



Classification: Organizing and Describing Diversity

Activity 3: Plant Classification

Key Question

How can we use physical characteristics to classify plants?

Objectives

- Students will **classify** flowering and nonflowering plants into groups based on adaptations and traits
- Students will **compare, contrast, and discuss** the traits of different plants

Grade: 2-5

Time: 45 minutes

Location: Classroom

Materials

- [EOL Species Cards](#) **
**[EOL Plant Species Cards](#) (Plants of Okaloosa County, FL and common in southeastern U.S.; can use plants from other decks including conifers, flowering plants, spore-bearing plants)
- Computer with internet
- The following plant materials:
 - plants with flowers/seeds
 - plants with cones (pines, cedars, etc.)
 - plants with spores: ferns, mosses

Preparation

Walk around your yard or schoolyard and collect plant parts listed above in materials (flowers/seeds, cones/needles, ferns, mosses, etc.).

Culminating Activity

After learning about and observing the differences between flowering and nonflowering plants, students go outside and search for plants in schoolyard, keeping notes and drawings of their observations.

Directions

Engage/Explore:

Have class close their eyes or put on blindfolds. Pass around a few examples of the following plant parts to the class:

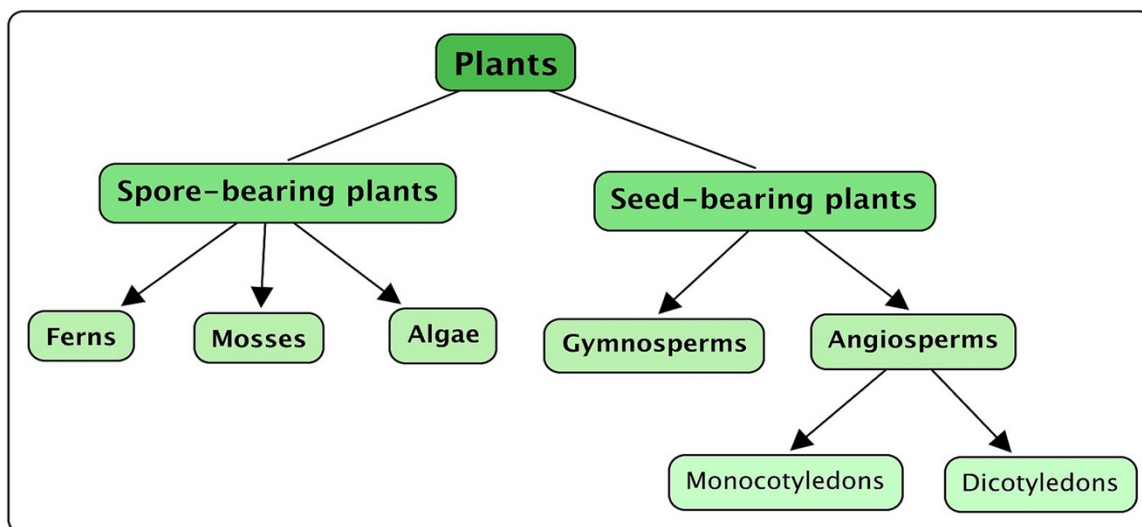
- Pine cone
- Moss from tree or ground
- Fern frond
- Flower(s)

- Needles
- Broadleaf cones
- Seeds (acorns, seed pods, etc.)
- Students feel the object(s), then pass to the next person. After students have felt several objects, move objects to the front of the room, covered or hidden at first. Have students open their eyes, describe characteristics to each other, and guess which objects they felt. Write these guesses on the board and circle the correct guesses. Write the names of different flowering and nonflowering plant parts, one from flowering, conifer, and non-flowering (cone, flower, moss, etc.) as headers on a chart on the board. Then, ask students to compare and contrast these organisms. Students should share a few ideas. Write these ideas on the chart. Example:

Pine Cone	Flowering plant	Moss
Has no flowers	Has flowers	Has no flowers
Has cone that holds seeds	Has no cone	Has no cone

Explain: Explain to students that each of the objects they felt come from the Plant Kingdom. The plant kingdom is divided first into two groups: plants that produce seeds, and plants that produce spores. Examples of plants that produce seeds are flowering plants (daisies, maple trees, and strawberries) and conifers (pine trees, cypress trees). Examples of plants that produce spores are ferns and mosses. We can find plants from these groups everywhere, likely even in a schoolyard.

Hand out Plant Classification Worksheet (attached). Students can add notes about each group of plants in the appropriate box. They can draw an example of a plant they find in their schoolyard as explained in the next section.



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Pass out decks of species cards ([EOL Okaloosa County Common Plants deck](#) or plants from other decks) and have students work in small groups to sort plant cards into groups based on: flowering, nonflowering-cone, nonflowering-spores. They can check their groups by reviewing the plant species list provided.

Elaborate: There are examples of spore-bearing, cone-bearing, and flowering plants in many schoolyards and parks. Give students 15 minutes to walk around the schoolyard and independently find and draw plants that fit into each plant category. If you have additional time, consider taking a field guide of common trees and wildflowers. Or, bring plant species cards.

Recommendation: *Walk your schoolyard one or two times before you take students outside to find areas where students can find different plants.*

Evaluate: Students can test their knowledge by playing the “Heads Up” game. Each student holds up a species card to his/her forehead and asks yes or no questions to other group members to figure out the plant name.

Students should ask questions to help classify into one of these groups. Many plant cards are common or iconic in different regions. You can challenge students to identify to species, or they could identify to a higher group like pine trees or ferns. Print out a PDF of the plant cards for students to use as reference as they guess species.

Next Generation Science Standards

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.



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