3rd Grade - EdZoocational Adventure Guide

Theme: Animal Adaptations – Body Parts

Grade level: 3rd

DESE Standard: 3-LS4-2: Use evidence to construct an explanation for how the variations in characteristics among individuals may provide advantages in surviving, finding mates, and reproducing.

Overview: Animals use a variety of body parts to survive in their environments and to help find mates to produce offspring. For example, bird beaks differ based on the type of food they eat. Woodpeckers have slender, very strong beaks for digging insects out of trees. Ducks have bills with combs along the edge to strain water from their mouths after they catch a fish underwater. Some animals have horns or antlers. They may use them to defend themselves and their families but also to impress other individuals. Foot structure can vary greatly as well. Hooves, paws, toes, and even the absence of feet altogether can be linked with the terrain on which an animal must travel. Tails on an animal can be used for numerous reasons: peacocks impress females, elephants swat away flies, squirrels shade or warm themselves, dogs communicate emotion, and wasps defend themselves.

Activity: Spend a few minutes reviewing the definition of *adaptation*. Discuss how to quietly observe an animal species noting its various body parts. As a group, choose an animal to discuss its body parts and how they help it to survive and thrive within its individual environment. Provide students with the field guide. Explain to the students how to document their observations during their visit to the Little Rock Zoo. Using their observations and the information they find at the various exhibits, students should be able to provide possible reasons for the development of certain body parts.

Activity Extension: Have students focus only on animals from a specific region or habitat type (like rainforest or African savannah). Note and document interesting body parts for animals within this region and discuss how different body parts on various animals help them within the same environment.

3rd Grade Tour Guide

This self-guided tour takes your class along a path to exhibits with animals that have distinctive adaptive body parts. This path does not cover the entirety of the Zoo but is meant to accentuate the lesson narrative.

- As you enter, head to the right. You should see a sign for Penguin Pointe.
- Remind students that calm, quiet guests see more animals. Loud noises send them into hiding, making them harder to find.
- **Penguin Pointe:** Penguins do not have wings like other birds. They have tapered, flattened flippers for swimming. These work like boat paddles, helping them to swim fast and make quick turns to catch fish. Our penguins have colored bands on their flippers so we can tell them apart: boys on the right flipper, and girls on the left flipper. Look for our special girl, Dory, who was born with a curved spine. She moves great and is still able to swim well with her flippers. She doesn't have an identification band because she is easy for our team to spot her within the group.
- **Tropical Bird House:** Bird beaks and bills differ greatly depending on what food the bird eats. The roseate spoonbills can scoop food up from shallow water with their spoon-shaped bill. They eat minnows, small crustaceans, insects, and bits of plants. Pesos is our Catalina macaw. Her beak is large and very strong so she can open the toughest shells of nuts. Her feet are shaped so that she can grasp branches without much effort – look at how she is sitting or moving around her enclosure.
- **Kudu:** Mombo and Fiona are obviously different. Mombo has long, spiral horns and Fiona does not. A male greater kudu's horns can grow up to six feet long and typically make 2 ½ twists. The horns make one complete twist in about two years, so kudu can be aged by the direction that their horn tips are pointed in. They use these horns to spar with other males over the mating rights to a female. Mombo has had surgery on one of his horns so it is a bit shorter than it naturally would be.
- **Cheetahs:** Most of us know that cheetahs are the world's fastest land animal (they run up to 70 mph), but why? Their skeleton was built for speed. A smaller frame gives them a lighter weight skeleton. They also have long leg bones and foot bones which help to propel them forward. They have a unique flexible spine which allows for extreme agility, placing the cat's legs directly underneath its body. They also have hips and shoulder blades which rotate to such an extreme angle that their front and hind legs overlap. Our cheetah boys, Padfoot and Prongs, can usually be found napping together, saving their energy.
- **Rhinoceros:** Our rhino family includes mom Andazi and son Kevin. Their horns are very different from the kudu, and all rhinos are born with them. Their horn is made of keratin, just like our fingernails. Males use them for defense like kudu but they can also use them to dig up water and break branches from trees so they can eat the leaves. Mothers will also use them to help guide their calves.
- **Flamingos:** Flamingo legs are unique and appear to bend backwards. When we look at them, we think that the middle joint is a knee, but it is actually an ankle and heel. Their knees are hidden underneath their lower feathers. This allows them to easily tuck one leg up and stand on the other. Scientists believe this helps them to save heat from escaping both legs as they sleep.
- **Elephants:** Our elephant girls, Babe and Zina, stand and walk for hours a day. Babe (the star) weighs nearly 12,000 pounds and all that weight sits on those four, wide feet. The bones of her foot are positioned so that she is walking on her five toes, like a person wearing high heeled shoes. A large pad of fat is found behind those toes, under the heel, to cushion the weight on them. Elephant feet can even pick up sound and register low frequency rumbles caused by other animals up to 20 miles away. This pad also muffles sound, making their own footsteps almost silent. Their feet get daily checks and care from the keepers.

Name:

Animals and Their Adaptations

Instructions: Use this field journal to explore the ecology of the animal kingdom while on your visit to the Little Rock Zoo. Write or draw animal adaptations that you notice and the importance of those adaptations.

Animal:	Adaptation/Body Part:	Importance:
Penguins 	Flippers 	Swimming, balance, defense, and communication
Roseate Spoonbill 		
Hamerkop 		
Kudu 		
Cheetahs 		
Rhinos 		
Flamingos 		
Elephants 		

Connection: Look around your own neighborhood for animals. Can you find special body parts on them? What about your pets?