



Nature at School Pre-lesson Fins, Tails and Scales

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 Wolf Lake State Fish Hatchery educator Shana Ramsey from southwest Michigan to connect with nature and learn about fish, how to identify them and discover how the DNR takes care of fish and fish habitat in Michigan. During our 30-minute lesson we will meet these objectives:

- Comprehend and understand fish community characteristics.
- Describe adaptations that fish species have developed to survive in different habitats.
- Explain the positive impacts of fish management and conservation.
- Understand threats to fisheries in Michigan.

Background information:

Michigan has more than 150 species of fish. Learning about the different fish in Michigan and how they are adapted to different habitats is just one way students can connect to and better understand the importance of conservation and management of all natural resources in Michigan. Fish hatcheries are one tool the DNR uses to raise and release millions of fish every year to create healthy aquatic ecosystems, provide diverse fishing opportunities and support a multi-billion-dollar fishing economy.

In this program, compare how fish have adapted to live in Michigan's lakes, rivers, and streams while fisheries management keeps up with an ever-changing ecosystem.

Resources:

- [Wolf Lake State Fish Hatchery video tour](#)
- [Michigan DNR fish hatcheries](#)
- [Chinook salmon lifestages video](#)

Suggested pre-activity:

- [Least Wanted: Sea Lamprey](#)
Salmon in the Classroom Activity Guide, page 153.

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 Fins, Tails and Scales



Compare how fish adapted to live in Michigan’s lakes, rivers and streams while fisheries management keeps up with an ever-changing ecosystem.

Join DNR educator Shana Ramsey from the Wolf Lake State Fish Hatchery in southwest Michigan to connect with nature and learn about fish, how to identify them and discover how the DNR takes care of fish and fish habitat in Michigan. This 30-minute presentation will meet the following learning outcomes.

- Describe adaptations that fish species have developed to survive in different habitats.
- Explain the positive impacts of fish management and conservation.
- Understand threats to fisheries in Michigan.
- Comprehend and understand fish community characteristics.

Guiding question/phenomenon:

What adaptations have Michigan fish made to survive in our waters, and why?

Science and Engineering Practice	Disciplinary Core Idea	Cross Cutting Concepts
<p>Engaging in Argument from Evidence</p> <p>Construct an argument with evidence, data, and/or a model.</p> <ul style="list-style-type: none"> • Students will discuss, predict and defend those predictions in the “Least Wanted” pre-activity. 	<p>LSI.A: Structure and Function</p> <p>Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior and reproduction.</p> <ul style="list-style-type: none"> • Students will learn fish anatomy, physiology and how and why fish have certain adaptations. 	<p>Systems and System Models</p> <p>A system can be described in terms of its components and their interactions.</p> <ul style="list-style-type: none"> • Students learn and reflect on the role of fish in Michigan’s waters. Pre- and post lesson include population modeling.
<p>Planning and Carrying Out Investigations</p> <p>Select appropriate tools to collect, record, analyze and evaluate data.</p> <ul style="list-style-type: none"> • At a local waterway students will conduct a field investigation, “Gone Fishin’.” 	<p>LSI.B Growth and Development of Organisms</p> <p>Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.</p> <ul style="list-style-type: none"> • Students will study the lifecycle of Michigan fish, and determine what factors influence survival. 	<p>Cause and Effect</p> <p>Relationship can be classified as causal or correlational and correlation does not necessarily imply causation.</p> <ul style="list-style-type: none"> • Students will learn the relationship between native and invasive species and human impacts to that system for solutions and causation.

Recommended grade band(s): upper elementary and middle 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 Fins, Tails and Scales

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's lakes, rivers and streams are home to a wide variety of fish. By learning about fish, where fish live and why they live there, as well as how the DNR works to protect fish and all natural resources, we gain a better understanding of animal adaptations, diverse aquatic habitats and conservation in Michigan.

In addition, there are many factors that impact fish, such as human activities and invasive species. Understanding the role individuals play in helping to protect fish and where they live can foster a greater appreciation of the natural world.

Connect to home:

[Gone Fishin'](#): Go fishing to conduct a field investigation about local fish species and habitats.

Post-activities:

From the [Salmon in the Classroom Activity Guide](#):

- Fish Finder (page 73)
Students will identify different fish of the Great Lakes using a dichotomous key. Students will identify physical characteristics of fish and how they help fish adapt to their environment.
- Pin the Parts on the Salmon (page 81)
Students will be able to identify the different parts of a fish and their function.
- Fashion a Fish (page 85)
Students will classify fish according to shape and coloration. Students will describe adaptations of fish to their environments, describe how adaptations can help survive in their habitats and interpret the importance of adaptation in animals by designing a fish adapted for various aquatic habitats.
- What's in the Water (page 106)
Students will test water quality parameters in a lake, river or stream, and learn what types of fish can survive in a variety of conditions and discover how human activities can impact water quality.

[Fishy Who's Who](#): Research native fish species in your area and write up fish biographies.

Learn about the [Native American relationship with lake sturgeon](#) with the Menominee Tribe.

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