

Nature at School Pre-lesson Tree Detectives

Learning outcomes:

Join DNR educator Craig Kasmer from Hartwick Pines State Park to learn the basics of tree identification. There are over 14 billion trees in Michigan! We are fortunate to have many different species of trees in a variety of habitats. This 30-minute presentation will meet the following learning outcomes:

- Observe leaves, bark, seeds, and other characteristics of trees to build identification skills.
- Understand the factors that allow a diversity of tree species to occur in Michigan, including soil types, growing seasons, and availability of water.
- Compare growing conditions/limiting factors around the state to understand why different tree species are found in each region.

Background information:

When detectives are faced with a mystery, they use clues to solve their case. The cool seasons we encounter in Michigan add a challenge to identifying deciduous trees after they have lost their leaves for winter. What else can help with identification? Look for clues! Figuring out what kinds of trees are growing around your yard, neighborhood or school can tell us about the ecology of the area.

Trees provide many benefits for people and animals. Many species of wildlife depend on trees for food and shelter. Some birds prefer nesting on the branches or twigs of trees, and other birds look for cavities in hollow trees. Some mammals also use tree cavities for resting or raising their young. There are some trees that have edible parts, but others shouldn't be eaten at all! Some trees seem to have a resistance to insects, while others seem to attract them.

Resources:

[MSU Extension bulletin "Identifying Trees of Michigan"](#)

[DNR:Your state forests](#)

[Science Trek:Your trees](#)

Suggested pre-activity:

[Arbor Day tree ID guide](#)

[National Wildlife Foundation tree activities](#)



Directions for your *DNR Nature at School* virtual program:

1. You will receive a reminder email from SignUp Genius three days prior to your scheduled *DNR Nature at School* program. Please read and follow the directions, so we all can have a successful program.
2. At least one day prior to your lesson, send your instructor the link to your Zoom/Google Meet/Skype/Teams for your lesson time. Starting 10 minutes early with just your instructor is encouraged.

Day of:

3. Make sure students have their sound muted and their cameras on to participate (with thumbs up, number on fingers).
4. If you use the chat feature, we encourage the students to ask their questions there, and the teacher can ask them at the end of the program.
5. See further directions in your SignUp Genius confirmation.



Nature at School NGSS Correlation Tree Detectives

Live from Hartwick Pines State Park: Discover how to observe and identify trees, and why they survive in different habitats.

Guiding question/phenomenon:

What allows trees to thrive in one area, and not in another?

Science and Engineering Practice

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

- Support an argument with evidence, data, or a model.
- Students will understand that plants acquire their material for growth chiefly from air and water.

[Clarification Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.]

Disciplinary Core Idea

LS1.C: Organization for Matter and Energy Flow in Organisms

All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

LS3.B: Variations of Traits

Different organisms vary in how they look and function because they have different inherited information. The environment also affects the traits that an organism develops.

- Students observe and compare various bark, seed, and leaf types.

ESS3.A: Natural Resources

Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)

- Students compare adaptations and limiting factors for different species of trees, and why geographical location matters to their survival.

Cross Cutting Concepts

Systems and Systems Models

A system can be described in terms of its components and their interactions.

- Students understand a tree's role in an ecosystem to provide shelter and food.

Energy and Matter

Matter is transported into, out of, and within systems.

- Students learn about limiting factors for trees.

Patterns

Similarities and differences in patterns can be used to sort and classify natural phenomena.

- Students will use a dichotomous key to recognize differences in tree species.

Recommended grade band(s): PreK through upper elementary

All Nature At School virtual programs have been created to introduce students at any grade level to life and/or earth science core ideas, when used with pre- and post-lesson suggestions.



Nature at School Post-lesson Tree Detectives

Activity wrap-up:

Now that you have the basic tools for identification, can you figure out which trees are in your schoolyard or at home? And now that you may see those trees differently, what are some new things you notice? Are all the leaves or needles the same size; is there evidence of insects chewing on the leaves; and how many branches have no leaves at all? As you can imagine, trees provide excellent opportunities for birds and mammals. In the fall, when the leaves start to drop off the branches, look for bird nests. Some birds' nests are so well hidden that we don't even see them during the spring and summer. We alter our appearance and habits with the changing of the seasons; trees do as well. Take the time to observe a tree near your house and see how it changes with the seasons.

Resources:

[PlantSnap tree ID app](#)

[Seek app by iNaturalist](#)

[Wheels to Woods grants for field trips](#)

iNaturalist



Connect to home:

- Go on a tree walk around your neighborhood. How many different kinds of trees can you find?
- Create a tree journal. You can draw or write about trees or add leaf rubbings to your pages.

Post-lesson activities:

Project Learning Tree - [Learn about forests](#)

Project Learning Tree - [Explore uses of trees](#)

[Discover the Forest activities](#)

Connect with DNR content:

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Visit the [DNR Nature at Home page](#) for educational video series, resources, lessons, virtual tours and more.