



# Nature at School Pre-lesson Falls, Forests and Ferns

## See what your students know:

Use this fun [Kahoot](#) to help the DNR understand what your students know on this topic before the program.



## Learning outcomes:

Join DNR educator Theresa Neal from the Upper Peninsula to explore the natural ecosystems within Tahquamenon Falls State Park. Compare forests, rivers, wetlands, and waterfalls with natural communities near your home. This 30-minute presentation will meet the following learning outcomes:

- Compare and contrast different natural communities.
- Learn how plants and animals are specially adapted to each community.
- Understand why continuous land is important to large animals, such as black bear, moose, and wolves.
- Develop a sense of ownership for your state parks.

## Background information:

Michigan has many different ecosystems with unique plants and animals that have adapted to their environments. By comparing a few of these natural communities, students can learn to recognize the characteristics of each ecosystem, and how human caused fragmentation could impact these communities.

Using Tahquamenon Falls State Park as an example, students will compare communities near their school to the natural communities found in a 50,000-acre continuous land mass.

## Resources:

- [Saving Unique Habitats](#)
- [Which type of explorer are you?](#)
- [Google Earth](#)

## Suggested pre-activity:

- Use Google Earth to find where you live.
  - List three natural communities nearby (forest, river, lake, etc.).
  - List three plants or animals that live in each community listed and why.

## 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 Falls, Forests and Ferns

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## Guiding question/phenomenon:

What is biodiversity?

How is biodiversity important to healthy ecosystems?

### Science and Engineering Practice

#### Planning and Carrying Out Investigations

Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.

- Students will observe different natural communities in the park, and reflect on evidence gleaned from those observations.

#### Engaging in Argument from Evidence

Evaluate the claims, evidence, and reasoning behind currently accepted explanations or solutions to determine the merits of arguments.

- Students will further research habitat management and explain benefits, problems and solutions to those problems that impact human or environmental health.

### Disciplinary Core Idea

#### LS2.C: Ecosystem Dynamics, Functioning, and Resilience

Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health.

- Students will observe, compare and contrast the various natural communities in the park - with real-world examples.

#### LS2.C: Ecosystem Dynamics, Functioning, and Resilience

Moreover, anthropogenic changes (induced by human activity) in the environment — including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change — can disrupt an ecosystem and threaten the survival of some species.

- Students will compare changes and their outcomes in different natural communities in the park.

### Cross Cutting Concepts

#### Patterns

Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations of phenomena.

- Students will learn how and why humans impact Tahquamenon Falls, different ecosystems and natural communities, and reflect on similarities to their local public lands.

#### Systems and Systems Models

Systems may interact with other systems; they may have sub systems and be a part of larger complex systems.

- Students observe and understand the sub systems within Tahquamenon Falls State Park, and what makes them similar and different, and why.

**Recommended grade band(s):** middle school and high school

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 Falls, Forests and Ferns

## See what your students learned:

Use this fun [Kahoot](#) to help the DNR understand what your students know on this topic, after the program. This data helps the DNR create and update free programming for teachers across the state.



## Activity wrap-up:

Michigan is filled with many different ecosystems that support a variety plants and animals. Larger animals often require larger areas of undisturbed land. Human presence (or absence) can dictate where certain plants and animals can live.

Supporting Michigan state parks ensures some areas remain natural with minimum human impact. Providing these spaces is an important part of what the DNR does, and you can help by being a responsible steward and citizen of Michigan.

## Resources:

- [iNaturalist](#)
- [Carnivorous plants video](#)

## Connect to home:

Draw out your backyard (or a friend or family members) and highlight the micro-habitats the yard contains. Who lives in each micro-habitat, and why?

## Post-activities:

- [Habitat fragmentation activity](#)
- Build your students' scientific practice skills by developing, recording and analyzing "Essential Questions" about schoolyard or neighborhood phenomena using the free lessons in [Field Investigations](#).
- Create paper airplane "birds" to fly along migration routes, relying on key habitat to survive in this [Earth Rangers activity](#).



## Connect with DNR content:

For a daily dose of nature, like [MiNatureDNR](#) on Facebook.

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