

Wizards of Wright

Lesson: Animal Survival

Background Info for Wizards:	Environments change. Sometimes that change happens naturally and sometimes it is caused by human intervention. Whatever the cause, animals need to adapt to keep up with their changing environment. In this lesson, we will learn about adaptation and survival.
Materials:	Bat Migration game boards – enough boards for groups of 4 1 die for each group game marker pieces for everyone 1 piece of colorful cloth for each group 1 baggie of hole punched dots of various colors for each group Stopwatch Group Data Sheet for each group
Lesson Time: 60-75 minutes	Introduction: 10 minutes Guided Lesson #1: 5 minutes Guided Lesson #2: 5 minutes Student Activity #1: 15-20 minutes Guided Lesson #3: 5 minutes Student Activity #2: 15-20 minutes Conclusion: 5-10 minutes
Learning Targets:	Students will discuss some environmental changes and how animals adapt to them. Students will understand the term migration. Students will understand the term camouflage. Students will learn more about how animals survive during everyday issues.
Introduction for Students: 10 minutes	Say to the students: Animals have lived in the wild for millions of years and to do that they have developed adaptations to increase their chances of survival.



Today, we will be learning about survival. Survival is basically the same for all living things on earth. Being able to survive means that you have the specific things needed to live on earth.

Ask the students: What are some things that living things need to survive?

- Answers should include: food, water, shelter, and air. (It might be helpful to write these on the board since they will be referred to often.)

Ask the students: Now I want you to think about animals that live in the wild. Do animals need these same things to survive?

- Do they need food?
- Water?
- Shelter?
- Air?

Of course, they do. But they don't get these things the same way we do.

Discuss for a few moments how animals (in the wild, not our pets) get their food and water. And shelter.

Use these leading questions to further the discussion.

- Do animals go to the grocery store for food?
- Can they safely drink the water from a nearby lake?
- Consider if animals can safely build a shelter without another animal taking it away.
- Consider the pollution humans create that affects the air animals breathe.

Say to the students: Obviously, there are difficulties that sometimes make survival hard for animals. Over time, however, animals can adapt to change.

Ask the students: Can anyone tell me what it means to adapt? Can anyone give me an example of adaptations that animals have had to make?

- An adaptation is when an animal slowly changes its behavior (eating, living, etc...) to keep up with the changes happening around them.
- Animals have adapted by changing where they live and how they hunt. Animal features like long noses, big ears, long necks, beaks, and claws are adaptations.



Guided Lesson #1:

5 minutes

Say to the students: An adaptation is a change that allows the animal to become better suited to its environment. These adaptations can be physical or behavioral.

Let me explain.

A physical adaptation is a physical feature – what it looks like.

- **Ask the students:** Why does a bird have feathers? To help it fly.
- **Ask the students:** Why do bears have fur? To keep them warm in the winter.
- **Ask the students:** Why do arctic marine mammals have blubber? To keep them warm in the icy water.

Camouflage and mimicry are other physical adaptations. These help animals blend in with their environment to avoid predators.

- A lizard's body can change color.
- A praying mantis looks like a leaf.
- Many butterflies blend in with the flowers or trees they land on.

A behavioral adaptation is something an animal does to survive.

Animals do this as a reaction to the changes in their environment.

- Bears, skunks, and snakes will hibernate (go into a deep sleep) during the coldest months of the year.
- Birds, deer, elk, and moose will migrate to warmer climates as the temperature drops.

Say to the students: Today we will learn about a few animal adaptations that have helped animals survive. There have been adaptations that provided food, water, or shelter when it was difficult to find. There have also been adaptations that help protect an animal from predators. As we go through our lesson, think about what this adaptation provides for the animal.

Guided Lesson #2:

5 minutes

Ask students: Can anyone tell me what the word migration means?

- When animals move from one place to another.

Ask students: Why would an animal need to move from one place to another?

- weather or temperature, food, a safe place to have babies

Ask students: Why is migration considered an adaptation?

- Migration is a behavioral adaptation. This behavior evolved to help animals survive.

Bats use a lot of energy flying around and must eat a lot of food, such as insects, for fuel. When cold weather drives insects away, bats



	<p>make a choice. Some will go into hibernation, while others follow the food and migrate to warmer areas.</p>
<p>Student Activity #1: 15-20 minutes</p>	<p>(Students will be working in small groups for this activity. Groups should be 4-5 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this.)</p> <p>Say to the students: Our first game is called The Bat Migration Game. Let's get you the supplies you'll need. Each group needs...</p> <ul style="list-style-type: none">- 1 game board- 1 die- enough marker pieces for everyone playing <p>After each group has what they need, explain that everyone needs to put their game marker pieces on the first square. They should take turns rolling the die, to see who will go first. The person with the highest roll goes first, and then rotates to that person's left.</p> <p>Explain that they will take turns rolling the die, moving their marker, and doing whatever the square they land on says. Remind them that they are adapting to the game just as bats must adapt to their living conditions.</p> <p>As they play, move around the room in case a group needs help.</p> <p>When all groups have finished, collect the equipment. As you are doing this, ask the students to report what they learned about bats and migration, and especially what they learned about how bats adapt to survive.</p>
<p>Guided Lesson #3: 5 minutes</p>	<p>Ask students: We talked about a behavioral adaptation. Now let's talk about a physical adaptation.</p> <p>Have you ever wondered why a turtle has a hard shell? Or why a chameleon changes colors to match its surroundings?</p> <ul style="list-style-type: none">- Listen to a few answers. <p>These are two examples of physical adaptations that animals use for survival and protection, and today we will talk specifically about one of them.</p> <p>Many animals have the same colors as their usual surroundings. This helps them to hide from predators. Snowshoe hares, for example,</p>



	<p>have white fur in winter to blend in with snow. For the rest of the year their fur is brown, to match the ground.</p> <p>Insects known as walking sticks are long, thin, and green or brown. Their color and shape make them look like parts of plants. Some animals, such as cuttlefish, can even change their color and pattern to match their surroundings.</p> <p>Ask students: Who can tell me what the adaptation of blending into your environment so it's harder to be seen is called? - Right. It's called camouflage.</p>
<p>Student Activity #2: 15-20 minutes</p>	<p>(Students will be working in small groups for this activity. Groups should be 3-4 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this.)</p> <ul style="list-style-type: none">- Environment: Each group will be given a piece of colorful cloth.- Prey: Each group needs a baggie of hole punched dots of various colors. <p>Explain to the students:</p> <ul style="list-style-type: none">- They need to spread out their cloth, which will be known as the environment.- Half of the group's members will turn around and face away from the cloth. These students are the birds.- The others will place the dots "insects that the birds will eat" randomly onto the piece of cloth.- I will signal <u>one bird at a time</u> to turn around to get ready to pick up dots. <p>Game Rules:</p> <ul style="list-style-type: none">- They must pick up dots one at time <u>and place them into their other hand.</u>- The first bird gets 45 seconds to pick up dots.- The second bird gets 30 seconds. <p>After each bird has had a turn, the group will help count the dots and pay specific attention to the amounts of each color that they collected. Each bird can fill in their part of the data sheet.</p> <p>Rotate roles so everyone gets the opportunity to be a bird. Make sure the data sheets continue to be filled out.</p>



	<p>When all the data sheets are complete ask students to carefully put all the dots back in the baggies. Collect the baggies and the pieces of cloth.</p> <p>Discuss with the students why this game was a good example of camouflage. Ask them to relate it to predators and prey. Ask them if they noticed if there was a color that was more difficult to find.</p>
<p>Conclusion: 5-10</p>	<p>Review with students what they learned today.</p> <ol style="list-style-type: none"> 1. What do animals need to survive? 2. What are some examples of animal adaptations? 3. Who can tell me the difference between physical and behavioral adaptations? 4. Who can explain what migration is and why it might be important to an animals' survival? 5. Who can explain what camouflage is and why it might be important to an animals' survival?

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