



Be a Tree Detective

How to Identify Trees

The learner will use their senses to explore a tree by looking for specific indicators of the tree's identity. They will take note of the tree's **habitat** and the overall shape of the tree. Then they will explore parts of the tree, including bark, leaves or needles, flowers, fruits, **seed pods** and cones. They will collect information about their tree by taking pictures or sketching items. They may also choose to collect tree parts that are on the ground (not from the living tree) such as nuts, leaves, or flowers. The learner will learn how to use a field guide to identify their tree.



Needles



Scales



Leaves

Purpose

The learners will become tree detectives looking for clues to a tree's identity. Trees provide all kinds of clues, such as their overall shape, their bark, leaves or needles, flowers, fruits and seeds, and leaf buds. Their location can also be a clue. The learner will pick a mystery tree and use their detective skills to gather clues. Using **deductive reasoning**, they will solve the mystery of their tree's identity! It may only take one or two clues to identify a tree, or it may take many. Sometimes, you may need to conduct additional investigations to solve a puzzling one. The identity is in the details!

Time

1 hour

Materials

- Tree identification guide for trees in your region
- (Optional) An age-appropriate book that introduces detective skills
- A detective kit, which may include:
 - Magnifying glass
 - Sketchbook and colored pencils
 - Camera or phone for taking pictures
 - Evidence collection bag
- “My Tree Clues” worksheet (included below)

Safety Tips

- Appropriate footwear is essential when walking through natural areas.
- Younger learners should always be accompanied by an adult when collecting clues.
- Make sure your tree is safe to explore, meaning there are no poisonous plants or stinging insects present.
- If the learner wants to collect items from their tree, please only take items that have fallen off the tree, not parts of the live tree.



Smooth bark



Furrowed bark



Warty bark

What to Do

1. Begin with a detective story, if you wish. You may also choose to explore your tree guide. Take note of the words used to describe the tree features in the guide.
2. The learners can pick a tree to find the identity of individually or with a group.
3. They will begin by observing the area around the tree. Trees grow in habitats where they can thrive. Is it in the woods or in an open area? Is it in or near water? Does the tree look healthy?
4. Look at the tree. The learner may take pictures of these components, sketch them, or collect them if they have fallen off the tree.

- a. **Size and shape:** From a distance, is it a tall tree or a short one? What is the **canopy** shaped like? Canopies may be broadly spreading or more compact. The tree may look like a familiar shape, like a vase, column, umbrella, or cone.
 - b. **Bark:** What is the texture of the bark? Is it smooth, furrowed, peeling, shiny or warty? What colors do you see on the bark? If you'd like, do a rubbing of the bark by holding a piece of paper against the tree and using the long side of a crayon to make an impression of the bark's pattern.
 - c. **Leaves:** What color are the leaves? What shape are they? Does the tree have broad leaves, needles, scales, or buds? Is the tree **evergreen**, meaning it stays green all year, or **deciduous**, meaning it drops its leaves in the winter? While most trees with needles or scales are evergreen and most trees with broad leaves are deciduous, there are some exceptions. If it is winter and your tree has dropped its leaves, you will need to look at the **leaf buds**. A leaf bud is the part of a tree that will eventually develop into a leaf.
 - i. **For broad leaves:** Are the edges smooth, **toothed**, or **lobed**?
 - ii. **For needles or scales:** It's often helpful to measure the length of needles or scales. If the tree has needles that grow in bunches, how many are in each bunch? Is the needle flat or can you roll it between your fingers?
 - iii. **For leaf buds:** What does the bud look and feel like? Is it pointy or scaly? Are the buds in clusters? What color are they?
 - d. **Leaf arrangement:** Do the leaves come off the branch opposite each other or alternate, or do all the leaves come off the branch at one point?
 - e. **Flowers, fruits, and seeds:** Explore the branches and the surrounding ground for flowers, fruits, and seeds. What shape and color are they?
5. Bring your evidence (pictures, sketches, tree parts) to one place. Use your tree guide to identify your tree. Most guides are split up into sections based on prominent features of trees.
 6. Share your clues with a friend, parent, teacher or counselor and tell them the identity of your tree.



Examples of Seed Pods



Examples of Leaf Buds

Questions for Review

1. What helped you most in figuring out the identity of your tree?
2. What did you learn about your tree?
3. If you could not identify your tree, what further information do you need?

Key Words

Canopy: the branches and leaves of a tree

Conifers: a tree that bears cones and needle-like or scale-like leaves; usually evergreen

Deciduous: a tree that sheds its leaves each year

Deductive reasoning: using facts to come to a conclusion

Evergreens: a plant or tree that has green leaves throughout the year

Furrowed: deep lines or grooves

Leaf buds: a small bump on a tree that will become a leaf

Habitat: the natural home of an animal or plant

Lobed: a curved or rounded part that sticks out

Prominent: noticeable

Scales: small, flat pieces that layer on top on each other

Seed pods: the case that holds the tree's seeds, such as pinecones or nuts

Toothed: having multiple parts that stick out, shaped like teeth or small triangles

Warty: having hard, rough lumps

Extension

There are field guides for many different things found in nature. In addition to trees, learners can explore and identify plants, flowers, rocks, and animals by looking at their individual features.

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My Tree Clues

Find a tree and collect clues that will help you identify the species.

Shape

Sketch or photograph the shape of your tree.

Describe the shape in one word (for example: umbrella, cone, column).

Habitat

Describe where the tree lives. Is it in a forest? A meadow? Is it growing in or near water?

Bark

Sketch, photograph, or do a rubbing of the bark.

Describe the texture in one word (for example: smooth, ridged, papery).

Leaves

Find a leaf to sketch or photograph. Optionally, use a ruler to measure your leaf.

Leaf Arrangement

Circle one:



Flowers, Fruits, and Seeds

Does the tree have flowers, fruits, or seeds (for example: nuts, acorns, pods, cones)? Sketch or photograph what you find.