## Student's Name\_\_\_\_\_

# BOTANY/SCIENCE OF PLANT GROWTH AND DEVELOPMENT AG 0512

Directions:	Evaluate the trainee using the rating scale below and check the appropriate number to indicate the degree of competency achieved. The numerical ratings of 3, 2, 1, and 0 are not intended to represent the traditional school grading system of A, B, C, D, and F. The descriptions associated with each of the numbers focus on level of student performance for				
	each of the tasks listed below.				
Rating Scale:	<b>0</b> - <b>No Exposure</b> - no information nor practice provided during training program, complete training required.				
	<ol> <li>Exposure Only - general information provided with no practice time, close supervision needed and additional training required.</li> </ol>				
	2 - Moderately Skilled - has performed independently during training program, limited additional training may be required.				
	<b>3 - Skilled</b> - can perform independently with no additional training.				

Instructor Signature	Data
Grade	
3. Percent of Competencies Attained (2/1)	
2. Number of Competencies Rated 2 or 3	
1. Number of Competencies Evaluated	

01.0	The Or	ganisms	04.0	Dividin
	The stuc	lent will be able to:		The stu
0 1 2 3			0 1 2 3	
	01.01	List the groups found in the classification system and classify a		04.01
		plant using the classification system		04.02
	01.02	Describe the kingdoms and the types of organisms found within		
		each kingdom		04.03
	01.03	List the phylums of the plant kingdom		04.04
02.0	Cell Str	ructure	05.0	Plant P
	The stuc	lent will be able to:		The stue
0 1 2 3			0 1 2 3	
	02.01	Identify the parts of the plant cell and the functions of each		05.01
	02.02	Identify the parts of the animal cell and the functions of each		05.02
	02.03	Distinguish the difference between plant and animal cells		05.03
	02.04	List three specialized cells found within the plant and determine		05.04
		how they differ from the basic plant cell		05.05
				05.06
03.0	3.0 Functions of Cells			
	The stuc	lent will be able to:		05.07
0 1 2 3				05.08
	03.01	Identify the composition of protoplasm		05.09
	03.02	Describe the importance of energy to the functioning of the cell		
		and where the energy is found within the cell		
	03.03	Discuss the compounds formed in the cell and the functions of		
		each of these compounds to the cell		

04.0	<b>Dividing Cells</b> The student will be able to:			
0 1 2 3				
	04.01	Identify the parts of the cell dealing with cell division		
	04.02	Describe the importance of genes and chromosomes to cell division		
	04.03	Describe the process of mitosis		
	04.04	Describe the process of meiosis		
05.0	Plant Processes The student will be able to:			
	05 01	List the important plant processes in food manufacture and growth		
	05.01	Explain why photosynthesis is an important process		
	05.02	Explain the chemical process of photosynthesis		
	05.05	List factors that affect photosynthetic rate		
	05.04	Explain the chemical process of respiration		
	05.06	Distinguish between characteristics of photosynthesis and respiration		

Discuss the process of conduction

Explain transpiration and list factors that affect transpiration rate

Explain osmosis and the process of absorption by plant roots

06.0 **Nonvascular Plants** 

The student will be able to:

0 1 2 3	
□□□□ 06.01	Classify the major phyla of nonvascular plants
	Explain how algae differ from land plants
	List the plant parts commonly found on nonvascular plants
	Discuss the importance of nonvascular plants to the plant world

 $\square\square\square\square$  06.05 Explain the methods of reproduction in nonvascular plants

#### 07.0 Vascular Plants

The student will be able to:

0	1	2	3		
				07.01	Label th

07.01	Label the parts common to all vascular plants
07.02	Discuss the advantages of a vascular plant to a nonvascular plant
07.03	List the methods of reproduction in a vascular plant

#### **Vegetative Plant Parts** 08.0

The student will be able to:

- 0 1 2 3
- List the primary parts and functions of the vegetative plant
- Identify the parts of the leaf and functions of the leaf  $\square\square\square\square$  08.02
- Label a drawing showing the parts of a plant stem
- Describe the functions of plant stems
- Match stem modification with correct descriptive terms
- Identify the parts of the root and the functions of each part
- Describe the two types of root systems
- Describe the two types of vascular systems found in the vegetative plant

#### 09.0 **Reproductive Plant Parts**

The student will be able to:

0	1	2	3	

- List the primary parts of the reproductive system and the functions of each part Identify the parts of the flower  $\square\square\square\square$  09.02 Describe the functions of the flower parts  $\square\square\square\square$  09.03  $\square\square\square\square$  09.04 Define what a fruit is and list the tissue layers of the fruit Describe two main types of fruits  $\square\square\square\square$  09.05 Label a drawing showing the parts of a seed  $\square\square\square\square$  09.06
- Describe the functions of the seed parts

### 10.0 **Vegetative Plant Growth**

The student will be able to:

- 0 1 2 3 List the stages of plant growth and development List the conditions affecting the vegetative growth of plants  $\square\square\square\square$  10.02 Discuss the nutrients needed for proper plant growth  $\square\square\square\square$  10.03 Explain the relationships between reproductive and vegetative  $\square\square\square\square$  10.04 plant growth  $\square\square\square\square$  10.05 Describe the three processes involved in vegetative growth 11.0 **Reproductive Plant Growth** The student will be able to: 0 1 2 3 Discuss sexual and asexual reproduction in plants List the different types of reproductive growth  $\square\square\square\square$  11.02 List the methods of pollination  $\Box\Box\Box\Box$  11.03 Discuss the difference between pollination and fertilization Explain the development of the seed Describe the steps in seed germination List the requirements for good seed germination  $\Box\Box\Box\Box$  11.07 List the factors that cause poor seed germination
- Diagram the vegetative and reproductive stages of plant growth as it relates to the plant life cycle