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**PITTSBURGH ZOO  
& PPG AQUARIUM**

**African Adventures**

**Table of Contents:**

Resources

- Academic Standards
- Background Information
- Vocabulary
- Related Websites
- Just for Kids

Pre-Visit Activity

- Origin Stories

In-Zoo Activity

- African Adventures Scavenger Hunt

Post-Visit Activity

- Where in the World is the African Savanna?



# African Adventures

## Academic Standards for Environment and Ecology

### 4.3. ENVIRONMENTAL HEALTH

- 4. 3. 4 B Identify how human actions affect environmental resources.
- 4. 3. 4 C Understand that the elements of natural systems are interdependent.

### 4.6. ECOSYSTEMS AND THEIR INTERACTIONS

- 4. 6. 4 A Understand that living things are dependent on non-living things in the environment for survival.

### 4.7. THREATENED, ENDANGERED, AND EXTINCT SPECIES

- 4. 7. 4 A Identify differences in living things that relate to their survival.
- 4. 7. 4 B Know that adaptations are important for survival.

### 4.8. HUMANS AND THE ENVIRONMENT

- 4. 8. 4 C Explain how human activities may change the environment.
- 4. 8. 4 D Know the importance of natural resources in daily life.

## Academic Standards for Science and Technology

### 3.1. BIOLOGICAL SCIENCES

- 3. 1. 4 A Know the similarities and differences of living things (life processes, external characteristics, basic needs).

## Background Information

### WHAT IS THE AFRICAN SAVANNA?

The African savanna is the grassland that stretches between the desert and rainforest areas of Africa. Daily temperatures commonly reach 130°F. There are only two seasons - the rainy season and the dry season. During the dry season, no rain falls. The rivers and waterholes dry up, and food becomes scarce as grasses become dry and parched. Wild fires are common, enriching the soil and releasing seeds for when the rains return. During the rainy season, torrential rains sweep across the plains. Once-dry riverbeds flood and waterholes overflow. The grasses return, lush and green, and food and water are plentiful.

### THE CIRCLE OF LIFE

In this land of extremes, the animals rely on each other for survival. Each living organism has a role to play to ensure that life will continue. It starts with the ultimate source of energy for our planet - the sun. The sun provides heat and light which are used by plants. Plants use sunlight along with water and carbon dioxide to manufacture food. Plants are eaten by herbivores (plant-eaters).

### HERBIVORES

Herbivores provide food for other animals, but each also has its own unique role to play. Elephants are the largest land animal, weighing over 16,000 pounds. They require 300 pounds of food and a bathtub full of water daily to sustain their enormous bulk. During the dry season, elephants dig for underground water sources with their tusks, providing life-giving moisture for all. Giraffes are the lookouts, keeping watch from their 18-foot observation tower. Their long legs and necks allow them to feast on treetop leaves, but they make getting a drink a slow and awkward process. When a giraffe drinks, other animals can feel secure that the coast is clear. Rhinos, the two-ton titans of the savanna, munch contently on grasses. They frequently rub their huge horns against termite mounds. The termites inside are disturbed and burrow into the earth below. This loosens the soil, preparing it to receive grass seeds (already fertilized) which pass through the rhino's body.

### CARNIVORES

Carnivores often strike fear into the hearts of many, but they play a crucial role in the circle of life. The cheetah, the fastest cat in the world, is able to reach speeds of up to 70 miles per hour in pursuit of prey. Because the hunt takes so much out of them, cheetahs, like other predators, will target the slow, the old and the weak animals in the herd. This ensures that the strong will survive to pass on their genes, strengthening the herd. Lions have the distinction of being the only cats to live in groups called prides. It is made up of several males and many females and their young. The males protect the pride's territory, while the females work together to do the hunting. With only eyes and nostrils visible above the water, crocodiles lie in wait in the waterholes and rivers of the savanna. These ambush hunters close their powerful jaws around unsuspecting prey in a lightning-quick strike.

## **OMNIVORES**

Omnivores have the best of both worlds, eating both plants and animals. Ostriches are unable to fly because of dense bones, heavy bodies and small wings. Instead, they are excellent runners reaching speeds of up to 40 miles per hour. As the world's largest birds, they lay the world's largest eggs, roughly equal in volume to two dozen chicken eggs. These are laid in large clutches. They are guarded by brown-feathered females in the daytime and at night by black-feathered males. Hedgehogs, though small, have little to fear. Covered with stiff, sharp spines, they curl up when confronted with danger, making them a prickly package to try to open.

## **SCAVENGERS**

Scavengers are nature's clean-up crew. Nothing goes to waste on the savanna. Leftover kills and dead and dying animals are quickly consumed by scavengers. Vultures circle overhead, marking the location of their meal. Many vultures will gather to eat one carcass, putting their heads inside to pick the bones clean. Because their heads have no feathers to trap the rotting meat, they avoid disease from the bacteria it would harbor. Hyenas also soon gather at the site. Working in a matriarchal pack, hyenas are certainly able to hunt for food on their own and often provide lions with stiff competition. However, it requires much less effort and provides less chance of injury to steal a kill or to eat from dead animals than to hunt, so hyenas are usually found scavenging meals. Their powerful jaws can crack bones, making them one of the few animals that can consume an entire carcass.

## **DECOMPOSERS**

Anything that still remains is broken down by the decomposers. Termites break down dead plant materials. Dung beetles break down animal waste. Fly and other insect larvae take care of any animal remains left by the scavengers. They break these down into nutrients which enrich the soil. The nutrients are used by plants and the circle starts again.

## **WHAT IS OUR PLACE IN THE CIRCLE OF LIFE?**

Human beings are unique among living things because of our ability to reason and make far-reaching changes in our environment. Our place in the circle is to understand and recognize the contributions of each living thing and to ensure that they are there to do their job so that our planet functions as it should. The first and most important step is to educate yourself about the environment. Next, take action. Create a sanctuary for wildlife in your backyard by providing feeders and trimmings from bushes for animal shelter. Plant a tree. Join a conservation organization. Recycle. Turn lights off and furnaces down. Anything you do to better the environment, even small things, helps to keep our place in the circle of life.



## Vocabulary

**Camouflage**- an organism's ability to hide or blend with its surroundings using color, pattern or shape.

**Carnivore** - an animal that eats meat.

**Conservation** - the wise use of natural resources in order to insure continued availability to future generations.

**Decomposer** - an animal that breaks down dead and decaying organic matter.

**Diurnal** - an animal that is mainly active during the daytime.

**Food Chain** - the transfer of energy through an ecosystem from its source, the sun, through a series of plants and animals.

**Ecosystem** - an ecological community together with its environment, functioning as a unit.

**Habitat** - the place an animal lives.

**Herbivore** - an animal that eats only plants.

**Nocturnal** - an animal that is mainly active during the night.

**Omnivore** - an animal that eats both plants and meat.

**Predator** - an animal that kills and eats other animals.

**Prey** - an animal that is hunted or killed for food.

**Savanna** - a flat, tropical or subtropical grassland.

**Scavenger** - an animal that eats dead and decaying animals.

## Related Websites

1. **AfriCam:** [www.africam.co.za/](http://www.africam.co.za/)
2. **African Wildlife Foundation:** [www.awf.org/home.html](http://www.awf.org/home.html)
3. **Yahooligans Directory:** [www.yahooligans.com/Science\\_and\\_Nature/Living\\_Things/Animals/](http://www.yahooligans.com/Science_and_Nature/Living_Things/Animals/)

## Just for Kids!

1. **Infostuff:** [www.infostuff.com/kids/index.html](http://www.infostuff.com/kids/index.html)
2. **KiddoNet:** [www.kiddonet.com/AOL/KidsOnly/aolindex.pl](http://www.kiddonet.com/AOL/KidsOnly/aolindex.pl)
3. **Kratt's Creatures:** [www.pbs.org/kratts/index.shtml](http://www.pbs.org/kratts/index.shtml)
4. **National Wildlife Federation:** [www.nwf.org/kids/](http://www.nwf.org/kids/)
5. **ZooBooks:** [www.zoobooks.com/](http://www.zoobooks.com/)

## Origin Stories

Pre-Visit Activity  
Time: 45 minutes

### **OBJECTIVES:**

- TSW define “origin story”.
- TSW list African animals and their adaptations.
- TSW identify the elements of an origin story.
- TSW create their own origin story.

### **MATERIALS:**

How Giraffe Got Such a Long Neck by Michael Rosen, Just So Stories by Rudyard Kipling, or When Hippo Was Hairy by Nick Greaves (includes animal facts), paper, crayons, markers

### **PROCEDURES:**

#### **ANTICIPATORY SET:**

Read How Giraffe Got Such A Long Neck or one of the stories from the other books. Explain that these are called origin stories.

#### **DEVELOPMENT OF LESSON:**

1. Ask the students what they think “origin” means. Ask them to think about what the story was about. Origin stories tell how something came to be.
2. Have the students brainstorm the elements of an origin story. You may wish to read another story and have the students pick out the parts. Origin stories take place in the distant past, long before recorded history, often include magic or supernatural events, and involve a physical change. This change is often permanent when it was supposed to be temporary, often sudden, irreversible, and passed on to future generations.
3. Have the students name African animals and put them on the board. List some notable adaptations they have.
4. Have the students select an animal with an interesting adaptation for their own origin story. Follow the recipe to write the story. Remind them to limit the story to explain just one thing about that animal (ex., how the giraffe got its long neck). This can be done as a class or in small groups for younger students. You may wish to write one origin story as a class then let the students write their own. Older students can work independently.
5. Illustrate the stories with pictures of the action.

#### **SUMMARY:**

Share the stories. You may wish to publish them as a class collection. Bind them together and create a cover for the book.

## African Adventures Scavenger Hunt

In-Zoo Activity  
Time: 45 minutes

### **OBJECTIVES:**

TSW be able to identify African Savanna animals.

TSW be able to recognize characteristics of African Savanna animals.

### **MATERIALS:**

“Scavenger Hunt” sheet, Savanna picture bank (younger students), pencils or markers, clipboards or hard writing surface, blow-up beachball globe

### **PROCEDURES:**

#### **ANTICIPATORY SET (1 OF 3):**

Before arriving at the zoo, toss the blow-up globe around your classroom for the students to catch. Ask the students to locate Africa on the globe and name one animal that lives there; or the equator; or one of the tropics (Tropics of Cancer or Capricorn). Continue until each student has a turn.

-or-

Before arriving at the zoo, your class may complete the enclosed map activity to prepare the students.

-or-

The zoo class, “African Adventures,” may be taken prior to the scavenger hunt.

#### **DEVELOPMENT OF LESSON:**

1. After passing out the clipboards and pencils, have students pair up. Depending on the age and level of your students, this activity may be completed without partners. Chaperones may be included in this activity, if appropriate.
2. Starting at the West African Dwarf Crocodiles and/or the flamingos, give a guided tour of the animals seen at each exhibit. The graphics will help with this, or use the background information included in this packet. Casually mention in your tour the features on the scavenger hunt the students are searching for. If your class is older or has completed the “African Adventures” class, you can make the “hunt” more challenging by not giving “hints” during your tour.

#### **SUMMARY:**

Discuss the answers with the students at the end of the “hunt,” either in the zoo (at the Plaza, for example) or back at your school.

## African Adventures Scavenger Hunt

### FIND AN ANIMAL THAT:

1. has tusks \_\_\_\_\_
2. is a carnivore \_\_\_\_\_
3. uses its tail like a fly-swatter \_\_\_\_\_
4. is a scavenger \_\_\_\_\_
5. lays the largest egg \_\_\_\_\_
6. is an herbivore \_\_\_\_\_
7. uses camouflage \_\_\_\_\_
8. uses its ears like an air conditioner \_\_\_\_\_
9. has babies 6 feet tall \_\_\_\_\_
10. has horns \_\_\_\_\_

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### Helpful Hints

Teachers: Please include this word bank if the scavenger hunt is too difficult for your students.

*Hint: The animal can be used more than once.*

Ostrich    Rhino    Zebra    Lion    Elephant    Giraffe    Gazelle    Vulture

## Where In the World is the African Savanna?

Post-Activity  
Time: 45 minutes

### **OBJECTIVES:**

TSW understand the 3 three basic habitats in Africa.  
TSW identify African animals in their natural habitat.

### **MATERIALS:**

“Where in the World is the African Savanna?” student page and answer key, crayons,  
blow-up beachball globe

### **PROCEDURES:**

#### **ANTICIPATORY SET:**

Toss the globe around the room and have each student locate Africa on the globe; also locate our continent for comparison. Show a large map and point out Africa, discussing the 2 seasons (dry and rainy).

#### **DEVELOPMENT OF LESSON:**

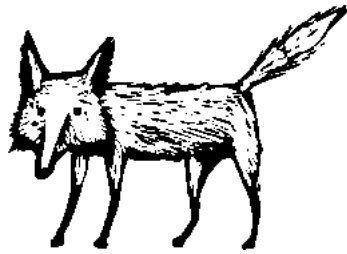
1. Have students color the three habitats using 3 different crayons.
2. Allow students to write the names of the animals in the correct habitat or have them draw a line connecting the animal to the correct habitat.

#### **SUMMARY:**

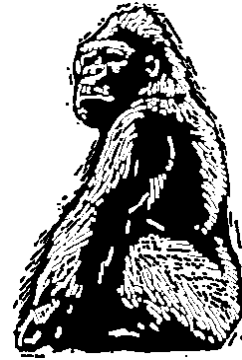
Discussing the activity with students when completed, ask students where the animals belong.



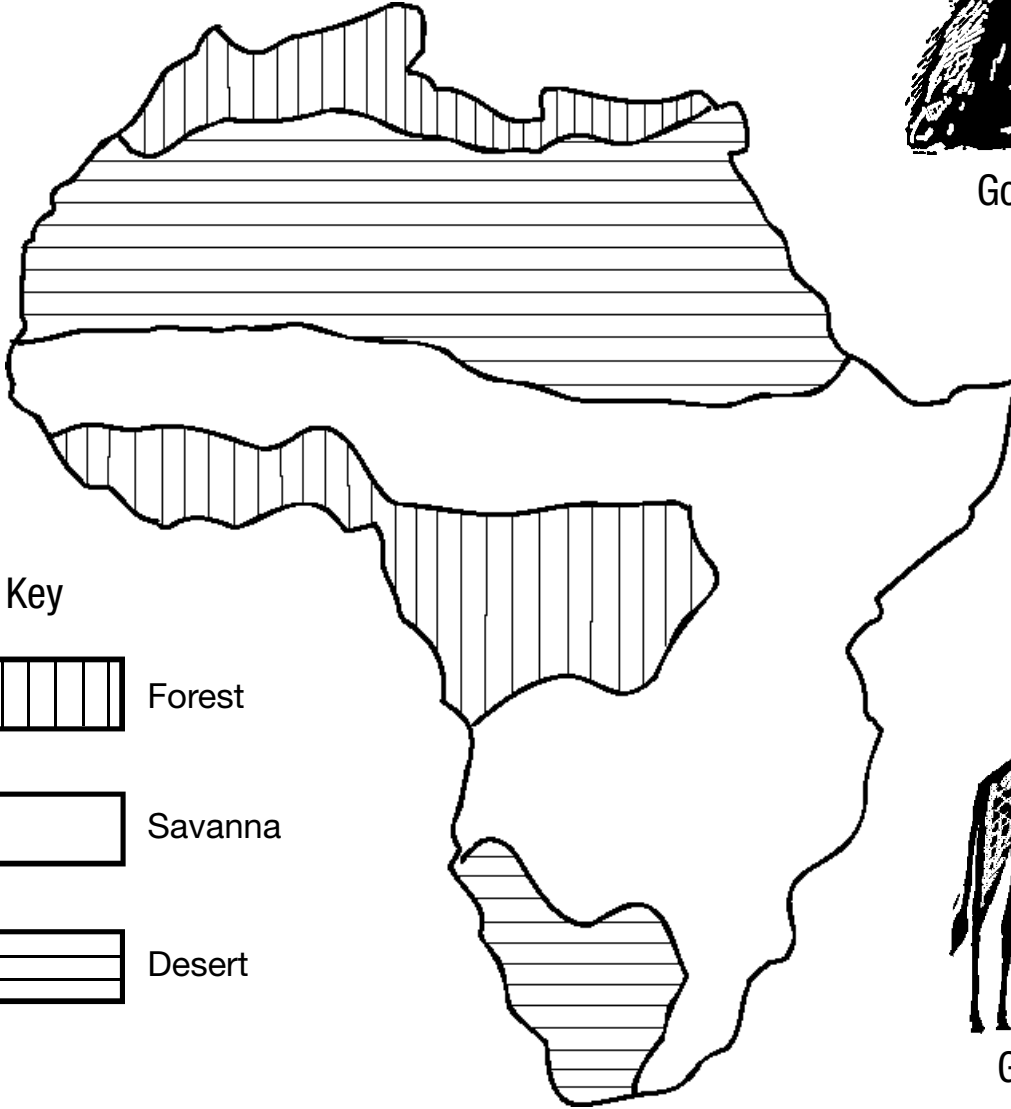
Scorpion



Fennec fox



Gorilla



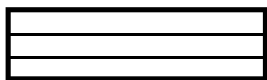
Map Key



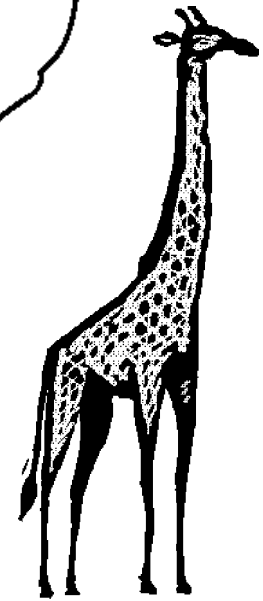
Forest



Savanna



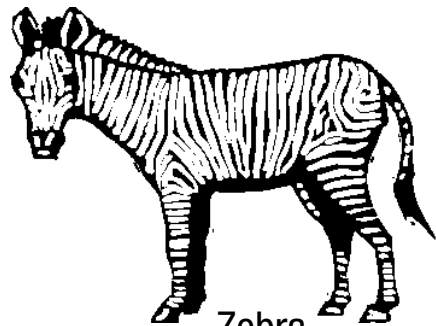
Desert



Giraffe



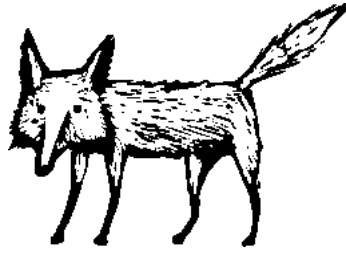
Cheetah



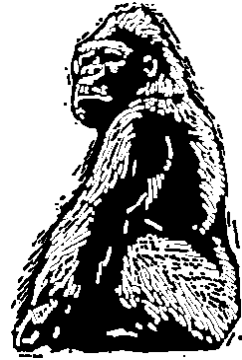
Zebra



Scorpion



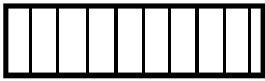
Fennec fox



Gorilla



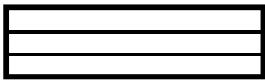
Map Key



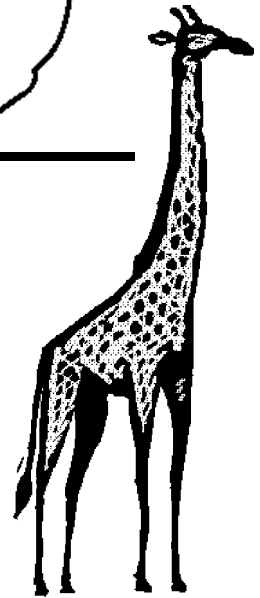
Forest



Savanna



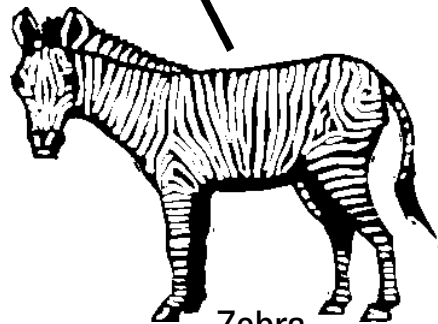
Desert



Giraffe



Cheetah



Zebra