

# PHILADELPHIA ZOO

3400 West Girard Avenue ■ Philadelphia, PA 19104-1196 ■ 215-243-1100 ■ philadelphiazoo.org

*Post-visit activity*

## Ecosystems (6<sup>th</sup>-8<sup>th</sup>)

In-School Activity

### Food Webs and Ecology: Part II

The first portion of this is the same as the pre-visit activity for Ecosystems (6<sup>th</sup>-8<sup>th</sup> grade).

The instructions and materials for that portion are included for reference:

Use the included worksheets to have students complete the following tasks.

**As individuals:** Have students work as individuals to describe a local ecosystem. They should include all the biotic and abiotic factors they can think of. This activity can be done outdoors and in the actual ecosystem if available. If not, research in books or on a computer works. Lists can be as specific as desired, and if time allows students can thoroughly research the different species that are found in their ecosystem.

**In groups:** Have students who worked on similar ecosystems work together to create food webs. Students should either write names or draw pictures of the plants and animals they want to include, then draw arrows from food to consumer. The arrow should point at the consumer and start from the food. Encourage students to think about all the relationships that occur within the ecosystem – it is rare that an animal only eats one type of food, or that a type of food only supports one type of consumer.

After visiting the Zoo and learning a bit more about ecosystems, students will now examine what happens to an ecosystem when a piece of it is removed.

**In groups:**

- Students should form groups (it works well if you place them in the same groups they formed for Part I) and work with the food web they created in Part I.
- Students should randomly choose an organism to remove from their food web. They can do this by either writing organism names on slips of paper and drawing them out of a bag, or assigning each one a number and rolling dice to see which numbered organism is removed.
- Once they have figured out what is removed, they should work together to fill out the included worksheet.

**As a class:**

- The entire class should discuss their responses to the final three questions.

**Standards**

**PA Academic:** 3.1 A2, 3.1 A8, 3.4 B2, 3.4 E2, 4.1 A, 4.1 C, 4.1 D, 4.1 E, 4.3 B, 4.4 A, 4.4 D, 4.5 A, 4.5 B, 4.5 C, 4.5 D

**Next Generation Science:** MS-LS2-1, MS-LS2-3, MS-LS2-4, MS-LS2-5, MS-LS4-4, MS-LS2-2, MS-ESS3-3, MS-ESS3-4

**New Jersey Core Curriculum:** 5.1, 5.3C, 5.4G

**Common Core:** CCSS.ELA-LITERACY.RST.4, CCSS.ELA-LITERACY.RST.7, CCSS.ELA-LITERACY.W.7, CCSS.ELA-LITERACY.SL.1

# Food Webs and Ecology: Part II

Group Members: \_\_\_\_\_  
\_\_\_\_\_

Describe your food web and list all the organisms involved:

---

---

---

---

Which organism did you remove from your food web? \_\_\_\_\_

What other organisms are affected by this event? *Hint: Look at all the organisms that were food for this species, as well as all the organisms that rely on this species as a food source.* Next to each species, draw an up or down arrow, indicating whether you think the population will increase or decrease based on this change to the food web.

---

---

Think about the following questions with your group and record your responses:

1. Overall, does the loss of this species have the potential for an overall positive or negative impact on the food web? Why do you think that?
  
  
  
  
  
  
  
  
  
  
2. Sometimes, the loss of a species results in another species no longer having a reliable food source. In that case, what do you think might happen to that species? What, then, would happen to the organisms that rely on that species as a food source? How far might this pattern continue?
  
  
  
  
  
  
  
  
  
  
3. When animals go extinct, what kind of impact can this have on the non-living components of their ecosystem? For example, how might soil be impacted if an herbivore goes extinct?