



TREES, PLEASE!

BACKGROUND

All living things have basic needs that must be met in order to survive. For the most part, plants and animals need food, air, water, shelter and space to grow and flourish. Trees have specialized parts that help them meet their basic needs. Trees are essential to life on the planet. Among many things, they provide food and shelter for other living organisms, reduce soil erosion, store carbon and produce oxygen, essential for our very survival. Forests are important to our planet and we need to protect them.



CURRICULUM CONNECTIONS

Key concepts include:

- Plants have basic needs, including air, water, light, and space.
- A plant's different parts contribute to its survival.
- Plants and animals (including humans) depend on each other in a variety of ways.
- Plants are important to the planet.
- Humans need to protect plants and their habitats.

The activities below allow students to observe, compare, contrast, classify, record, evaluate, and use various communication skills.

ACTIVITIES

Discussion Starter

Watch ClearWaterKids Challenge – Forest Guardians (3:08)

Ava, Ari and Potato the Chicken try to solve this riddle: What does breathing have to do with a tree? Along the way they look at some of the many ways trees contribute to a healthy environment. Included is a demonstration of how forests help clean pollutants from water, and a challenge to viewers to explore outdoors and get up close and personal with trees.



Pre-viewing Probes

- What trees can you see around you now and/or from the window?
- What do a tree and a human have in common?
- What does breathing have to do with a tree? What do you think the link might be? Let's watch the video to find out.



Post-viewing Prompts

- *Did anything in the video surprise you? What and why?*
- *What do trees have to do with breathing?* (Plants need the carbon dioxide that animals, including humans, breathe out; animals need the oxygen that plants release into the air.)
- *How do trees provide humans and other living organisms with the things we need?* (Trees produce oxygen, food, lumber, pulp for paper; reduce erosion; reduce noise; capture carbon; keep soil moist; release moisture into the air; prevent flooding; provide shelter for wildlife and recreation for people; trees even produce fibre used in some textiles [rayon] and chemicals used in everything from medicine to packing tape.)
- *What do we (humans) need to grow and survive? What do trees need to grow and survive?*

Explore Outdoors

Be a Tree Detective

- Set the stage for outdoor exploration by asking students to close their eyes and picture a tree. Lead them on a tour of their imagined tree by asking questions. For example, is it small or tall, is the trunk smooth or bumpy, are there many branches, are there broadleaves or needles, what colour are they, what shape is the tree?
- Students can look to answer these questions and others as they observe real trees – ideally, in a location with both coniferous and deciduous trees. Their mission as tree detectives is to gather as much information as they can about the trees they explore. Encourage use of all the senses.
- Lead the class from tree to tree (older students may work in pairs or small groups and make notes or drawings) paying attention to similarities and differences.
- Collect a sampling of both broadleaves and needles (as fresh as possible, not dried out) to bring back to class.

Follow-up: Our Discoveries

Back in the classroom, make a list of the information collected by the student detectives about the trees they inspected as a lead-in to discussion about them.

- *What did you notice first?*
- *Did anything surprise you?*
- *How did spending time with the trees make you feel?*
- *Do you have questions about what you saw, heard, smelled, felt?*
- *What are you wondering about?*

Invite students to pretend to be the tree of their choice using feet as roots, legs as trunks, arms as branches, fingers as leaves/needles, and so on. They may like to try balancing with the [yoga tree pose](#).



Compare and Contrast: Deciduous/Coniferous

Make a list of what students know about deciduous and coniferous trees, including what they observed on their tree visit. (For example, deciduous trees have broad, flat leaves that generally change colour and fall in the autumn; some have flowers, fruit or nuts. Coniferous trees usually have leaves that look like needles which they keep all year round; they have woody cones that contain seeds.)

Take a close-up look at the broadleaves and needles collected. Record the differences in texture, size, shape, smell and any other distinguishing features. How could those properties help the tree to survive? (For example, could they help the tree retain more water during a drought, or absorb water, absorb more sunlight, shed snow so branches don't break in winter, or resist attack by insects or other animals?)

Adaptation Investigation

Students can use the leaves collected on their tree visit to demonstrate some of the differences between broadleaves and needles:

What You Need

- An assortment of fresh broadleaves and needles
- Sealable plastic bags

What to Do

- 1 If the broadleaves and needles are wet, pat them dry.
- 2 Put a handful of broadleaves into one sealable bag, and a handful of needles into another. You may wish to weigh the bags to ensure that the mass of each group of leaves is equal.
- 3 Seal the bags tightly, so moisture cannot escape.
- 4 Place the bags beside a window.
- 5 Make a prediction: Which leaves will release more moisture?
- 6 Wait and observe over several days.

After two or three days, the bag containing broadleaves should show more condensation than the bag of needles. Trees with needles (conifers) are capable of retaining more moisture for longer periods, which helps them survive through cold winters. Trees need water to survive, but when the ground is frozen, water is not easily accessible. Broadleaf trees drop their leaves and go dormant in the winter to wait for the spring when water in the ground is available again. Conifers rely on the moisture retained in their needles to get through winter months.

Take Action



Be a Tree Protector!

Help reinforce students' understanding that all living things are connected and that we play an important role in caring for our shared home.

- *What would the world be like without trees? How different would life be?*
- *What do plants do for us?*
- *Think of ways trees have an impact on us and ways we have an impact on trees.*
- *What can we do to protect trees?*

Plant a Tree

- There are several organizations that can help you source a native tree and advise you about how, when and where to plant it.
- Research ways in which your tree will benefit other living things nearby.
- Name your tree.
- Create a tree-care duty schedule.
- Record questions and observations about your tree as it grows and undergoes seasonal changes.

More to Explore

- **Tree-Home Trek:** Before the trek, students brainstorm a list for animals that make homes in trees (birds, squirrels, wasps, spiders, etc.). They draw an example of each animal on a grid. During the trek, they use their grid to tally and/or draw pictures of the homes they find.
- **Squirrel Mural:** Watch squirrels in action to see how trees help them meet their basic needs (collecting leaves for middens, eating nuts, running up trees to avoid predators, etc.). Students make their own squirrels with speech balloons describing the survival activities they are engaged in, and add them to a classroom tree mural.
- Take a walk in [The Forest](#) on the main page of [clearwaterkids.org](#) to discover some of the plants and animals that make their home among the trees there.
- Look for these theme-related books:
 - *Can You Hear the Trees Talking?* by Peter Wohlleben. Translated by Shelley Tanaka (Greystone Books, 2019)
 - *Deep Roots: How Trees Sustain Our Planet* by Nikki Tate (Orca Book Publishers, 2016)
 - *Nature All Around: Trees* by Pamela Hickman and Carolyn Gavin (Kids Can Press, 2019)
 - *The Wind and the Trees* by Todd Stewart (Owlkids Books, 2021)
 - *Picture a Tree* by Barbara Reid (Scholastic, 2011)
 - [ClearWater Kids Booklist](#) for more great Canadian books on nature and science.
- Visit [Science North](#) for more hands-on, curriculum-linked learning resources and lesson plans.