UNIT OF STUDY

Title: Classification of Plants	**Subject/Course**: Biology	**Length**: 1 week
Topic: Classification and the Diversity of Life (5)	**Grade**: 10th grade	**Designer**: Woods

UNIT GOALS AND EXPECTATIONS

IMPORTANT CONCEPTS/UNDERSTANDINGS: The great diversity of organisms is the result of more than 3.5 billion years of evolution that has filled every available niche with life forms. Natural selection and its evolutionary consequences provide a scientific explanation for the fossil record of ancient life forms, as well as for the striking molecular similarities observed among the diverse species of living organisms. The millions of different species of plants, animals, and microorganisms that live on earth today are related by descent from common ancestors. Biological classifications are based on how organisms are related. Organisms are classified into a hierarchy of groups and subgroups based on similarities which reflect their evolutionary relationships. Species is the most fundamental unit of classification.	ESSENTIAL QUESTIONS: How are plants different? How do plants reproduce? What are the structures and functions of plants? How are plants important to humans?
STUDENT LEARNING EXPECTATIONS: CDL.7.B.17 Describe the structure and function of the major parts of a plant: ▪ Roots -mycorrhiza ▪ stems ▪ leaves ▪ flowers CDL.7.B.18 Relate the structure of plant tissue to its function ▪ epidermal ▪ ground ▪ vascular-xylem/phloem	CDL.7.B.15 Differentiate between vascular and nonvascular plants using evolutionary relationships CDL.7.B.16 Differentiate among gymnosperms, and angiosperms ▪ Seed in fruit vs "nakes seed" in cones ▪ Monocot vs. dicot CDL.7.B.19 Evaluate the medical and economic importance of plants-Arkansas Farming industry
SPECIFIC DECLARATIVE KNOWLEDGE – What I know Explain what a plant is. Describe what plants need to survive. Describe how the first plants evolved. Describe the adaptations of bryophytes. Identify the three groups of bryophytes. Explain how vascular tissue is important to ferns and their relatives Describe the reproductive adaptations of seed plants. Identify the four groups of gymnosperms. Identify the characteristics of angiosperms. Explain what monocots and dicots are. Describe the organs and tissues of vascular plants. Describe the three main types of roots. Describe the different functions of roots. Describe the three main functions of stems. Contrast monocot and dicot stems. Describe how the structure of a leaf enables it to carry out photosynthesis.	SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do Describe the structure and functions of each plant part. Explain how plants are a necessary p[art of our ecosystem. Identify the different modes of reproduction in plants.

Explain how water is transported throughout a plant. Describe how the products of photosynthesis are transported throughout a plant. Identify the reproductive structures in gymnosperms and angiosperms. Describe the development of seeds and fruits. Identify the major food-supply crops for humans.	

UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)
"Water Transport in Plant Stems" Lab-Group Work "Examining the Structure of A Flower" Lab- Pg. 679—Group Work

Traditional Assessments:	Other Evidence of Learning:
Test Quiz Open Response "Examining the Structure of A Flower" Lab Assignment	"Comparing Rates of Photosynthesis" Lab Report "Water Transport in Plant Stems" Lab Report

ACTIVITIES AND LEARNING EXPERIENCES	Resources
"Comparing Rates of Photosynthesis" Lab- Inquiry Cooperative Group Work with TI-83's and CO2, Dissolved Oxygen, and pH probes "Water Transport in Plant Stems" Lab-Group Work "Examining the Structure of A Flower" Lab- Pg. 679—Group Work Plant Powerpoint Vocabulary Strategy Daily Notebook Entries Establish Habits of Mind for Science in Critical Thinking, Creative thinking, and Self Regulated Thinking Current Event Open Response	Prentice Hall Textbook: Biology Internet Powerpoint Lab Equipment CBL's with CO2, Dissolved Oxygen, and pH probes Plants

Career Connections
Farming