



Activity 1

Can You Explain?



Have you ever seen a desert lizard like this one? This starred agama keeps cool by finding shade during a hot sunny day. Many animals have special ways to keep cool in the hot desert. How do different types of animals adapt to hot, dry climates?

How do different types of animals and plants adapt to survive extreme climates?



Life Skills

I can share ideas I am not yet sure about.



Activity 2

Ask Questions Like a Scientist

Penguin

Climate is one reason many organisms adapt over generations. An animal you may not know a lot about is the penguin. Penguins in Antarctica live in a polar climate that is one of the coldest places on Earth. **Use** the text, then, **answer** the questions that follow.

Have you ever held ice in your hand? How long do you think you could stand on a sheet of ice in bare feet? You would lose feeling in your toes after only two minutes. Amazingly, a penguin has no feathers on its feet, but it can stand around on ice all day. This is important because, unlike most birds, penguins cannot fly. So why don't a penguin's feet freeze?



In addition to other features, such as dense feathers and a thick layer of fat, the way blood moves through a penguin's feet keeps their entire body warm. Blood vessels bring cold blood up from the feet. Other blood vessels bring warm blood down to the feet from the feather-coated body. These vessels weave around each other. Where they touch, the warm blood vessels can then heat up the cold blood vessels. This means the blood traveling up into the body is not cold, and blood flowing down to the toes is warm enough to keep their toes from freezing.

Your Ideas

How do penguins' feet help them survive in cold climates? and give other example of animals that live in different cold environment.



Talk Together The big ears on a fennec fox help it stay cool. The path of blood vessels in a penguin help its feet stay warm. How are these adaptations similar? How are they different?

Life Skills I can ask questions to clarify.



Activity 3

Observe Like a Scientist

Adaptations for Survival

Scientists ask a lot of questions. When scientists learn something new, new questions come to mind. **Read** the text about another type of adaptation that helps animals survive. Then, **write** two questions you have.

Adaptations for Survival

Adaptations are characteristics that help living organisms survive and **reproduce** in the **ecosystem** in which they live. For example, thick, white fur is an adaptation in polar bears. It helps them stay warm in their cold, Arctic home. It also helps polar bears blend in with the snow as they sneak up on their prey.



In contrast, many bears that live in other habitats have darker fur. Brown bears and black bears live in forests. Their dark fur helps them stay hidden among the trees as they hunt. Sandy-colored fur helps desert animals, such as caracals and fennec foxes, blend in with desert landscapes. Rocks in the desert can also be quite colorful. Many lizards have colorful scales that make them hard to see among the rocks. This type of adaptation that hides animals from a **predator** or their **prey** is called **camouflage**.

Can the fur on some animals change color with different seasons? What prey do polar bears need to sneak up on? **Write** other questions.

I wonder . . .