

What is Your Leaf Type?

Grades 3-5th (most appropriate for grade 3)

Overview

This lesson gives students information about arrangement, shapes, venation, and margins of leaves in their region. Students practice recognition and categorizing leaves from various tree species.

Preparation

- ✦ At the beginning of the year, ask students to bring at least one leaf to school from a tree in their yard. Place leaves between the pages of the old phone book for several weeks. (*You can do the activities in the fall or wait until spring.*) Copy Activity Sheets #1 & #2, *Show Me Trees* poster – page 7 and Forestkeepers Field Manual (*Leaf Species* page) – page 10 for each student. Divide students into cooperative learning groups with a copy of each hand-out for each child.
- ✦ As a class, have students look at the *Leaf Structure* page and review the various categories. Discuss similarities and differences in each category. Point out that differences can be subtle, especially in the shape category.
- ✦ Discuss briefly the five senses and the kinds of information we can gather using our senses. Hand out a leaf from the phone book collection to each student and ask them to use their senses (*except for taste*) to observe and gather info about the leaves. Use hand lenses. Have them record their observations on Activity Sheet #1.
- ✦ Using Leaf Structure page & Activity Sheet #1, have them record the composition, shape, margins, and venation their leaf.
- ✦ Working in cooperative learning groups, ask students to compare the similarities and differences in the leaves they have and the observations they made individually. Fill in Activity Sheet #2.

OBJECTIVES

- ✦ Students observe a variety of leaf types.
- ✦ Students compare and contrast composition, shapes, venation and margins of various leaves.
- ✦ Students practice identifying leaves with their species names.

BACKGROUND

Understanding leaf structure can help students identify trees in their community and begin to make observations of the subtle differences. Leaves are categorized according to their arrangement, shape, leaf margins and venation.

MATERIALS

- ✦ *Show Me Trees* poster
- ✦ Forestkeepers Field Manual – handout from page 10, handout from page 7
- ✦ Various leaves that students bring to class. A couple of old telephone books, paper, crayons or markers, hand lenses, leaf cards.



Procedure










- 1 Pre-lesson, ask students to draw a leaf on the back of Activity Sheet #1. Have students complete the K-W-L graphic organizer. Encourage them to pretend that they are making a picture for a giant so that they fill the page. Display the *ShowMe Trees* poster in the classroom.
- 2 As a class, have students look at the *Leaf Structure* page and review the various categories. Discuss similarities and differences in each category. Point out that differences can be subtle, especially in the shape category.
- 3 Discuss briefly the five senses and the kinds of information we can gather using our senses. Hand out a leaf from the phone book collection to each student and ask them to use their senses (except for taste) to observe and gather info about the leaves. Use hand lenses. Have them record their observations on Activity Sheet #1.
- 4 Using *Leaf Structure* page & Activity Sheet #1, have them record the composition, shape, margins, and venation their leaf.
- 5 Working in cooperative learning groups, ask students to compare the similarities and differences in the leaves they have and the observations they made individually. Fill in Activity Sheet #2.

Final Activities

- Using *Leaf Species* page, ask students to try to identify the species of leaves in their pod. Then as a class, record the types of leaves.



RESOURCES

-  **The Missouri Department of Conservation's Discover Nature Schools Program and Resources**
www.mdc.mo.gov
-  **Discovery Trunks Loan Program**
 available through the Missouri Department of Conservation. A Discovery Trunk is a collection of materials that may be checked out by innovative teachers and youth leaders. These trunks are a great way to compliment thematic units or as a intriguing way to cross disciplines. There is not fee for using the trunks and each may be checked out for two weeks. Check out www.mdc.mo.gov keyword *Discovery Trunks* for more information.
-  **Autumn Leaves**
by Ken Robbins, grade 3
-  **Why Do Leaves Change Color?**
by Betsy Maestro
-  **Forestkeepers Field Manual**
-  **www.nyu.edu/projects/julian/**
 click on *Tree Museum* and then *Tribute Tree* for a gallery of tree paintings by various artists.
-  **Have You Ever Met A Tree?**
www.reachoutmichigan.org/funexperiments/agesubject/lessons/arb/meetatree.html
-  **Just for Teachers: Forests**
<http://mdc4.mdc.mo.gov/Documents/184.pdf>
-  **50 Common Missouri Trees**
 available from the Missouri Department of Conservation and includes a simple dichotomous key to identify trees

Extensions

- ✦ Cut out pictures of individual trees from the *Show Me Trees* poster and glue each picture on a playing card. With these leaf cards, play a “Memory” game, use them as flash cards, or create a card game.
- ✦ Take a walk on school grounds or in a local park to identify leaves and tree species.
- ✦ Use recycled computer paper to make leaf rubbings using the side of crayons, cut out and use it to decorate a leaf haiku poem.
- ✦ **Sort leaves** – In cooperative learning groups, students sort, list, and label their collected leaves. **By size** – large to small, wide to narrow, long to short; **by texture** – rough to smooth, thick to thin; **by insect damage** – leaves with the most holes to those with the least, leaves with the most bumps or other kinds of damage; **by colors** – reds, yellows and other shades of foliage, or variations of green; **by smell** – leaves with a pleasant smell, with an unpleasant smell, with no smell, **by edges** – leaves with smooth edges, leaves with ‘teeth’.

Assessment

- ✦ Quiz using leaf flash cards.
- ✦ Repeat the K-W-L graphic organizer and compare to pre-lesson one.
- ✦ Compare drawings for detail and accuracy.



MULTIPLE INTELLIGENCES: Interpersonal – Intrapersonal – Naturalist

GLE'S

THIRD GRADE - SCIENCE

- ✦ **Strand 3, 1.D.a** Identify the major organs and their functions
- ✦ **Strand 7, 1.A.a** Pose questions about objects, materials, organisms and events in the environment; and **1.B.b** Make qualitative observations using the five senses
- ✦ **Strand 8 3.A.b** Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member.

FOURTH GRADE - SCIENCE

- ✦ **Strand 4, 3.C.a** Identify specialized structures and describe how they help plants survive in their environment ** extended discussion required to fulfill this component.
- ✦ **Strand 8 3.A.b** Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member.

FIFTH GRADE - SCIENCE

- ✦ **Strand 3, 1.E.a** Explain how similarities are the basis for classification; **1.E.e** Identify plants or animals using simple dichotomous keys.
- ✦ **Strand 7, 1.B.a** Make qualitative observations using the five senses; **1.B.c** Use a variety of tools and equipment to gather data.
- ✦ **Strand 8, 3.A.b** Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member.

Name:

What my senses tell me about my leaf:

I see...

I feel...

I smell...

I hear...

My Leaf Type

My leaf composition is: My leaf shape is:

My leaf margin is: My leaf venation is:

Name:

My imaginary leaf...

Name:

My partner is: My partner's leaf is:

When you tell how things are alike, you are **comparing** them.

When you tell how things are different, you are **contrasting** them.

Below is a Comparing-Contrasting Chart that you can complete in your cooperative learning groups. After the group talks about similarities and differences, choose a partner to compare and contrast your leaf on the chart below. Write differences near the lines on the leaves.

Different...

Alike...

Name:

What I know...

K

What I want to know...

W

What I learned...

L