

AG 460

AGRIBUSINESS

MANAGEMENT

AND MARKETING

FOR

IDAHO

SECONDARY AGRICULTURE INSTRUCTORS

Developed and written by:
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Department of Agricultural and Extension Education
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.

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AGRICULTURAL CAREERS

AG 460 - 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 460 - 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, 3rd edition, 1980.

AGRICULTURAL CAREERS

AG 460 - 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 460 - 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

2. Agricultural supplies and services

3. Agricultural mechanics

4. Agricultural processing

5. Ornamental horticulture

6. Natural resources and rural recreation

7. Agricultural education

AGRICULTURAL CAREERS

AG 460 - 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? _____

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

17. What is the working environment like? _____

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

AGRICULTURAL CAREERS

AG 460 - 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 460 - 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 460 - 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 460 - 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 460 - 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

AGRICULTURAL SAFETY MANAGEMENT

AG 460 - 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 460 - 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 460 - 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

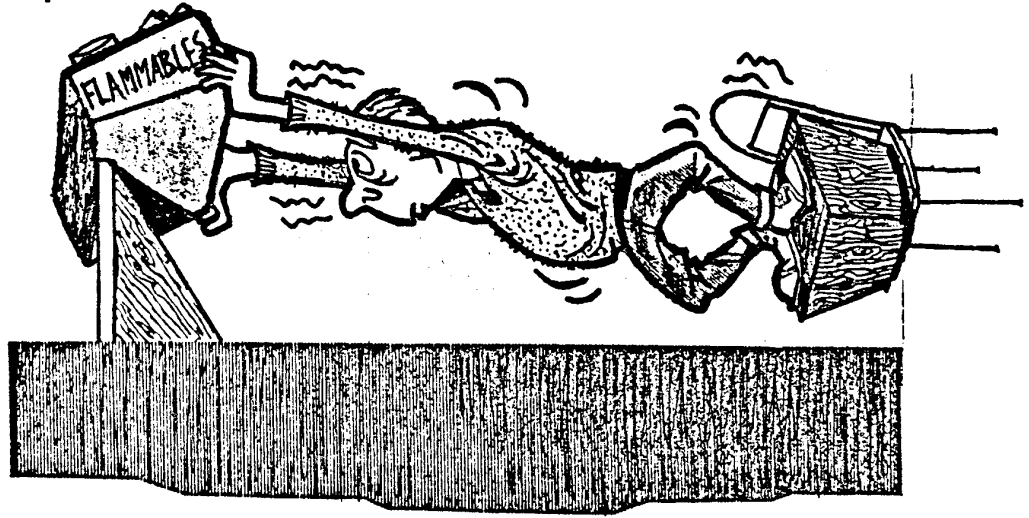
- X. Safety practices for farm machinery
 - A. Machinery maintenance and operation
 - 1. All farm machinery should be operated and maintained according to instruction manual recommendations
 - 2. Safe operating rules should be known and observed by everyone
 - 3. Shields and guards should always be in 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

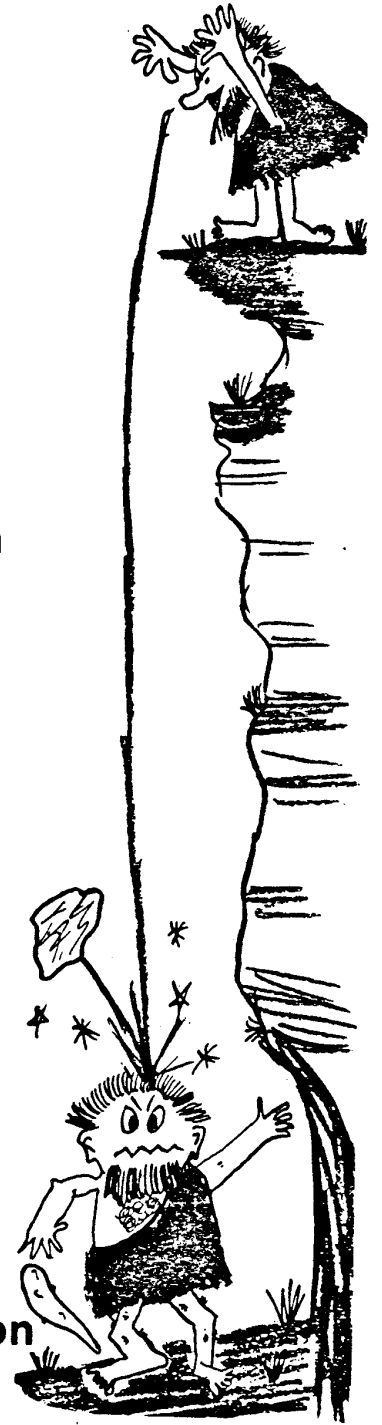
1. What are unsafe conditions that exist in my business?
2. What are common unsafe work practices?
3. Do workers understand reasons for following safe methods?
4. What are abilities of employees?
5. What laws am I responsible for?

460B - 13



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

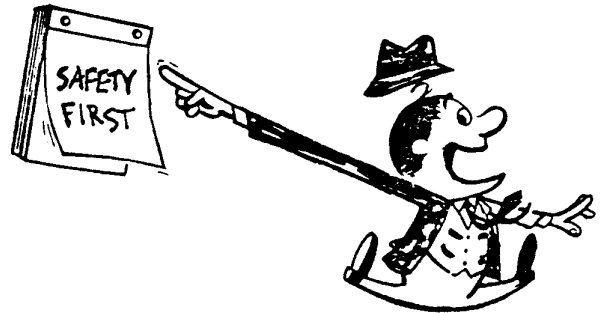


Emergency Plan Ingredients

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 460 - 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 460 - 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 460 - 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 460 - 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.

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. _____

b. _____

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.

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 460 - 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 460 - 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 six factors that affect the starting of an agribusiness.
6. List four regulatory items that need to be evaluated before starting a business.
7. Label the three basic types of business structures in the United States.
8. Distinguish among the main characteristics of individual proprietorships, partnerships and corporations.
9. Select the characteristics of a cooperative.
10. Design a partnership agreement.

BASICS OF AGRIBUSINESS MANAGEMENT

AG 460 - 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. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- D. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agriculture Management*, Reston Publishing Company-Prentice Hall, Reston, Virginia, 1978.
- E. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- F. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

BASICS OF AGRIBUSINESS MANAGEMENT

AG 460 - 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. 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

VI. 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

VII. 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

VIII. 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

- IX. 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

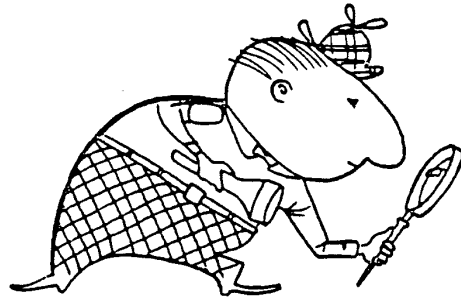
(Note: Sometimes this is modified to allow a member more votes based on amount of patronage.)
 - C. Profits are returned to the people who buy the goods and services based on their volume of business or patronage
 - D. Governed by board of directors elected by the members
 - E. Returns on money invested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

Steps In Decision Making

Set Goal



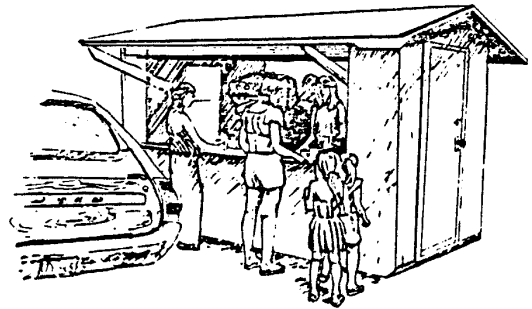
Gather Information



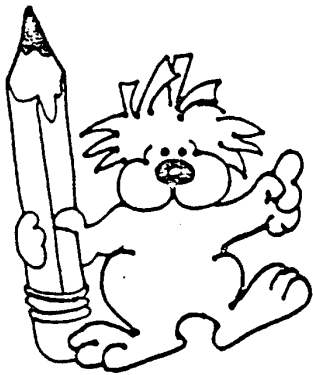
Make A Plan



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 460 - 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 460 - 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.

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 six factors that affect the starting of an agribusiness.
- a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
6. List four regulatory items that need to be evaluated before starting a business.
- a. _____
 - b. _____
 - c. _____
 - d. _____

7. 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
8. 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

9. 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 460 - 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. Goals of the manager; Abilities of the manager; Resources available; Credit available; Market potential or availability of customers; Government regulations

6. Licenses and/or fees; Health and safety regulations; Tax regulations; Zoning regulations

7. a. Corporation
 b. Partnership
 c. Individual proprietorship

8. 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

9. b, c, d, f, g

GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 460 - 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 460 - 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 460 - 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

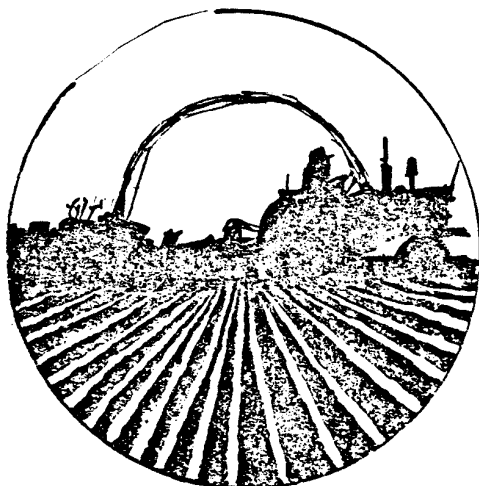
Agriculture Conservation



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 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 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. 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 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 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 Conservation System ID: ctu2					
1 HEL*	54.3 Ac	Oct. 88			<p>328--Conservation Cropping Sequence 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>					

HO 1-2

FULL DATA LISTING

June 20, 1990

Opid: 1234

Opunit Name: John Doe

Practice Narratives				
Practice Code	Narrative Number	#	Pre-written Narrative Text	Additional Narrative
328	1	4	<p>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.</p>	
328	2	6	<p>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 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>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. 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

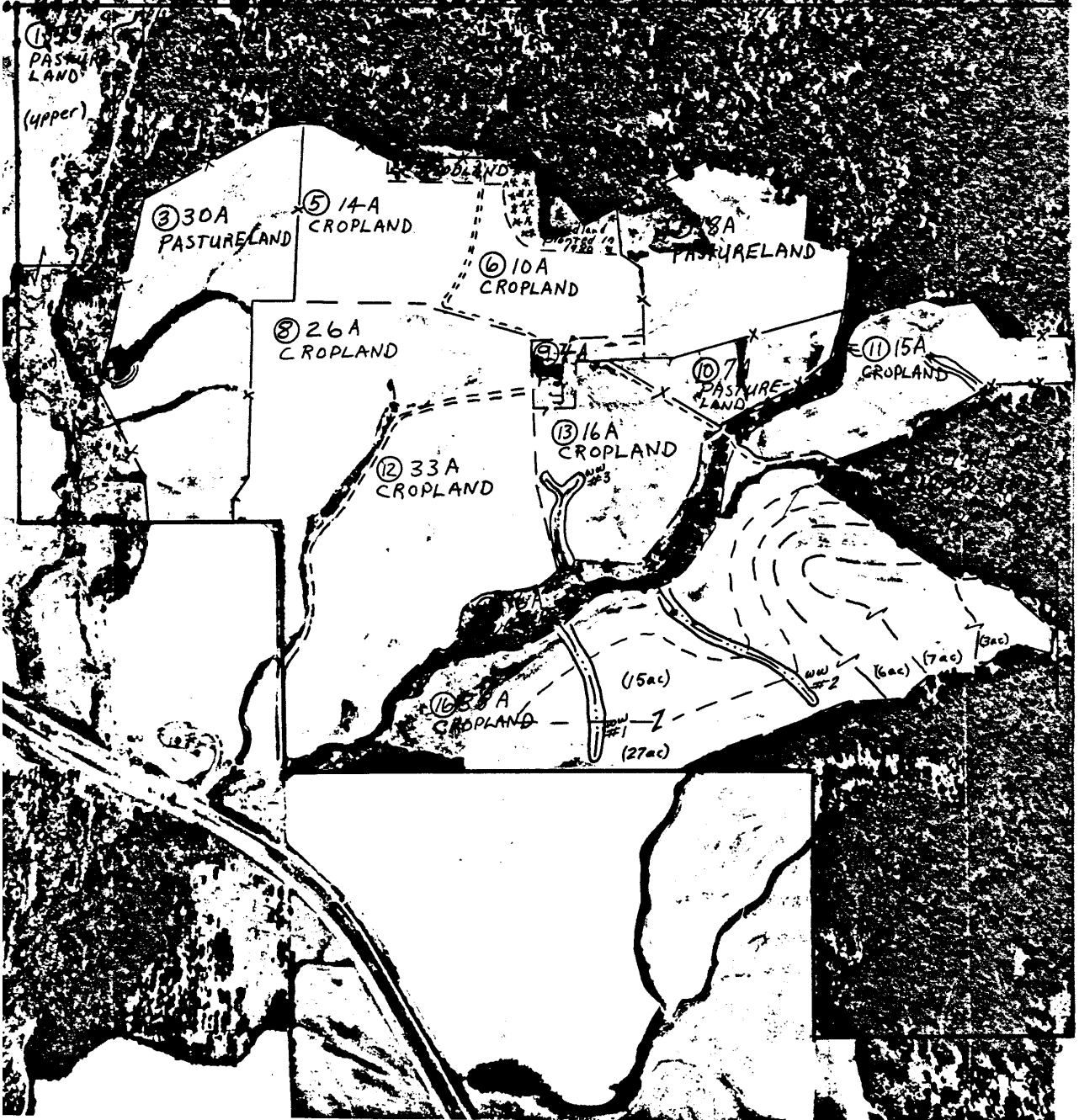
Practice Narratives				
Practice Code	Narrative Number	#	Pre-written Narrative Text	Additional Narrative
330	1	2	CONTOUR FARMING: Tillage and seeding operations will be done across slope as close to the contour as practical.	
344	1	9	CONSERVATION TILLAGE/ CROP RESIDUE USE: At least 600 lbs of residue 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 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 460 - 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 _____

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.) _____

Agency _____ Location _____

Types of service provided _____

How to obtain services (reports necessary, etc.) _____

GOVERNMENT ORGANIZATIONS AFFECTING AGRICULTURE

AG 460 - 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.)

- | | |
|--|--|
| <p>_____ a. Develops and enforces safety regulations for workers</p> | <p>1. Idaho Crop and Livestock Reporting Service</p> |
| <p>_____ b. Conducts programs to protect and improve animal and plant health</p> | <p>2. Animal and Plant Health Inspection Service</p> |
| <p>_____ 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</p> | <p>3. Environmental Protection Agency</p> |
| <p>_____ d. Provides funds for research and helps distribute information through the Cooperative Extension Service and agricultural publications</p> | <p>4. Food Safety and Quality</p> |
| <p>_____ e. Supervises activities of the Farm Credit System which provides credit to agribusinesses</p> | <p>5. Farm Credit Administration</p> |
| <p>_____ f. Establishes and administers standards for grain inspection</p> | <p>6. Federal Crop Insurance Corporation</p> |
| <p>_____ g. Manages national forests to protect natural resources while balancing the needs of recreation and industry</p> | |

- | | |
|--|---|
| <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 460 - 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

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

UNIT OBJECTIVE

After completion of this unit, students should be able to describe important characteristics for an effective employer-employee relationship from each point of view. Students should also be able to describe the duties and responsibilities of an agribusiness manager. 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 labor relations and management to their correct definitions.
2. List five basic human needs that affect how people perform in a job.
3. List five methods of effective personnel leadership.
4. List five keys to effective discipline.
5. Arrange the five steps to corrective directions in their correct order.
6. List four steps in employee selection.
7. List five personal characteristics important for a successful employee.
8. Describe an orientation program for employees.
9. Select criteria for an effective incentive plan.
10. Match incentives to their description.
11. List six elements in an effective safety program.
12. Describe the General Duty Clause of the Occupational Safety and Health Act.
13. Select requirements for employment of young people in production agriculture.
14. List three advantages of a good employee record system.
15. Select descriptions of incidents that indicate effective disciplinary approaches.
16. Prepare a job description for an agribusiness occupation.

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

SUGGESTED ACTIVITIES

- I. Suggested activities for the 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 students share incidents of good and poor labor management they have experienced.

- F. Invite an employer with good employee relations to speak to the class on what is expected from both an employer and employee point of view.
 - G. Have students role-play incidents that demonstrate good and poor labor management.
 - H. Have students research local labor practices and policies on such things as wages, working conditions, fringe benefits, incentive programs, training, orientation to the job, labor planning and so on.
 - I. Invite an employer to share a labor management record keeping system with the students.
 - J. Obtain copies of the *Personnel Management Handbook* from the Cooperative Extension Service. It is an easy to use reference in looseleaf form. *Why Young People Fail to Get and Hold Jobs* from the Idaho Department of Employment is also a good publication.
 - 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--Hazardous Occupations in Agriculture
 - E. Assignment sheets
 - 1. AS 1--Select Descriptions of Incidents That Indicate Effective Disciplinary Approaches
 - 2. AS 2--Prepare a Job Description for an Agribusiness Occupation
 - F. Answers to assignment sheets
 - G. Test
 - H. Answers to test

III. Unit references

- A. *Farm Management Guide*, 17th edition, Doane Information Services, St. Louis, Missouri, 1989.
- B. *Farmer to Consumer Marketing 5: Personnel Management*, Pacific Northwest Extension Publication, March, 1980.
- C. Fisher, Wayne F. and Early, John O., *Accident Prevention Training For Employees = Good Management*, University of Idaho Cooperative Extension Service, May, 1978.
- D. Hillison, John and Crunkilton, John, *Human Relations In Agribusiness*, McGraw-Hill Book Company, 1980.
- E. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- F. *Personnel Management Handbook--Manpower Programs in Extension*, National Extension Manpower Task Force, 1981.
- G. Schermerhorn, Richard W., *Effective Personnel Leadership*, University of Idaho Cooperative Extension, July, 1977.
- H. Steward, Jim and Jobs, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- I. Wills, Walter J., *An Introduction to Agribusiness Management*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- J. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.
- K. *Why Young People Fail To Get And Hold Jobs*, Idaho Department of Employment Job Service Division, 1980.

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

INFORMATION SHEET

- I. Terms and definitions
 - A. Employer--One who hires people to do a job
 - B. Employee--One who works at a job for a wage
 - C. Agribusiness--Farming and related food-processing and marketing businesses
 - D. Personnel--People working for a business
 - E. Discipline--Training to act in accordance with rules
 - F. Personality--The qualities of a person that affect how other people will react to him or her
 - G. Orienting--Familiarizing people with your operation
 - H. Policies--Guidelines under which a business operates
 - I. Incentive--Something that encourages people to do a better job
 - J. Alien--A person who is not a citizen
- II. Basic human needs that affect how people perform in a job

(Note: These needs are listed in decreasing level of importance. In other words, "A" would need to be met before a person would worry about "B." A successful employer will adopt methods to help employees meet these needs.)

- A. Physical
Examples: Food, water, shelter, physical comfort, lighting
- B. Safety and security
Examples: Job security, physical safety, confidence in one's ability
- C. Need to belong
Examples: Acceptance by peers, co-workers or boss
- D. Need for respect
Examples: Being asked your opinion, being trusted to do a good job

E. Self-actualization

Examples: Fulfillment of personal goals, satisfaction with accomplishments

III. Methods of effective personnel leadership

A. Set a good example

B. Actively listen and respond to employee's ideas, suggestions and problems

C. Give credit and praise for accomplishment

D. Let people know what is expected of them

E. Provide only the supervision needed

(Note: Too little supervision can make some employees frightened and at a loss for what to do. Too much, however, can frustrate an employee and decrease his or her self-worth. Over-supervision is also a waste of valuable time.)

F. Make sure criticism is constructive

G. Be consistent and fair

H. Pay a fair wage

(Note: This could be in the form of benefits as well as money.)

IV. Keys to effective discipline

A. Make sure everyone knows what is expected

B. Keep rules to a minimum--concentrate only on the important issues

C. Be consistent

D. Correct employees in private

E. Take care of situations as they arise

F. Conduct regular evaluations

V. Five steps to corrective directions

A. Compliment individual on a strong point

B. Offer praise for some good performance

C. Specifically discuss the performance that needs correcting

(Note: It is important at this point to deal only with the actions that need correcting. Do not focus on the individual.)

- D. Ask for reactions and suggestions for solving the problem
- E. Offer a positive comment to encourage action

Example: "It sounds like you have solved the problem" or "I appreciate your willingness to make these changes"

VI. Steps in employee selection

- A. Locate applicants

(Note: This can be done by contacting neighbors, getting recommendations from present employees, checking the classified ads, advertising, checking with the school counselor or secondary agriculture instructor and checking with the employment agency. Make sure to let applicants know what to expect so you don't waste time interviewing people who are not interested.)

- B. Conduct an interview

(Note: A written application can reduce time spent interviewing if there is a large number of applicants or if you have several positions to fill.)

- C. Check references of those people that seem to be the best qualified

- D. Inform all applicants of your decision

(Note: Not informing those who did not get the job can create a poor public image and hurt future attempts to hire employees.)

VII. Personal characteristics important for a successful employee

- A. Appropriate appearance
- B. Ability to get along with others

(Note: One study found that 80 percent of the people who were denied promotions were denied them because of personality.)

- C. Ability to do the job
- D. Willingness to learn
- E. Reliability

VIII. Orienting employees

- A. Develop a written set of policies

(Note: This helps to eliminate confusion and misunderstandings and helps eliminate wasted effort.)

- B. Welcome the new employee--Introduce employee to fellow workers; show an interest in employee

- C. Explain the rules and procedures
- D. Provide the necessary job training
- E. Explain safety precautions
- F. Follow-up to check on progress

IX. Criteria for an effective incentive plan

- A. Rewards the employee for working in the interest of the employer
- B. Is written and understandable
- C. Is based on conditions under the employee's control

Example: Telling an employee he will get a bonus if the weather remains good enough to create a bumper crop is not likely to motivate him to work harder. Rewarding an employee for a low death loss for calves under her care might inspire the employee to watch the calves more closely

- D. Provides the reward at the time requirements are met
- E. Does not encourage uneconomical or unsafe practices

Example: Rewarding an employee for getting field work done in the least amount of time possible would probably cause the employee to put excessive wear and tear on the machinery

- F. Does not hamper management decisions
- G. Does not shift financial risk to the employee

X. Types of incentives

- A. Piece rates--Payment according to productivity

Example: Payment for each box of fruit picked or each bale of hay hauled

- B. Commissions--Payment based on a percentage of sales
- C. Profit sharing--Distribution of part of the profits to employees
- D. Bonuses--Direct payment for outstanding performance

XI. Elements of an effective safety program

- A. Commitment of the employer to safety
- B. Regular supervision of employees
- C. Neat, clean, well-lighted work areas

- D. Adequate and readily available protective equipment
 - E. Effective safety training
 - F. Accessible first aid supplies with employees trained in their use
 - G. Regular emphasis on safety
 - H. Regular reporting to employees of any hazardous conditions
- XII. General Duty Clause of the Occupational Safety and Health Act (OSHA)--Each employer under the act should provide employees with employment free from hazards that have caused or are likely to cause death or serious physical harm
- XIII. Requirements for employment of children under 16 (Transparency 1)
- A. 14 and 15 year-olds can be employed in any non-hazardous agricultural occupation outside of school hours (Transparency 1)
 - B. 14 and 15 year-olds can be employed to operate farm machinery if they have completed the appropriate certification courses

(Note: There are two types of certification. One is for tractor operation and one is for operation of other farm machinery. This training is offered through 4-H and/or vo ag programs.)
 - C. 12 and 13 year-olds can be employed in non-hazardous occupations with the written consent of their parents or on the same farm their parents are employed
 - D. Children under 12 years old can be employed by their parents or on small farms with the written consent of their parents

(Note: Check with local authorities to find out the exact limitation on farm size. An exemption for 10 and 11 year-olds can also be granted by the Secretary of Labor under certain circumstances.)
- XIV. Advantages of good employee records
- A. Improve employee selection
 - B. Provide documentation for tax and insurance purposes
 - C. Provide protection from false accusations of unfair labor practices
 - D. Provide a basis for future personnel decisions

HAZARDOUS OCCUPATIONS IN AGRICULTURE

- * **Operating or hitching to a tractor of 20 horsepower or more**
- * **Operating or assisting with a corn picker, cotton picker, grain combine, hay mower, forage harvester, hay baler, potato digger, mobile pea viner, feed grinder, crop dryer, forage blower, auger conveyor, self-unloading wagon, trencher, earth moving equipment, fork lift, potato combine or power driven circular, band or chain saw**
- * **Working in an area occupied by a bull, boar, stud horse, sow with suckling pigs or cow with a newborn calf (umbilical cord still present)**
- * **Felling, bucking, skidding, loading or unloading timber with a butt diameter of over 6 inches**
- * **Working from a ladder or scaffold over twenty feet high**
- * **Riding on a tractor**
- * **Driving a bus, truck or automobile carrying passengers**
- * **Working inside a fruit, forage or grain storage facility designed to retain an oxygen deficient or toxic atmosphere, for example a silo or manure pit**
- * **Handling or applying Category I (poison label) or II (warning label) agricultural chemicals**
- * **Handling or using a blasting agent**
- * **Working with anhydrous ammonia**

(Note: These are the jobs defined as hazardous by the U.S. Department of Labor. Any situation can be hazardous if proper care is not taken.)

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

ASSIGNMENT SHEET #1--SELECT DESCRIPTIONS OF INCIDENTS THAT INDICATE
EFFECTIVE DISCIPLINARY APPROACHES

Name _____ Score _____

Discipline should be a positive effort on the part of the employer to build and improve employees, not tear them down. Listed below are approaches to various situations that could be encountered in an agribusiness. Place a check by the approaches you think show good disciplinary technique. On the ones you don't think are so good, write down why. Be prepared to discuss your reasons.

____ 1. My people know that if I say nothing, everything must be all right. _____

____ 2. If I find somebody doing something wrong, I let him know right in front of everybody so others will know not to do it. _____

____ 3. You have to use judgment in discipline. For example, I wouldn't be as critical of a good worker for breaking a rule as I would of a poor worker. _____

____ 4. I have a good relationship with Jack. If one of my employees needs a little discipline, I get Jack to take care of it. _____

____ 5. If the productivity of one of my employees drops off, I call him in right away and let him know what the score is--that I always expect 100 percent effort. _____

____6. I review the work rules periodically with my employees, explain why they are necessary and then enforce them. _____

____7. As soon as absenteeism builds to where I can't stand it, I crack down. _____

____8. If the occurrence of mastitis in my dairy herd goes up, I call my herdsman in to explain that all he has to do is improve cleanliness in the parlor to clear up the problem _____

____9. I wish all my employees worked like Cindy. I tell them so, too. _____

____10. I ease off discipline when morale is low. _____

____11. I don't worry about the rules until something comes up that needs to be corrected. _____

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

ASSIGNMENT SHEET #2--PREPARE A JOB DESCRIPTION FOR AN
AGRIBUSINESS OCCUPATION

Name _____ Score _____

"Job descriptions are an unnecessary waste of time. After all, people know what they are supposed to do or they wouldn't have applied for the job. Anyway, agricultural jobs change too much." If this is your opinion, you are not alone, but you are not necessarily right either. It is surprising how many problems arise because employees expected they would be doing something different or really didn't know what was expected. Descriptions also help the employer to organize the employees for maximum effectiveness. In a study conducted on some large western farms, managers found they were employing an average of 20 percent more people than needed because of poor planning. Descriptions don't have to be complicated, but do require some thought.

Choose a specific agricultural occupation and write a job description for it using the job description worksheet on the next page. Detailed instructions for using the worksheet are listed below:

Section A: The work activities of this job should be clearly identified by month or month group (Example: December - March). If the job consists of a number of activities during a given period of time and the different activities change, a new grouping should be identified. It may be possible that as the season changes, the activity skill level may change as well.

Section B: In farm work the salary structure may change with the work activity. The wage for pruning may be a piece rate. The wage for equipment operation may be hourly. The employees occupying the higher level jobs may be on salary. Accordingly, as the activity changes, the wage or salary may change. This should be noted in this section of the job description.

The first step in the development of job descriptions is to identify, and combine, those activities that logically comprise a job. Jobs that can offer year round employment are likely to attract the more qualified worker.

Section C: This section is self-explanatory. However, it is suggested that a time range be used in identifying hours per week, since work requirements change with the season.

Section D: Self explanatory.

Section E: This section requires careful thought, as the manager must make a decision about skills needed to perform the activities of this job. Of course, the skills will vary with job level and needs of the employer.

Section F: Select the courses most related to the requirements of this job. It is recognized that it may be necessary to provide training for some employees. If training is provided, management will have more options in matching employees in jobs.

JOB DESCRIPTION WORKSHEET

EMPLOYER NAME: _____ PHONE: _____

PERSON PREPARING DESCRIPTION: _____

JOB TITLE: _____

NUMBER OF JOBS WITH THIS TITLE: _____

SUPERVISOR OF THIS JOB: _____

A. Description of Activities:

Months:	Activities:	B. Wage or Salary Range:
_____	_____	_____

_____	_____	_____

_____	_____	_____

C. Conditions of Employment:

Length of employment: _____

Hours per week: _____ Days per week _____

Pay periods: _____ Other: _____

D. Fringe Benefits:

Insurance programs: _____

Paid vacation: _____ week(s)

Other benefits: _____

E. Minimum Qualifications:

F. Recommended Short-course Instruction:

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

The only correct response is #6. Explanations of the problems with the rest of the approaches are listed below.

(Note: This is primarily an exercise to generate discussion. There is no absolutely correct way to discipline effectively.)

1. Discipline should involve positive feedback as well as criticism.
2. Correcting someone in front of others will tear down their self-image and increase the likelihood of their being an unhappy employee.
3. Favoritism will create problems among employees and between the employer and employees.
4. This is another method showing favoritism and puts Jack in a difficult position.
5. Jumping on a person without first trying to find out what is causing the problem makes an employee feel he or she is not cared about as a valuable person and can cause that employee to be less committed to the job.
6. Reviewing rules periodically eliminates confusion and misunderstandings. It also keeps people reminded of safety precautions. This is a good approach.
7. Problems should be taken care of before they build into major crises.
8. An effort should first be made to discuss the problem with the employee. The mastitis could be caused by something else.
9. This could be an unfair comparison and is another example of favoritism.
10. Discipline should be consistent and because it should be positive, can even help improve low morale.
11. Clear, concise rules help avoid problems and improve worker morale.

Assignment Sheet #2

JOB DESCRIPTION WORKSHEET

(Note: The following is an example only. Answers will vary.)

EMPLOYER NAME: Joe Cropgrower PHONE: 423-4546PERSON PREPARING DESCRIPTION: Joe CropgrowerJOB TITLE: Equipment operator and maintenance personNUMBER OF JOBS WITH THIS TITLE: 2SUPERVISOR OF THIS JOB: Joe Cropgrower

A. Description of Activities:

Months:	Activities:	B. Wage or Salary Range:
<u>March - October</u>	<u>Operate and maintain a wide range of farm equipment including crawler tractor, large wheel tractor, and cultivation, planting and harvesting equipment</u>	<u>\$1,000/month</u>
<u>November - February</u>	<u>Repair and overhaul farm equipment, employment as needed</u>	<u>\$5.50/hour</u>

C. Conditions of Employment:

Length of employment: 10 to 12 monthsHours per week: 40 to 60 Days per week 6Pay periods: 1st and 15th of every month Other: _____

D. Fringe Benefits:

Insurance programs: Health InsurancePaid vacation: One week(s) Other benefits: Noon meal

E. Minimum Qualifications:

Must be at least 18 years old and have experience in farm machinery operation. Must also have had training in agricultural mechanics equivalent to a four year vocational agriculture program.

F. Recommended Short-course Instruction:

Adult class in farm machinery maintenance.

LABOR RELATIONS AND MANAGEMENT

AG 460 - 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. | Familiarizing people with your operation | 1. Employer |
| _____b. | The qualities of a person that affect how other people will react to him or her | 2. Incentive |
| _____c. | One who works at a job for a wage | 3. Personnel |
| _____d. | Guidelines under which a business operates | 4. Agribusiness |
| _____e. | People working for a business | 5. Personality |
| _____f. | Training to act in accordance with rules | 6. Discipline |
| _____g. | Something that encourages people to do a better job | 7. Policies |
| _____h. | A person who is not a citizen | 8. Orienting |
| _____i. | One who hires people to do a job | 9. Alien |
| _____j. | Farming and related food-processing and marketing businesses | 10. Employee |

2. List five basic human needs that affect how people perform in a job.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

3. List five methods of effective personnel leadership.

- a. _____
- b. _____
- c. _____

d. _____

e. _____

4. List five keys to effective discipline.

a. _____

b. _____

c. _____

d. _____

e. _____

5. Arrange the following steps to corrective directions in their correct order. "1" would be the first step, while "5" would be the last.

____ a. Specifically discuss the performance that needs correcting

____ b. Offer a positive comment to encourage action

____ c. Offer praise for some good performance

____ d. Compliment the individual on a strong point

____ e. Ask for reactions and suggestions for solving the problem

6. List four steps in employee selection.

a. _____

b. _____

c. _____

d. _____

7. List five personal characteristics important for a successful employee.

a. _____

b. _____

c. _____

d. _____

e. _____

8. Describe an orientation program for employees.

9. Select criteria for an effective incentive plan from the following. Write an "X" in the blank before each correct answer.

- ___ a. Rewards the employee for reducing the time spent on tasks
- ___ b. Rewards the employee for working in the interest of the employer
- ___ c. Does not hamper management decisions
- ___ d. Does not encourage uneconomical or unsafe practices
- ___ e. Is dependent on how good a year it is for the agribusiness
- ___ f. Is written and understandable
- ___ g. Is provided at the end of the year
- ___ h. Is based on conditions under the employee's control
- ___ i. Provides the reward at the time requirements are met

10. Match the incentives listed on the right to their descriptions. Write the correct number in the blank.

- | | | | |
|--------|--|----|----------------|
| ___ a. | Payment according to productivity | 1. | Bonuses |
| ___ b. | Distribution of part of the profits to employees | 2. | Profit sharing |
| ___ c. | Payment based on a percentage of sales | 3. | Commissions |
| ___ d. | Direct payment for outstanding performance | 4. | Piece rates |

11. List six elements of an effective safety program.

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

12. Describe the General Duty Clause of the Occupational Safety and Health Act.

13. Select the correct requirements for employment of young people in production agriculture from the list below. Write an "X" in the blank before each correct answer.

- ____ a. People between 16 and 18 years of age can only be employed in hazardous agricultural occupations with parental consent
- ____ b. 12 and 13 year-olds can be employed in non-hazardous occupations with the written consent of the parents or on the same farm their parents are employed
- ____ c. 14 and 15 year-olds can be employed in any non-hazardous agricultural occupation outside of school hours
- ____ d. 14 and 15 year-olds can be employed to operate farm machinery if they have completed the appropriate certification courses
- ____ e. 14 and 15 year-olds can be employed in any agricultural occupation with written parental consent
- ____ f. 12 and 13 year-olds can become certified to work in hazardous agricultural occupations
- ____ g. Children under 12 years old can be employed by their parents or on small farms with the written consent of their parents

14. List three advantages of a good employee record system.

a. _____

b. _____

c. _____

LABOR RELATIONS AND MANAGEMENT

AG 460 - E

ANSWERS TO TEST

1. a. 8 d. 7 g. 2 j. 4
 b. 5 e. 3 h. 9
 c. 10 f. 6 i. 1
2. Physical; Safety and security; Need to belong; Need for respect; Self-actualization
3. Answer should include five of the following:

 Set a good example; Actively listen and respond to employee's ideas, suggestions and problems;
 Give credit and praise for accomplishment; Let people know what is expected of them; Provide
 only the supervision that is needed; Make sure criticism is constructive; Be consistent and fair;
 Pay a fair wage
4. Answer should include five of the following:

 Make sure everyone knows what is expected; Keep rules to a minimum--concentrate only on the
 important issues; Be consistent; Correct employees in private; Take care of situations as they
 arise; Conduct regular evaluations
5. (Note: c and d could be switched and still be correct)

 a. 3 d. 1
 b. 5 e. 4
 c. 2
6. Locate applicants; Conduct an interview; Check references of those people that seem to be the best
 qualified; Inform all applicants of your decision
7. Appropriate appearance; Ability to get along with others; Ability to do the job; Willingness to
 learn; Reliability
8. Answer should include some of the following information:

 Develop a written set of policies; Welcome the new employee--Introduce employee to fellow
 workers; show an interest in employee; Explain the rules and procedures; Provide the necessary
 job training; Explain safety precautions; Follow-up to check on progress
9. b, c, d, f, h, i
10. a. 4 b. 2 c. 3 d. 1
11. Answer should include six of the following:

 Commitment of the employer to safety; Regular supervision of employees; Neat, clean, well-
 lighted work areas; Adequate and readily available protective equipment; Effective safety training;
 Accessible first aid supplies with employees trained in their use; Regular emphasis on safety;
 Regular reporting to employees of any hazardous conditions

12. Each employer under the act should provide employees with employment free from hazards that have caused or are likely to cause death or serious physical harm
13. b, c, d, g
14. Answer should include three of the following:
Improve employee selection; Provide documentation for tax and insurance purposes; Provide protection from false accusations of unfair labor practices; Provide a basis for future personnel decisions

BASIC ECONOMIC PRINCIPLES

AG 460 - F

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. Select the basic beliefs of capitalism.
4. Write the main characteristic of pure competition.
5. List three functions of money.
6. Name three ways the Federal Reserve System can increase the money supply.
7. Name three ways the Federal Reserve System can decrease the money supply.
8. Describe the role prices play in economics.
9. Describe two reasons prices paid to the farmer do not tend to rise with inflation.
10. Describe how supply and demand affect prices.
11. List three factors that affect prices other than supply and demand.
12. Describe the reasons price cycles occur.
13. Distinguish among supplementary, complementary, competitive and independent enterprises.
14. List two advantages of diversification.
15. List two advantages of specialization.
16. Write and explain examples of the four types of enterprises.

BASIC ECONOMIC PRINCIPLES

AG 460 - F

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. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
 - D. Osburn, Donald D. and Schneeberger, Kenneth C., *Modern Agriculture Management*, Reston Publishing Company-Prentice Hall, Reston, Virginia, 1978.
 - E. 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.
 - 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.

BASIC ECONOMIC PRINCIPLES

AG 460 - F

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. 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.)

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

V. Functions of money

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

VI. 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

VII. 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

VIII. 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

IX. 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

X. 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

XI. 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

XII. 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

XIII. Advantages of diversification

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

B. May provide a more continuous use of resources

XIV. 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

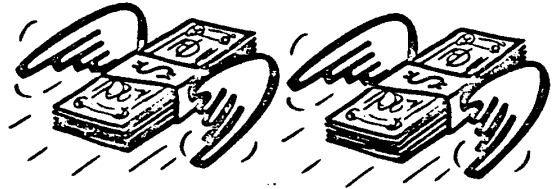
REDUCE AMOUNTS BANKS
MUST HAVE ON RESERVE



Interest Charges
~~15%~~ 14%

LOWER THE INTEREST
RATE ON MONEY BANKS
MUST BORROW

BUY GOVERNMENT SECURITIES



Methods of Decreasing Money Supply

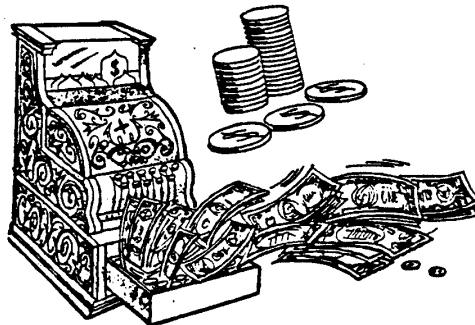
INCREASE AMOUNTS BANKS
MUST HAVE ON RESERVE



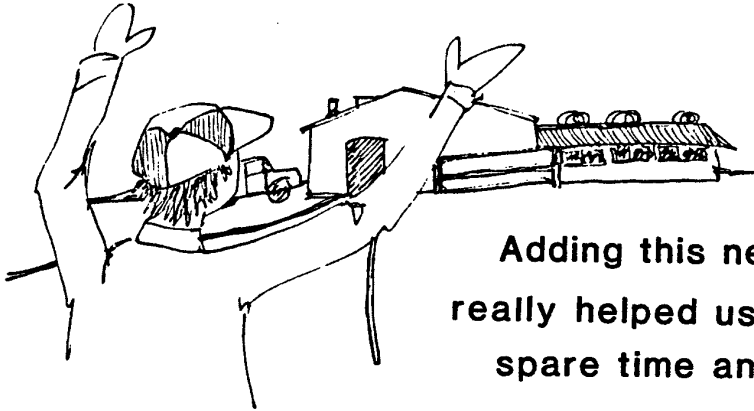
Interest Charges
14% ~~15%~~

RAISE THE INTEREST RATE
ON MONEY BANKS MUST BORROW

SELL GOVERNMENT SECURITIES



Types Of Enterprises

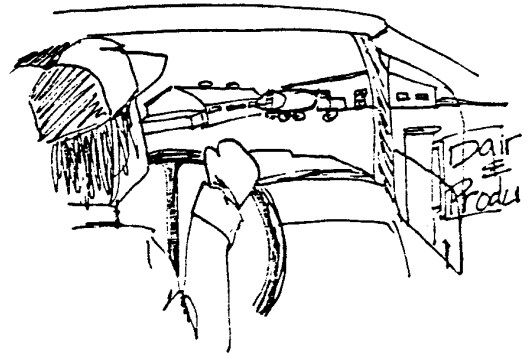


Supplementary

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 460 - F

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 460 - F

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 460 - 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. | 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.

3. 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

4. Write the main characteristic of pure competition.

5. List three functions of money.

- a. _____
- b. _____
- c. _____

6. Name three ways the Federal Reserve System can increase the money supply.
- a. _____
 - b. _____
 - c. _____
7. Name three ways the Federal Reserve System can decrease the money supply.
- a. _____
 - b. _____
 - c. _____
8. Describe the role prices play in economics.
- _____
- _____
9. Describe two reasons prices paid to the farmer do not tend to rise with inflation.
- a. _____
 - _____
 - _____
- b. _____
 - _____
 - _____
10. Describe how supply and demand affect prices.
- _____
- _____
- _____
11. List three factors that affect prices other than supply and demand.
- a. _____
 - b. _____
 - c. _____

12. Describe the reasons price cycles occur.

a. _____

b. _____

c. _____

13. 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

14. List two advantages of diversification.

a. _____

b. _____

15. List two advantages of specialization.

a. _____

b. _____

BASIC ECONOMIC PRINCIPLES

AG 460 - F

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. a, b, d, h
 4. No individual can affect the price of a product
 5. Serves as a convenient medium of exchange; Provides a measure of value; Serves to store value for savings
 6. Reduce reserve requirement; Lower discount rate; Buy back government securities
 7. Raise reserve requirement; Raise discount rate; Sell government securities
 8. Act as the guide for allocation of resources
 9. 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
 10. When supply is high or demand is low the price will decrease; When supply is low or demand is high the price will increase
 11. Labor unions forcing high wages; Government regulations creating artificial supply and/or demand levels or controlling prices; Oligopolies or monopolies
 12. 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
 13. a. CE b. S c. CY d. I
 14. Provides an alternate source of income should one particular enterprise fail; May provide a more continuous use of resources
 15. Manager can concentrate on one enterprise and can become more knowledgeable and efficient in its production; May reduce overhead costs

AGRICULTURAL CREDIT

AG 460 - 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. Calculate interest expense.
16. Determine net worth and solvency ratio.
17. Select the most appropriate lending institution.

AGRICULTURAL CREDIT

AG 460 - 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 | <i>Credit or Cash: Equal Credit Opportunity Act, Fair Credit Billing Act</i> \$.25 |
| CIS | 351 | <i>Credit or Cash: Consumers and Credit</i> \$.25 |
| CIS | 358 | <i>Credit or Cash: Advantages and Disadvantages of Buying on Credit</i> \$.25 |
| CIS | 491 | <i>Credit Cards</i> \$.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--Calculating Actual Interest Rates
 10. TM 10--Calculating Total Interest Paid
- 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.
 - B. Hoag, W. Gifford, *The Farm Credit System*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1976.
 - C. Schneeberger, Kenneth C. and Osburn, Donald D., *Financial Planning in Agriculture*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1977.
 - D. Schneeberger, Kenneth C. and Osburn, Donald D., *Financial Planning in Agriculture: Teachers Guide*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1977.
 - E. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
 - F. Wood, Greg, Ag Executive Business Manager, *Doane Information Services*, St. Louis, Missouri, 1988.

AGRICULTURAL CREDIT

AG 460 - 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 situation 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?

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

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

Period	Beginning Balance	Chart Interest	Ending Balance
1st month	100.00	1.00	101.00
2nd month	101.00	1.01	102.01
3rd month	102.01	1.02	103.03
4th month	103.03	1.03	104.06

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

I	=	Interest rate
N	=	Number of payments per year
C	=	Total interest paid
P	=	Principle borrowed
T	=	Total payments

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

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

Net Worth Statement

EC 71-853
Revised

As of _____, 19__

Name _____ Age _____ Address _____
Spouse _____ Age of children at home _____ Phone _____

ASSETS		LIABILITIES AND NET WORTH	
Current Assets		Current Liabilities	
Cash (on hand) or in checking	\$ _____	Open or charge acc'ts.:	
Savings accounts & time certificates	_____	Feed \$ _____ Seed \$ _____ Fertilizer \$ _____	
Cash value of life insurance	_____	Fuel & Oil \$ _____ Repairs \$ _____ Other farm \$ _____	\$ _____
Marketable bonds and securities (Sched. B2)	_____	Medical & other personal	_____
Prepaid expenses (for items not yet received)	_____	Estimated accrued interest on:	
Notes & accounts receivable (good)	_____	Open acc'ts. \$ _____ Notes \$ _____	_____
Livestock to be sold	Ave. wt: Value/hd.	Intermediate notes	_____
_____ Steers	_____	Long term liabilities	_____
_____ Heifers	_____	Estimated tax liability (accrued):	
_____ _____	_____	R.E. \$ _____; Pers. \$ _____; Income \$ _____	_____
_____ Hogs	_____	Accrued cash rent	_____
_____ _____	_____	Notes payable within 12 mo. (To whom, maturity, purpose)	_____
_____ Horses	_____	_____	_____
_____ _____	_____	_____	_____
Grain, Feed, Seed, & Supplies		That portion of longer term debts due within next 12 months (Sched. B4)	
_____ Bu. corn _____ bu. gr. sorgh.	_____	Intermediate	_____
_____ Bu. wheat _____ bu. soybeans	_____	Long term	_____
_____ T. hay (_____ alf. _____ pr. _____ other)	_____	Judgments & mechanic liens	_____
_____ T. silage; _____ T. haylage; _____ T. straw	_____	CCC loans: _____ bu. _____ bu.	_____
Supplies (Sched. B3)	_____	Other (including relatives)	_____
Cash Investment in Growing Crops			
_____ ac. wheat; _____ ac. rye; _____ ac. _____	_____		
TOTAL CURRENT ASSETS	\$ _____	TOTAL CURRENT LIABILITIES	\$ _____
Intermediate Assets		Intermediate Liabilities (Sched. B4)	
Machinery, equipment, cars, trucks (Sched. B1)	\$ _____	(Show only balance due beyond 12 mo.)	
Breeding or work animals not to be sold within 12 mo.		Notes payable	\$ _____
_____ Beef cows; _____ dairy cows; _____ bulls	_____	Sales contracts	_____
_____ 2 yr. old hfrs.; _____ yr. hfrs.	_____	Life insurance loans	_____
_____ Ewes & rams; _____ horses	_____	Other intermediate term liabilities	_____
_____ Gilts; _____ sows; _____ boars	_____		
Securities not readily marketable (Sched. B2)	_____		
TOTAL INTERMEDIATE ASSETS	\$ _____	TOTAL INTERMEDIATE LIABILITIES	\$ _____
Fixed Assets		Long Term Liabilities (Sched. B4)	
Farm real estate (Schedule B 5)		(Show only balance due beyond 12 mo.)	
Gross value \$ _____		Mortgages on farm real estate	\$ _____
less: estimated cost of selling \$ _____		Land contracts	_____
est. capital gains tax \$ _____		Mortgages on other real estate	_____
Net value	\$ _____	Other	_____
Non-farm real estate (Schedule B 5)	_____		
Household goods	_____		
TOTAL FIXED ASSETS	\$ _____	TOTAL LONG TERM LIABILITIES	\$ _____
		TOTAL LIABILITIES	\$ _____
		PRESENT NET WORTH	\$ _____
TOTAL ASSETS	\$ _____	TOTAL LIABILITIES AND NET WORTH	\$ _____

Insurance on crops \$ _____ Do you carry: medical insurance? _____; accident insurance? _____
 Insurance on bldg. (fire, ext. cov.) \$ _____ disability insurance? _____; life insurance? _____
 Insurance on mach., equip., & livestock \$ _____ Are any suits pending against you? _____
 Liability insurance coverage \$ _____
 List notes co-signed for other people _____

I certify that the above statement and the schedules on the reverse and attached are correct.
 Date _____, 19____ Signature _____ Signature _____
 Subscribed and sworn to before me this _____ day of _____, 19____, Notary Public in and for the State of Nebraska,
 _____ County. My commission expires _____, 19____ (SEAL)

Net Worth Statement (CONTINUED)

Schedule B1 - Machinery, Equipment, and Auto Inventory						Schedule B2 - Securities Inventory				
NOTE: YOU MAY WANT TO SUBSTITUTE LAST YRS. DEPREC. SCHED.						Description and no. of shares	Original cost		Present market value	
Item	Make & Model	Date acquired	Cost or other basis	Deprec. for past yr.	Current undeprec. balance		per unit	total	per unit	total
Auto			\$	\$	\$	Marketable				
						\$	\$	\$	\$	
						TOTAL \$			\$	
Truck						Not Readily Marketable				
Tractor						\$	\$	\$	\$	
						TOTAL \$			\$	
Combine						Schedule B3 - Supplement, Seed, Fertilizer, Chemical Fuel, etc. Inventory				
Baler						Item	Quantity	Value		
Irrig. equip.								\$		
			TOTAL \$	\$	\$	TOTAL \$				

Schedule B4 - Inventory - Intermediate and Long Term Liabilities								
	To whom	Purpose and/or property mortgaged	Final due date	Interest rate	Payment dates	Current outstanding prin. bal.	Portion of balance	
							due with- in 12 mo.	due beyond 12 mo.
INTERMEDIATE								
Notes						\$	\$	\$
Sale contracts								
Life Ins. Co. loans								
Other								
						TOTAL \$	\$	\$
LONG TERM								
Farm R.E. mortgages						\$	\$	\$
Land contracts								
Non-farm R.E. mortgages								
Other (specify)								
						TOTAL \$	\$	\$

Schedule B5 - Real Estate Inventory											
Tract no. or descrip.	Acres						Title held in name of	Date of purchase	Purchase Cost	Cost of improvements added	Estimated current market value
	Total	Irrig. crop	Dry crop	Hay- land	Range or past.	Waste					
FARM											
								\$	\$	\$	
TOTAL								\$	\$	\$	
NON-FARM											
TOTAL								\$	\$	\$	

Prepared by Philip A. Henderson, Extension Economist (Farm Mgt.), and Thomas L. Frey, Ass't. Professor of Agricultural Finance and Farm Management.

AGRICULTURAL CREDIT

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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 460 - 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	Total Non-Farm Current Assets (Add lines 1 thru 5)			45	Total Non-Farm Current Liabilities (Add lines 40 thru 44)		
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	Total Non-Farm Liabilities (Add lines 45 thru 49)		
12	Total Non-Farm Assets (Add lines 6 thru 11)			51	Non-Farm Net Worth (Line 12 minus line 50)		
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	Total Farm Current Liabilities (Add lines 52 thru 63)		
26				65	Portion of Intermediate-Term Debt Due After Next Year		
27	Total Farm Current Assets (Add lines 13 thru 26)			66	(Breeding stock, machinery, and equipment)		
28	Swine (Breeding)			67			
29	Beef (Breeding)			68			
30	Dairy (Breeding)			69	Total Farm Intermediate Liabilities (Add lines 65 thru 68)		
31	Other (Breeding)			70	Portion of Long-Term Debt Due After Next Year		
32	Machinery and Equipment			71			
33	Total Farm Intermediate Assets (Add lines 28 thru 32)			72			
34	Buildings (Book value)			73	Total Farm Long-Term Liabilities (Add lines 70 thru 72)		
35	Land (Improvements)			74	Total Farm Liabilities (Add lines 64, 69 and 73)		
36	Land			75	Farm Net Worth (Line 38 minus line 74)		
37	Total Farm Long-Term Assets (Add lines 34 thru 36)			76	Total Liabilities (Add lines 50 and 74)		
38	Total Farm Assets (Add lines 27, 33 and 37)			77	Total Net Worth (Line 39 Minus line 76)		
39	Total Assets (Add lines 12 and 38)			78	Total Liabilities Plus Net Worth (Add lines 76 and 77)		

AGRICULTURAL CREDIT

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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 460 - G

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. $\$7,200 \times 12\% = \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 AdministrationCase #3: Dealer or MerchantCase #2: Production Credit AssociationCase #4: Commercial Bank

NET WORTH STATEMENT

Name Key Date _____

ASSETS		BEGIN YEAR	END YEAR	LIABILITIES AND NET WORTH		BEGIN YEAR	END YEAR
1	Family Bank Balance			40	Charge Accounts		
2	Savings			41	Notes (Portion due next year)		
3	Stocks and Bonds (Present value)			42	Mortgages (Portion due next year)		
4	Accounts and Notes Receivable			43	Accrued Interest On Above		
5	Life Insurance (Cash value)			44	Total Non-Farm Current Liabilities (Add lines 40 thru 44)		
6	Total Non-Farm Current Assets (Add lines 1 thru 5)			45	Notes (Portion due after next year)		
7	Auto (Family share)			46	Mortgages (Portion due after next year)		
8	Household Furnishings, Clothing, Jewelry			47	Total Non-Farm Liabilities (Add lines 45 thru 49)		
9	Boat, Camper, Etc.			48	Non-Farm Net Worth (Line 12 minus line 50)		
10	Non-Farm Real Estate			49	Short-Term Farm Notes Payable		
11				50	Accounts Payable		4000
12	Total Non-Farm Assets (Add lines 6 thru 11)			51	Portion of Intermediate and Long-Term Debt Due Next Year		7000
13	Cash In Farm Account		6350	52	Accrued Liabilities (Taxes, rent, interest)		5200
14	Farm Accounts Receivable			53	Total Farm Current Liabilities (Add lines 52 thru 63)		1050
15	Swine (Non-breeding)			54	Portion of Intermediate-Term Debt Due After Next Year		3780
16	Beef (Non-breeding)			55	(Breeding stock, machinery, and equipment)		21030
17	Dairy (Non-breeding)			56	Total Farm Intermediate Liabilities (Add lines 65 thru 68)		45000
18	Other (Non-Breeding)			57	Portion of Long-Term Debt Due After Next Year		7550
19	Purchased Feeds		2300	58	Total Farm Long-Term Liabilities (Add lines 70 thru 72)		5250
20	Stored Crops		23000	59	Farm Net Worth (Line 38 minus line 74)		23650
21	Growing Crops			60	Total Liabilities (Add lines 50 and 74)		23650
22	Crop Supplies			61	Total Net Worth (Line 39 Minus line 76)		31430
23	Livestock Supplies			62	Total Liabilities Plus Net Worth (Add lines 76 and 77)		63075
24	Other Current Assets:			63			
25				64			
26				65			
27	Total Farm Current Assets (Add lines 13 thru 26)		31650	66			
28	Swine (Breeding)		17500	67			
29	Beef (Breeding)			68			
30	Dairy (Breeding)			69			
31	Other (Breeding)			70			
32	Machinery and Equipment		43800	71			
33	Total Farm Intermediate Assets (Add lines 28 thru 32)		224300	72			
34	Buildings (Book value)		75000	73			
35	Land (Improvements)			74			
36	Land		300000	75			
37	Total Farm Long-Term Assets (Add lines 34 thru 36)		375000	76			
38	Total Farm Assets (Add lines 27, 33 and 37)		63075	77			
39	Total Assets (Add lines 12 and 38)		75075	78			

AGRICULTURAL CREDIT

AG 460 - 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.

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; immediate loan approval; convenience of 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. _____
 - f. _____
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.
- | | |
|---|------------------------|
| _____a. Product of the principle, the time in years and the annual rate of interest | 1. Simple interest |
| _____b. Interest is deducted from principle at the time the loan is made | 2. Compound interest |
| _____c. Interest calculated at regular intervals and added to the principle | 3. Discounted interest |
| _____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. | 4. Add-on interest |
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 = _____

AGRICULTURAL CREDIT

AG 460 - 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

NOTE TO INSTRUCTOR

Current tax publications need to be ordered at the beginning of the semester for use in the following units:

460 - H Agricultural Records

460 - L Taxes

Please refer to Instructor Notes for Assignment Sheet in the Taxes unit on page 460L - 13 for ordering information.

460H-1

AGRICULTURAL RECORDS

AG 460 - 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 460 - 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.

- 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 460 - 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

460H-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
Tractor:			
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
Harvester:			
Potato	2,500	10	.000256
Sugarbeet	2,500	10	.000256
Forage, pull type	2,000	10	.00032
Forage, self-propelled	2,000	10	.000182
Seeding equipment:			
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 460 - 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>		
<u>Livestock</u>		
<u>Crops</u>		

INVENTORY RECORD

Item	Beginning	Ending
<u>Miscellaneous</u>		

AGRICULTURAL RECORDS

AG 460 - 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 460 - 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

460I-1

BUDGETING

AG 460 - 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 460 - 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 *Idaho Enterprise Budget Generator* \$.35

CIS 791 *Budgeting--A Management Tool* \$.35

MS 101 *1990-91 Northern Idaho Crop Enterprise Budgets* (16) \$.35 each

MS 102 *1990-91 Southwestern Idaho Crop Enterprise Budgets* (16) \$.35 each

MS 103 *1990-91 Southcentral Idaho Crop Enterprise Budgets* (30) \$.35 each

MS 104 *1990-91 Southeastern Idaho Crop Enterprise Budgets* (15) \$.35 each

MS 110 *1989-90 Livestock Enterprise Budgets* (29) \$.35 each

WREP 104 *Financial Analysis of Proposed Farm Adjustments with a Partial Budget* \$.50

PNW 237 *A Guide to Budgeting for the Family* \$.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 460 - 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 cost/unit	Quantity	Value or 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		4.246		

- 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:

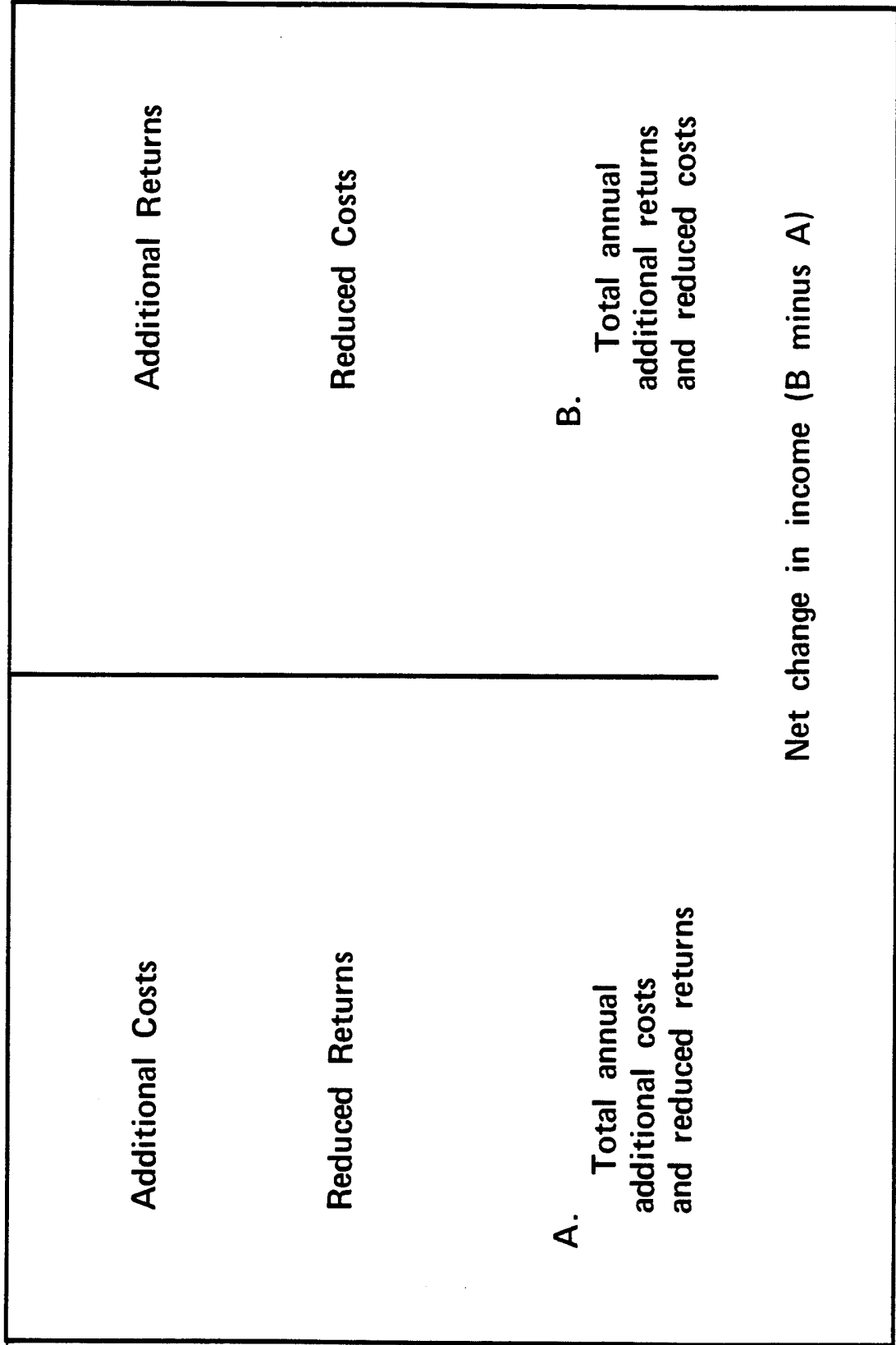
You want to set up a partial budget to help decide whether it will pay to include more roughage in the rotation and feed an additional 40 steers for which you have space, equipment and labor. Assume that the latter items have no alternative use and therefore do not charge for them. The value of production (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 fuel and repair costs on machinery	\$ 450
A. Total annual additional costs and reduced returns	\$5,070	B. Total annual additional costs and reduced 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
LIVESTOCK		OPERATING OR VARIABLE COSTS	
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
TOTAL L.S. RECEIPTS	\$ 8,250	Electricity	199
CROPS		Miscellaneous	325
Corn	\$ 140		_____
	_____	TOTAL OPERATING EXPENSES	\$ 4,446
TOTAL CROP RECEIPTS	\$ 140	FIXED EXPENSES	
HOME USE		Taxes	\$ 220
Dairy	\$ 128	Interest	150
Beef and veal	57	Insurance	45
Eggs and poultry	123	Improvements	314
	_____		_____
TOTAL HOME USE	\$ 308	TOTAL FIXED EXPENSES	\$ 729
	_____		_____
TOTAL GROSS INCOME	\$ 8,698	TOTAL EXPENSES	\$ 5,175
	_____		_____
		NET FARM INCOME	\$ 3,523

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
Total variable costs	\$ 122.55

Fixed Costs

Machinery	50.73
Taxes	5.70
Overhead	4.50
Total fixed costs	<u>\$ 60.93</u>

Total costs \$ 183.48

Income

Total receipts	\$ 300.00
<u>Return to management and land investment</u>	\$ 116.52
<u>Return on land investment</u>	\$ 120.00
<u>Return to management and risk</u>	-\$ 3.48

PARTIAL BUDGET

<p>Additional Costs</p> <p>Concentrates \$70 x 40 steers \$2,800</p> <p>Interest \$10 x 40 steers \$ 400</p> <p>Taxes and miscellaneous \$3 x 40 steers \$ 120</p> <p>Reduced Returns</p> <p>Reduced grain production \$1,750</p> <p>A.</p> <p>Total annual additional costs and reduced returns \$5,070</p>	<p>Additional Returns</p> <p>Value of Production \$125 x 40 steers \$5,000</p> <p>Reduced Costs</p> <p>Fertilizer, fuel and machinery repair Costs \$ 450</p> <p>B.</p> <p>Total annual additional returns and reduced costs \$5,450</p>
<p>Net change in income (B minus A)</p> <p>\$5,450 - \$5,070 = \$380</p>	

BUDGETING

AG 460 - 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

<u>Income</u>	_____
<u>Cash Operating Expenses</u>	_____
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	_____
<u>Non-Cash Operating Expenses</u>	_____
Family labor	_____
Total Non-Cash Operating Expenses	_____
<u>Total Operating Expenses</u>	_____
<u>Return Above Operating Expenses</u>	_____
<u>Depreciation</u>	_____
<u>Return to Capital Investment and Management</u>	_____

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

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ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

**ENTERPRISE BUDGET FOR 100 ACRES
SEED POTATOES**

<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>
	Total Cash Operating Expenses	<u>\$45,852</u>
<u>Non-Cash Operating Expenses</u>		
Family labor		<u>6,000</u>
	Total Non-Cash Operating Expenses	\$6,000
<u>Total Operating Expenses</u>		51,852
<u>Return Above Operating Expenses</u>		28,898
<u>Depreciation</u>		17,400
<u>Return to Capital Investment and Management</u>		11,498

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

Additional Returns

Wheat (5 bu. @ \$3.50) \$17.50

Subtotal \$17.50

Reduced Returns

-0-

Reduced Costs

Custom Cutting \$13.50

Custom Hauling
(70 bu @ \$.10/bu) 7.00

Subtotal \$20.50

A. Total annual additional costs
and reduced returns \$23.25B. 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

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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

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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

CASH FLOW

AG 460 - 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

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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

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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	Operating Receipts: Crops and feed					
3	Livestock and poultry					
4	Products: Livestock and poultry					
5	Custom work					
6	Government payments and patronage dividends					
7	Hedging account withdrawals					
8	Other:					
9	Capital Receipts: Breeding stock					
10	Machinery and equipment					
11	Non-Farm Income: Off-farm wages					
12	Interest and dividends					
13	Other:					
14	TOTAL CASH AVAILABLE (add lines 1 thru 13)					
15	Operating Expenses: Labor hired (including employer taxes)					
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	TOTAL CASH OPERATING EXPENSES (add lines 15 thru 28)					
30	Livestock and Feed Purchases: Feeder livestock					
31	Breeding livestock					
32	Feed purchased					
33	Capital Expenses: Machinery and equipment					
34	Building and improvements					
35	Other Expenses: Hedging account deposits					
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	TOTAL CASH REQUIRED (add lines 29 thru 40)					
42	CASH AVAILABLE LESS CASH REQUIRED (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	Loan Balances: Intermediate and long term					
49	Operating loan					
50	TOTAL LOANS					

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

CASH FLOW

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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.)

JanuaryIncome

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

FebruaryIncome

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

MarchIncome

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

AprilIncome

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

MayIncome

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

JuneIncome

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

JulyIncome

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

AugustIncome

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

SeptemberIncome

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

OctoberIncome

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.)

CASH FLOW

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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	Operating Receipts: Crops and feed					
3	Livestock and poultry					
4	Products: Livestock and poultry					
5	Custom work					
6	Government payments and patronage dividends					
7	Hedging account withdrawals					
8	Other:					
9	Capital Receipts: Breeding stock					
10	Machinery and equipment					
11	Non-Farm Income: Off-farm wages					
12	Interest and dividends					
13	Other:					
14	TOTAL CASH AVAILABLE (add lines 1 thru 13)					
15	Operating Expenses: Labor hired (including employer taxes)					
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	TOTAL CASH OPERATING EXPENSES (add lines 15 thru 28)					
30	Livestock and Feed Purchases: Feeder livestock					
31	Breeding livestock					
32	Feed purchased					
33	Capital Expenses: Machinery and equipment					
34	Building and improvements					
35	Other Expenses: Hedging account deposits					
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	TOTAL CASH REQUIRED (add lines 29 thru 40)					
42	CASH AVAILABLE LESS CASH REQUIRED (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	Loan Balances: Intermediate and long term					
49	Operating loan					
50	TOTAL LOANS					

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	Operating Receipts: Crops and feed					
3	Livestock and poultry					
4	Products: Livestock and poultry					
5	Custom work					
6	Government payments and patronage dividends					
7	Hedging account withdrawals					
8	Other:					
9	Capital Receipts: Breeding stock					
10	Machinery and equipment					
11	Non-Farm Income: Off-farm wages					
12	Interest and dividends					
13	Other:					
14	TOTAL CASH AVAILABLE (add lines 1 thru 13)					
15	Operating Expenses: Labor hired (including employer taxes)					
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	TOTAL CASH OPERATING EXPENSES (add lines 15 thru 28)					
30	Livestock and Feed Purchases: Feeder livestock					
31	Breeding livestock					
32	Feed purchased					
33	Capital Expenses: Machinery and equipment					
34	Building and improvements					
35	Other Expenses: Hedging account deposits					
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	TOTAL CASH REQUIRED (add lines 29 thru 40)					
42	CASH AVAILABLE LESS CASH REQUIRED (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	Loan Balances: Intermediate and long term					
49	Operating loan					
50	TOTAL LOANS					

Note: Beginning cash balance for the month should be the same as the ending cash balance of the previous month.

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CASH FLOW

AG 460 - 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 Operating Receipts: Crops and feed	17500			25000		
3 Livestock and poultry						
4 Products: Livestock and poultry						
5 Custom work						
6 Government payments and patronage dividends				6250		
7 Hedging account withdrawals						
8 Other:						
9 Capital Receipts: Breeding stock						
10 Machinery and equipment						
11 Non-Farm Income: Off-farm wages						
12 Interest and dividends	36	125	45	60	75	10
13 Other:						
14 TOTAL CASH AVAILABLE (add lines 1 thru 13)	22536	16991	2936	31396	26746	531
15 Operating Expenses: Labor hired (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 TOTAL CASH OPERATING EXPENSES (add lines 15 thru 28)	4170	1100	1750	725	29925	13575
30 Livestock and Feed Purchases: Feeder livestock						
31 Breeding livestock						
32 Feed purchases						
33 Capital Expenses: Machinery and equipment						
34 Building and improvements						
35 Other Expenses: Hedging account deposits						
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 TOTAL CASH REQUIRED (add lines 29 thru 40)	5670	14100	2850	4725	31225	14575
42 CASH AVAILABLE LESS CASH REQUIRED (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 Loan Balances: Intermediate and long term	85000	85000	85000	85000	85000	85000
49 Operating loan					5000	20000
50 TOTAL LOANS	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 Operating Receipts: Crops and feed		42700	34038	31110		
3 Livestock and poultry						
4 Products: Livestock and poultry						
5 Custom work						
6 Government payments and patronage dividends						12000
7 Hedging account withdrawals						
8 Other:						
9 Capital Receipts: Breeding stock						
10 Machinery and equipment						
11 Non-Farm Income: Off-farm wages						
12 Interest and dividends	8	132	45	176	80	75
13 Other:						
14 TOTAL CASH AVAILABLE (add lines 1 thru 13)	964	43096	49769	62830	38210	37955
15 Operating Expenses: Labor hired (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 TOTAL CASH OPERATING EXPENSES (add lines 15 thru 28)	700	3450	3100	23200	10830	35750
30 Livestock and Feed Purchases: Feeder livestock						
31 Breeding livestock						
32 Feed purchased						
33 Capital Expenses: Machinery and equipment						
34 Building and improvements						
35 Other Expenses: Hedging account deposits		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 TOTAL CASH REQUIRED (add lines 29 thru 40)	1700	5950	18225	24700	12330	37250
42 CASH AVAILABLE LESS CASH REQUIRED (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 Loan Balances: Intermediate and long term	85000	85000	80000	80000	80000	80000
49 Operating loan	21000					
50 TOTAL LOANS	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 460 - 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 460 - 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

MACHINERY AND EQUIPMENT MANAGEMENT

AG 460 - K

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 460 - K

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 460 - K

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

$$\$1,210.75 \times \$1,359.85 = \$2,570.60 \text{ total annual fixed costs}$$

- 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 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
OWNERSHIP COSTS		
DEPRECIATION	5.06	0.68
INTEREST	6.64	0.89
TAXES, HOUS, INS.	<u>1.33</u>	<u>0.18</u>
TOTAL OWNERSHIP COSTS	13.03	1.74
OPERATING COSTS		
REPAIRS & MAINTENANCE	1.89	0.25
FUEL	8.21	1.10
LUBRICANTS	<u>1.23</u>	<u>0.16</u>
TOTAL OPERATING COSTS	11.34	1.51
LABOR	<u>6.05</u>	<u>0.81</u>
TOTAL COSTS	30.42	4.06

*** PRESS RETURN TO CONTINUE ***

MLBD PLOW (6B)

	\$/HR	\$/AC
OWNERSHIP COSTS		
DEPRECIATION	6.55	0.87
INTEREST	4.03	0.54
TAXES, HOUS, INS.	<u>0.64</u>	<u>0.09</u>
TOTAL OWNERSHIP COSTS	11.22	1.50
OPERATING COSTS		
REPAIRS & MAINTENANCE	3.69	0.49
FUEL	0.00	0.00
LUBRICANTS	<u>0.00</u>	<u>0.00</u>
TOTAL OPERATING COSTS	3.69	0.49
LABOR	<u>0.00</u>	<u>0.00</u>
TOTAL COSTS	14.92	1.99

*** 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

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 Life (years)	Combine S.P. Windrower Wagon & box Automatic bale wagon	Potato harvester Bean cutter Hay rake Seeding equip. Tillage equip. Truck	Hay baler Forage harvester	Tractor, 2-wheel dr Tractor, 4-wheel dr 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 %	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 auto- matic 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
Tractor:			
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
Harvester:			
Potato	2,500	10	.000256
Sugarbeet	2,500	10	.000256
Forage, pull-type	2,000	10	.00032
Forage, self-propelled	2,000	10	.000182
Seeding equipment:			
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

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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

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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 _____

$$\frac{\text{Total annual fixed costs}}{\text{Hours of annual use}}$$

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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

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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

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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. <u>depth</u>	10 in <u>depth</u>	6 in <u>depth</u>	10 in <u>depth</u>
		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

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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
- b. 3.1 acres per hour
- c. 129 hours
- d. \$325.44 (salvage value = \$518.40)
- e. \$420.21
- f. \$745.65
- g. \$5.78 per hour
- h. \$3.01 per hour
- i. \$8.79 per hour
- j. \$1,163.25 (salvage value = \$4,867.50)
- k. \$1,581.20
- l. \$2,744.45
- m. \$5.32 per hour
- n. \$2.38 per hour
- o. \$4.41 per hour
- p. \$7.15 per hour
- q. \$13.94 per hour
- r. \$19.26 per hour
- s. \$28.05 per hour
- t. \$9.05 per acre
- u. \$3,620 total annual equipment cost

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

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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 460 - K

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

NOTE TO INSTRUCTOR

Current tax publications need to be ordered at the beginning of the semester for use in the following units:

460 - H Agricultural Records

460 - L Taxes

Please refer to Instructor Notes for Assignment Sheet in the Taxes unit on page 460L - 13 for ordering information.

460L-1

TAXES

AG 460 - L

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 460 - L

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 Jobes, 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 460 - L

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

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

AG 460 - L

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

AG 460 - L

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 23,000 # @ .15/cwt	34.50	34.50						

SALES AND OTHER INCOME

Date	Item of Sale and Description	Total 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 460 - L

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.

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.

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

AG 460 - L

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

INSURANCE

AG 460 - M

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 460 - M

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 460 - M

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 460 - M

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.)

1. 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 460 - M

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 460 - M

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

MARKETING

AG 460 - N

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 definition.
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. Conduct a survey of local marketing practices.
21. Develop a marketing plan for a commodity.

MARKETING

AG 460 - N

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 (NC)</i>
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 1*, 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. Luening, Robert A. and Mortenson, William P., *The Farm Management Handbook*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1979.
- G. Mortenson, W.P., *Modern Marketing of Farm Products*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1977.
- H. Roy, Ewell Paul, *Exploring Agribusiness*, The Interstate Printers and Publishers, Inc., Danville, Illinois, 1980.
- I. 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.
- J. Steward, Jim and Jobes, Raleigh, *Farm and Ranch Business Management*, Deere and Company Service Training Department, Moline, Illinois, 1987.
- K. Wood, Greg, *Ag Executive Business Manager*, Doane Information Services, St. Louis, Missouri, 1988.

MARKETING

AG 460 - N

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

<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 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
	<hr/>	<hr/>	<hr/>
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

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

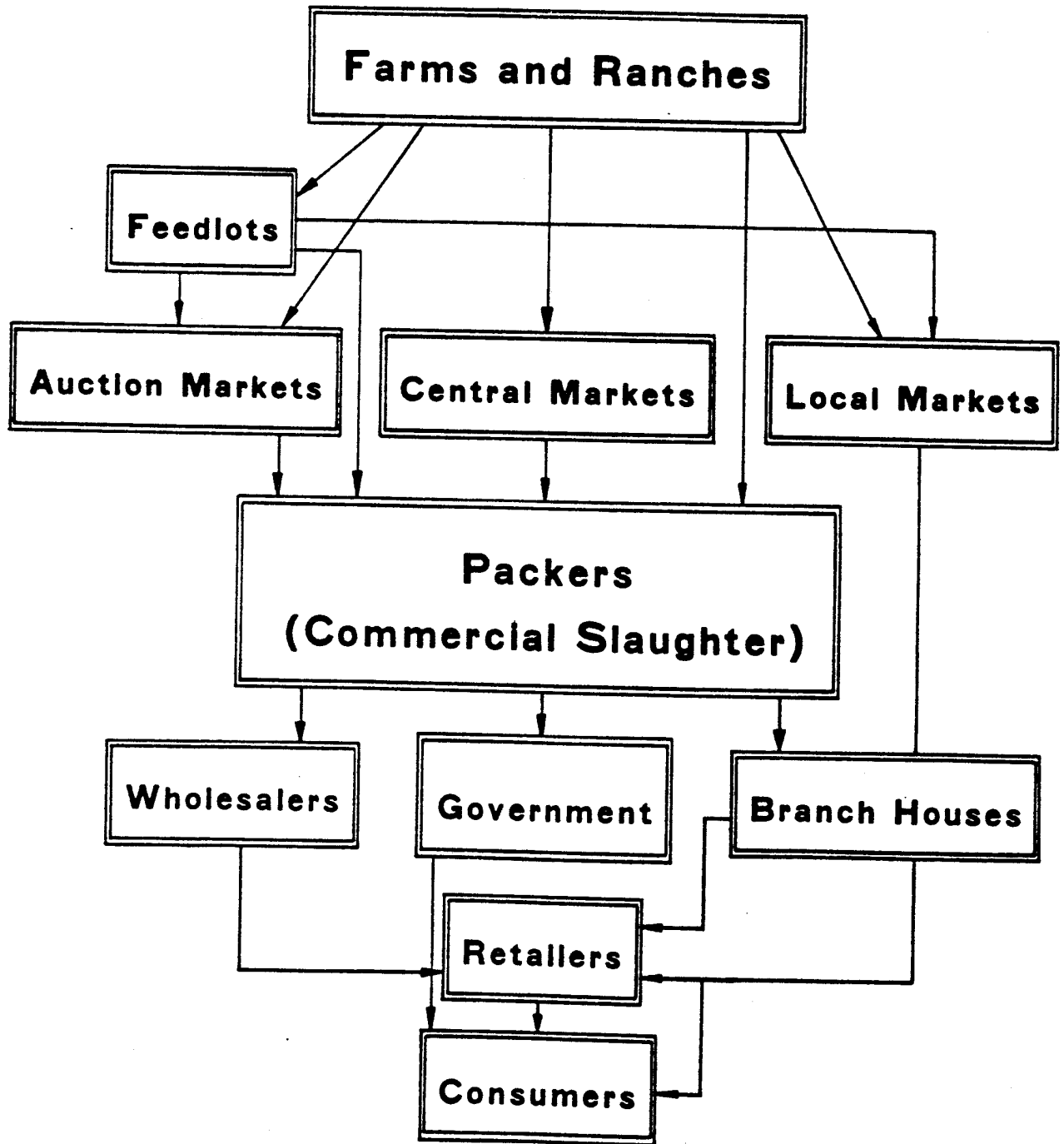
Wholesalers

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

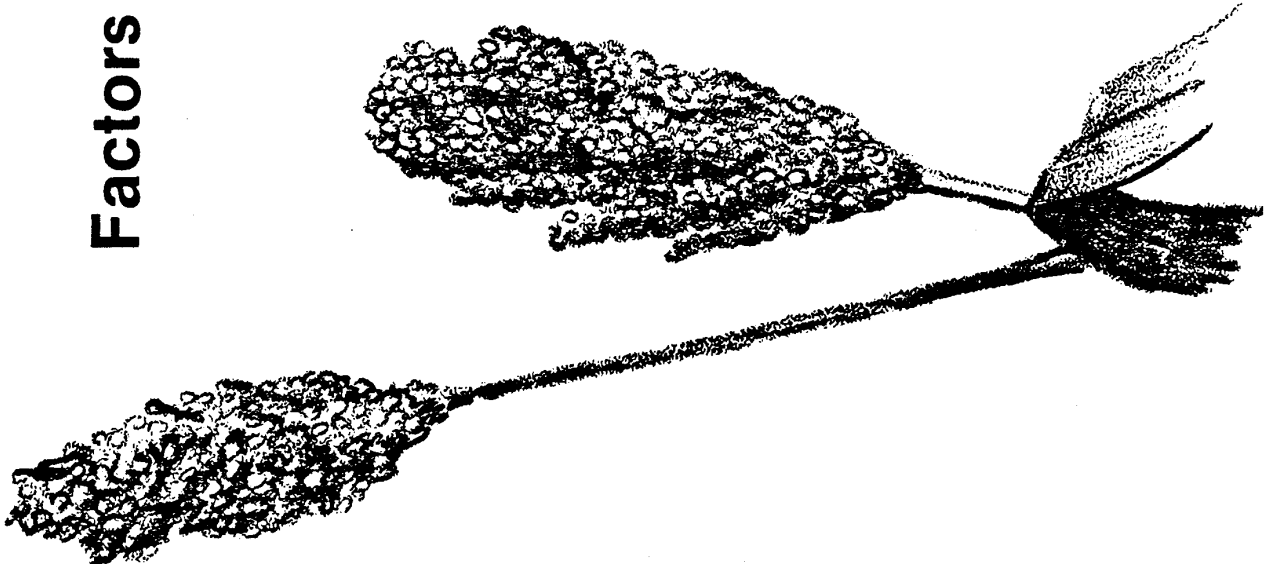
Amount of processing

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

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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?

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MARKETING

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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

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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 Promotion _____

 - 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. _____
- d. _____

12. Match the types of costs that need to be evaluated when determining marketing strategy on the right to their descriptions.

- | | |
|---|---------------------|
| _____ a. Expenses associated with producing a commodity | 1. Profit objective |
| _____ 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 |
| _____ c. The amount of return acceptable for taking the risks of production | 3. Fixed costs |
| _____ d. Costs that increase with increasing production and which may be eliminated entirely if nothing is produced | 4. Variable costs |
| _____ 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. _____

MARKETING

AG 460 - N

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

460O-1

PURCHASING

AG 460 - O

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 460 - O

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 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.

PURCHASING

AG 460 - O

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 460 - O

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 460 - O

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 460 - O

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

AGRICULTURAL LAW

AG 460 - P

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 460 - P

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 460 - P

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 460 - P

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.

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.

a. _____

b. _____

c. _____

d. _____

11. Discuss cash farm leases, including the definition, two advantages and two disadvantages for the landlord, and two advantages and 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.

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 460 - P

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 460 - Q

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 460 - Q

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 460 - Q

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 460 - Q

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 460 - Q

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 460 - R

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 460 - R

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 460 - R

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 460 - R

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.

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.

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 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 460 - R

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

460S-1

COMPUTERS IN AGRICULTURE

AG 460 - S

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.

COMPUTERS IN AGRICULTURE

AG 460 - S

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.

460S-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 460 - S

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

- 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

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.)

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

COMPUTERS IN AGRICULTURE

AG 460 - S

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 460 - S

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:

JanuaryIncome

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

FebruaryIncome

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

MarchIncome

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

AprilIncome

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

MayIncome

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

JuneIncome

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

JulyIncome

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

AugustIncome

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

SeptemberIncome

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

OctoberIncome

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 460 - S

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 460 - S

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 460 - S

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 460 - S

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