
TEKS 1.10 Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(A) investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats.

Background Knowledge

Animals are living things found in a variety of different environments. They have special external features that help them meet their basic needs in their environment.

Animals living in different environments are structurally different from one another. For example, animals that live in or around water and spend at least part of the time in water, such as frogs and Polar bears, usually have webbed feet or webbing between the toes to help them swim. Land animals usually have hardened hooves to protect the soft parts of their feet from rocks and hard ground. Animals that climb and burrow usually have claws. Animals that fly have wings. Some animals, such as birds, have feathers while other animals have wings covered with skin and fur, such as bats, or with a thin “see-through” skin-like material, such as insects.

Animals also have certain external characteristics to help them feed. Pollinators, such as bees, wasps, and butterflies, have a built-in straw-like tongue to help them drink nectar. Hummingbirds have long narrow beaks to suck nectar from flowers that are long and deep. Other birds have beaks shaped for catching and eating insects or cracking nuts and seeds. Horses and cows have scissor-like front teeth for cutting plant parts and flat back teeth for grinding them. Meat-eating animals, like lions and tigers, have sharp teeth for tearing meat. Since we eat both plants and meat, we have both scissor-like and sharp teeth.

Essential Questions

- How can we match animals with their babies?
(By looking at their features.)
 - What are the external characteristics of animals?
(Body parts, such as legs, fins, or wings, body covering, size, differences in nose, eyes, and ears, etc.)
 - Why are the external features of a fish so different from a bird’s?
(Because a fish needs to be able to survive in water, while a bird needs to be able to survive on land.)
 - What can the features of an animal tell us about where it lives?
(Body parts, which are adaptations for survival, give clues to where and how an animal lives.)
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Sort Us Out

Objectives:

To help students match an animal to its correct living environment.

To investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats.

Materials:

- Charts with sand dunes, trees, water and snow with the headings of "desert", "grassland", "ocean" and "polar regions"
- Animal pictures cut from magazines or other sources

How to Conduct:

- Show the students the charts of different environments.
Ask:
 - How would you describe these areas?
(They are different environments with different climates: desert, grassland, oceans and polar regions.)
 - What do you know about the different animals that live in these areas?
(A penguin lives in the polar regions; a snake lives in the grasslands, etc.)
- Divide the students into groups.
- Instruct students to match the animals given to the environments on the charts after discussing with each other.
- Tell students you want to hear discussions about animals and their characteristics for living in the environments.
- Give each group a set of charts with the different environments.
- Give each group some animal pictures cut from magazines or other sources.
- Students will discuss each animal's external adaptations to its environment, and then place the picture on the respective chart.
- Students present work to the class and discuss any differences among groups.

Extended Activities:

Discuss how a change in environment would affect these animals.

Discuss how a change in external features would affect these animals.

Missing Parts

Objectives:

To help students identify the missing external characteristics of animals.

To investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats.

Materials:

Have pictures of animals with their special external feature missing:

- An elephant without a trunk
- An armadillo without its tongue hanging out, and without claws
- A bird without a beak
- A flying bird without wings
- A fish without fins
- A monkey without a tail
- A penguin without its flippers
- A giraffe without its long neck
- A kangaroo with its hind legs missing

How to Conduct:

- Show an animal with missing features to the class.
 - Model thinking about the animal and what is missing.
 - Model drawing in the missing part.
 - Show a few more of the pictures.
Ask:
 - What do these animals have in common?
(They are all missing a body part)
 - How are these animals different?
(They have different body parts missing, because they live in different environments and have different structures.)
 - Give each student a picture of an animal with its external feature missing.
 - Instruct students to draw and color in the missing part, in order to complete the picture.
 - Students present pictures to the class.
 - Class discusses how this part of the animal helps it survive.
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Living Tools

Objectives:

To help students evaluate what objects and tools are similar to features of animals.
To investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats.

Materials:

- Pictures of animals: crocodile, porcupine, woodpecker, snail
- Pictures or samples of:
 - Chisel
 - Hook
 - Airplane
 - Ball
 - Suction cup hooks
 - Army camouflage material
 - Arrow
 - Strainer
 - Hands
- Journals

How to Conduct:

- First show the image of various objects and ask students what they remind the students of.
- Then show pictures of the animals and ask if the objects remind them of any of these animals.
- Discuss how some objects go with more than one of these animals.
- Place the animal pictures on different chart papers.
- Divide students into groups, and assign a chart to each group.
- Have the student label different parts of the animal bodies as different tools.
- Include a sketch of the object or tool by the animal part.
- Present to the class and then post the charts.

Extended Activity:

Students may use charts to write in science journals.
