Local Tree Identification Guide

Standards Addressed	 Environmental Education Standards: A. Questioning and Analysis: A.4.1, A.4.2, A.4.3, and A.4.4. B. Knowledge of Environmental Processes and Systems: B.4.4 and B.4.6.
Key Concepts/ Content	 To build students' background knowledge of the different types of trees that grow in their local environment. To gain a basic understanding of how to classify trees based upon their leaf characteristics.
Teacher Background	A wealth of information about native trees for Wisconsin exists on the Department of Natural Resources website and in libraries or at your local arboretum. Before taking the students on a leaf-collecting trip, locate and identify several trees near the school or field trip area that are examples of typical Wisconsin trees. The very beginning of the school year would be the best time to undertake this project to ensure the availability of leaves to collect.
Getting Ready	Walk around outside to determine the types of tree leaves your students might collect. Obtain all the materials for the activity.
Safety Issues	You will need to obtain permission for the field trip and follow all district guidelines.

Materials Needed * Trees to take samples from (it is suggested that for trees on private property, permission be obtained from the owner before samples of leaves are taken)

- * Folders or large plastic bags to hold leaves
- Forest Trees of Wisconsin, poster and booklet (see references at the end of the activity)
- Supplies for constructing the final product
- Procedures

 Individually, in small groups, or even as a whole-class group, students should brainstorm the names of trees that they think are found in their local area. After these lists have been completed, the trees can be investigated using tree identification guides for Wisconsin to determine if they belong on the list.
 - 2. After checking the trees on their lists against the tree identification guides, students should be encouraged to look through the guides to find any other trees they recognize and could add to their lists.
 - 3. A field trip is then taken for the collection of leaf samples. The trip could be a walking tour around the school grounds or perhaps a nearby park. The students could be taken to the school forest or other natural area to collect samples.
 - 4. Once the leaves are collected, and the students are back in the classroom, have the students sort the leaves, using their own sorting or classifying methods.
 - 5. Then have the students use the tree identification guides to compare their sorting/classification systems with those used in the guides. An activity sheet is included that could be used by the students to help in the classification of their samples. Have the students reclassify the leaves according to the system listed in the reference guide *Forest Trees of Wisconsin, How To Know Them.*

- 6. Optional leaf collection activities:
 - Books can be created containing all of the information gathered about the local tree populations. These publications can be presented to other classes, perhaps younger grades studying similar topics.
 - Arranging similar leaves in a radial pattern can make leaf kaleidoscopes (see activity sheet). This pattern can then be moved onto the sticky side of one piece of clear contact paper. A second piece of clear contact paper can then be placed on top of the first piece, sandwiching the leaves inside the contact paper. The contact paper can then be trimmed around the contours of the leaf kaleidoscope. The kaleidoscopes look best when hung in direct sunlight.

Helpful Hint Why Do Leaves Change Color In Autumn?

Trees such as oaks and maples change color in the fall. Cool fall temperatures and less daylight result in a tree producing less green pigment called chlorophyll. The other pigments in the leaf become more prominent: yellow (xanthophyll), orange (carotene), and red (anthocyanin). The brown pigment (tanin) remains after all other pigments have disappeared. The brilliance of the color depends on the amount of sugar stored in the leaf and the amount of autumn sunlight it receives. On average, a healthy mature tree will shed 200,000 leaves each year.

Evidence ofDevelop a rubric that assesses student knowledge of sorting
and classification, as well as understanding of the term
classification and how leaf shapes are used to classify trees.
You can develop this rubric with or without the students'
participation. You can also conduct individual conferences
where the students explain to you what they have learned
from this activity. The students may also want to conduct
conferences with each other discussing the essential knowl-
edge they gained from doing the activity.

References/Image: Forest Trees Of Wisconsin How to Know Them, DNR,
Madison, Wisconsin, Bureau of Forestry, 1990. http://www.dnr.state.wi.us/org/land/forestry/treeid/index.htm

- Urban Forestry Laboratory Exercises, USDA Forest Service North Central Research Station, 1992 Folwell Avenue, St. Paul, MN 55108, and the USDA Forest Service National Resource Conservation and Education Program.
- □ Sohi, Morteza E., *Look What I Did With A Leaf!*, Walker and Company, New York, 1993.
- Gile, John, *The First Forest*, Worzalla, Stevens Point, WI, 1989.
- http://www.millenniumtree.org

Activity Sheet	Local Tree Identification Guide
Name	Date:
Common Name:	Scientific Name:
CHECK OFF T	HE IDENTIFIED CHARACTERISTICS:
ls it? Evergreen (the lea Deciduous (the le	eves stay on for more than one season) aves fall off at the end of a season and regrow in the spring)
EVERGREEN: Nu Le	omber of needles in a bundle ogth of needles Needles look scalelike
Description of Course	:
Color of Needles:	· ·
l Needles are gro wrapping [shea	Suped (2-5) with a $\left \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$
Needles are in branch with ne	a cluster right at the M_ > wrapping = clustered
Leaf Types and Arran	igement:
-	
Compound	I.J Palmate Dinnate
Leaf Margins: Entire -	Lobed 🏶 🔄 Serrated 🔹 🔲 Wavy 🗰 🗍
Leaf Venations:	Pinnate - 💭 - 🖾 Parallel - 💶 🔤



Local Tree Identification Guide continued

Some other common leaf shapes:









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e des

Inflorescence (flower) and plant parts



Buds are fun to look at in the winter .





Some other root types:



Fruit and Seed Types: Poine (apple) Drupe (cherry) Nut (acorn) Conc with seeds (conifers) Capsule (cottonwood) Legume (black locust) Compound fruits with small druplets (cospherry)

Bulb [lilies]

Tuber (potato)



You can make pressed leaves fast by froning fall or partially dried leaves.



Trum around the contours to create the leaf kaleidoscope.¹ Add string and hang in a bright sunny window.