



Animal Adaptations Investigation (K-3)

At a glance

Students explore the Zoo in search of animals that fit certain categories and discover their adaptations.

Time requirement

One Zoo visit of at least 60 minutes

Group size and grades

Any group size, divided into small groups of 10 or fewer students
Grades K-3

Materials

Copies of the investigation worksheet
Copies of the checklist (optional)
Pencils
Clipboards (optional)

Goal

To observe adaptations of animals at the Zoo and collect data to share with others

Objective

Students will be able to name an animal they saw at the Zoo and describe an adaptation it has to help it survive.

Theme

Animals have adaptations to help them survive.

Academic standards

Ohio Science Academic Content Standards (Grade: Indicators)	<p>Life Sciences</p> <ul style="list-style-type: none"> Diversity and Interdependence of Life (K:5) (1:4) (3:2) Characteristics and Structures of Life (1:1,3) (2:1,2,6) <p>Scientific Inquiry</p> <ul style="list-style-type: none"> Doing a Scientific Inquiry (K:5,6) (1:4,9) (2:5,6,9,10) (3:2,5,6) <p>Scientific Ways of Knowing</p> <ul style="list-style-type: none"> Nature of Science (K:2) (1:2) Science and Society (2:4)
Kentucky Core Content—Science	<p>Life Science K-4</p> <ul style="list-style-type: none"> The Characteristics of Organisms (SC-E-3.1.3)
Indiana Science Standards	<p>The Living Environment</p> <ul style="list-style-type: none"> Diversity of Life (K.4.1; K.4.2; 2.4.1) Interdependence of Life (1.4.3)

Background

Each animal and plant species is adapted to live in a specific habitat. A habitat is the place where an animal lives and finds what it needs to survive—food, water, shelter and space. Not all habitats are alike—some are cold and others hot, some are terrestrial and others aquatic, some have a diverse community of living things and others very few kinds of plants and animals. The physical and behavioral characteristics that enable an animal or plant to survive in its habitat are called adaptations.



For example, the elephant's most famous adaptation is certainly its trunk. A formidable body part,

the trunk is comprised of more than 100,000 muscles and has one or two (depending on the species) fingerlike tips. It's how the elephant uses the trunk, its behavior, which truly makes it an indispensable adaptation. For example, this fifth limb has the ability to pick up a huge tree by its trunk or a twig the size of a pencil. The trunk acts as a snorkel to breathe through when under water and as a hose while bathing. The elephant also uses its trunk to bring food and water to its mouth, to trumpet to communicate, to dust its back for protection from the sun and to hold mother's tail for safety.

Without its trunk and the ability to use it, the elephant would have a difficult time obtaining food, water, shelter and space.

Vocabulary

Adaptation—a body part or behavior that helps an animal survive in its habitat

Camouflage—disguise or blending in with the environment.

Habitat—a place where an animal lives

Activity

Getting ready

Make enough copies of the Adaptations Checklist (p.5) for each chaperoned group to have one. If you so choose, make enough copies of the Adaptations Investigation Worksheet (p.7-8) for each student to have one.

Doing the activity

Before coming to the Zoo, let the students know that they will be taking part in an important investigation; that is, with the help of some clues, they will be searching for animals that fit into certain categories. Once they find an animal that fits, they will be challenged to think of some of that animal's adaptations. If you so choose, they will be asked to document their data through drawings or short written descriptions.

Introduce the concept of an adaptation. Have the students try to write their names or tie their shoes without using their thumbs. Explain how the thumb is one of our important adaptations. Without thumbs it would be hard to do many things.

Other animals and plants have adaptations, too. An adaptation is a body part or behavior that helps an animal survive. Body Part + Behavior = Survival. Brainstorm a list of adaptations of different animals.

At the Zoo, give each group's chaperone a copy of the Adaptation Checklist to complete. If possible, share the investigation with the chaperones ahead of time so they can be more familiar with it. If you so choose, give each student a copy of the Adaptations Investigation Worksheet to fill in and a pencil. Clipboards, or pieces of cardboard, can be used as a hard surface.

Wrap-up

Once you've returned to the classroom, have each group share which animals they found during their investigation with the rest of the class and discuss their adaptations.

You may want to ask some questions to facilitate the discussion. For example:

- Did some groups choose different animals from the same hint (i.e., animal that eats plants)?
- Did some groups choose a different adaptation that helps the same animal to survive?
- Perhaps they discovered that these animals each have many different adaptations to help them survive. Discuss multiple adaptations for individual species (For example, birds have wings to fly, and some are also camouflaged, which helps them hide from predators).

Assessment

Assess the student's participation in the group discussion.

Unsatisfactory—Student did not participate in the discussion.

Satisfactory—Student participated in the discussion at a satisfactory level.

Excellent—Student fully participated in the discussion.

Extension

- Students choose one of the animals they observed at the Zoo to research further and draw a picture of or write a report on the animal's adaptations for survival.
- Students can apply the same "investigation" methods to learn about plant adaptations. Have students create their own check list with room to record observations about parts of plants and things that plants do in order to survive. Students can look for plants around the school or at home.
- Have a discussion about why plants are important to the students personally and important to the animals they have been researching or animals in general. Students can make a list of the ways plants are important to people and a list of how plants are important to other animals. These lists can be incorporated into a Venn Diagram.

Animal Adaptations Checklist

Dear Chaperone – Please help your group find animals that fit the following categories. Use the hints, if needed. Discuss the questions during your time at the Zoo. Fill in the blanks and turn in the sheet to the teacher at the end of the trip. Thank you.

- An animal that eats plants _____
Hint:
 - Check out the elephants, gorillas, and manatees
 - What special features, or adaptations, does it have to help it feed on plants?
e.g. (flat, grinding teeth)
- An animal that eats other animals _____
Hint:
 - Check out the lions, polar bears, and wolves
 - What adaptations does it have to help it catch and eat animals?
e.g. (sharp claws, sharp teeth)
- An animal that lives in the trees _____
Hint:
 - Check out the gibbons, red pandas, and macaws
 - What adaptations does it have to help it live and move in the trees?
e.g. (long tail, gripping hands/paws)
- An animal that is in the water _____
Hint:
 - Check out manatees, polar bears, and swans
 - What adaptations does it have to help it move in the water?
e.g. (fins/flippers, tail, webbed feet, streamlined body)
- An animal that lives underground _____
Hint:
 - Check out the naked mole-rats (at World of the Insect)
 - What adaptations does it have to help it move underground?
e.g. (claws/teeth for digging)
- An animal that flies _____
Hint:
 - Check out different birds (at Wings of the World), insect, and bats (at the Nocturnal House)
 - What adaptations does it have to help it fly?
e.g. (feathers, wings, light bones)
- An animal that is camouflaged _____
Hint:
 - Check out the snakes or lizards (at the Reptile House) and cats (at the Cat House)
 - What adaptations does it have to help it camouflage?
e.g. (colors or features that match the background)

Animal Adaptations Investigation Worksheet

Check off each one when you find an animal that fits and then, draw or write about one of its adaptations. Work on your observational skills by counting how many animals you see in the exhibit!



An animal that eats other animals

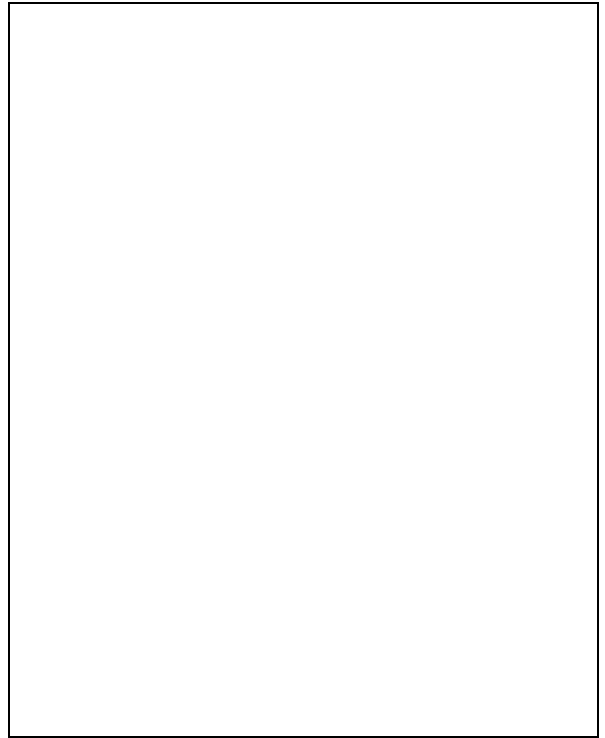
An animal that eats plants

An animal that lives in the trees

An animal that is in the water



An animal that flies



An animal that lives underground



An animal that is camouflaged

