



# Land and Water Adaptations



## Overview

What physical attributes do animals need to live on land and in the water? Students will compare the physical traits of animals using a Venn diagram. Students will identify adaptations of animals that live on the land and in the water.

## Standards/Benchmarks \*

- Use information gained from illustrations and the words in a text to demonstrate understanding of the text. ELA (3.2.7.7)
- Write informative/explanatory texts to examine a topic and convey ideas and information clearly. ELA (3.6.2.2)
- Conduct short research projects that build knowledge about a topic. ELA (3.6.7.7)
- Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. ELA (3.10.2.2)
- Provide evidence to support claims other than saying “Everyone knows that,” or “I just know”, and question such reasons when given by others. Science (3.1.1.1.1)
- Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own investigations. Science (3.1.1.2.1)
- Construct reasonable explanations based on evidence collected from observations or experiments. Science (3.1.1.2.4)
- Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools. Science (3.1.3.2.1)
- Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction. Science (3.4.1.1.1)
- Identify common groups of plants and animals using observable physical characteristics, structures, and behaviors. Science (3.4.1.1.2)

## Background

Animals live in a habitat, where they can utilize their surroundings to survive and reproduce. Many are adapted to live in very specialized habitats. For example, some invertebrates live only underground in caves, never coming to the surface. Many animals and especially people are capable of living in a broad range of habitats from the extreme cold of the Arctic Circle to the hot and humid areas around the equator. Most of the Earth is covered by water, so many creatures are adapted to life in water, but not out of water. Likewise, creatures adapted for living on land or in the air are normally not capable of living in or on the water.

There is a special subset of different kinds of creatures that have specialized adaptations for living on land or water and the interface where

## Time:

60 minutes

## Skills:

Critical thinking  
Observing  
Interpreting  
Drawing conclusions  
Writing  
Drawing

## Vocabulary:

adaptations  
habitat  
Venn diagram

## Materials Needed:

- chart paper
- *Minnesota Weatherguide Environment™ Calendar*
- paper
- markers/colored pencils
- pencil

they meet, wetlands. Amphibians such as frogs and salamanders should immediately come to mind—they are named for being amphibious or living a “double life,” and their adaptations truly reflect living in mixed habitats. Many snakes forage in the water or along water's edge and almost all snakes can swim considerable distances. Some mammals that frequent Minnesota wetlands and streams are river otters, beavers and muskrats. Many birds are adapted to living on water and land, but they also have the ability to fly so technically they can live in all three realms. This could become another part of your Venn diagram.

## The Activity

### Warm Up

1. Look through the *Minnesota Weatherguide Environment™ Calendar* for birds, animals, and fish. Start a list on chart paper of the animals found in the *calendar*. Outdated editions of the *Minnesota Weatherguide Environment™ Calendar* and other resources provide a larger selection with more variety.
2. Discuss where the animals, birds, and fish live. Explain that this is called a habitat. Next to the animal, write the habitat that the animal lives in. Animals include birds, fish, reptiles, amphibians, mammals, insects and spiders.

### Activity

1. Introduce a Venn diagram by making an example on chart paper. Review that it's a graphic organizer to compare different things. It shows the differences in the outer sections and also shows the similarities in the intersecting space. Show a Venn diagram.
2. Label the two sections of the Venn diagram Water and Land. As a class, place the animals from the list in the correct sections. Encourage the students to share any examples of animals that were not on the list that they can accurately place in the Venn diagram.
3. Focus on the section of the Venn diagram that shares qualities of living on water and land. Discuss the attributes that help these animals live on land and in the water. If needed, look at the pictures to encourage possible answers.
4. Generate a list of answers such as webbed feet, feathers, wings, long bills, etc.

## Wrap Up & Assessment

1. Have the students select one of the animals in the center of the Venn diagram to draw and label the attributes that help it live in a water habitat and also on land.
2. Encourage the students to color accurately using the picture from the calendar or from other resources.
3. Students should write a paragraph describing the animal's physical characteristics that allow it to live in water and on land.
4. Display the student pictures on a bulletin board.

## Questions for Discussion

- What allows different animals to live on land and in the water? Physical adaptations such as webbed feet.
- Can all animals live in both water and land habitats? Only if they have physical characteristics that help them survive in both habitats.

## Extensions

- If possible, go outside to a pond or river and observe animals using their adaptations to live in a water habitat.
- Have the students create their own animal that has a variety of adaptations that allow it to live on land and in the water. Students can draw a picture and write about their creation.

## Resources

Minnesota Weatherguide Environment™ Calendar

## \* Minnesota Academic Standards

### Standards Met

Subject	Code	Standard	Benchmark
ELA	3.2.7.7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.	Use information gained from illustrations (e.g., maps, photographs) and the words in text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
	3.6.2.2	Write informative/explanatory texts to convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
	3.6.7.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	Conduct short research projects that build knowledge about a topic.
	3.10.2.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. e. Use conventional spelling for high-frequency and other studied words. f. Use spelling pattern and generalizations in writing words. g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.
Science	3.1.1.1.1	Scientists work as individuals and in groups, emphasizing evidence, open communication and skepticism.	Provide evidence to support claims other than saying “Everyone knows that,” or “I just know”, and question such reasons when given by others.
	3.1.1.2.1	Scientific inquiry is a set of interrelated processes incorporating multiple approaches that are used to pose questions about the natural world and investigate phenomena.	Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one’s own investigations.
	3.1.1.2.4	Scientific inquiry is a set of interrelated processes incorporating multiple approaches that are used to pose questions about the natural world and investigate phenomena.	Construct reasonable explanations based on evidence collected from observations or experiments.
	3.1.3.2.1	Men and women throughout history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry.	Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools.
	3.4.1.1.1	Living things are diverse with many different characteristics that enable them to grow, reproduce, and survive.	Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction.
	3.4.1.1.2	Living things are diverse with many different characteristics that enable them to grow, reproduce, and survive.	Identify common groups of plants and animals using observable physical characteristics, structures, and behaviors.