

**Tampa's Lowry Park Zoo**  
**Educators' Activity Guide**  
**Grades 6-8**

Tampa's Lowry Park Zoo's Education Department gratefully acknowledges the following curriculum contributors:

Writing Team: Cynthia Britten and Sharon Dyle

Consultants: Carol Ballas, Andi Ringer, Deborah Goin-First Edition Fall 2001

Edited and Updated Summer 2003 By: Mathea Otero Carol Ballas

**Edited and Updated Fall 2008 By: Jennifer A. McLachlan and Diana Hughes Diaz**

Dear Educator,

Welcome to Tampa's Lowry Park Zoo! Zoos are exciting places and represent a unique opportunity to foster an awareness of the natural world. A trip to the zoo is literally a "field day" for the senses: memorable visual stimuli coupled with new sound and smells. Pair these external cues with a structured activity or two and you have transformed a fun day at the zoo into an effective teaching tool.

These FCAT friendly activities were designed for middle school students and takes into account different learning styles. The activities were designed to complement the middle grades curriculum by interfacing zoo-based learning and have been correlated to the Sunshine State Standards. This resource contains a variety of in-class and in-Zoo activities. Each section begins with background information for teachers. Some of the activities focus on specific domains at the zoo and some are general activities requiring students to travel throughout the zoo to collect data/information.

## Contents:

Planning A Fieldtrip

The Importance of Zoos

Background Information and Activities

### **Aviary Background Information**

The Best Beak

Aviary Observation Log

Aviary Scavenger Hunt

Adaptations of Birds: Beaks and Feet

### **Primate Background Information**

Primate Scavenger Hunt

Primarily Primates Place

The Primate

### **Florida Boardwalk Background Information**

Florida Boardwalk Scavenger Hunt

Manatee and Aquatic Center Background Information

Manatee and Aquatic Center Scavenger Hunt

### **Asian Domain Background Information**

Asian Domain Scavenger Hunt

### **Australia Background Information**

Australia Scavenger Hunt

ZOOing It The Right Way

What's For Dinner?

### **Safari Africa Background Information**

Safari Africa-It's All Relative

Safari Africa Scavenger Hunt

### **Safari Ride Background Information**

Safari Ride – I Spy

Safari Ride Mix 'n Match

Benchmark Correlates

# AVIARY INFORMATION



The aviary is a free-flight home to approximately 45 species of subtropical birds, including, waterfowl, ground, and tree dwellers. The entire area is filled with dense vegetation and a variety of water features like lagoons and waterfalls. Please caution your children to speak softly and walk slowly along the trail. Feel free to adapt this activity to fit your grade level. Your students will probably find it helpful to define/discuss some of the following terms before your visit:

**Adaptation**-the behaviors and physical characteristics of species that allow them to live successfully in their environments.

**Rainforest**-tropical and sub-tropical forest with abundant rain year round and a wide variety of diverse species.

**Habitat**-specific environment in which an animal lives.

**Incubate**-to sit on and hatch eggs (to keep warm).

**Insulator**-a material that does not conduct heat well and therefore helps prevent heat escaping.

**Camouflage**-protective coloration, a common animal defense.

## AVIARY FACTS

- Approximately 130 individuals representing 45 species occupy the aviary.
- Approximately 8,800 species of modern birds exist, divided into 28 orders and over 160 families.

## ALL BIRDS SHARE A CERTAIN CHARACTERISTIC

- the body is covered with feathers.
- the skeleton is delicate but very strong
- two pairs of limbs are present, one pair is modified into wings, the second pair may be adapted for running, swimming, perching or grasping.
- the lungs are attached to the ribs and connected to air sacs.
- the body temperature is regulated by internal means (endothermy)
- birds are found all over the world, each species occupies a definite geographic range
- speed of flight varies from 20 to 50 mph.
- their particular calls and songs can identify most birds; songs are used to advertise nesting territories and attract mates, used to assemble flocks, direct young and warn of danger.
- because birds must maintain high body temperatures and are, for the most part, very active, they must obtain foods with high energy values; due to their limited fat storage capacity, birds cannot survive long without food; the diet of most birds is specific.
- enemies include other birds, cats, foxes, man, parasites, etc.
- economic aid to man is provided by birds that eat rodents, insects and "weed" seeds.
- feathers are made of a protein substance similar to that of hair and nails.
- preening is the process of spreading oil from the uropygeal gland (located at the base of the tail) across the feather to clean, waterproof and "zip up" the feathers.
- all birds molt, or shed feathers on a regular (often annual) basis; molting allows new feathers to replace old feathers.
- feathers play an important role in bird behavior; males are often brightly colored and perform elaborate rituals to obtain a mate.
- birds that incubate the eggs (often the female) may have drab plumage, so as not to attract the attention of predators

# The Best Beak



## **Objectives:**

Students will be able to 1) identify and describe the advantages of bird adaptations; and 2) evaluate the importance of adaptations to birds.

## **Benchmarks:**

SC.F.2.3.3, SC.G.1.3.1, SC.G.1.3.2, SC.G.1.3.3, LA.A.1.3.1, LA.C.1.3.1, LA.C.1.3.4

## **Materials:**

The Best Beak Worksheet macaroni, raisins, beans (or other materials) scissors, plastic spoons, toothpicks, clothes pins petri Dishes, pen or pencil and a clipboard (optional)



In this classroom exploration students will identify one of the adaptations that birds need to survive in their particular environment, the shape of a beak. The shape of a beak is an adaptation to the type of food found in the bird's environment.

## **Classroom Activity:**

The student should read the directions silently, a class discussion of the directions should follow to check for comprehension and to answer any questions. Materials should be distributed. Students should then complete the activity with their group. Discuss and answer #1 -#3 on the Best Beak Pre-Zoo Activity Sheet. A class discussion should follow to check for comprehension.

## **Fast Fact:**

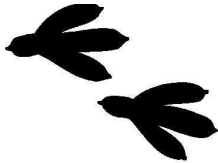
A group of owls is called a Parliament.

# The Best Beak Worksheet

Whether you are in an open meadow, a zoo, or your own backyard, you are likely to hear the sound of birds. There are many different bird species and each has special adaptations to its environment. For example, birds have beaks of various shapes and sizes. The shapes of beaks are adaptations to the different kind of foods found in the bird's environment. Birds eat large amounts of food in order to maintain a constant body temperature and because flying uses enormous amounts of energy.

In this activity, you will be given a beak and a crop in which to store your food. Your mission is to collect enough food to survive. Can you meet the challenge?

**Directions:** Each person in your group should choose one of the following tools to serve as a beak: scissors, plastic spoon, toothpick, clothespin; and, an empty petri dish to serve as a crop. While a classmate times your group, use the beak to pick up as many seeds from the dish that you can in 30 seconds (you may use only 1 hand). **Count the number of seeds that each person in your group picks up within 30 seconds and record this number in the Data Table.**



Name	Beak Type	Macaroni #	Raisins #	Beans #

List the tool-beaks in order of effectiveness at picking up each type of seed.

Macaroni \_\_\_\_\_

Raisins \_\_\_\_\_

Bean \_\_\_\_\_

Were some tool-beaks effective at picking up a variety of seeds? Explain



# Aviary Observation Log

## **Objectives:**

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between birds and record common behaviors. They will be able to identify the common characteristics of birds; and explain how birds are adapted to and affect their environments.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.3, SC.G.1.3.2, SC.G.1.3, SC.G.1.3.4, SC.G.2.3.4, SC.H.3.3.1, LA.A.1.3.3, LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.5

## **Materials:**

Aviary Observation Log.  
Pen or pencil, clipboard (optional)



## **Instructions for Completion of the Log:**

Your students will not be able to identify, by species, all the birds in the aviary, however, they can identify birds by their feet and beaks. Recall that feet and beaks have much ecological significance for birds. This activity requires students to make some original observations on bird beaks, feet, body size, coloration,

and position in the aviary. Below is a description of the type of data each student should be prepared to collect at the zoo.

1. **Body Size** -the student is to compare the body size of the bird to a part of his or her own anatomy. Small birds are likely the size of their palm (measured from wrist to base of fingers); slightly larger birds would approximate the length of their hand with fingers extended. Some of the larger birds are about the size of a forearm (measured from the wrist to the elbow); the largest birds may have body lengths as long as an entire arm.
2. **Body Coloration** - record the basic body coloration and any distinct identifying markings such as tail length, head coloration, distinguishing patterns of head feathers (crests, crowns, etc.)
3. **Foot Type** - these are described in the Adaptations of Birds-Beaks and Feet Activity.
4. **Location** - this will vary considerably, but the student should record the position of the bird when first observed.
5. **Sound** - if any vocalizations are heard the student should record that sound (i.e., squawk, chirp, click, whistle, etc.)
6. **Observed Behaviors** - students should record behaviors such as preening, foraging, sleeping, or interacting with other birds.

**Fast Fact:** The Arctic Tern migrates a distance greater than 22,000 miles every year.



# **AVIARY SCAVENGER HUNT**

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## **Objectives:**

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between birds, and record common behaviors. They will be able to identify the common characteristics of birds; and explain how birds are adapted to and affect their environments.

Students will be able to express ideas and facts, analyze and organize thoughts utilizing a written format.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.3

SC.G.1.2.3, SC.G.1.3.3

SC.G.1.3.4, SC.G.2.3.4

SC.H.3.3.1, LA.A.1.3.3

LA.B.1.3.1, LA.B.2.3.1

LA.C.1.3.1, MA.D.2.3.2

SS.B.2.3.5

## **Materials:**

Aviary Scavenger Hunt, Pen or Pencil and Clipboard (optional)

## **Pre-Zoo Activity**

Teacher should go over the Aviary Scavenger Hunt Activity Sheet, answering any questions students might have.

## **In-Zoo Activity**

Students are to seek out and record answers to Aviary Scavenger Hunt. Emphasize that students need to think about how adaptations help birds survive in their particular environment.

## **Scavenger Hunt Answer Key**

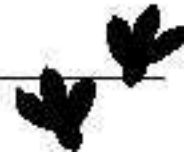
1. Habitat: Examples- narrow beaks for gathering nectar, long legs for wading in water, long beaks for probing insects, large eyes for night vision
2. Gizzard- a muscular organ
3. to claim territory, sound alarms, attract mates
4. True
5. Molting
6. 9,200
7. Waterproofing, flight, incubation, courtship, camouflage, insulation
8. Examples: Nicobar Pigeon, Green Naped Pheasant Pigeon, Bleeding Heart Dove, African Openbill Stork, Hottentot Teal, Black-Necked Stilt
9. To probe for insects and small animals buried in the mud
10. Webbed feet

## **Fast Fact:**

A swift is the fastest bird in the air. They can fly 106 mph.



# AVIARY SCAVENGER HUNT



Search for answers to the following questions in Lowry Park Zoo's Aviary.

1. A bird's beak and feet are adapted to its \_\_\_\_\_. List 2 examples:  
\_\_\_\_\_
2. Birds eat a variety of food without teeth. How do they grind up their food?  
\_\_\_\_\_
3. Name 3 reasons that birds sing. Use examples from birds located outside of the Aviary.
  1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_



4. TRUE or FALSE? Bats are mammals more closely related to primates than rodents.
5. Once or twice a year birds replace old feathers with new plumage. What is this process called? \_\_\_\_\_
6. Approximately how many bird species are there worldwide?  
Circle the correct answer: a) 22,000 b) 9,200 c) over 1 million
7. List 3 reasons that birds need feathers.  
1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_
8. Look around you—name just 2 birds that spend most of their time on the ground.  
\_\_\_\_\_ and \_\_\_\_\_
9. Why does the Scarlet Ibis have a long neck? \_\_\_\_\_
10. How do ducks swim? \_\_\_\_\_



**Something to think about... How do adaptations help birds survive in their particular environment?**

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# **Bird Adaptations: Beaks and Feet**

## **Objectives:**

Students will be able to 1) identify and describe the advantages of bird adaptations; and 2) evaluate the importance of adaptations to birds.

## **Benchmarks:**

SC.F.2.3.3, SC.G.1.3.1 SC.G.1.3.2, SC.G.1.3.3  
LA.A.2.3.1, LA.C.1.3.1 LA.C.3.3.2

## **Materials:**

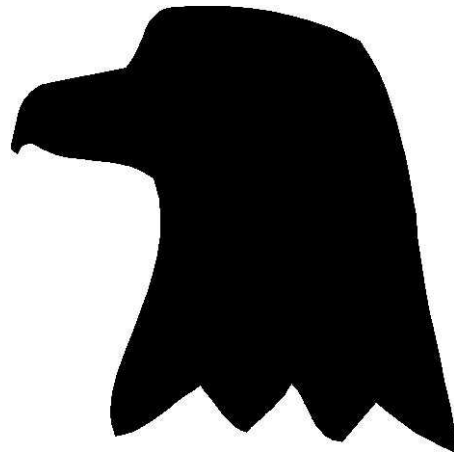
Beaks and Feet Adaptation Worksheet, Teacher Answer Key, pen or pencil, clipboard (optional)

## **Pre-Zoo Activities:**

In this classroom exploration students will identify one of the adaptations that birds need to survive in their particular environment, the shapes of beaks, and the type of feet. The shapes of beaks are adaptations to the different kinds of food found in the bird's environment. The types of feet birds have help them survive in their particular environment.

## **Classroom Activity:**

The student should read the directions silently, a class discussion of the directions should follow to check for comprehension and to answer any questions. Students are to complete the activity sheet. Class discussion of answers should follow. Students should be able to justify their answers.



## **Fast Fact:**

Most birds have three or four toes but the ostrich has just two.

# ADAPTATIONS OF BIRDS

## BEAKS AND FEET

Like other animals, birds have adaptations that help them survive. A duck would not swim well if it had the feet of a hawk. A rosette spoonbill would not get much food if it had the beak of an eagle. Examine each of the different types of bills and feet pictured. Match each with one of the advantages listed below.

advantage _____	advantage _____
advantage _____	advantage _____
advantage _____	advantage _____
advantage _____	advantage _____
advantage _____	advantage _____

### Advantages (bills)

cracking seeds  
straining water for food  
tearing flesh probing flowers for nectar  
probing for insects

### Advantage (feet)

aids in walking on mud  
grabbing onto animals  
swimming  
climbing trees perching

# ADAPTATIONS OF BIRDS

## *Teachers Copy*

### **BEAKS AND FEET**

*Like other animals, birds have adaptations that help them survive. A duck would not swim well if it had the feet of a hawk. A rosette spoonbill would not get much food if it had the beak of an eagle. Examine each of the different types of bills and feet pictured.*

*Match each with one of the advantages listed below.*

<i>advantage <u>tearing flesh</u></i>	<i>advantage <u>aids in walking in mud</u></i>
<i>advantage <u>cracking seed</u></i>	<i>advantage <u>swimming</u></i>
<i>advantage <u>probing for insects</u></i>	<i>advantage <u>grabbing onto animals</u></i>
<i>advantage <u>straining water for food</u></i>	<i>advantage <u>perching</u></i>
<i>advantage <u>probing flowers for nectar</u></i>	<i>advantage <u>climbing trees</u></i>

# Primate Information

The order primates is a very diverse group of mammals found mostly throughout tropical and subtropical regions of Africa, Asia, and Latin America. Ranging in size from a few ounces to several hundred pounds, they include both tree and ground dwellers, nocturnal and diurnal species.

Primates can be divided into 4 main categories:

- Prosimians,
- New World Monkeys,
- Old World Monkeys, Lesser
- Greater Apes.

Many of the approximately 200 species are in danger of extinction as a result of human activities such as forest destruction and commercialized hunting.

Primates as a group share some features.

- The fingers are very mobile and the thumb is opposable - it rotates to be opposite of the other fingers giving them the ability to grasp.
- Sensitive pads are on the underside of the fingers (increased sense of touch)
- Flat nails, not claws, are on the top.
- Ability for upright posture
- Stereoscopic vision (allows for depth perception)
- Reduced dependency on smell (especially in humans)
- A general decrease in defensive mechanisms
- Increase in brain size
- Infants are born dependent and remain dependent for a long period of time
- Social grouping (families).

Lowry Park Zoo is home to 11 species of primates with representatives from each of the categories.

Before you visit the zoo it would be helpful for your students to define/discuss the following:

*\*mammals*  
*\*primate characteristics*  
*\*apes (greater and lesser)*  
*\*Old and New World monkeys*



*\*prosimians*  
*\*rainforest*  
*\*endangered*  
*\*species*

# Primate Scavenger Hunt

## Objective:

Students will utilize information in front of animal enclosures and observe animals to answer questions.

## Benchmarks:

SC.F.1.3.7, SC.F.2.3.3 SC.G.1.3.2, SC.G.1.3.3  
LA.A.1.3.3, LA.B.1.3.1 LA.B.2.3.3

## Materials:

Copy of Primate Scavenger Hunt, pen or pencil and clipboard (optional)



## Pre-Zoo Activity:

Show students the Primate Scavenger Hunt sheet and go over with them how they will find the answers.

## Zoo Activity:

Students will read plaques in front of animal enclosures and observe primates, filling in answers to the questions on the Primate Scavenger Hunt sheet, as they travel throughout the zoo.

## Post-Zoo Activity:

Go over answers to the questions. Have students create a crossword puzzle from the information on the scavenger hunt.

## Primate Scavenger Hunt Answer Key

1. Tamarin
2. Brachiation is movement through the trees by swinging arm over arm.
3. Mandrill and Colobus
4. Old world monkeys have nostrils that are more narrow and closer together.
5. Colobus are folivores (leaf eaters). They consume large quantities of leaves and shoots each day. Resting is an aid to digestion.
6. Males are larger and have black hair; females have olive-buff colored hair
7. Scent glands
8. The chimpanzee is our closest living relative
9. Grooming removes bugs and dirt
10. Vocalizations and facial expressions
11. The ability to grasp
12. Arboreal
13. Colobus
14. Camouflage coloration, Slow movement

## Fast Fact

Did you know: Monkeys have tails and apes do not

Did you know: Gibbons are the only apes who can stand upright and walk on their hind legs.

# PRIMATE SCAVENGER HUNT

1. I am one of the smallest primates and one of the most critically endangered mammals. When my young are born, father cares for them. WHO AM I? \_\_\_\_\_
2. The Siamang is a 'lesser ape' with very long powerful arms that are used to brachiate through the trees. So, just what is **brachiation**? \_\_\_\_\_
3. "Old World" monkeys are found in Asia and Africa. Which 2 species of monkeys at Lowry Park Zoo are found on the continent of Africa? \_\_\_\_\_ & \_\_\_\_\_
4. One way of distinguishing the "Old World" monkeys from the "New World" is by their noses. How are their noses different?
5. What do you observe the Angolan Colobus doing? If they are sleeping, why do you think that they spend so much time resting? Clue: What is their diet? \_\_\_\_\_
6. How are male and female howlers different? \_\_\_\_\_
7. How do Collared Lemurs let others know "hey this is my territory"? \_\_\_\_\_
8. Which primate is our closest relative? (Circle one) Orang-utan OR Chimpanzee OR Lemur
9. Grooming is an important social behavior among primates. It is a means of strengthening friendships and relieving tension. Physically, what purpose does it serve? \_\_\_\_\_
10. Quietly observe the chimpanzees. Physical gestures (or motions) are one way that these apes communicate. Name 2 other ways they communicate. \_\_\_\_\_ & \_\_\_\_\_.
11. What ability of the hand do all primates have in common? \_\_\_\_\_
12. Are Orang-utans **arboreal** or **terrestrial**? (Circle one)
13. The Greek name \_\_\_\_\_ meaning "mutilated one" was given to these monkeys because they have no thumbs.
14. Although the two-toed sloth can use it's sharp teeth and claws when threatened, its best defenses are \_\_\_\_\_ and \_\_\_\_\_.

# Primarily Primates

## **Objective:**

Students will be able to list characteristics that are shared by humans, apes and monkeys. They will also be able to list the characteristics that are unique to each group of primates.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.2 SC.F.2.3.3, SC.G.1.3.2  
SC.G.1.3.3, SC.H.1.3.4 LA.A.1.3.3, LA.B.2.3.3

## **Materials:**

Venn Diagram (data collection chart). Pen or pencil and clipboard (optional)



Students will collect information about humans, apes, and monkeys. They will compare and contrast these groups of primates.

## **Pre Zoo Activity:**

Go over how to fill in the information on the Venn diagram. There are spaces to fill in the characteristics shared by all three primates; those

shared by humans and apes; characteristics shared by apes and monkeys; characteristics shared by humans and monkeys; and spaces for filling in the unique characteristics for each group of primate.

## **Zoo Activity:**

Students are to observe representatives of each of the three groups of primates (humans, apes, and monkeys). They will need to list the characteristics that are unique to that group and characteristics that are shared between/among the groups. They will need to use a Venn diagram (or a chart) to keep track of their observations. Students should strive to have at least 3 characteristics in each section of the Venn diagram.

## **Post Zoo Activity:**

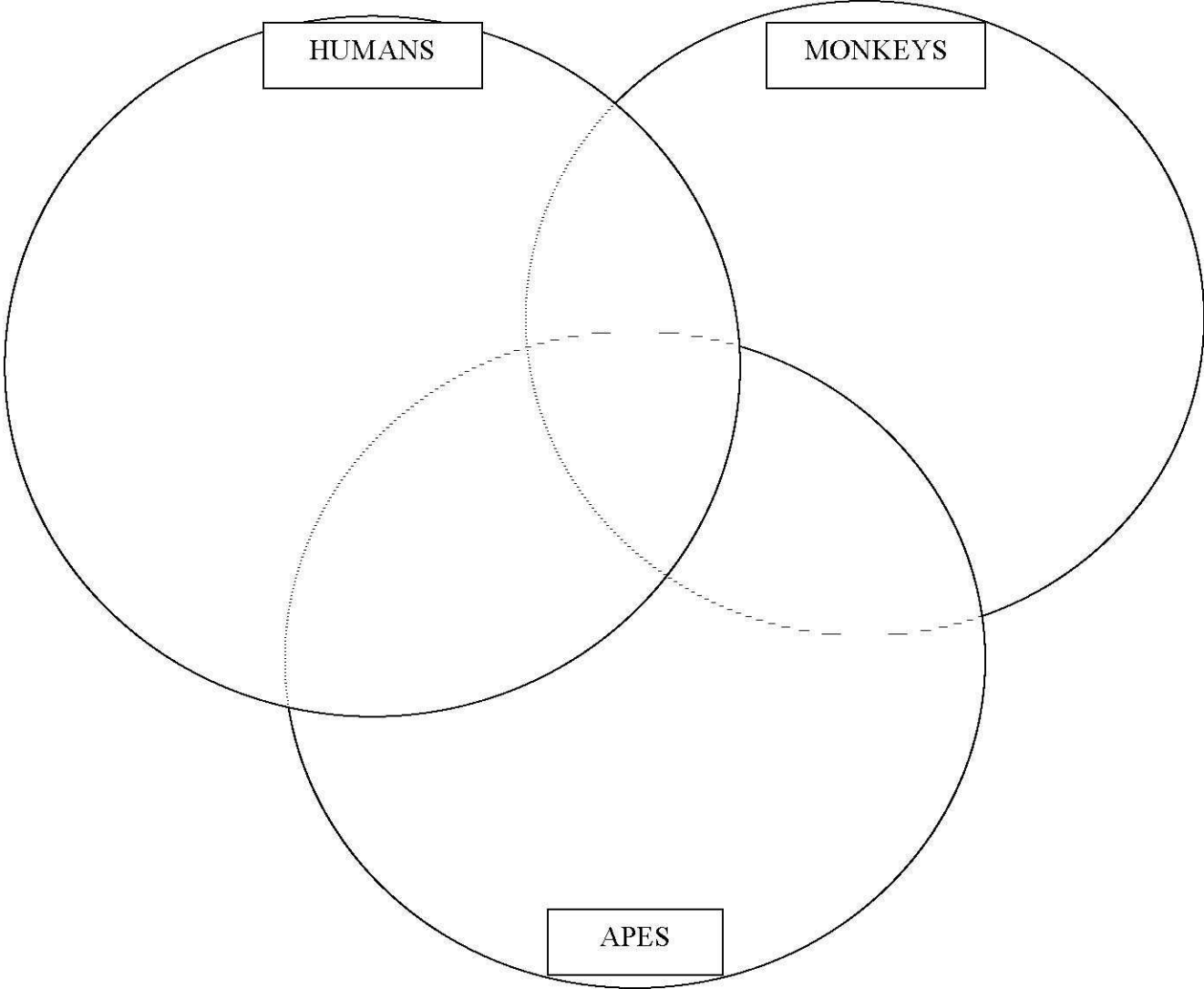
Group students and have them compare their Venn diagrams and discuss in a large group the differences and similarities. If students had difficulty collecting the information at the zoo you can provide resource books that they can use for research.

Note: The primate information sheet has some of the similarities listed for you.

## **Fast Fact:**

Mountain gorillas are found in the rain forests of Rwanda, Uganda and Zaire. There are approximately 620 mountain gorillas left in the wild.

Primarily primates: Compare and Contrast Venn Diagram



# Place The Primate

## **Objective:**

The student will be able to classify Lowry Park Zoo's primates as Old World monkeys, New World monkeys, prosimians, or apes.

## **Benchmarks:**

SC.G.1.3.2, SC.G.1.3.3 SC.H.2.3.1, L.A.A.1.3.3, L.A.A.2.3.3, MA.D.2.3.3

## **Materials:**

Observation sheet (chart), pen or pencil Reference books (optional) and clipboard (optional)

## **Vocabulary:**

prehensile tail – tail capable of 'holding' onto a branch or limb. quadrupedal – walking on all four limbs. ischial callosities – hard pads on the lower side of the buttock. monogamous – having one mate.



Students will travel through the zoo and observe the primates housed there. They will classify each one as an Old World monkey, New World monkey, prosimian, or ape. Students will list the primate's common or scientific name under the correct category on the "Place The Primate" chart.

Pre Zoo Activity: Review the chart and how it is to be filled out. A discussion of primate classifications will be helpful to students.

In Zoo Activity: Observe the primates and classify them as Old World monkeys, New World monkeys, prosimians, or apes.

Post Zoo Activity: Group students and have them compare their classifications. They can research any discrepancies and correct any errors they may have made. Have students make a bar graph showing how many primates at Lowry Park Zoo are in each group.

## **PLACE THE PRIMATE ANSWER KEY**

**Prosimians:** Red Ruffed, Ring-tailed and Collared Lemurs

**New World Monkeys:** Howler monkey, Golden Lion Tamarin, Golden Headed Lion Tamarin, Cotton-topped tamarin, Geoffrey Marmoset

**Old World Monkeys:** Angolan Colubus and the Mandrill

**Apes:** Chimpanzee, Orangutan, Siamang

## **Fast Fact:**

Some Old World primates, like the mandrill, have cheek pouches for storing food.

# Place The Primate: Teacher Information

## Prosimians

- Lower primates
- Pointed, dog-like snouts
- Elongated bodies
- Quadrapedal (move on all four limbs)
- Well developed sense of smell
- Found only between latitudes 25 N and 30 S

## New World Monkeys

- Found only in the “New World” – North and South America
- Rely heavily on their sense of sight
- Some have developed prehensile tails
- Nostrils are far apart and wide open.

## Old World Monkeys

- Nostrils are narrow and close together
- Have ischial callosities, “sitting pads” on the buttocks
- Do not have prehensile tails

## Apes

- Most advanced group of primates
- Found only in Asia and Africa
- Do not have tails
- Forearms are longer than their hind limbs
- Chests are barrel-shaped
- Have extended maternal care of their young

## Place The Primate Answer Key

Prosimians	New World Monkeys	Old World Monkeys	Apes
Red ruffed lemur	Geoffroy’s Marmoset	Mandrill	Chimpanzee
Ring-tailed lemur	Golden Lion Tamarin	Angolan Colobus	Siamang
Collared lemur	Golden Headed Tamarin		Bornean Orangutan

	Howler monkey		Humans
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## Place The Primate

Directions: As you travel through the primate section of the Zoo read the plaques in front of each exhibit, observe each primate and then classify them using the chart below:



Prosimians	New World Monkeys	Old World Monkeys	Apes

# Florida Boardwalk: Teacher Information

A visitor to the Florida Boardwalk is treated to a glimpse of the State's diverse animals and representations of their natural habitats. It stresses how presentation of habitat is vital to the survival of its native species. We suggest you define/discuss some of the following terms with your students before visiting the zoo: ecosystem, reptile, mammal, nomenclature, habitat, conservation, extinction, predator, and prey. Feel free to adapt this activity to fit your grade level. It is suggested that you start the search just after the river otter habitat (after passing through the Manatee Center).

## **Vocabulary:**

**Ecosystem**-all the living and nonliving things that interact in an area.

**Reptile** -an ectothermic vertebrate that has lungs and scaly skin.

**Mammal**-warm blooded (endothermic) vertebrates that have hair and feed their young milk.

**Nomenclature**-a system of names used in science.

**Habitat**-specific environment in which an animal lives.

**Conservation**-responsible use of natural resources in order to ensure its future availability.

**Extinction**-the permanent loss of a plant or animal species.

**Predator**-an animal that feeds on other animals.

**Prey**-an animal that a predator feeds upon.

## Florida's Unique



### Natural

### Environment

The natural environment of Florida, the most tropical state in the continental USA, reveals an exceptional biological diversity. Numerous animal species in Florida are unique to the state. Each of the many different ecosystems in Florida contains a rich array of plant and animal species specifically adapted to that environment. Because of these adaptations, the majority of Florida's wildlife will not survive outside their particular habitat. The survival of Florida's animal species is directly linked to the preservation of their habitat. The following Florida wildlife can be seen at Lowry Park Zoo: Southern Bald Eagle, American Bison, White Tail Deer, Florida Sandhill Crane, Red Wolf, Alligator, Florida Black Bear, Kestrels, Otter, West Indian Manatee, Fox Squirrel, Burrowing Owl and Florida Panther.



### Threats to Florida's Natural Heritage

Florida's ongoing population boom represents a serious threat to the state's natural heritage. Habitat destruction and decline seriously reduces the chances of survival of many native species. The drainage of wetlands and the clearing of forests for agricultural uses or for urban and residential development, in addition to sharp increases in air and water pollution, have endangered the survival of as many as 530 plant and animal species specific to Florida. Species such as the Florida panther, the West Indian manatee, and the Florida black bear are at risk to join the 14 vertebrate Florida species that have become



# Florida Boardwalk Scavenger Hunt

## **Objectives:**

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between aquatic animals, and record common behaviors.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.3, SC.G.1.3.2, SC.G.1.3.3, SC.G.1.3.4, SC.G.2.3.4, SC.H.3.3.1, LA.A.1.3.3, LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.5

## **Materials:**

Florida Boardwalk Scavenger Hunt Activity Sheet, pen or pencil, clipboard (optional)

## **SCAVENGER HUNT ANSWER KEY**

1. Snout and teeth (protrudes out)
2. Temperature of the nest The sex of the alligator is determined by the temperatures at which the egg is incubated. There is a critical period for sex determination between the 7th and 21st day of incubation. If the temperature drops below 86 degrees F, they will all be females. If the temperature rises to 93 degrees F or above, they will all be males. At 89.6 degrees F, more than 3/4 of the hatchlings are female.
3. Semi-Aquatic member of the weasel family
4. 30-50
5. Habitat loss, environmental pollution, inbreeding, due to hit by car
6. Build a bat box
7. *Gopher Tortoise*
8. A keystone species is a species that has a major influence on the structure of an

ecosystem. Its presence impacts many other members of the ecosystem, and if its population dwindles or disappears, there can be far-reaching consequences for the ecosystem.

9. Gray fox



## **Fast Fact:**

Florida's population grew by 4.7 million between 1935 and 1990. That is an average of **2,000 people per week every week**. Approximately how many people would live in Florida at that rate in the year 2020?



# Florida Boardwalk Scavenger Hunt



Discover the answers to the following questions by searching for clues along Lowry Park Zoo's **Florida Boardwalk**. Look, listen and read the posted information along the way.

GOOD LUCK!

1 What is the difference between the American Alligator and Crocodile?  
\_\_\_\_\_

2 What environmental factor affects the sex of alligator hatchlings? \_\_\_\_\_  
\_\_\_\_\_

3 To what Family does the River Otter belong? \_\_\_\_\_



4 How many Florida Panthers are estimated to survive today? \_\_\_\_\_

3a. Why are there so few? \_\_\_\_\_

5 Bats are an important part of our ecosystem. They eat about 600 insects an hour!  
5a. What can you do to help conserve them? \_\_\_\_\_

6 Which reptile is considered a “keystone” species of the wetlands? \_\_\_\_\_

6a What does the term keystone mean? \_\_\_\_\_

7 This member of the dog family surprisingly eats a diet of about 30% fruit, nuts, and seeds? \_\_\_\_\_

8 Which mammal leaves scratch marks on trees to identify territorial boundaries?  
\_\_\_\_\_

9 What bird creates nests that may be seven feet across and weigh over a ton?  
\_\_\_\_\_

10. Name 2 mammals that were once found in Florida but are now considered **extinct** in this state.  
\_\_\_\_\_ and \_\_\_\_\_.

# Manatee & Aquatic Center:

## Teacher Information

The Manatee and Aquatic Building is home to the manatee hospital and research facility. It is an enclosed building where terrestrial and aquatic habitats may be viewed through interior windows. This design limits the amount of light within the Center while permitting sound to carry. For your safety and enjoyment, children should speak quietly and walk slowly. We suggest you define/discuss some of the following terms with your students before visiting the zoo: reptile, amphibian, mammal, habitat, endangered, ectotherm, species, estuary. It is suggested you start this 'hunt' from the South entrance of the building.

### **Vocabulary:**

**Reptile**-an ectothermic vertebrate that has lungs and scaly skin.

**Amphibian**-an ectothermic vertebrate that spends its early life in water and its adulthood on land, returning to the water to reproduce.

**Mammal**-an endothermic vertebrate with a four-chambered heart, skin covered with fur or hair, and which has young fed with milk from the mother's body.

**Habitat**-specific environment in which an animal lives.

**Endangered**-a species threatened with immediate biological extinction.

**Ectotherm**-an animal whose body does not produce much internal heat-its body temperature changes depending on the temperature of its environment (example: reptile and amphibian).

**Endotherm**-an animal whose body controls and regulates its temperature by controlling the internal heat it produces, the body temperature usually does not change much, even when the temperature of its environment changes (example: mammals).

**Species**-a group of organisms that can mate with each other and produce offspring, which can also mate and reproduce.

**Estuary**-a partially enclosed body of water where fresh water from rivers and streams mixes with salt water from the sea.

### **Manatee Facts:**

1. Found from the southeastern USA through the Caribbean islands, eastern Central America, northern coast of South America, sometimes as far north as Virginia and the Carolinas and as far west as Texas
2. Inhabits fresh, marine and brackish water
3. Diet consists of aquatic vegetation but will ingest invertebrates living in the vegetation
4. Approximate adult size: length - 12.7 feet (maximum), 9.8 feet (average) Weight - 3,500 lbs (maximum), 793 - 1,190 (average)
5. Large, flat, rounded tail and paddle-like forelimbs with 3 to 4 nails at the tips
6. Hair is sparse over its torpedo-shaped body, but most prominent at the muzzle
7. Clear nictitating membrane covers and protects the manatee's eyes when submerged and valve like flaps of skin close over the nostrils to keep water out
8. Surfaces to breathe once every 30 seconds when active and once every 4 minutes when resting, can remain submerged for as long as 24 minutes
9. Feed 6 to 8 hours each day
10. No natural enemies and no mechanism for defense except to retreat from danger
11. Calves remain with their mothers for up to 2 years



# Manatee and Aquatic Center

## Scavenger Hunt

### Objectives:

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between aquatic animals, and record common behaviors.

### Benchmarks:

SC.F.1.3.7, SC.F.2.3.3, SC.G.1.3.2, SC.G.1.3.3, SC.G.1.3.4, SC.G.2.3.4, SC.H.3.3.1, LA.A.1.3.3, LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.5

### Materials:

Manatee & Aquatic Center Scavenger Hunt Activity Sheet, pen or pencil, clipboard (optional)

### Website:

Florida Marine Research Institute [www.fmri.usf.edu](http://www.fmri.usf.edu)

### ANSWER KEY

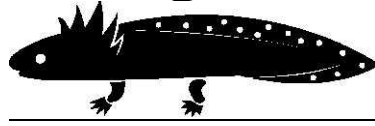
1. Exotic species compete with native for food and habitat; they may lack enemies
2. Examples: marine toad, greenhouse frog, brown anole, knight anole
3. Coral snake
- 4.

5. Greater Siren
6. Bluegill - the male gets brighter coloration when courting female in summer
7. Bowfin
8. Nurse shark, catfish& koi
9. Elephant
10. Both
11. Observe manatee speed zones and caution areas. Become involved in manatee education and public awareness by Reporting dead, injured manatees or harassment to the manatee hotline: **1-800-DIAL-FMP**

Characteristics	Amphibian	Reptile
Scales		X
Moist Skin	X	
Eggs without shells	X	
Some shed skin		X
Ectotherm	X	X



# Manatee & Aquatic Center: Scavenger Hunt



- Why is it harmful to introduce new species into an environment?  
\_\_\_\_\_
- Name 3 examples of species introduced into Florida.  
\_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_
- Which snake is a relative of the cobra? \_\_\_\_\_
- THE SCALY DIFFERENCE: Reptile or amphibian? Check the characteristic that applies:

Characteristics	Amphibian	Reptile
Scales		
Moist skin		
Eggs without shells		
Some shed skin		
Ectothermic		

- One amphibian remains in water all its life. They have gills instead of lungs. Unscramble the letters to reveal the name **t r e a r e G i r S n e** \_\_\_\_\_
- Which male fish is able to change his coloration when courting females in the summer?  
\_\_\_\_\_
- What is the name of the only living member of an ancient family of primitive bony fish?  
(Circle the correct answer)  
Catfish      Bowfin      Snook      Angelfish
- Name 2 aquatic species that have barbels. \_\_\_\_\_ and \_\_\_\_\_
- Manatees are distantly related to which large terrestrial mammal? \_\_\_\_\_
- Manatees live in: fresh water or salt water or both? (Circle the correct answer)
- Manatees are endangered due to habitat loss and other human activities. Write down 1 thing you can do to help these endangered mammals. \_\_\_\_\_



## Asian Domain Information

Asia, the world's largest land mass, is resplendent with a seemingly infinite array of peoples, cultures, geographical extremes and wildlife diversity. Its natural vegetation zones are varied and include subtropical rainforests, tundra, alpine, temperate forests, grasslands, desert scrub and barren land. The highest point on earth (Mt Everest) the lowest point the Dead Sea, the largest living species of lizard (Komodo Dragon) and the smallest mammal (bumble bee bat) are all found within this wondrous land.

Lowry Park Zoo is home to 9 species of Asian mammals and 1 representative from the class of reptiles. Sadly, most of these species are considered endangered or rare in the wild. Human activities such as commercialized hunting and habitat destruction are taking a deadly toll on these species in the wild. Their survival is dependent upon our actions— we can all make a difference!



Before you visit the zoo it would be helpful for your students to define/discuss the following:

1. Camouflage
2. Habitat
3. Species
4. Reptile
5. Mammal
6. Endangered
7. Herbivore
8. Carnivore
9. Omnivore
10. Different types of habitats ( rainforests, swampy grasslands, semi- desert etc.)



**Fast Fact:**

Did you know: Although the clouded leopard has the largest canine teeth of all cats in proportion to its size, its purrs like a small cat.

# Asian Domain Scavenger Hunt

## **Objectives:**

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between various organisms, and record common behaviors.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.3, SC.G.1.3.2, SC.G.1.3.3, SC.G.1.3.4, SC.G.2.3.4, SC.H.3.3.1, LA.A.1.3.3, LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.5

## **Materials:**

Asian Domain Scavenger Hunt,  
pen or pencil, clipboard (optional)

## **Answer Key:**

1. Hunting (for horn), an expanding human population
2. Camouflage
3. Rhinoceros and tapir, horse (you may need to give some hints: for example, both have thick skin and like to be near water)
4. Fat - for energy reserve

5. Because these bears can hang upside down like a sloth, though this is a rare behavior
6. Clouded Leopard
7. Komodo Dragon
8. True
9. All-except for the Sloth Bear, which is an omnivore
10. 10.Malayan Tapirdense rainforest Bactrian Camel desert to dry steppe Indian Rhinoceros remote, swampy grassland
11. Babirusa
12. Lowland Anoa

## **FAST FACT**

Did you know: The Rhinoceros's impressive horn is made up of keratin- the same substance that's in your finger and toe nails.



# Asian Domain Scavenger Hunt

Search for clues in the Asian Domain. Look, listen and read the signs!

1. Why is the Indian Rhinoceros almost extinct?  
\_\_\_\_\_
2. Why does the Malayan Tapir have black-and-white coloration? \_\_\_\_\_
3. \_(\_)\_ \_(\_)\_(\_)\_(\_)\_ and \_ \_ \_ \_ (\_ ) are related mammals with prehensile (grasping) lips. Unscramble the indicated (\_ ) letters to form the name of a third relative whose ancestors were domesticated by man. \_ \_ \_ \_ \_ ?
4. The camel's hump stores \_\_\_\_\_. Why? \_\_\_\_\_
5. How did sloth bears get their name? \_\_\_\_\_
6. The tiger has cryptic coloration that helps it to hide. Name another animal in the Asian Domain that has a cryptic pattern.  
\_\_\_\_\_
7. What is the largest species of lizard in the world? \_\_\_\_\_
8. All of the species that live in the Asian Domain are considered endangered or rare?     True     False
9. Animals can be classified according to their diet. Circle the mammals below that could be considered herbivores.  
  
A) Indian Rhinoceros B) Reeves Muntjac C) Sloth Bear
10. Draw a line from the animal to its habitat:  

Malayan Tapir	remote, swampy grasslands
Bactrian Camel	dense rainforest
Indian Rhinoceros	desert to dry steppes
11. Although it appears clumsy, the \_\_\_\_\_ is a swift runner and can swim from island to island in search of food and mates.
12. The \_\_\_\_\_, a miniature water buffalo, is the smallest of all wild cattle species.

# Australia Information Sheet

Australia is the smallest, flattest and driest inhabited continent in the world. It is the country which is also a whole continent. It is located in the Southern Hemisphere down under the equator and is why we often hear Australia referred to as the land down under. Not all of Australia is the dry desert of the outback. Australia has many awesome habitats including, Rainforests, Mountains, gum and eucalyptus forests, wetlands, farmland, sandy beaches and of course the Great Barrier Reef off the coast. These wonderfully diverse habitats are home to many strange and unusual plants and animals. Of these, about 95 percent of the mammals, 70 percent of birds, 88 percent of the reptiles and 94 percent of frogs are found nowhere else in the world.

English is Australians spoken language but it differs from our American English. They use Australian slang called Strine, which is made up of words or phrases which have different meanings from other English (like American or British) that Australians have either made up or borrowed from aborigine words or slang used by early settlers.



Before you visit the zoo it would be helpful for your students to define/discuss the following:

1. Marsupial
2. Jumpbuck
3. Strine
4. Slang
5. Billabong
6. Boomerang
7. Station
8. Outback
9. Aborigines



# Wallaroo Station Scavenger Hunt

## **Objectives:**

The Students will learn skills and observations required for the careful study of any group of animals. They will observe the interaction between various organisms, and record common behaviors

## **Benchmarks:**

LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.3, SC.G.1.3.2, SC.G.1.3.3, SS.A.2.3.4, SS.B.2.3.3, SS.B.2.3.5

## **Materials:**

Wallaroo Station Scavenger Hunt Activity Sheet, pen or pencil, clipboard (optional)

## **Pre-Zoo Activities:**

Teacher should review Wallaroo Station Scavenger Hunt Activity Sheet, answering any questions students might have.

## **Zoo Activities:**

Students are to seek out answers to Wallaroo Station Scavenger Hunt Activity Sheet from the informational plaques located at each exhibit.

## **Post Zoo Activities:**

Go over answers to the Wallaroo Station Scavenger Hunt Activity Sheet. Have students write a paragraph about a few of the animals in Wallaroo Station, using some of the “Strine” terms they learned.

## **ANSWER KEY**

1. A cowboy rounds-up his sheep from the desert to the watering hole to get a drink.
2. A Jillaroo meaning a girl
3. A station
4. A Red Flying Fox
5. Anything
6. However many hands tall you are.
7. To taste their food
8. 3,307
9. A bird. Sounds like it is laughing, i.e. its name: laughing kookaburra
10. Since the Dreaming; what aboriginal people used to explain their world
11. Wallaby and kangaroo
12. Emu
13. they sing, climb trees



## **Fast Fact:**

Did you know: Although they have wings and feathers, emus cannot fly.

# Wallaroo Station Scavenger Hunt

Search for the clues in Wallaroo Station. Look, listen and read the signs!

**You can find these Aussie words located throughout Wallaroo Station. Decipher what this sentence means by translating it into American speak.**

1. A stockman mustered his jumpbuck from the outback to the billabong to get a drink. A \_\_\_\_\_  
\_\_\_\_\_ his \_\_\_\_\_ from the \_\_\_\_\_ to the \_\_\_\_\_ to get a drink.

Answer these questions from the signs throughout Wallaroo Station. Have fun!

2. Is Kylie a Jackaroo or a Jillaroo? \_\_\_\_\_
3. What is the Aussie name for “barn”? \_\_\_\_\_
4. Which Australian desert animal drinks by soaking its chest fur while flying over water and then licking it? \_\_\_\_\_
5. What will African pygmy goats eat? \_\_\_\_\_
6. How many hands would you be if you were a horse or pony? Measure yourself at the Handprint Scale. \_\_\_\_\_
7. What do Koi use their whiskers for? \_\_\_\_\_
8. How long is the Aussie Dingo Fence? \_\_\_\_\_
9. What kind of animal is a kookaburra? \_\_\_\_\_ What does it sound like? \_\_\_\_\_
10. How long have wallabies been in Australia? \_\_\_\_\_
11. Can you guess what two words combined makes up Wallaroo? \_\_\_\_\_ and \_\_\_\_\_
12. The \_\_\_\_\_ is Australia’s national bird.
13. Two unusual behaviors of New Guinea Singing Dogs are \_\_\_\_\_ and \_\_\_\_\_.



# ZOOing It The Right Way

## **Objective:**

The student will design a guideline for zoo patron behavior.

## **Benchmarks:**

SC.D.2.3.2, SC.F.1.3.7, SC.G.1.3.2, SC.G.2.3.4, SC.H.1.3.1, SC.H.1.3.6, SC.H.3.3.2, SC.H.3.3.4, SC.H.3.3.5, LA.B.1.3.3, LA.B.2.3.3, LA.C.1.3.1, VA.A.1.3.1

## **Materials:**

Writing paper Pen or pencil

Copy of Mission: ZOOing It The Right Way



Students will design a guideline for zoo patron behavior. First, students must observe interactions between zoo patrons and zoo inhabitants, listing specific details of the interaction. What exactly did the zoo patron do? What exactly did the zoo inhabitant do? Second, students will review their

observations and determine the pros and cons of each interaction. Third, students will design and or create a guideline for zoo patrons to follow.

## **Pre Zoo Activity:**

Students should be given instructions for their observation/data collection while at the zoo.

## **Zoo Activity:**

Students should observe interactions between zoo patrons and zoo inhabitants and write detailed accounts of what was observed on their copy of Mission: ZOOing It The Right Way.

## **Post Zoo Activity:**

Have groups (or individuals) review observations and write their opinion on the pros and cons of each observed interaction.

Have groups write guidelines for zoo patrons to follow while visiting the zoo.

Have groups create a visual of their 'rules' (a poster, a pamphlet, a flyer, etc.)

Have groups create a role-play script from their observations and act out the script.

Send examples of the visuals or role-play scripts to the Teacher Program Specialist at Lowry Park Zoo and/or display them around school.

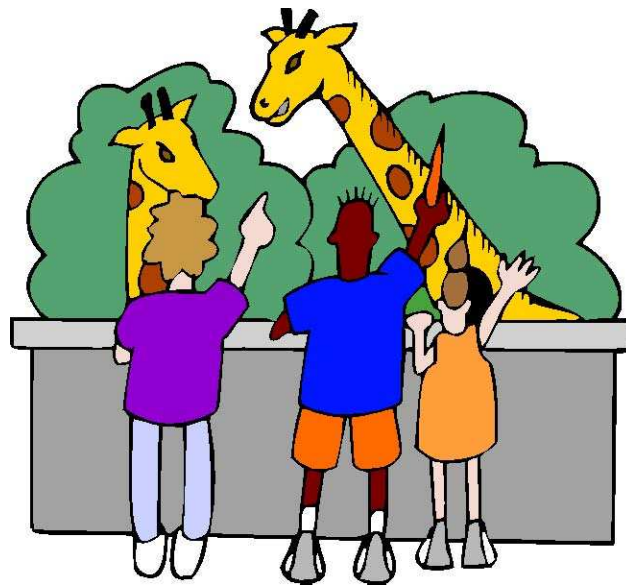
## **Fast Fact:**

Lowry Park Zoo has served 6,000,000 visitors since 1987.

# Mission: ZOOing It The Right Way

You have been given a 'public relations' job at the zoo. You are working for the zoo inhabitants. Your first assignment is to design a new guideline for how zoo patrons should behave while visiting the zoo. To better help you with your design, you decide that first you have to know what is good and what is bad about the present interactions. You will need to ask yourself many questions: Is the interaction stressful for the inhabitants? Does the interaction interfere with the inhabitants' life functions? How do you encourage appropriate interactions and discourage inappropriate interactions? How can you enforce the rules and put them in writing so that patrons will continue to attend (without making them angry)?

1. Wander through the zoo and observe patron-inhabitant interactions. Make sure you write detailed accounts of each observed interaction. What did the patron do? How did the inhabitant respond?
2. After completing your observations review them and determine if they were positive interactions or negative interactions.
3. Design a do's and don'ts guideline for the zoo patrons. (Note: sometimes it's easier to follow the rules if you know why you have to follow them)



# What's For Dinner ?

## **Objective:**

The student will be able to identify the feeding styles of animals (i.e. insectivore, herbivore, nectivore, etc.)

## **Benchmarks:**

SC.G.1.3.3, SC.G.1.3.4, SC.G.1.3.5, SC.G.2.3.2, SC.G.2.3.3, SC.G.2.3.4, SC.H.1.3.2, LA.A.1.3.3, LA.A.2.3.1, MA.A.1.3.3, MA.D.2.3.1, SSB.2.3.6

## **Materials:**

What's for Dinner? Graphic Organizer, pen or pencil, clipboard (optional)

## **Vocabulary:**

Granivore (graminivore) – feeds on grains, grasses and/or seeds.

Frugivore – feeds on fruits

Omnivore – feeds on both plants and animals Carnivore – feeds on meat/flesh

Insectivore – feeds on insects

Folivore – feeds on leaves and shoots of plants

Herbivore – feeds on plants

Nectivore – feeds on nectar



## **What's for Dinner? Answer Key**

1. F
2. D
3. E
4. G
5. H
6. A
7. C
8. B

Students will first learn the meaning of the different feeding styles and will then identify at least 5 Lowry Park Zoo animals for each of the categories.

## **Pre Zoo Activity:**

Give each student a copy of the What's For Dinner? Work sheet or display a copy on an overhead and have students try to match the eating styles with their definitions. Go over and discuss each of the different feeding styles. Discuss with students how you want them to fill out the graphic organizer.

## **Zoo Activity:**

Read the plaques found in front of animal enclosures and complete the graphic organizer What's For Dinner?

## **Post Zoo Activity:**

Have students get into groups and compare their graphic organizers and add any animals they may not have had on their paper.

Have students create a pie or line graph showing what percentage of the animals they observed fit each eating style. They should make sure they title and label the graph correctly.

## **Fast Fact:**

Caterpillars munch on plant parts using strong jaws. Some are such "picky" eaters that they will only eat one kind of plant.

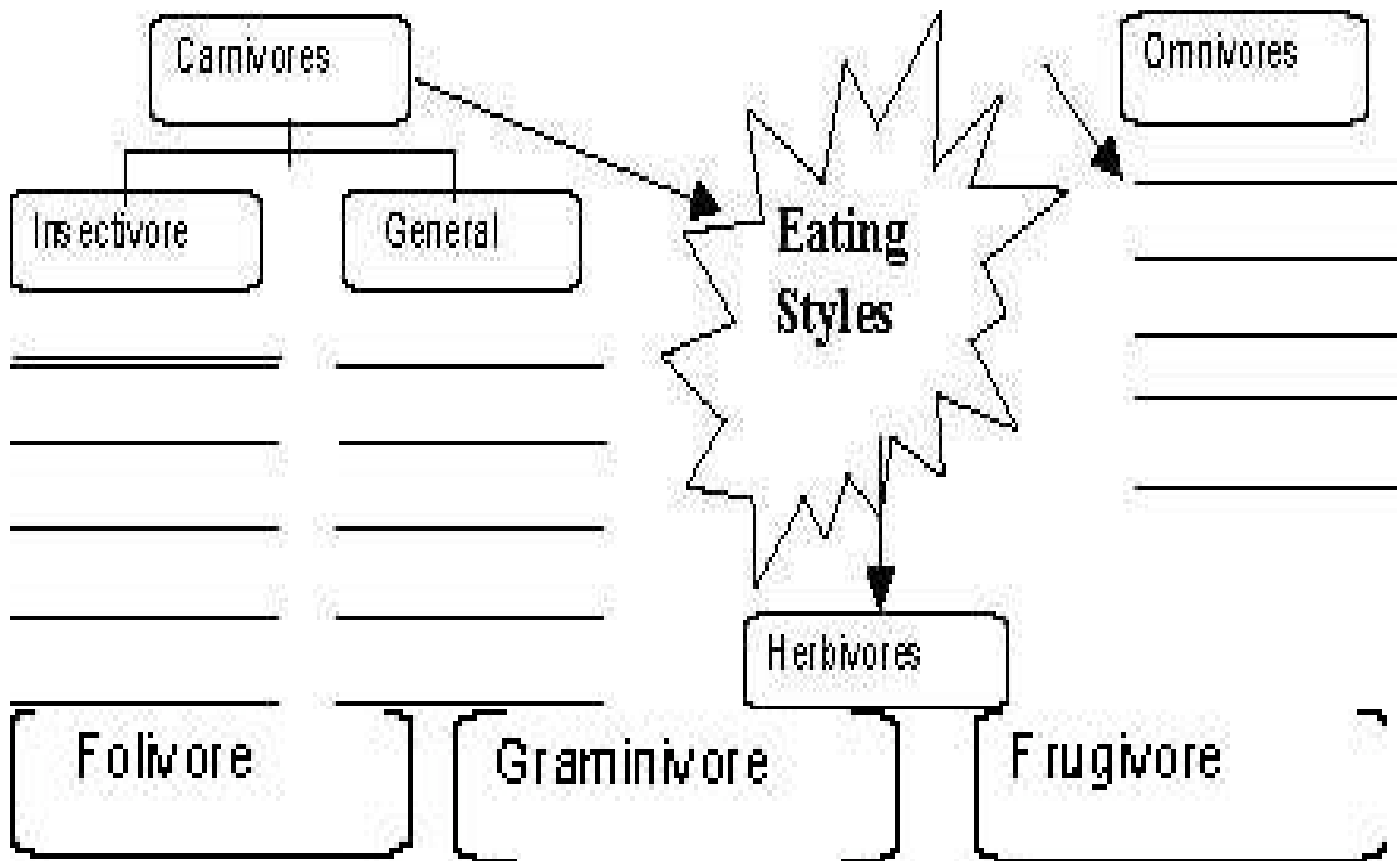
# What's For Dinner?



<u>Feeding Style</u>	<u>Description/Definition</u>
1. graminivore (granivore)	A. feeds on plants in general.
2. frugivore	B. feeds on nectar
3. carnivore	C. feeds on leaves and shoots of plants
4. omnivore	D. feeds on fruits
5. insectivore	E. feeds on meat/flesh only
6. herbivore	F. feeds on grains, grasses, and seeds
7. folivore	G. feeds on both plants and animals
8. nectivore	H. feeds on insects

II. Complete the graphic organizer below as you move through the zoo. You will probably need to read the plaques to discover the eating style of the animal.

Answers will vary.



# Safari Africa Information Sheet

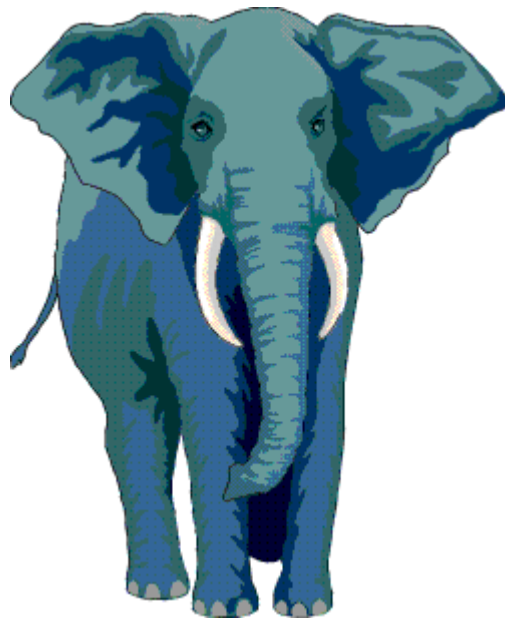


Africa, the second largest continent of the world, is considered by most scientists to be the origin of mankind. While home to the largest desert in the world- the Sahara desert- Africa also boasts an impressive climate and landscape diversity, which includes tropical rain forests, rugged mountains and fertile grasslands- also called savannahs. Africa is also home to approximately 45 species of primates, 60 species of large predators, and countless wildlife forms that require this environmental diversity for survival.

Safari Africa is the newest addition to Tampa's Lowry Park Zoo's collection of authentically reproduced natural habitats. By bringing a slice of "the dark continent" to the zoo, students can experience first hand how environment, conservation and education work together to benefit wildlife-from the smallest duiker to the largest African elephant.

Before you visit the zoo it would be helpful for your students to define/discuss the following:

1. Carrion
2. Transparent
3. Forage
4. Savannah
5. Monogamous
6. Omnivore
7. Endangered
8. Nocturnal
9. Diurnal
10. Crepuscular



# Safari Africa Scavenger Hunt

## **Objectives:**

Students will model the skills and observations required for the careful study of any group of animals. They will observe the interaction between various organisms, and record common behaviors.

## **Benchmarks:**

SC.F.1.3.7, SC.F.2.3.3, SC.G.1.3.2, SC.G.1.3.3, SC.G.1.3.4, SC.G.2.3.4, SC.H.3.3.1, LA.A.1.3.3, LA.B.1.3.1, LA.B.2.3.1, LA.C.1.3.1, MA.D.2.3.2, SS.B.2.3.5

## **Material:**

Safari Africa Scavenger Hunt, It's All Relative Activity Sheet, pen or pencil, clipboard (optional)

## **Pre Zoo Activity:**

- A. Teacher should review Safari Africa-It's All Relative Activity Sheet, directing students to attempt it *prior* to exploring area.
- B. Teacher should review the Safari Africa Scavenger Hunt Activity Sheet, answering any questions students might have.

## **Zoo Activity:**

- A. Students can check their answers on the information plaques in front of the exhibit.
- B. Students are to seek out and record answers to Safari Africa Scavenger Hunt from the informational plaques located at each exhibit.

## **Post Zoo Activity:**

Go over answers on both activity sheets with students. Emphasize that students need to think about how adaptations help animals survive in their particular environment.

## **Vocabulary:**

1. Sow-female pig/warthog
2. Wattle-large protruding patches of skin near eyes and throat
3. Incisors-front teeth
4. Dominant-in control
5. Cavity-hollow place
6. Nutrients-substances that nourish
7. Aggressive-forceful
8. Parasite-one organism living off another, can cause injury or death to its host
9. Conservation-protection from depletion and decay

## **ANSWER KEY**

1. Digging tunnels, social grooming.
2. Protection when attacked.
3. Breathing while underwater, grabbing branches, touching and sniffing, sucking up water and dropping it into its mouth.
4. They are endangered.
5. Conservation of their habitat and reduction of poaching
6. True
7. Crepuscular. They are active at dawn and dusk
8. Omnivores.
9. They bite off the stinger.
10. Giraffes.

**Fast Fact:** Those dark circles around the meerkat's eyes serve as built-in sunglasses helping to deflect the sun's glare

# Safari Africa-It's All Relative

Directions: Before you explore Safari Africa, test your knowledge by trying to match up the below listed African animals with their American relatives and their similarities.

Do this by:

- A) Drawing a line from each African animal to its American relative, and, then
- B) Drawing a line to their shared characteristics.
- C) Next, find the answers on the informational plaques in front of each exhibit.

How did you do?

<b>African Animal</b>	<b>American Animals</b>	<b>Shared Characteristics</b>
Kudu	Pig	Grazer, very social
Warthog	Donley	Small, carnivorous mammal
Meerkat	Sheep	Uses snout to root for food
Zebra	Otter	Hoofed, herbivore



# Safari Africa-It's All Relative

## Teacher Answer Sheet

Directions: Before you explore Safari Africa, test your knowledge by trying to match up the below listed African animals with their American relatives and their similarities.

Do this by:

- D) Drawing a line from each African animal to its American relative, and, then
- E) Drawing a line to their shared characteristics.
- F) Next, find the answers on the informational plaques in front of each exhibit.

How did you do?

<i>African Animal</i>	<i>American Animals</i>	<i>Shared Characteristics</i>
<i>Kudu (Sheep)</i>	<i>Pig</i>	<i>Grazer, very social (Zebra, Donkey)</i>
<i>Warthog (Pig)</i>	<i>Donkey</i>	<i>Small, carnivorous mammal (Meerkat, Otter)</i>
<i>Meerkat (Otter)</i>	<i>Sheep</i>	<i>Uses snout to root for food (Warthog, Pig)</i>
<i>Zebra (Donkey)</i>	<i>Otter</i>	<i>Hoofed, herbivore (Kudu, Sheep)</i>

# Safari Africa Scavenger Hunt

1. Two important uses for meerkat's long claws on its forepaws are \_\_\_\_\_ and \_\_\_\_\_.

2. What is the purpose of the thick, leathery "warts" on a warthog's head?  
\_\_\_\_\_



3. Name 3 ways an elephant uses its trunk:

- 1.
- 2.
- 3.

4. What is one thing kudus, giraffes and crowned-cranes have in common? (Hint: their numbers are significantly declining). \_\_\_\_\_

5. Although still considered endangered, the white rhinoceros nearly became extinct in the wild 100 years ago. Now, however, their numbers have grown to approximately 11,000. How did this amazing increase happen?  
\_\_\_\_\_

6. The skin beneath a zebra's hair is black and white striped. True or False

7. Duikers are: (circle one) nocturnal                      diurnal                      crepuscular

What does this mean? \_\_\_\_\_

8. Flamingos eat vegetation as well as crustaceans and other shellfish. They are therefore classified as  
\_\_\_\_\_.

9. How are meerkats able to eat deadly scorpions without becoming poisoned? \_\_\_\_\_

10. \_\_\_\_\_ are the tallest animals on earth, at heights of 16-18 feet.



# Safari Ride

Take a behind-the-scenes tour of Safari Africa and observe up close some of our most fascinating zoo residents. Nesting ostriches with their chicks, powerful white rhinos and the reclusive okapis are just a few examples of what await you on this safari adventure. Watch out for curious giraffes or swift footed antelope as our open air tram takes you right into their habitat! Survey the massive night houses and holding pens that shelter our largest animal friends. Learn amazing animal facts from our knowledgeable tour guide driver. Tampa's Lowry Park Zoo's Safari Ride is the perfect way to visit Africa – and barely break a sweat!



Before you visit the zoo it would be helpful for your students to define/discuss the following:

1. Reticulated
2. Scavenge
3. Predator
4. Camouflage
5. Adaptation
6. Endangered
7. Carnivorous
8. Herbivorous
9. Ratite
10. Horn/Tusk (compare/contrast)

**Fast Fact:** Although the Okapi has striped legs like a zebra, it is more closely related to a giraffe.

# Safari Ride - I Spy

## I Spy:

1. The zoo's largest Ratite \_\_\_\_\_(its common name).
2. The number of Ratite offspring in this exhibit:\_\_\_\_\_.
3. The herbivore whose odor is so noxious, it discourages predators from attacking:  
\_\_\_\_\_ (Hint: It may seem all *wet*, but actually prefers dry land).
4. Two subspecies of giraffe on display: \_\_\_\_\_ and \_\_\_\_\_.
5. An animal with an 18 inch tongue: \_\_\_\_\_.
6. The animal that first became known to science in 1901 because of its secretive nature:  
\_\_\_\_\_.
7. Three carnivores: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. The zoo's second largest animal. Part of the Species Survival Program: \_\_\_\_\_.  
Bonus: *Explain Species Survival Program*
9. Camel ride which features the 2-humped camel known as: \_\_\_\_\_.  
a.. The one-humped camel is known as: \_\_\_\_\_.  
b. What is the purpose of the hump(s)? \_\_\_\_\_.
10. The "Naked swine of the Savannah:" \_\_\_\_\_.

# Safari Ride - I Spy

## (Teacher Answer Sheet)

### I Spy:

1. The zoo's largest Ratite: **Ostrich** (its common name)
2. The number of Ratite offspring in this exhibit: **accept what you can count, as this figure changes**
3. The herbivore whose odor is so noxious, it discourages predators from attacking:  
**Waterbuck** (Hint: It may seem all *wet*, but actually prefers dry land).
4. Two subspecies of giraffe on display: **Reticulated** and **Ugandan**
5. An animal with an 18 inch tongue: **Giraffe**
6. The animal that first became known to science in 1901 because of its secretive nature:  
**Okapi**
7. Three carnivores: **Cheetah**  
**Marabou Stork**  
**Southern Ground Hornbill**
8. The zoo's second largest animal. Part of the Species Survival Program: **White Rhino**.  
Bonus: *Explain Species Survival Program (endangered animals residing in approved zoos, identified and tracked for breeding purposes. Goal is to keep their gene pool healthy for study and/or future release into the wild).*
9. Camel ride which features the 2-humped camel known as: **Bactrian**
  - a.. The one-humped camel is known as: **Dromedary**
  - b. What is the purpose of the hump(s)? **Store fat/nutrients for long periods**
10. The "Naked swine of the Savannah:" **Warthog**

# **Safari Ride *Mix ' Match***

Directions: Unscramble the letters below to make a correct word (each word has a hint).  
Use the underlined letters to make a new word. The new word answers the  
Question below:

**T E T I R A** (Hint: feathered, yet unable to fly)

**H E E C H T A** (Hint: thanks to its great speed it chases prey, rather than stalks it)

**F F E R A G I** (Hint: only has 7 vertebrae, despite its height)

Where is the largest desert in the world (Sahara Desert) located? \_ \_ \_ \_ \_

# Safari Ride *Mix ' Match*

Directions: Unscramble the letters below to make a correct word (each word has a hint).  
Use the underlined letters to make a new word. The new word answers the  
Question below:

T E T I R A (Hint: feathered, yet unable to fly)  
**RATITE**

H E E C H T A (Hint: thanks to its great speed it chases prey, rather than stalks it)  
**CHEETAH**

F E R A G I (Hint: only has 7 vertebrae, despite its height)  
**GIRAFFE**

Where is the largest desert in the world (Sahara Desert) located? A F R I C A



