

# Unit 11: Plant Structure and Function

Content Area: **Template**

Course(s):

Time Period:

Length:

Status: **Published**

## State Mandated Topics Addressed in this Unit

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N/A	N/A

## Unit 11: Plant Structure and Function

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### Learning Objectives

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- How are cells, tissues and organs organized into systems that carry out the basic functions of a seed plant?
- How do changes in the environment affect the reproduction, development, and growth of plants?

### Essential Skills

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- Compare the structure of monocots and eudicots
- Compare the structures and functions of roots, stems, and leaves
- Define a tissue system
- Describe 4 examples of cloning plants
- Describe and compare germination in bean and corn plants
- Describe and compare primary and secondary growth.
- Describe plant adaptations that permit very long lives
- Describe the 3 unique structures found in most plant cells, and describe structures of 5 major types of plant cells
- Describe the parts of a flower and their functions
- Describe the structure and function of fruit
- Distinguish between a taproot, petiole, and tendril, and indicate example of each.
- Distinguish between annuals, biennials, and perennials
- Explain how a seed forms.

## Standards

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9-12.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9-12.HS-LS1-5	Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
9-12.HS-LS1-7	Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.
9-12.HS-LS4-4	Construct an explanation based on evidence for how natural selection leads to adaptation of populations.
9-12.HS-LS4-3	Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.
9-12.HS-LS4-5	Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.
9-12.HS-LS2-5	Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.
9-12.HS-LS2-3	Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

## Instructional Tasks/Activities

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- Chapter Test
- Plant Scavenger Hunt: Students, in groups, search school campus for plant items to demonstrate understanding of plant structure then arrange them on a poster and label each item. Teacher asks each student about function of each item displayed.
- Review game
- Vocabulary Quizzes

## Assessment Procedure

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- Classroom Total Participation Technique
- Classwork
- Conifer Life Cycle diagram: Students draw and label conifer life cycle
- DBQ
- Essay
- Exit Ticket/Entrance Ticket/Do Now
- Fern Life Cycle Diagram: Students draw and label fern life cycle
- Flower Worksheet: Student's color and label parts of flower.
- Foldables – organization of material (monocots vs. dicots, plant parts and functions, types of plant cells, plant adaptations)
- Group discussion
- Journal / Student Reflection

- Kahoot
- Life: Plants: Students watch Life: Plants video and summarize facts discussed in class as well as interesting new information introduced. Discuss as review.
- Moss life Cycle Diagram: Students draw and label moss life cycle diagram
- Other named in lesson
- Peer Review
- Performance
- Plant Cell Worksheet: Student's color and label organelles in a plant cell diagram.
- PowerPoint presentation of material
- Problem Correction
- Project
- Quiz
- Rubric
- Teacher Collected Data
- Test
- Think, pair, share (read assigned section of text individually, discuss with a partner, present material in pairs to class – use PowerPoint as a reference)
- Worksheet

## **Recommended Technology Activities**

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- Appropriate Content Specific Online Resource
- Chromebook
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here
- Gimkit
- GoGuardian
- Google Classroom
- Google Docs
- Google Forms
- Google Slides
- Kahoot
- MagicSchool AI
- Other- Specified in Lesson
- Quiziz
- Screencastify

## **Accommodations & Modifications & Differentiation**

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Accommodations and Modifications should be used to meet individual needs. Their IEP and 504 plans should

be used in addition to the following suggestions.

## **Gifted and Talented**

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- Compare & Contrast
- Conferencing
- Debates
- Jigsaw
- Peer Partner Learning
- Problem Solving
- Structured Controversy
- Think, Pair, Share
- Tutorial Groups

## **Instruction/Materials**

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- alter format of materials (type/highlight, etc.)
- color code materials
- eliminate answers
- extended time
- extended time
- large print
- modified quiz
- modified test
- Modify Assignments as Needed
- Modify/Repeat/Model directions
- necessary assignments only
- Other (specify in plans)
- other- named in lesson
- provide assistance and cues for transitions
- provide daily assignment list
- read class materials orally
- reduce work load
- shorten assignments
- study guide/outline
- utilize multi-sensory modes to reinforce instruction

## **Environment**

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- alter physical room environment
- assign peer tutors/work buddies/note takers
- assign preferential seating
- individualized instruction/small group
- modify student schedule (Describe)
- other- please specify in plans
- provide desktop list/formula

## **Honors Modifications**

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N/A

## **Resources**

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- Resource 1
- Resource 2
- Resource 3
- Resource 4
- Resource 5