

Grades 3 & 4/Lesson 1: Student Reading

Telling Trees Apart

In the simplest sense, there are two kinds of trees in the world: conifers, or coniferous trees, and broad-leaf or deciduous trees.



Needles or Broad Leaves

Conifers have seeds that develop inside the cone. Pines, junipers, cedars, and cypress are all examples of conifers in our region. For the most part, conifers also have needle-shaped scaly leaves and they're evergreen. That means they don't lose all their leaves each year but instead stay green year-round.

Deciduous trees such as the California Sycamore, Crape Myrtle, Cottonwood, and Liquid Amber have broad, flat leaves. They lose all of their leaves each year, usually in the fall.

Some trees, however, aren't typical conifers or deciduous trees. For example, Dawn Redwoods have cones and needles, but lose their leaves every year and therefore are deciduous. Fern Pine trees have needle-shaped leaves and are evergreen but have berries and not cones, and a Coast Live Oak is a broad-leaf tree that's evergreen.



The Shape of Leaves

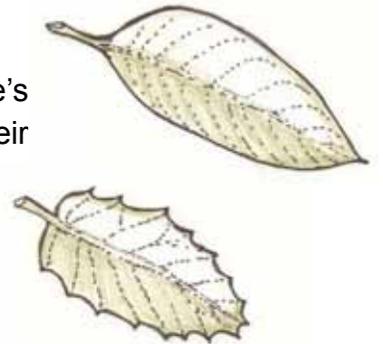
The overall shape of a leaf gives clues to the tree's identity. For example, Eucalyptus have long, slender leaves; Coast Live Oaks have oval-shaped leaves; Cottonwoods have triangular-shaped leaves. The shape of the leaves differ in many ways. For example, the tips of the leaves may be notched, pointed, rounded or tapered. And the bases of the leaves may be squared, rounded or heart-shaped.



Telling Trees Apart, Page 2

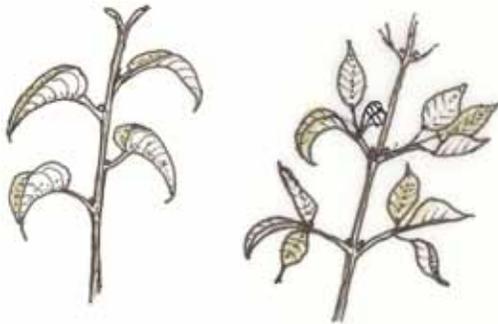
Margins

The edges or margins of leaves can also provide clues to the tree's identity. For example, some leaves have teeth (serrated) along their margins and some leaf margins are smooth. Some leaves are lobed, with several points.



Textures

Some leaves are completely hairy, others have hair on only one side, and others are completely smooth. Leaves may also be thick or thin, rough or waxy.

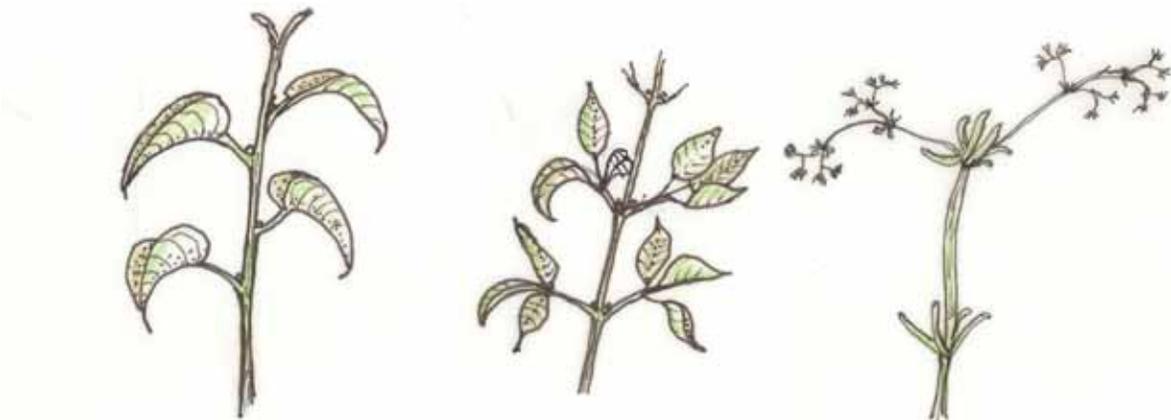


Simple and Compound

When most people think of leaves, they think of simple leaves. Simple leaves connect directly to the branch. Oak, Sycamore, Cottonwood and many other trees have simple leaves. Compound leaves, on the other hand, are made up of several leaflets. Jacaranda, California Pepper, and Chinese Flame trees all have compound leaves.

Leaf Arrangements

Another characteristic to identify a tree is the way its leaves are arranged on the twigs. Many trees have alternate leaves that are staggered along the twig. Other trees have opposite leaves that grow in pairs along the twig. Some leaves grow in whorls, or are whorled. The leaves on pines, and other needle-leaved trees also grow in patterns. For example, leaves on pines may grow in clusters of two, three, or more.



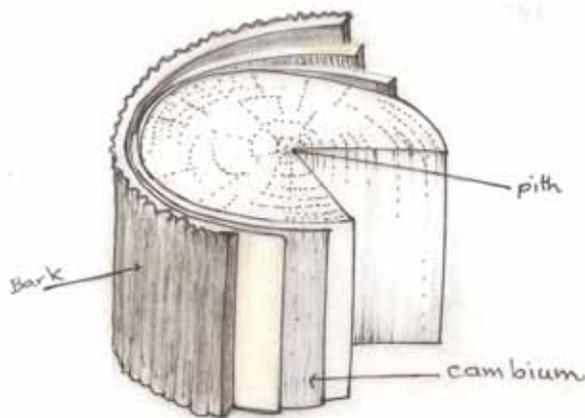
Twiggy Clues

If you know what to look for, even leafless twigs on a tree can tell you the tree's identity. This is especially helpful when identifying deciduous trees in the winter. The locations of the leaf scars or buds are on the twig, indicate whether the leaves grow in an alternate, opposite, or whorled pattern. (Leaf scars are the places on the twigs where leaves used to be attached.) The size, color, and shape of buds can be used to identify trees. Spines and thorns on twigs can also help identify a tree.



Flowers and Fruit

Trees produce flowers that have distinctive shapes and colors. Many trees have only female or male flowers. Different trees produce different kinds of fruit, such as berries, winged seeds, nuts, or pods. Different conifers produce different kinds of cones. The shape, color, texture, size, and other characteristics of the flowers, fruit, and cones can be used to identify trees.



Bark Basics

Many people can identify trees just by looking at the color and texture of tree bark. For instance, bark may be shaggy, smooth, or rough. Bark may have deep furrows or markings. Sycamore is an example of a tree easily identified by its smooth peeling bark that has a “camouflage” pattern. However, when using bark to identify a tree, it's best to look at bark growing on the trunk rather than on branches and twigs (because the bark on branches is thinner and newer, it may look quite different from the trunk). Bark also looks different as a tree gets older.

Shaping Up

Many trees have characteristic shapes that can be used to identify them. In fact, just by glancing at the shape of a distant tree and the color of its leaves, some people can tell what kind of tree it is. ■

Vocabulary

Broad-leaf: a tree with wide leaves, generally deciduous

Conifer: a tree that bears its seed in cones, with needle-shaped leaves that are evergreen

Deciduous: a plant that periodically loses all its leaves, usually over the winter

Decompose: the process of breaking down dead animals and plants

Evergreen: a plant that keeps its leaves year-round

Life cycle: the stages of an organism from birth to death

Sapling: a young, small tree

Seed: grows into a new plant, often with special structures to help it start growing far from the parent plant

Sprout: a plant just starting to break out of the seed, before growing roots



Find a spot in nature you can use for the lessons - either in the schoolyard or in a park nearby with trees or bushes. Check for any hazards. Describe the boundaries of the outdoor area that you will be using for the lessons and explain acceptable and unacceptable behaviors outdoors. Much of the class discussion, etc. can also be done outside.

Note: Worksheets are available for all lessons, though please save paper when possible by having students use journals, notebooks or scratch paper.