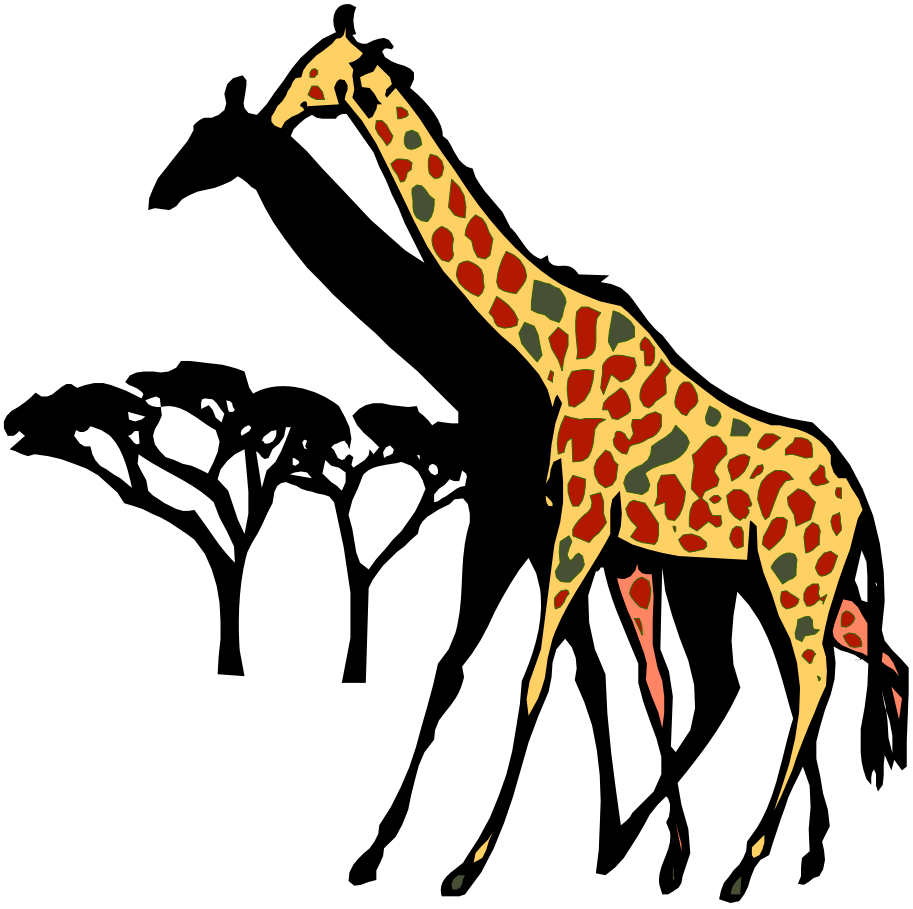
ANIMAL ADAPTAIONS

Scavenger Hunt

GRADES 4th - 5th



Saint Louis Zoo

Animals Always®

Scavenger Hunt

ANIMAL ADAPTAIONS 4th – 5th GRADE

Teacher's Guide

Updated: 2008
APPROXIMATE TIME: 60 Minutes

Suggestions for teachers:

1. Allow your students about 60- 70 minutes for this scavenger hunt. The activities begin at The Living World and take you to different areas of the Saint Louis Zoo Remember, during the colder months there will not be as many animals on display outdoors and there may be fewer birds populating The Bird Garden due to migration.
2. It will be helpful during the scavenger hunt to divide your class into small groups of five or fewer students supervised by an adult. This scavenger hunt is intended to be a cooperative effort of the group. Consequently, it might be wise for the group to decide before beginning the scavenger hunt on which roles individual students will have. For example, all students might complete individual scavenger hunts along the way, or one student might record answers for the group with the understanding that the group will meet for discussion and completion of the individual scavenger hunt packet after visiting each designated area of The Zoo.
3. Because the animals at the Zoo are living creatures with very special needs, some of the animals referred to in this scavenger hunt may not be on public display. Please remind adults/students to do their best to complete the hunt by carefully observing the animals they find.

Library Resources:

-Check out our library resources at http://www.stlzoo.org.

Scavenger Hunt

ANIMAL ADAPTAIONS 4th – 5th GRADE

Answer Key

Because the animals at the Zoo are living creatures with very special needs, at certain times some of the animals referred to in this scavenger hunt may not be on public display. **Please remind your student to do their best to complete the hunt by carefully observing the animals they find and not to worry about any that are off display.** We update our scavenger hunts on an annual basis during the summer months to be able to provide you with the most accurate information about our animals.

APPROXIMATE TIME: 60 MINUTES
UPDATED: 2008

1. c and d
2. b
3. Two adaptations would be camouflage and the method of food selection. Through camouflage the grayish-brown colored feathers allow the Tawny Frogmouth to blend in with its ground-cover surroundings. Although it is a rapid flier and could get its food using flight movement, it is a large-mouthed ground feeder instead, eating mostly ground-living insects, grasshoppers, snails, slugs and mice. Other examples are shown in the chart below.

STRUCTURE	**ADAPTATION**	**FUNCTION**
a. Body Covering	Brown/gray color of feathers	Blends into ground cover
b Mouth	Large mouth with modified	Enables it to catch insects and small animals the size of mice.
c. Eyes	Large in size	Vision is important for hunting and survival
d Neck	Rotates 180 degrees	Compensates for little eye rotation in socket

4. The hornbill takes extreme measures to protect its young. One way is that the female is walled into the nest hole in the tree where the eggs will incubate. Another precautionary measure is that the female must rely entirely on her mate for food until the young are ready to break out of the walled-in nest.
5. a
6. b
7. d
8. Anodorhynchus hyacinthinus / Homo sapiens
9. d
10. c
11. a
12. d

13. d
14. c
15. d.
16. d
17. a and c
18. b
19. c
20. The skink should have an elongated body and long flexible tail. It is sometimes mistaken for a snake.

Summary

The picture should accurately reflect the material covered during the scavenger hunt. Adaptations should include physical and behavioral adaptations.

VOCABULARY

Adaptation--A physical or behavioral change made through species evolution by which an adjustment is made to the environment, surroundings, or other conditions.

Amphibian—A cold-blooded animal that spends part of its life in water and part of its life on land.

Arboreal--Tree dwelling

Bird—A warm-blooded animal that has feathers, two legs, two wings and a beak.

Brachiated—Able to swing by the arms from branch to branch

Diurnal—active during the day

Endangered—close to extinction, in need of protection

Herbivore—An animal that eats only plants

Mammal—A warm-blooded vertebrate that has hair or fur and milk feeds its young.

Nocturnal—Active at night

Omnivore—eats plants and other animals

Prehensile--Able to grasp

Reptile—cold-blooded vertebrate that lives on land and has waterproof scales or plates

Specialized--Changed greatly during the course of evolutionary development and highly developed to a special function in life

Survival--To remain alive or in existence

Torpedo--Cigar-shaped underwater projectile

Territorial--A particular area or region inhabited by an individual or group of animals and defended against intruders

Vulnerable—reduced population in the wild and in need of protection

Library Resources:

-Check out our library resources at http://www.stlzoo.org.

Name _____

Scavenger Hunt
ANIMAL ADAPTAIONS 4th – 5th GRADE
Student's Activity Pages

Over millions of years, many animals species have appeared and become extinct (died out.) The species that have survived adapted to modern conditions. They have evolved (developed over time) in ways that help them find food, escape predators, cope with their environments, and reproduce. These changes are all called **adaptations**.

Some adaptations are **physical characteristics** that you can see, or that involve how an animal's body works. Other adaptations are **behavioral characteristics** and include how an animal acts or what an animal does. Here are some examples of these adaptations:

Physical *Cat whiskers*. Long hairs growing out from the face to increase the sense of touch and help the animal to feel its way around at night.

Frog skin. Thin, moist skin with glands that open externally to secrete toxins.

Behavioral *Antelope herds*. Living in large groups (herds) helps to protect antelope from predators. With more eyes and ears alert to potential danger, predators are less likely to take the antelopes by surprise.

Animals look and act the way they do for a reason. By observing the animal's body structure and its behavior, and by using information from the signs found at each exhibit, you will discover how animals are adapted for their specific lifestyles. You will also bring knowledge from your own past experiences that will help you understand why animals make adaptations for their survival and specific lifestyles.

You will now begin your Animal Adaptations Scavenger Hunt. Be sure that you have a copy of the Saint Louis Zoo Directory and Map.

*Using your map**, locate The Living World and proceed in a southeast direction, around Lakeside Cafe, to the Sea Lion Basin.** *When you arrive, place an X on your map to show the Sea Lion exhibit area. Use information from the adaptation clues on the posted signs in the exhibit areas to help you answer your scavenger hunt questionnaire.*

Sea Lion Basin and Chain of Lakes

1. Sea Lions (*Zalaphus californianus*) have special adaptations for the lives they lead. They have coverings on their eyes to see underwater, they can close their nostrils underwater, and their bodies are shaped like torpedoes so they can move easily through the water. They have a layer of blubber to help them to maintain body _____ and _____.

a. energy
b. weight
c. warmth
d. protection

Continue walking in a southeast direction along the Chain of Lakes on Historic Hill to locate the river otters*. Place an X on the map to show this exhibit area.*

2. River Otters (*Lontra canadensis*) have elongated bodies and short legs that they tuck alongside their bodies when they swim. They have five webbed toes with claws. They spend several hours everyday cleaning their short, dense fur. Why do you think this is important?

a. They need the fur to stay afloat.
b. It is water impermeable and keeps their skin dry.
c. It makes their coat attractive for mating.
d. It covers their ear membrane when they dive.

Now, walk in a northeast intermediate direction proceeding to the Bird House. *Place an X on your map to show your destination.*

Bird House / Bird Garden

3. Find the exhibit of the **Tawny Frogmouth** (*Podargus strigoides*.) Before you read about this bird, find it in its enclosure and describe two adaptations that would help this bird survive in the wild.

Structure	**Adaptation**	**Function**
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

4. The **Trumpeter Hornbills** (*Bycanistes bucinator*) take extreme measures to protect their young. List two of these characteristic behaviors.

a. _____

b. _____

5. Mimicry is an unusual way that some animals protect themselves. They trick their predators into thinking they are a different, bigger or more dangerous animal by making a sound resembling that of another animal, or by using camouflage. Find the **Burrowing Owl** (*Speotyto cunicularia*). What sound does a ***young*** burrowing owl mimic?

a. the sound of a rattlesnake
b. the sound of a raging chicken
c. the sound of stampeding cattle
d. the roar of a lion

6. What action is characteristic of the **Burrowing Owl** when it feels threatened?

a. fly to and hide in a dead bush
b. run into a pre-dug rabbit burrow or prairie dog tunnel
c. flatten itself against the ground rather than fly
d. both (b) and (c)

7. The **White Crested Laughing Thrush** (*Garrulux leocolophus*) has numerous characteristic behaviors. Which listed behavior is **not** a characteristic?

a. makes loud, boisterous calls while prancing on the forest floor
b. flaps wings while making calling sounds
c. moves with almost continuous chattering
d. rests quietly on emergent layer branches

8. The naming system developed by Carolus Linnaeus uses the classification system of organisms. The first part of an organism's name lists the genus and the second part of its name gives its species. The scientific name of the **Hyacinth Macaw** is

_____ _____.

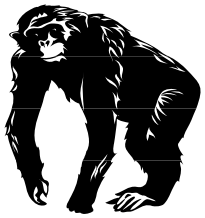
What is the scientific classification of humans?

_____ _____

Exit the Bird House through the front door, turn right and proceed to the Jungle of the Apes. *Place an X on the map to show its location when you arrive.*

Jungle of the Apes / Fragile Forest

9. Orangutans are the only truly *arboreal* (live in trees) "great ape". There is only one species, *Pongo pygmaeus*. They move by brachiation (swinging by their arms) from branch to branch. What is it about their arms that make them especially good at this?



a. the length
b. the fingers can be "fixed" into hooks
c. the thumbs are small
d. all of the above

10. Chimpanzees (Pan troglodytes) have a high developed brain and anatomically are very close to man. They have learned to imitate a number of actions of humans. Which of the following is ***not*** true of chimpanzees?

a. The arms and legs are about the same length.
b. They use their facial expressions to communicate.
c. They rub hair off their face for a cooler body temperature.
d. Usually only one young is born at a time.

11. A disorder is an ailment that affects the function of the mind or body. An adaptation is an adjustment by a species that allows it to improve its condition in relationship to its environment. Observe the hairless chimp. The hairless condition is called alopecia. Is this a disorder or an adaptation?

a. disorder
b. adaptation

Exit the Jungle of the Apes or Fragile Forest. Return to the paved route and travel in a southeast direction to Red Rocks to the Hoofed Mammal Area. *Place an X on your map as you arrive.*

Hoofed Mammal Area

12. How does the white coat of the **Arabian oryx** (*Oryx leucoryx*) make it a desert specialist?

a. It allows reflection of the sun's hot rays and enables them to get water from desert food while going without drinking for long periods of time
b. It makes them valuable bounty for hunters
c. It helps them avoid predators as camouflage
d. a and c

13. What adaptations of the **Arabian Oryx** (*Oryx leucoryx*) help it survive in the desert?

a. Its white coat reflects the heat and keeps it cooler
b. It is able to go for long periods of time without drinking by getting water from the desert succulents it eats
c. It takes flight at the first sight or smell of an enemy
d. All of the above

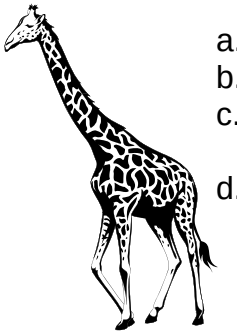
14. The **Okapi** and the L**esser Kudus** have stripes that allow them to camouflage themselves in their habitat. The **Okapi** (*Okapia johnstoni*) lives in the dense rainforests of eastern Zaire. What is the location of the habitat of the **Lesser Kudu** (*Tragelaphus imberbis*)?

a. Midwestern plains of North America
b. Rainforest of South America
c. Rainforest of eastern Zaire in west central Africa
d. none of the above

15. What do **Lesser Kudus** and **Okap**i have in common that helps them hide from their predator?

a. It has stripes on its body or legs
b. They **both** have long, spiral horns
c. They both have the same shape of head, lips and tongue of a giraffe
d. Both a and c

16. The **Reticulated Giraffe** (*Giraffe talleus*) has a long neck helps it survive on the savannahs of Africa by enabling them to graze on leaves of acacia, mimosa, and wild apricot trees. Other hoofed mammals can't reach them. After chewing the food and swallowing it, the giraffe does not immediately digest the food. What happens?



a. It regurgitates the food and leaves it for other animals to eat.
b. It washes it down with water, but does not digest it.
c. It regurgitates the food, selects new leaves to eat and continues the feeding process.
d. It regurgitates the food from the stomach to the mouth to be chewed again as cud.

17. How does the giraffe's long neck make survival on the savannahs of Africa easier? (More than one answer is correct.)

a. They can see and smell their enemies for great distances and take action if necessary.
b. They can be sociable with lions, one of their main enemies.
c. They can graze on the leaves that other hoofed mammals can't reach.
d. They are able to keep their nostrils above any blowing sand.

On your map locate the Primate House. *Travel in a westerly direction and place an X on the map when you reach your destination.*

Primate House

18. The **Colobus Monkeys** (Colobus guereza) have a strictly plant diet and have developed the adaptation of having bacteria in their stomach. What purpose does this have?

a. It dissolves sand and small stones the monkey accidentally swallows.
b. The bacteria assists in digestion of the plants the colobus monkeys eat.
c. It cleans the teeth after the colobus monkeys eat.
d. It does all of the above.

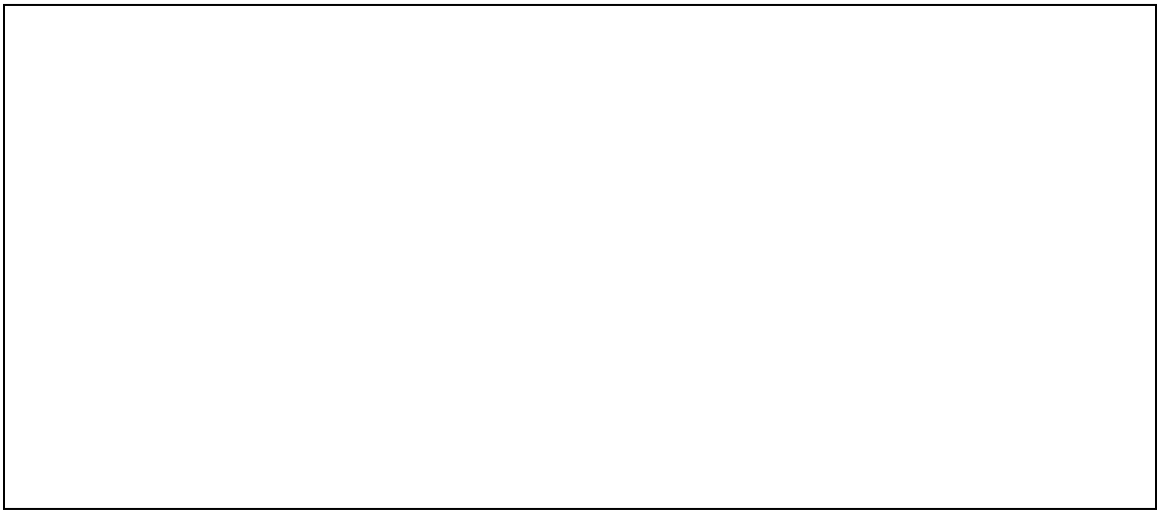
Exit the Primate House. Proceed in a northwesterly direction to your final scavenger hunt site, the Herpetarium. *Locate and mark your destination with an X on the map.*

Herpetarium

19. Find **Henkel's Leaf-tailed Gecko** (*Uroplatus henkeli*). This animal is an excellent example of the use of ……

a. Parenting skills
b. Varied sound vocalizations
c. Camouflage that enables it to reduce its shadow and change its color in imitation of the bark of trees on which it lives.
d. None of the above

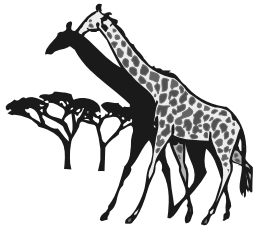
20. Draw a picture of the Solomon Island **Prehensile-tailed Skink** *(Corucia zebrata)* using its primary adaptation?



Scavenger Hunt

ANIMAL ADAPTAIONS 4th – 5th GRADE

Student Summary Activity



DIRECTIONS: *Using at least four of the physical and behavioral adaptations you have encountered on this scavenger hunt, draw an imaginary animal that exemplifies these characteristics. Give your animal a name, then use the naming system developed by Carolus Linnaeus to develop a scientific name. Remember, the first word names the genus and the second names the species.*

Common Name: _____

Scientific Name: _____ _____