6th Grade-The Water Cycle's Role in Creating Habitats

Teacher Guide

Goal: Students will analyze how the water cycle plays an important role in creating the habitats in which animals live and how animals are adapted to live in those environments.

GSE Connections: S6E3: Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.

NGSS Connection: MS-ESS2-4.: Develop a model to describe the cycling of water through Earth's systems, driven by energy from the sun and the force of gravity.

Background Information: The water cycle is the process by which water moves through various stages and locations on the Earth. From rain, to puddles, water vapor and clouds, each stage of water plays an important role in many ecosystems.

Rainforests are characterized by the amount of rainfall, as well as the amount of water vapor, or humidity. This combination allows for very specific wildlife to thrive, where others would not. Deserts are known for their lack of precipitation; however, even the lack of water is important to the animals and plants that are specially adapted to live in an absence of large quantities of water.

In many places, the amount of rainfall and moisture in the air depends on the season. Elephants migrate great distances to find water during the dry season. Along their way, they serve as keystone species, planting new vegetation each time they poop! In the springtime, many amphibians take advantage of the seasonal puddles that occur due to heavy rainfall. Spring is the time of year that many amphibians reproduce. If not for these seasonal puddles of water, many amphibians would not be able to reproduce.

Vocabulary	
Precipitation: rain, hail, sleet and snow	**Humidity:** water vapor in the air
Seasonal Water: water that shows up in the springtime. An example is a puddle of water that is only available for a few weeks or months.	**Migration:** seasonal movement of animals from one region to another

Activity: While in the Zoo, students will identify animals that live in various types of ecosystems and the ways the water cycle is important to their life cycles. Students will use the attached Explore sheet to identify how the animals' adaptations allow them to survive during various stages of the water cycle in their native habitats.

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Student Explore Sheet

The water cycle plays an important role in the life cycles of animals. As you explore the Zoo, think about how water impacts the animals that you are observing.

African Savanna

Animals of the African savanna are specially adapted to live in areas that have a rainy season and a dry season. During the dry season, there is little rain, and animals may need to travel long distances to find water.

Check out the animals of Zoo Atlanta's African Savanna. In the chart below, write down some of the adaptations they have that help them travel long distances to find food and water.

Animal	What physical features(adaptations) help this animal travel long distances to find water?	What adaptations help this animal eat as it travels to find water?
African elephant		
Zebras		
Giraffes		

Scaly, Slimy, Spectacular!

Scaly Slimy Spectacular is home to a variety of reptiles and amphibians. As you explore this habitat, complete the charts below.

Desert Habitats

Many reptiles in Scaly Slimy Spectacular are adapted to live in desert environments. A desert is an area which receives very little rainfall. Find two reptiles that are adapted to live in desert environments and complete the chart below.

List Desert Animal	What physical features (adaptations) allow this animal to survive with little water?

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Rainforest

Also in Scaly Slimy Spectacular are a variety of amphibians. Amphibians can breathe through their skin. When they are born, they start out as eggs that must be in the water. As they undergo metamorphosis and change into their adult form, they can leave the water, but need to stay moist.

Find two animals that are adapted to live in moist environments and use their information to complete the chart below.

Animal	***How does this animal stay moist and damp, even when it is not in the water?***	***What other special adaptations does this animal have that enable it to live in moist, damp habitats?***

Pick a habitat from your visit to the Zoo today. Use the space below to sketch the habitat and answer the questions.

1. Describe the habitat in terms of water. Is there a lot of rain, little rain, no rain, lots of humidity, etc.

2. How is this animal adapted to live in this environment?