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Minnesota Fish

Minnesota's great diversity of fish species corresponds to the diversity of its aquatic habitats.

What Will the Students Learn?

In 2006, Minnesota was home to 160 fish species. When a variety of living organisms exist in a given area, the area exhibits biodiversity. Students will learn to classify and identify common Minnesota fish species, study and make models of adaptations that enable fish to survive and flourish in Minnesota waters, compare similarities and differences between fish and people, and experience how cultural traditions reflect and influence people's attitudes and ideas about fish.

Chapter Concepts



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Touching Fish!

Lesson 2:1—Fish Sense

Children have a natural curiosity about the world and its inhabitants. They're eager to dive in and discover the wonders connected with the many fish species inhabiting Minnesota's lakes and streams. Students learn *gyotaku*, the Japanese art of fish printing, to look at fish more closely, experience them through touch, and study numerous traits and features. They compare fish senses with their own five senses, and learn how fish use their senses to survive in a watery environment. Knowledge of fish characteristics and behavior also provides for richer angling experiences.

Minnesota Fish

Lesson 2:3—Fish Families

Lesson 2:4—Using a Key for Fish ID

Lesson 2:5—Diving Into Diversity

Lesson 2:6—Adapted for Habitat

Minnesota is home to a diversity of fish species. Why should we learn to identify them? What makes a rainbow trout different from a flathead catfish? Why is a bluegill shaped like a frying pan? How do vertical stripes help a yellow perch survive? The answers to these questions are tied to the relationship between these fishes' key traits and their habitats. Each species has adaptations (body features as well as habits or behavior) suited to its habitat.

Knowledge of fish characteristics helps anglers and observers know where, how, and when to fish for a given species. Correct fish identification also helps anglers follow fishing regulations.

“Without habitat, there is no wildlife.
It's that simple.”

—Wildlife Habitat Canada

Parts, Form, and Function

Lesson 2:1—Fish Sense

Lesson 2:2—Fins: Form and Function

Lesson 2:6—Adapted for Habitat

Form follows function. The shape and position of a body part relates to the function it performs to help the fish survive in its aquatic environment. Students make observations, study parts of fish, make and test predictions, make models, analyze similarities and differences, and learn about some survival strategies that enable various species to survive. With opportunities to become creative and apply what they've learned, students design fish suited to lives as a predator or prey species, or fish suited for lives in a hypothetical aquatic habitat of the future.

Diversity, Classification, and Identification of Minnesota Fish

Lesson 2:3—Fish Families

Lesson 2:4—Using a Key for Fish ID

Lesson 2:5—Diving Into Diversity

Fish identification becomes much easier when you're familiar with physical characteristics, which are the “keys” that unlock fish identities. In most cases, fish can be identified and organized into groups by comparing and contrasting external features. Scientists classify fish into groups to more efficiently study them and to share data. Identification keys, illustrations, descriptions, and classification systems based on physical characteristics are often used to identify plants and animals. When students accomplish the skill of classifying species, they'll probably be able to identify any fish they encounter.

“The value of biodiversity is more than the sum of its parts.”
—Bryan Norton

Fish and Language

Lesson 2:7—Fish Tales

Language is one element that illustrates interconnections in natural and social systems. Stories, both spoken and written, have been used in every culture throughout history to communicate and transmit ideas, emotions, traditions, and information. Minnesota communities have rich histories and cultural diversity. Minnesota native cultures, such as Dakota and Ojibwe, illustrate that storytelling is a vital part of a culture—oral traditions convey knowledge, emotion, and attitudes concerning the natural world. Early European immigrants told tall tales to find relief from the difficulties of their daily lives. Stories are entertaining, too. By comparing and analyzing several fish tales, students will identify perceptions, and philosophies regarding fish. Using what they’ve learned about tall tales, they’ll reveal their own feelings and ideas by writing a fish tale.

Winter Adaptations of Fish

Lesson 2:8—Fish in Winter

Minnesota’s extreme climate produces natural limiting factors that challenge fish survival. How do fish survive Minnesota winters? Cold temperatures, short days, deep snow, and food shortages don’t pose the greatest challenge—the possibility of low levels of oxygen in the water does. In this role-playing activity, students become fish in winter. They discover how ice and snow cover affect oxygen levels in the water, and what this means for Minnesota fish as winter progresses. They also explore some adaptations that help fish survive in winter.



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Test Your Knowledge!

Lesson 2:9—Fish Bowl

Students review fish facts, write questions, and work in teams to play a knowledge bowl game that demonstrates their understanding of Minnesota fish. Fish Bowl questions can also be modified to assess student knowledge of material from other chapters.

The Human Connection

All Lessons

Minnesota’s more than 10,000 lakes and many thousands of miles of streams and rivers provide diverse aquatic habitats for equally diverse fish species. Minnesota’s rich human history has also resulted in a colorful tapestry of diverse human cultures.

Both people and fish depend on biodiversity for survival. Biodiversity enables people and all other species to continually adapt to and survive changing environmental conditions, but everyday human activities cause degradation and loss of productive habitat at ever-increasing rates. Loss of habitat is the single largest threat to biodiversity, both on land and in the water.

With increased awareness, understanding, and appreciation for the diversity of species in our environment, and an understanding of how attitudes and ideas about the natural world are created and reinforced, students begin to develop skills enabling them to consider differing points of view and perspectives, make informed choices and decisions, and analyze environmental issues. To become our future’s active citizens, they’ll need these skills to solve problems, strengthen neighborhoods and communities, ensure that healthy habitats are available to protect biodiversity, and enjoy Minnesota’s natural resources in a sustainable way.