

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Plant Science Basics

Course Code:

COURSE INTRODUCTION:

The Greenhouse Operation and Management course develops a basic understanding of greenhouse techniques. The production of greenhouse crops will be used to demonstrate procedures such as plants started from cuttings, seeds, grafts, and layering. Students will manage their own crop as a greenhouse project. (CD 016765, CIP 01.0604)

Course Rationale – Agriculture encompasses the food, fiber, conservation and natural resource systems, employing over 20% of the nation's workforce. Cutting, seeding, grafting, layering, and management of a greenhouse provide entry level and entrepreneurial opportunities for students with an interest in horticulture.

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Plant Science Basics

Course Code:

UNIT DESCRIPTION: Students will learn how plants grow and function.		SUGGESTED UNIT TIMELINE: 3 WEEKS CLASS PERIOD (min.): 50 MINUTES				
ESSENTIAL QUESTIONS: 1. How do plants grow? 2. How do plants function?						
ESSENTIAL MEASURABLE LEARNING OBJECTIVES	CCSS LEARNING GOALS (Anchor Standards/Clusters)	CROSSWALK TO STANDARDS				
		GLEs/CLEs	PS	CCSS	AFNR Standards	DOK
1. Distinguish plant parts, structures, and functions.				SL11-12.2	PS.01.02.01.a PS.01.02.02.a PS.01.02.03.a PS.01.02.04.a PS.01.02.05.a	1
2. Identify the growth processes of a plant.				SL11-12.2	PS.01.03.01.a PS.01.03.02.a PS.01.03.03.a	2
3. Distinguish plants by characteristics and purpose.				SL11-12.2	PS.01.01.01.c	4
4. Unit: Demonstrate an understanding of plant science by creating a plant collection in which plants will be identified and labeled as to the type of root, leaf shape, leaf margin, leaf attachment, and venation.				SL11-12.1.d SL11-12.2 SL11-12.4 SL11-12.6 RST11-12.9		4
ASSESSMENT DESCRIPTIONS*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc.) Each student will create a plant collection that includes types of roots, types of leaf shapes, types of leaf margins, types of leaf attachments,						

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Plant Science Basics

Course Code:

and types of venation. For examples of these plant types and shapes, students can refer to lesson 1 in the unit. Students will mount each specimen to a piece of paper in some manner. Each root or leaf should be labeled as to the category and the sample it represents (e.g., type of leaf shape, oval).

Assessment will be based on the overall content and presentation of the plant collection.

***Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above (i.e., Grade Level/Course Title/Course Code, Unit #.)**

Obj. #	INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods)
1-3	1. Lecture, demonstration, discussion
4	2. Independent student activity
Obj. #	INSTRUCTIONAL ACTIVITIES: (What Students Do)
1-3	1. Students will engage in study questions in lessons 1 through 3.
4	2. Students will complete “AS 3.2, Stem Poster”; “AS 3.3, Leaf Poster”; “AS 3.4, Identifying Monocot and Dicot Plants”; “AS 3.6, Plant Pictionary: Part I”; and “AS 3.7, Plant Pictionary: Part II.”
	3. Additional activities that relate to the unit objective can be found under the heading “Other Activities and Strategies” in the following location: p. 161.
UNIT RESOURCES: (include internet addresses for linking) <ul style="list-style-type: none"> • <i>Greenhouse Operation and Management</i>. University of Missouri-Columbia, Instructional Materials Laboratory, 2002. • Horticulture Publications. MU Extension. University of Missouri-Columbia. Accessed January 17, 2012, from http://extension.missouri.edu/main/DisplayCategory.aspx?C=34 • The National Arbor Day Foundation. Accessed January 17, 2012, from http://www.arborday.org/. • Plants of Missouri. Missouri Department of Conservation. Accessed January 17, 2012, from http://mdc.mo.gov/ • Reiley, H. E., & Shry, C. L., Jr. <i>Introductory Horticulture</i>, 6th ed., Delmar Learning, 2000. 	

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Plant Science Basics

Course Code: