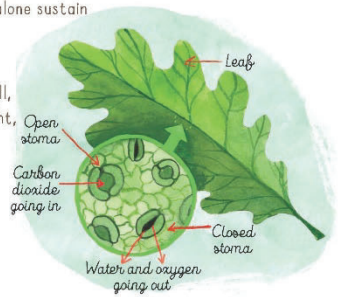
HOORAY FOR THE HUMBLE OAK!

Oak trees are a keystone species, which means that many other species depend on them for survival. In North America, oaks support more forms of life than any other tree family, from microscopic creatures and fungi in the soil and leaf litter to insects, spiders, birds, and a host of mammals. Oaks alone sustain over 950 species of caterpillars nationwide.

IN PRAISE OF THE LEAF

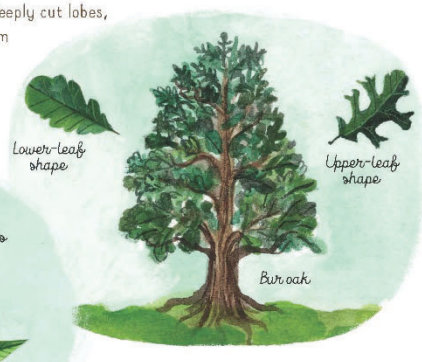
The main job of a leaf is to help make food for a tree. Leaves contain chlorophyll, a pigment that gives them their green color. Chlorophyll helps leaves use sunlight, water, and carbon dioxide to make food (sugar and oxygen) for the tree. This process is called photosynthesis.

Leaves contain stomata, tiny holes to help them breathe. Stomata take in carbon dioxide, and release oxygen and water vapor. To help balance water loss, leaves open and close their stomata.



VARIATIONS ON AN OAK LEAF

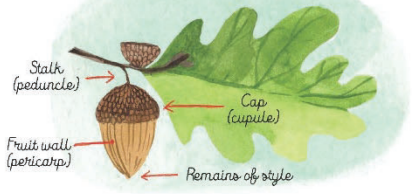
Leaves at the top of a tree receive direct exposure to the sun, so they need less surface area to collect sunlight. As a result, leaves at the top of a tree are smaller and have more deeply cut lobes, which helps prevent overheating. The opposite is true for the bottom of the tree—the leaves have fewer lobes since they require more surface area to collect sunlight due to shade from the upper canopy and branches.



COMMON OAK LEAF SHAPES

ANATOMY OF AN ACORN

Acorns are the fruit of an oak tree. They drop from trees in the fall and are spread by birds and mammals. This is called dispersal. There are two basic acorn shapes: round-shaped, more easily carried by mammals such as chipmunks, squirrels, and deer, and football-shaped, better adapted for a bird's beak.



HOW YOU CAN HELP: OAK TREE REGENERATION

One mature oak tree can help fight climate change by absorbing nearly 50 pounds (22 kilograms) of carbon per year! You can grow an oak from an acorn. Here's how:

Consult Homegrown National Park to find your ecoregion: homegrownnationalpark.org/ecoregion-finder/. Then visit the "North American Keystone Plants" page to find the native oaks in your area: homegrownnationalpark.org/keystone-plants/

In the fall, collect acorns from native oak species in your community.

Native oaks (and other plants) are best because they:

- ensure the health of our ecosystems.
- support a wide variety of animals, plants, fungi, and microorganisms, which create healthy soil, clean air, and food sources for wildlife. More natives means more biodiversity.
- are often harmed or destroyed by invasive, or non-native, species. Non-native species spread rapidly and compete with native species for valuable resources.

Is your acorn from a red oak (leaves with pointed lobes) or a white oak (leaves with rounded lobes)?

If it's a red oak:

- It will sprout in the spring.
- Place your acorn in a plastic bag. Add peat mix or sawdust. Seal and store it in your refrigerator at 40 degrees.
- In the spring, add soil and plant the acorn sideways in a flowerpot. Place it outside in a sunny area.

If it's a white oak:

- It will sprout in the fall.
- Add soil to a flowerpot, and plant your acorn sideways. Store it in a cool place such as a garage or a shed. Water it once a month.
- If you don't have a garage or a shed, place it outside and cover it to protect it from hungry critters.
- In the spring, place it in a sunny spot outside.

Once your acorn seedlings are about twelve inches tall, plant them in your yard, at your school, or in your neighborhood. Oaks grow best together in groves about ten feet apart. Their roots will eventually interlock, which will protect them from damaging winds.

MORE WAYS TO ROOT FOR OAKS

- Collect acorns with your friends, plant them in pots, and give them as holiday or birthday gifts!
- Organize an acorn collection drive at your school.
- Distribute acorns or oak seedlings for planting in your neighborhood—in city and town parks, public gardens, schools, places of worship, local businesses, and more!
- Organize volunteers to collect acorns for your local arboretum or nature conservancy organization and their oak regeneration projects.