



# Endocrine Lab Tour:

## Virtual Classroom Extension

This activity is designed to start your student(s) in recognizing themselves as scientists and thinking critically about problem-solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. As with all lessons provided, please feel free to adapt them according to your students' abilities. Certain scientific vocabulary may or may not be appropriate for your students' level of understanding. Take these ideas, make them your own and your students will have a greater chance at success.

**Materials:** Print outs (pictures and worksheets) at the bottom of the lesson plan, scissors, old newspaper or other old paper. Optional: tweezers

**Preparation:** Print out the pictures at the bottom of this lesson plan. If you do not have a printer, you may sketch your own pictures. Each image goes with the labeled animal. Cut out all the images, but be sure to keep them with their correct animals. Take each cut out and wrap them in newspaper or other paper you have. Create a ball of paper with the images in the center. This will represent the poop of an animal. For instance, if you used the "orangutan" page, you will be creating orangutan poop.

### What can scientists learn by studying animal poop?

1. Discuss with your student(s) the video that gave a tour of the endocrinology lab. Many of the words or concepts may have been new to them. Explain some of those words if necessary.
  - a. Hormone: a chemical made by glands and other special cells in the body that helps different parts of the body communicate. Hormones tell your body when it is time to do different things. They help with things like growth, heartrate, and how hungry you feel.
  - b. Endocrinology: the study of hormones
  - c. Reproductive hormones: These hormones are important for healthy and successful pregnancies. Certain levels of these hormones can indicate if an animal is pregnant.
  - d. Adrenal Gland: glands in the body that produce different types of hormones. There are several types of hormones made in the adrenal gland and these hormones do different things. One type of hormone helps the body react to outside stimuli.
2. Ask your child(ren) what their favorite part of the video. What did they think was the most interesting?
3. If it doesn't come up, remind them that some of the scientists at the Cleveland Metroparks Zoo study poop in order to understand hormones and the health of the animals. (You may substitute the word "poop" with "scat" or "feces" if you prefer. If you do, make sure your child knows what that is referring to.)
4. Tell them that today they get to pretend to be a scientist that studies poop. (Make sure to explain that this is pretend, and they should not touch real animal poop.)
5. Discuss what scientists might learn from animal poop. What clues can poop give you about animals and animal health?

6. Give the students the pre-made paper poop. Tell them that they will be dissecting the poop. Allow them to open the paper poop. For a greater challenge, give them tweezers or pens to use to represent different tools and tell them that they can only use the tools to dissect the poop, not their hands.
7. Students should record or draw out their observations of what is in the animal's poop using the worksheet below.
8. Discuss with them what each item tells them about the animal? What food has the animal been eating recently? Can you tell which animal you have based on the diet? With older students, they can access the internet to try to figure out what type of animal they have based on the food items. With younger students, you can give them the descriptions of the animals provided and they can choose from those three animals.
9. For older students, they can write a paragraph about their findings. They can fill out the attached scientific explanation sheet about what animal they had, and what it ate recently. Make sure that they reference the evidence that they used to support their explanation.

Science Content Standards	
Grade	Standard
K	K.LS.2: Living things have physical traits and behaviors, which influence their survival.
1	1.LS.1 Living things have basic needs, which are met by obtaining materials from the physical environment.
5	5.LS.1: Organisms perform a variety of roles in an ecosystem. (Food webs can be used to identify the relationships among producers, consumers and decomposers in an ecosystem.)



## Animal Fact Sheet

For more information about each animal, visit the Cleveland Metroparks Zoo's Online Resource Library:  
<https://resourcelibrary.clemet zoo.com/Animal/Details>

**Orangutan:** Orangutans live in the rainforests of Borneo and Sumatra in Southeast Asia. They are primarily arboreal, which means they spend most of their time in the trees. Orangutans in the wild eat fruit, leaves, insects, and sometimes small vertebrates and bird eggs. Their favorite foods tend to be durians and figs.

**Lion:** Lions can be found in Africa. They live in a few different habitats, including grassy plains, savannahs, arid woodlands, and semi-deserts. Lions are carnivores. They eat wildebeest, buffalo, zebra, warthogs and other animals they can catch.

**Giraffe:** Giraffe live in African savannahs. They eat leaves from trees, particularly Acacia and Mimosa. They will also sometimes eat seed pods, flowers and fruit. They are the tallest living mammals, which allows them to reach food at the tops of the trees that other animals may not be able to reach.

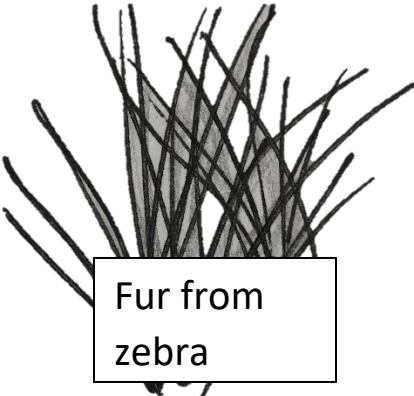
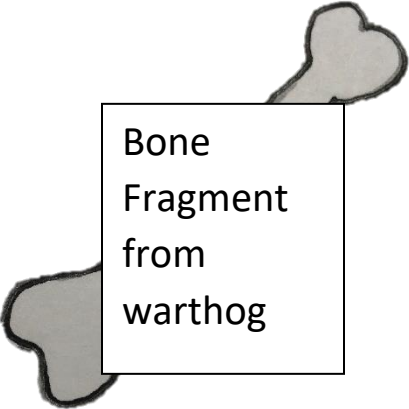


# Data Observation and Scientific Explanation Sheet

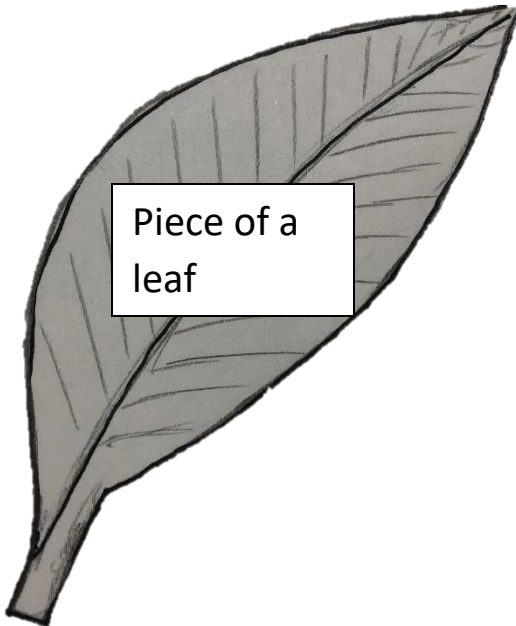
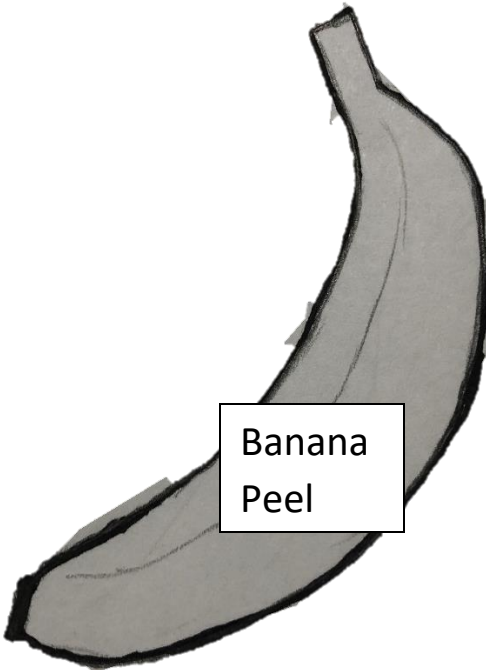
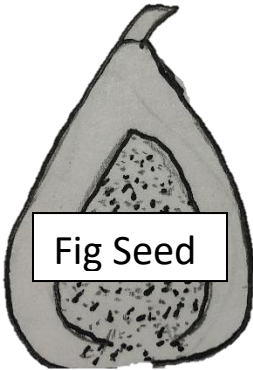
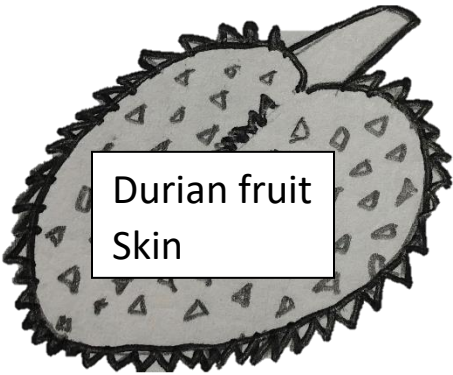
1. In the box below, write or draw what you saw in the animal poop.

2. What animal do you think the poop belongs to?
  
3. Explain why you think so. What evidence supports your claim and why?

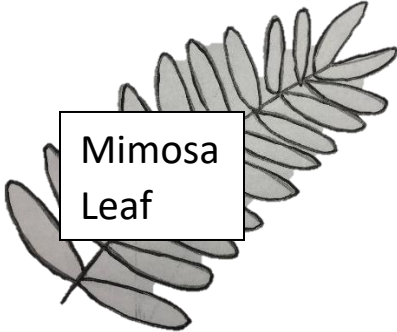
**Lion Food Items:**



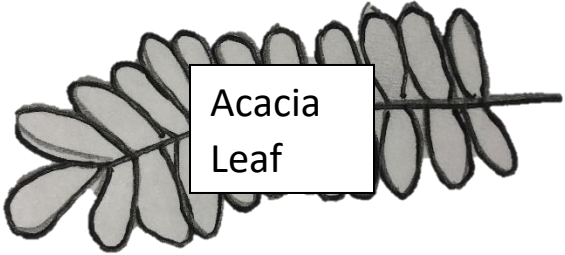
**Orangutan Food Items**



**Giraffe Food Items**



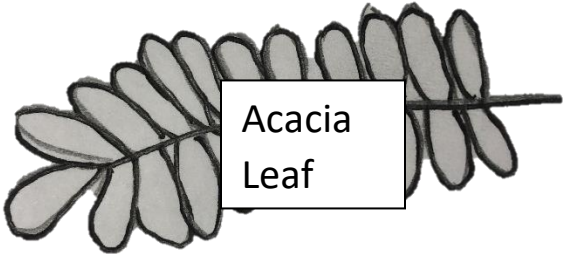
Mimosa  
Leaf



Acacia  
Leaf



Acacia seed pod



Acacia  
Leaf