

Tree Identification

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School or Agency: St. Anne's Wetland Education Outreach Project

Grade Level(s):

Science Topic: Identifying trees based on their leaves.

Summary: The students will have a chance to explore the wetlands and collect leaves that they find on the ground. Instruct the students it is important not to pick any live leaves off the trees. The students will then be able to use methods in order to identify what type of tree the leaf came from.

Core Content: Life Science. Specifically: Diversity and Adaptations of Organisms

Objectives: The students will observe the wetland, collect leaves, and learn how to use a dichotomous key to identify the tree the unknown leaf came from. They will also become familiar with the different parts of a leaf and the nomenclature used to describe leaves.

Materials: Leaves collected from the wetlands, a ruler, dichotomous key, leaf glossary. Also pictures of the trees commonly found in the wetlands are provided.

Procedures:

1. Prior to coming to the wetlands, give the children a brief background on some common terms associated with leaves. This can be as simple or as difficult as you would like. Make sure they know the difference between a simple leaf versus compound leaf, alternate versus opposite, entire versus toothed versus lobed, palmate versus pinnate.
2. Upon arriving to the wetlands, split the class into groups of two or four. Familiarize the kids with the area, and then have them set off in search of their leaves. Remember to instruct them to only pick up leaves that have already fallen to the ground, and not to pick leaves from a living plant.
3. Once the kids have a variety of leaves collected, have them all return to a meeting spot. Give everyone a chance to examine what they have collected, then have the kids pick out the classifications they recognized based on what they learned before the trip.

4. Use the dichotomous key to determine what tree the leaf came from. This can be done as an entire class, or to make it more difficult it can be done individually or in their groups.

Assessment Techniques: Upon returning to the classroom, you can give the students one unknown leaf, and see if they can use the key to identify the leaf on their own. For older grades the kids could design their own key using everyday classroom items, or using beans.

Resources: Adapted from Introduction to Biology II Laboratory Manual. Thompson et al. Spring 2009. Print.

Pictures were obtained from

Kotvas, Karen. "Common Trees and Their Leaves." *Rutgers Cooperative Extension*. 2001. Rutgers University. 5 Sep 2009 <<http://images.google.com/imgres?imgurl=http://www.discoverscience.rutgers.edu>

Extensions: For older grades, the kids could design their own key using everyday classroom items, or using beans.

Glossary

Alternate leaves: leaves that are born singly at the nodes.

Blade: the flat expanded part of a leaf

Compound Leaves: leaves that have leaf-like subunits separate from each other at their bases.

Entire: leaf margins that are smooth rather than toothed.

Lobe: a large pointed or rounded projection on a leaf blade.

Margin: The edge of a leaf or leaflet blade; maybe toothed entire, or lobed.

Node: a level on a stem where a leaf arises or leaves arise.

Opposite leaves: leaves borne two at a node, on each side of the stem.

Palmate: an arrangement of the leaf in which all parts radiate from one central point, fan like.

Pinnate: an arrangement of parts where the leaf arises from the middle, featherlike.

Simple: leaves with one blade. It does not have subunits.

Toothed: a leaf margin with many small points, like teeth of a saw.

Dichotomous Key

1a. Leaves Simple	2
1b. Leaves Compound	5
2a. Leaves opposite.....	3
2b. Leaves Alternate	4
3a. Leaves lobed, palmate	
3b. Leaves lobeless, pinnate	
4a. leaf blade coarsely toothed	
4b. leaf blade symmetric, margin entire	
5a. Leaves opposite	
5b. Leaves alternate	

Pin Oak



American Beech



Tulip Poplar



Sycamore

