignment sheets and a unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with national and international economy and trade with their correct definitions.
2. Discuss the basic principles and characteristics of capitalism and name two capitalist countries.
3. Discuss the basic principles and characteristics of socialism and name two socialist countries.
4. Discuss the basic principles and characteristics of communism and name two communist countries.
5. Describe national income accounting.
6. List the four categories used to compute gross national product based on expenditures.
7. List the five categories used to compute gross national product based on income.
8. List the five types of income used to compute national income.
9. List and define the phases of a business cycle.
10. List four causes of the business cycle.
11. List and define the four indicators of the business cycle.
12. List and define the four types of unemployment.
13. Define inflation.
14. List and define the two types of inflation.
15. Describe two benefits of international trade.
16. List three restrictions on international trade.
17. List two arguments against free trade.

18. List two arguments for free trade.
19. Explain the Reciprocal Trade Agreements Act.
20. Explain the General Agreements on Tariffs and Trade (GATT).
21. Explain the European Economic Community (EEC).
22. List three characteristics of developing nations.
23. List in order the three stages that most nations experience in economic development.
24. State the major problem facing developing countries in advancing to other stages of economic development.
25. List four obstacles to growth in developing nations.

NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

AG 660 - V

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor
  - A. Make transparencies and necessary copies of materials.
  - B. Provide students with objectives and discuss.
  - C. Provide students with information and assignment sheets and discuss.
  - D. Review and give test.
  - E. Reteach and retest if necessary.
- II. Instructional materials
  - A. Objective sheet
  - B. Suggested activities
  - C. Information sheet
  - D. Transparency masters
    1. TM 1--Modern Economic Systems
    2. TM 2--Phases of the Business Cycle
    3. TM 3--Causes of the Business Cycle
    4. TM 4--Business Cycle Indicators
    5. TM 5--Types of Unemployment
    6. TM 6--Characteristics of Developing Nations
    7. TM 7--Stages of Economic Development
  - E. Assignment sheets
    1. AS 1--Discuss Benefits of Capitalism
    2. AS 2--Examine Economic System in Selected Country
  - F. Test
  - G. Answers to test

III. Unit references

- A. Lowe, Ross E., et al., *Consumer Education and Economics*, 3rd edition, Glencoe Publishing Company, Mission Hills, California, 1990.
- B. Miller, Roger Leroy, *Scribner Economics*, Scribner Educational Publishers, New York, 1988.
- C. Peterson, H. Craig, *Economics of Work*, 2nd edition, South-Western Publishing Company, Cincinnati, Ohio, 1988.
- D. Smith, Robert F., et al., *The American Economic System*, 3rd edition, Laidlaw Brothers, Publishers, River Forest, Illinois, 1987.
- E. Swanson, Bettye B., *Consumer Challenges and Issues*, South-Western Publishing Co., Cincinnati, Ohio, 1987.

## NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

## AG 660 - V

## INFORMATION SHEET

- I. Terms
- A. Socialism--System in which the government owns the basic factors of production and controls how they are used
  - B. Democratic socialism--System that works within the constitutional framework of a nation to elect socialists to office; the government controls only some areas of the economy
  - C. Communism--System that supports revolution as the means to overthrow capitalism and bring about socialist goals; the entire economy is controlled by a central government; also called authoritarian socialism
  - D. Privatization--Program to return government-owned-and-operated companies to private ownership
  - E. Capitalism--System in which individuals own the factors of production and have the right to use those resources in any way they choose within the limits of the law; also called market system or free enterprise system
  - F. Third World--Developing nations that are not aligned with the major communist or capitalist nations
  - G. National income accounting--The measurement of the national economy's performance
  - H. Gross national product--Total dollar value of all final goods and services produced in the nation during a single year
  - I. Net national product--Value of a nation's total output minus value lost through the wear and tear on machines and equipment
  - J. National income--Measure of the total income earned by everyone in the economy
  - K. Personal income--Total income received by individuals before personal taxes are paid
  - L. Disposable personal income--Income people have left to spend or to save after all taxes have been paid
  - M. Consumer price index--Measure of the change in price over a period of time of a specific group of goods and services used by the average household
  - N. Producer price index--Measure of the change in price over time of a specific group of goods used by businesses

- O. Business cycle--Periodic ups and downs in the nation's economic activity
- P. Deficit financing--Spending by the government that exceeds the money it takes in through taxes
- Q. National debt--Total amount of debt outstanding for the federal government
- R. Foreign exchange--Transactions of money between different countries
- S. Exchange rate--The price of one nation's money in comparison to the price of another nation's money
- T. Free trade--International trade without restrictions
- U. Tariffs--Taxes on imports
- V. Quotas--Restrict imports by placing a limit on the amount of a certain good that may enter the country
- W. Embargo--A complete restriction on the import or export of a particular good

II. Modern economic systems (Transparency 1)

- A. Capitalism
  - 1. An economic system based on private ownership of property and the freedom of individuals to engage in economic activity as they see fit
  - 2. Uses the profit motive to stimulate production and competition to insure efficiency
  - 3. Consumer sovereignty is expressed through market purchases of goods and services to determine what is produced
  - 4. Benefits
    - a. Personal freedom
    - b. Personal initiative
    - c. Individuality
    - d. More efficiency in marketplace
    - e. Greater rates of economic growth
    - f. Higher standards of living
    - g. More economic freedom

5. Capitalist countries
  - a. United States
  - b. West Germany
  - c. Japan
  - d. Canada
  - e. France

B. Socialism

1. An economic system in which the major means of production are owned and operated by the government
2. Small businesses (usually only nonessential businesses) are often privately owned and operated
3. Set up to keep the small group of wealthy people from having too much power over other people's lives and from controlling the national resources
4. Major economic decisions about production, distribution, use of resources, etc., within basic industries are made by the government planners
5. Consumer decisions play some part in shaping production
6. Socialist countries
  - a. Great Britain
  - b. Sweden
  - c. Denmark
  - d. Norway

C. Communism

1. An economic system in which all economic goods are owned by society as a whole
2. Private property is eliminated
3. Supports revolution as the means to overthrow capitalism and bring about socialist goals
4. Entire economy is controlled by central government, which decides things such as what is produced, how much is produced, what goods will be available to consumers, etc.

5. Consumer demand does not shape production activities in most communist countries
6. Communist countries
  - a. Soviet Union
  - b. People's Republic of China
  - c. Czechoslovakia
  - d. Poland
  - e. Cuba
  - f. East Germany

(Note: In the real world, "pure" capitalism, "pure" socialism and "pure" communism do not exist. All economies are a mix of these extremes. For example: the United States government is involved with some industries such as nuclear power, and some farmers in the Soviet Union are allowed to farm a small plot of ground on the side in addition to their work on the government-owned farms.)

### III. National income accounting

- A. Measurement of national economy's performance--overall economy's income and output
- B. Measures the interaction of consumers, businesses and governments
- C. Major measurements used for the nation's income and production are gross national product

### IV. Categories for computing gross national product based on expenditures

- A. Consumer goods--Goods and services bought by consumers for their direct use
- B. Business (or producer) goods--Money spent by businesses on the tools, machines, buildings and other inputs used to produce goods
- C. Government goods--Goods and services bought by federal, state and local governments
- D. Net exports--The difference between what the nation exports (sells to other countries) and imports (buys from other countries). This may be a positive or negative figure

### V. Categories for computing gross national product based on income

- A. Wages (all forms of labor income)
- B. Interest received by households

- C. Rent earned by individuals (such as for farms, houses and stores)
  - D. Profits earned by corporations, partnerships and proprietorships
  - E. Adjustments--Deductions made for sales, property taxes paid and depreciation on machines and equipment
- VI. Types of income used to compute national income
- A. Wages and salaries paid to employees
  - B. Income earned by self-employed individuals (including farmers and owners of sole proprietorships and partnerships)
  - C. Rental incomes of property owners
  - D. Corporate profits
  - E. Interest on savings and investments received by individuals
- (Note: Wages and salaries make up about three-fourths of national income.)
- VII. Phases of the business cycle (Transparency 2)
- A. Peak--Period of prosperity; new businesses open; factories are producing at full capacity; jobs are plentiful
  - B. Recession--Business activity is slowing down or contracting. Typical traits are decreasing prices, decreasing profits and increasing unemployment levels
  - C. Trough--Lowest point in the business cycle; economy levels off from it's downward spiral
  - D. Expansion (or recovery)--Increase in economic activity that follows the trough. Consumer spending picks up, signaling factories to hire workers and increase production to meet demand; new businesses open, factory production climbs back to capacity
- VIII. Causes of the business cycle (Transparency 3)
- A. Business investment
  - B. Government activity
  - C. External factors
- Examples: War, discovery of new sources of raw materials, sudden loss of raw materials, etc.

D. Psychological factors

Example: People's psychological reactions to events such as the prospects of peace in the Middle East or the discovery of a new oil field may lead to feelings of confidence and/or optimism; while war or the overthrown government of a trading partner may lead to pessimism about the future

IX. Indicators of the business cycle (Transparency 4)

A. Economic indicators--Statistics that measure variables in the economy, such as stock prices or the dollar amount of loans to be repaid

B. Leading indicators--Statistics that point to what will happen in the economy. Used by economists to predict which phase of the business cycle the economy is moving into

Examples: Layoff rate in manufacturing; New orders for consumer goods; Number of new businesses formed; Stock prices; Supply of money in the economy

C. Coincident indicators--Statistics that change at about the same time as changes in overall business activity

Examples: Number of nonagricultural workers who are employed; Personal income minus transfer payments; Rate of industrial production; Sales of manufacturers, wholesalers, and retailers

D. Lagging indicators--Statistics whose changes seem to lag behind changes in overall business activity

Examples: Average length of unemployment; Size of manufacturing and trade inventories; Labor cost per unit of output in manufacturing; Average interest rate charged by banks to their best business customers; Number of commercial and industrial loans to be repaid; Ratio of consumer installment debt to personal income

X. Types of unemployment (Transparency 5)

A. Cyclical

1. Definition--Unemployment associated with fluctuations up or down in the business cycle

2. Characteristics--Rises during recessions and depressions; falls during recoveries and booms

B. Structural

1. Definition--Unemployment caused by changes in the economy because of such factors as technological advances or discoveries of natural resources

2. Characteristics--Can result when workers are replaced by computers or other machines or when cheaper natural resources are found elsewhere; often affects less-skilled workers

C. Seasonal

1. Definition--Unemployment caused by changes in the seasons or weather
2. Characteristics--Affects construction workers (especially in the Northeast and Midwest), farm workers and workers of the logging industry

D. Frictional

1. Definition--Temporary unemployment between jobs because of firings, layoffs, voluntary searches for new jobs or retraining
2. Characteristics--Always exists to some degree because of the time needed between jobs to find new work and the imperfect match between job openings and applicants

XI. Inflation

- A. Definition--Prolonged increase in the general price level of goods and services

B. Types

1. Demand - pull inflation--Rise in prices that result when total demand on the part of the businesses and consumers increases faster than total supply
2. Cost - push inflation--Rise in prices that results from the wage demands of labor unions and the excessive profit motive of large corporations

XII. Benefits of international trade

- A. Allows countries to produce the goods and services that they can efficiently produce
- B. Allows countries to obtain resources not available in their country, such as natural resources

XIII. Restrictions on international trade

- A. Tariffs
- B. Quotas
- C. Embargoes

- XIV. Arguments for and against free trade
  - A. Arguments against free trade
    - 1. Job security
    - 2. Protection of infant industries
    - 3. Strong national defense
  - B. Arguments for free trade
    - 1. Benefits of world specialization
    - 2. Trade restrictions may damage nation's export industries
    - 3. Protection from foreign competition removes incentives to improve technology and production methods
  
- XV. Reciprocal Trade Agreements Act
  - A. Passed by Congress in 1934
  - B. Gave the President the authority to form bilateral, or two-party, agreements to reduce tariffs with other nations
  
- XVI. General Agreement on Tariffs and Trade (GATT)
  - A. Involves 85 countries
  - B. Countries have agreed to work together to remove barriers to international trade
  - C. Representatives from these countries meet to negotiate tariff cuts and to work out rules for trade
  
- XVII. European Economic Community (EEC)--Regional tariff agreement that has eliminated almost all trade restrictions on the movement of goods between its 10 member countries
  
- XVIII. Characteristics of developing nations (Transparency 6)
  - A. Low per capita gross national product
  - B. Agricultural economy
  - C. Poor health conditions
  - D. Low literacy rate
  - E. Rapid population growth

- XIX. Stages most nations experience in economic development (Transparency 7)
  - A. Agricultural--First stage; most of the population have jobs in farming
  - B. Manufacturing--Second stage; most of the population have jobs in industry
  - C. Service--Third stage; shift of workers into the service sector (sales, food service, repair work, etc.)
- XX. Major problem developing countries face in advancing to other stages of economic development is the financing of the equipment, facilities and training
- XXI. Obstacles to growth in developing nations
  - A. People's attitude (mostly toward change)
  - B. Continued rapid growth population
  - C. Misuse of natural or human resources
  - D. Trade restrictions on imports

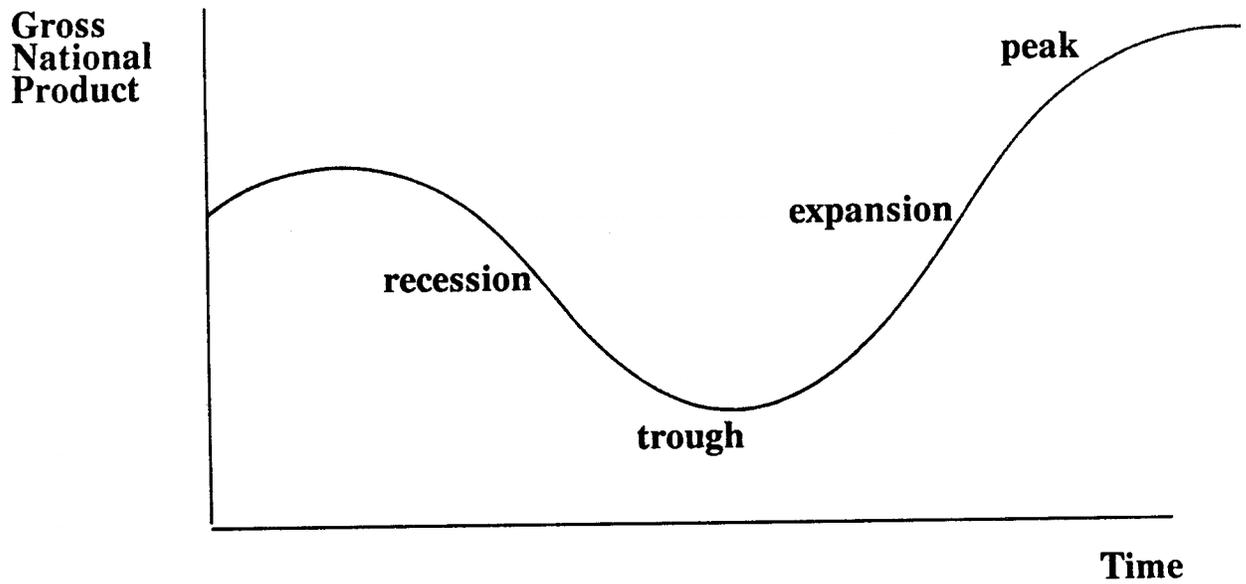
# **MODERN ECONOMIC SYSTEMS**

**Capitalism**

**Socialism**

**Communism**

# PHASES OF THE BUSINESS CYCLE



# **CAUSES OF THE BUSINESS CYCLE**

**Business investment**

**Government activity**

**External factors**

**Psychological factors**

# **BUSINESS CYCLE INDICATORS**

**Economic indicators**

**Leading indicators**

**Coincident indicators**

**Lagging indicators**

# **TYPES OF UNEMPLOYMENT**

**Cyclical**

**Structural**

**Seasonal**

**Frictional**

# **CHARACTERISTICS OF DEVELOPING NATIONS**

**Low per capita gross national product**

**Agricultural economy**

**Poor health conditions**

**Low literacy rate**

**Rapid population growth**

# **STAGES OF ECONOMIC DEVELOPMENT**

**Agricultural**

**Manufacturing**

**Service**

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NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

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ASSIGNMENT SHEET #1--DISCUSS THE BENEFITS OF CAPITALISM

Name \_\_\_\_\_ Score \_\_\_\_\_

Write a 1 - 2 page paper discussing the benefits of capitalism that you and your family enjoy in your lives.

NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

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ASSIGNMENT SHEET #2--EXAMINE AN ECONOMIC SYSTEM IN A SELECTED COUNTRY

Name \_\_\_\_\_ Score \_\_\_\_\_

Much can be learned about the economic systems of other countries by examining the ways in which they solve their economic problems. Select one country to study. Collect newspaper and magazine articles about economic news from that country. Summarize this news in an oral report to the class. Try to present illustrations such as graphs, photographs and maps with your report.

## NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

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## UNIT TEST

Name \_\_\_\_\_ Score \_\_\_\_\_

1. Match the terms on the right associated with national and international economy and trade with their correct definitions. Write the correct numbers in the blanks.

- |          |  |                               |
|----------|--|-------------------------------|
| _____ a. | System in which the government owns the basic factors of production and controls how they are used   | 1. Gross national product     |
| _____ b. | System that works within the constitutional framework of a nation to elect socialists to office. The government controls only some areas of the economy  | 2. Business cycle             |
| _____ c. | System that supports revolution as the means to overthrow capitalism and bring about socialist goals. The entire economy is controlled by a central government; also called authoritarian socialism          | 3. National income            |
| _____ d. | A program to return government owned and operated companies to private ownership   | 4. Tariffs                    |
| _____ e. | System in which individuals own the factors of production and have the right to use those resources in any way they choose within the limits of the law; also called market system or free enterprise system | 5. Embargo                    |
| _____ f. | Developing nations that are not aligned with the major communist or capitalist nations   | 6. Socialism                  |
| _____ g. | The measurement of the national economy's performance  | 7. Consumer price index       |
| _____ h. | The total dollar value of all final goods and services produced in the nation during a single year   | 8. Disposable personal income |
| _____ i. | Value of a nation's total output minus value lost through the wear and tear on machines and equipment  | 9. Foreign exchange           |
| _____ j. | Measure of the total income earned by everyone in the economy  | 10. Democratic socialism      |
| _____ k. | Total income received by individuals before personal taxes are paid  | 11. Third world               |
| _____ l. | Income people have left to spend or to save after all taxes have been paid   | 12. Producer price index      |
|          |  | 13. Capitalism                |
|          |  | 14. Quotas                    |
|          |  | 15. Net national product      |
|          |  | 16. Privatization             |
|          |  | 17. Deficit financing         |
|          |  | 18. Free trade                |





5. Describe national income accounting.

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6. List the four categories used to compute gross national product based on expenditures.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

7. List the five categories used to compute gross national product based on income.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

8. List the five types of income used to compute national income.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

9. List and define the phases of a business cycle.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. List four causes of the business cycle.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

11. List and define the four indicators of the business cycle.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_

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c. \_\_\_\_\_

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d. \_\_\_\_\_

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12. List and define the four types of unemployment.

a. \_\_\_\_\_

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b. \_\_\_\_\_

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c. \_\_\_\_\_

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d. \_\_\_\_\_

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13. Define inflation.

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14. List and define the two types of inflation.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

15. Describe two benefits of international trade.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

16. List three restrictions on international trade.

a. \_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

17. List two arguments against free trade.

a. \_\_\_\_\_

b. \_\_\_\_\_

18. List two arguments for free trade.

a. \_\_\_\_\_

b. \_\_\_\_\_

19. Explain the Reciprocal Trade Agreements Act.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. Explain the General Agreement on Tariffs and Trade (GATT).

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21. Explain the European Economic Community (EEC).

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22. List three characteristics of developing nations.

a. 

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b. 

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c. 

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23. List the three stages most nations experience in economic development.

a. 

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b. 

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c. 

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24. State the major problem facing developing countries in advancing to other stages of economic development.

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25. List four obstacles to growth in developing nations.

a. 

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b. 

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c. 

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d. 

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## NATIONAL AND INTERNATIONAL ECONOMY AND TRADE

## AG 660 - V

## ANSWERS TO TEST

- |    |       |       |       |       |
|----|-------|-------|-------|-------|
| 1. | a. 6  | g. 22 | m. 7  | s. 21 |
|    | b. 10 | h. 1  | n. 12 | t. 18 |
|    | c. 23 | i. 15 | o. 2  | u. 4  |
|    | d. 16 | j. 3  | p. 17 | v. 14 |
|    | e. 13 | k. 20 | q. 19 | w. 5  |
|    | f. 11 | l. 8  | r. 9  |       |
2. Capitalism: An economic system based on private ownership of property and the freedom of individuals to engage in economic activity as they see fit; Uses the profit motive to stimulate production and competition to insure efficiency; Consumer sovereignty is expressed through market purchases of goods and services to determine what is produced; Benefits include personal freedom, personal initiative, individuality, more efficiency in marketplace, greater rates of economic growth, higher standards of living and more economic freedom Answer should include two capitalist countries: United States; West Germany; Japan; Canada; France
  3. Socialism: An economic system in which the major means of production are owned and operated by the government; Set up to keep the small group of wealthy people from having too much power over other people's lives and from controlling the national resources; Major economic decisions about production, distribution, use of resources, etc., within basic industries are made by the government planners; Consumer decisions play some part in shaping production Answer should include two socialist countries: Great Britain; Sweden; Denmark; Norway
  4. Communism: An economic system in which all economic goods are owned by society as a whole; Private property is eliminated; Supports revolution as the means to overthrow capitalism and bring about socialist goals; Entire economy is controlled by central government, which decides things such as what is produced, how much is produced, what goods will be available to consumers, etc.; Consumer demand does not shape production activities in most communist countries Answer should include two communist countries: Soviet Union; People's Republic of China; Czechoslovakia; Poland; Cuba; East Germany
  5. Answer should include the following information:  
  
Measurement of national economy's performance--overall economy's income and output; Measures the interaction of consumers, businesses and governments; Major measurements used for the nation's income and production are gross national product
  6. Consumer goods; Business (or producer) goods; Government goods; Net exports
  7. Wages (all forms of labor income); Interest received by households; Rent earned by individuals (such as for farms, houses and stores); Profits earned by corporations, partnerships and proprietorships; Adjustments scientific authorities

8. Wages and salaries paid to employees; Income earned by self-employed individuals; Rental incomes of property owners; Corporate profits; Interest on savings and investments received by individuals
9.
  - a. Peak--Period of prosperity; new businesses open, factories are producing at full capacity; jobs are plentiful
  - b. Recession--Business activity is slowing down or contracting. Typical traits are decreasing prices, decreasing profits and increasing unemployment levels
  - c. Trough--Lowest point in the business cycle; economy levels off from its downward spiral
  - d. Expansion (or recovery)--Increase in economic activity that follows the trough. Consumer spending picks up, signaling factories to hire workers and increase production to meet demand; new businesses open, factory production climbs back to capacity
10. Business investment; Government activity; External factors; Psychological factors
11.
  - a. Economic indicators--Statistics that measure variables in the economy, such as stock prices or the dollar amount of loans to be repaid
  - b. Leading indicators--Statistics that point to what will happen in the economy. Used by economists to predict which phase of the business cycle the economy is moving into
  - c. Coincident indicators--Statistics that change at about the same time as changes in overall business activity
  - d. Lagging indicators--Statistics whose changes seem to lag behind changes in overall business activity
12.
  - a. Cyclical--Unemployment associated with fluctuations up or down in the business cycle
  - b. Structural--Unemployment caused by changes in the economy because of such factors as technological advances or discoveries of natural resources
  - c. Seasonal--Unemployment caused by changes in the seasons or weather
  - d. Frictional--Temporary unemployment between jobs because of firings, layoffs, voluntary searches for new jobs or retraining
13. Prolonged increase in the general price level of goods and services
14.
  - a. Demand-pull inflation--Rise in prices that results when total demand on the part of the businesses and consumers increases faster than total supply
  - b. Cost-push inflation--Rise in prices that results from the wage demands of labor unions and the excessive profit motive of large corporations
15. Allows countries to produce the goods and services that they can efficiently produce; Allows countries to obtain resources not available in their country, such as natural resources
16. Tariffs; Quotas; Embargoes
17. Answer should include two of the following:  
Job security; Protection of infant industries; Strong national defense
18. Answer should include two of the following:  
Benefits of world specialization; Trade restrictions may damage nation's export industries; Protection from foreign competition removes incentives to improve technology and production methods

19. Passed by Congress in 1934; Gave the President the authority to form bilateral, or two-party, agreements to reduce tariffs with other nations
20. Involves 85 countries; Countries have agreed to work together to remove barriers to international trade; Representatives from these countries meet to negotiate tariff cuts and to work out rules for trade
21. A regional tariff agreement that has eliminated almost all trade restrictions on the movement of goods between its 10 member countries
22. Answer should include three of the following:  
  
Low per capita gross national product; Agricultural economy; Poor health conditions; Low literacy rate; Rapid population growth
23. Agricultural; Manufacturing; Service
24. Financing equipment, facilities and training
25. People's attitude (mostly toward change); Continued rapid growth population; Misuse of natural or human resources; Trade restrictions on imports