Basic Tree/Leaf ID

Grades 3-4 (Adapt as Needed)
Prepared by the Lumber Heritage Region Educators

OVERVIEW & PURPOSE

This lesson introduces students to tree identification, focusing on observable characteristics, especially leaves, as a beginner-friendly approach. Students will learn about the 10 major tree attributes used for identification and practice classifying leaves with a simple key. The lesson also highlights the historical uses of different trees. The lesson promotes a connection with nature, and encourages students to recognize the importance of trees in their community. The goal is to inspire stewardship and awareness of the ecological and historical significance of forests/trees.

ACADEMIC STANDARDS

Humans & the Environment

- Identify items used in daily life that come from natural resources.

Science and Technology and Engineering Education

- Explain how technology extends human abilities to identify, explain, and analyze characteristics of organisms.
- Describe characteristics of living things.

History

- Understand the importance of historical contributions to Pennsylvania, including natural resource use.

OBJECTIVES

1. Identify 10 major tree attributes useful for identification.
2. Focus on leaves as a starting point for tree ID.
3. Explore the historical and modern uses of selected tree species.
4. Apply observation skills to classify leaves using a simple key.

MATERIALS NEEDED

1. Visual chart/display of the **10 major tree attributes** (poster, slide, or handout).

2. Basic tree leaf ID guide (laminated or printed) or dichotomous key with corresponding samples.
3. Sample leaves (real, printed, or laminated) showcasing various types (simple vs. compound; broad/flat vs. needle/scale-like). https://docs.google.com/presentation/d/18sr4zzVn4eNG6tyxsQwH7XS90VDglRszZYDJ1Fn7jSQ/edit?usp=sharing
4. Worksheet with a simple tree leaf key for group activity.
5. Magnifying glasses (optional).
6. Visuals or small objects representing tree uses (e.g., a maple syrup bottle, oak wood sample, pinecones, clothespins, matches, sports equipment, leather).

SUPPLEMENTAL RESOURCES - Tree ID guides / quizzes / games / videos -

https://www.envirothonpa.org/wp-content/uploads/2018/11/1-6_Key-to-Some-Common-Trees-of-PA.pdf
https://studio.learn.extension.psu.edu/asset-v1:PSUExtension+RNR_FOR101+SalesforceID+type@asset+block/Tree_Identification_Key_for_Understanding_Forest_Ecosystems.pdf

ACTIVITY/ASSESSMENT

1. Introduction (5 minutes)

Begin by asking students if there are different kinds of trees, and if so, how can they tell the difference between them?
Introduce the 10 major tree attributes:
Leaves, flowers, fruits, bark, twigs, smells, tastes, tree size, tree shape, and tree location.

Discuss:
"Some parts, like leaves, fruits, and flowers, are seasonal and only useful at certain times of the year."
Highlight bark as a forester's year-round main identification method.
Leaves are a great starting point for beginners.

2. Focus on Leaves and Tree Uses (15 minutes)

Teach key concepts:
Broad/Flat vs. Needle or Scale-like Leaves: Compare examples
Simple vs. Compound Leaves: Show examples and explain differences.
Margins (edges - serrated vs lobed) and Leaf Arrangements (whorls, alternate, opposite).
All trees have many uses - we will talk about popular uses but most can be used for similar products with varying results. For example, baseball bats and instruments like guitars will vary in performance/sound depending on wood-type used.
Most hardwoods (deciduous) are popular choices for furniture, cabinets, and flooring.
Most softwoods (coniferous) are the most popular choices for paper/pulp production.

Highlight selected species and their uses:
Maple: Leaves for ID; uses - baseball bats, furniture, syrup production (historical and modern).
Oak: Leaves for ID; furniture and flooring.
Cherry: Leaves for ID: furniture and flooring
Hemlock: Needles for ID; paper/pulp and used historically in leather tanning.
White Pine: Needles for ID; wood in construction and paper/pulp.
Black Walnut: Leaves for ID; wood in furniture and flooring, edible walnuts/
Black Birch: Leaves for ID (twigs if available-scent/flavor); essential oils, flavoring
Others as desired - there are many native and non-native trees & uses in PA to explore.

3. Group Activity: Using the Leaf Key (15 minutes)

Divide students into small groups. Provide each group with:

A worksheet with a simple tree leaf key **and** leaf samples (or pictures).

Guide students as they work together to identify each leaf sample.
Encourage discussion about the uses of each tree they identify.

4. Wrap-Up and Reflection (5-10 minutes)

Review the answers as a class, celebrating correct matches.

Discuss: “Do you think it is important for people to understand different trees? Why or why not?”
Highlight how forests and trees have shaped every-day life.
Optional: Challenge students to find a tree near their home or school and try identifying it using leaves or bark.

Extension:

Take it Outside! Explore different trees on a class nature walk and be sure to note all of the items spotted that come from trees. Collect fallen leaves to examine.

Art in Nature! Using collected leaves/needles allow students to use crayons and paper to create leaf rubs or use paint to make leaf prints (could be used on T-shirts). Examples:
https://www.youtube.com/watch?v=uTjlPPjEIG0
https://www.youtube.com/watch?v=W66TAqCT4hc
https://www.youtube.com/watch?v=lEXIEqI9T6o

Simple Dichotomous Key for Tree Identification (3rd-6th Grade)

Step 1: Look at the leaves.

- If the leaves are **needle-like** or **scale-like**, go to Step 2.
- If the leaves are **broad and flat**, go to Step 3.

Step 2: Examine the needle-like or scale-like leaves.

- If the leaves are **scale-like**, it's an **Eastern Redcedar**.
- If the leaves are **needle-like**, go to Step 4.

Step 3: Look at the leaf arrangement (broad and flat leaves).

- If the leaves are **opposite**, go to Step 5.
- If the leaves are **alternate**, go to Step 6.

Step 4: Examine the needles.

- If the needles are **short, soft, and grow in flat sprays**, it's an **Eastern Hemlock**.
- If the needles are **long, in bundles of 5**, it's a **White Pine**.

Step 5: Examine the opposite leaves.

- If the leaves are **lobed**, it's a **Maple** (e.g., Sugar Maple or Red Maple).
- If the leaves are **not lobed and oval-shaped**, it's a **Dogwood**.

Step 6: Look at the alternate leaves.

- If the leaves are **compound** (multiple leaflets on one stem), go to Step 7.
- If the leaves are **simple** (one leaf per stem), go to Step 8.

Step 7: Examine the compound leaves.

- If the leaflets are **large and hairy**, it's a **Black Walnut**.

Step 8: Examine the simple leaves.

- If the leaves are **lobed**, go to Step 9.
- If the leaves are **not lobed**, it's a **Black Cherry**.

Step 9: Look at the lobes.

- If the lobes are **rounded or pointed,** go to Step 10.
- If the leaves are **squared or notched** at the top, it's a **Tulip Poplar**.

Step 10: Look at the lobes.

- If the lobes are **rounded,** it's a **White Oak group.**
- If the lobes are **pointed**, it's a **Red Oak group.**