

OBSERVATIONS

Branch Out



Oak tree.



Twigs from oak tree showing alternate branching pattern.

Go outside and choose a tree to learn from. All you need are your eyes and your hands. A magnifier or cell phone are options if you want to look more closely.*

Directions

Let's explore a twig—a thin, small branch that is the most recent growth. A twig is a very important part of the tree. It holds the tree's leaves and flowers in the spring and summer. It actively drops the leaves in the fall. It protects next year's growth from cold temperatures and drying winds during the winter.

The pattern of twig growth allows a tree to bend and weave its way through the air in search of sunlight.

Stand under the tree and look up. Can you see a pattern in how the twigs are arranged on larger branches—are they directly opposite each other on the branch? Or do they alternate sides?



Opposite Branching



Alternate Branching

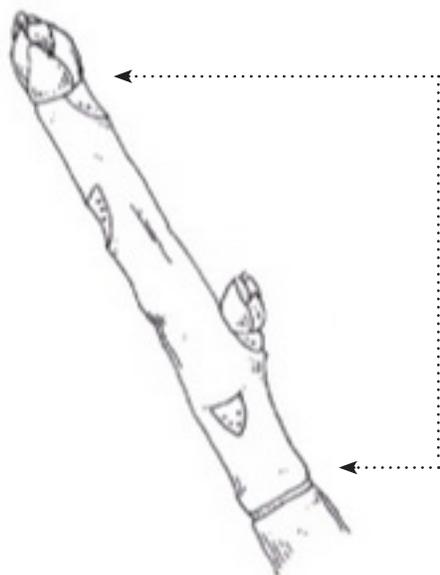
Now, look for a twig that has fallen on the ground—sometimes they are blown off and sometimes squirrels chew them off. If you can't find one on the ground, gently snap or snip one off of a tree.

Look closely at your twig—do you see bumps and lines and tiny holes?

Bumps = buds containing flowers and new leaves or scars where last year's leaves were

Lines going around the twig = the end of growth between years. If you measure the distance between these lines, you'll know how much a branch grew each year. Why do you think the length isn't the same each year?

Holes = where the tree breathes



**Previous
season's
growth**



Twig from ash tree showing new buds and scars where leaves were attached last year.



Twig from oak tree showing ring that marks yearly growth.

If you'd like to learn how to identify trees when they don't have leaves, *The Winter Tree Finder* is a nice resource.

Online PDF

(Hint: the pattern of opposite or alternating twigs is an important piece of information for tree identification).

Books:

These are links to free videos of the books being read aloud. We recommend that you turn off the sound and read the stories to your children in your voice.

[Winter Trees](#)

Carole Gerber and Leslie Evans
(Many of the trees described in this book grow in the Eastern US)

[It Starts With a Seed](#)

Laura Knowles

[Who Will Plant a Tree?](#)

Jerry Pallota and Tom Leanard

*** Using a cell phone as a magnifier.**

Go to 'Settings', and scroll to find 'Accessibility'. Scroll to 'Magnifier' and turn it on. Hold the phone up to whatever you would like to see and activate the magnifier—on iPhones, press the Home button three times; on Android phones, tap anywhere on the screen except the keyboard or navigation bar three times. If you'd like to take a picture, you can use the zoom feature on the camera, but it won't enlarge images as big as the Magnifier feature will. If you would like to use a handheld magnifier instead of a phone, you can contact us at museumed@colorado.edu and we will mail one to you.



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