

RELATIONSHIPS IN ECOSYSTEMS

Grade Level	Ideal for 6 th - 8 th grade Appropriate for ages 10 - 14	
Exhibition	<i>Nature Walk</i>	
Time	1 hour	

Overview

In this exploration, students will investigate an ecosystem by observing the individual organisms as part of a larger structure - a food web. Students will first note the various organisms that live in an ecosystem and then create a food web to depict how these organisms are connected.

Guiding Questions

How are organisms in an ecosystem connected through food webs?

What would happen if a major natural disaster were to disturb the natural order within an ecosystem?

Key Words

Carnivore - an organism that consumes animals for food

Decomposer - an organism that breaks down dead plants and animals for food

Ecosystem - a system of organisms that interact within an environment

Herbivore - an organism that consumes plants for food

Omnivore - an organism that consumes both plants and animals for food

Producer - an organism that uses water, sunlight, and nutrients to make its own food

Connections to Standards

Next Generation Science Standard

Disciplinary Core Idea LS2.A: Interdependent Relationships in Ecosystems

Organisms, and populations of organisms, are dependent on their environmental interactions, both with other living things and with nonliving factors. (MS-LS2-1)

Trip Tip: When students first enter an exhibition, encourage them to look around freely before asking them to concentrate on completing this guide. Becoming familiar with their learning space will help students focus.

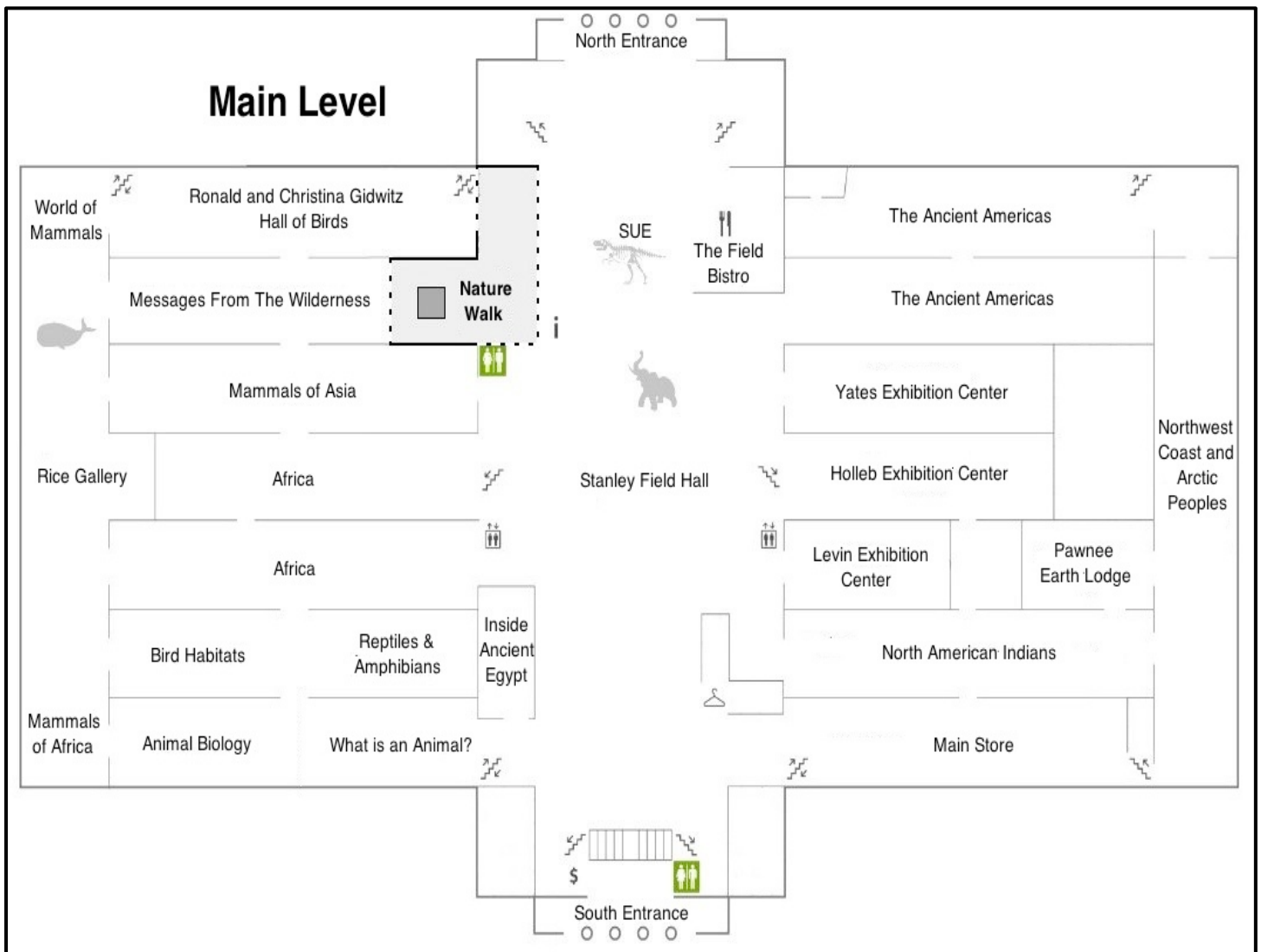
RELATIONSHIPS IN ECOSYSTEMS

Chaperone Guide

Map

Exhibition:

Nature Walk (Main Level)



If you have extra time, visit these related exhibitions:

Messages from the Wilderness (Main Level)

Mammals of Asia (Main Level)

Evolving Planet (Upper Level)

RELATIONSHIPS IN ECOSYSTEMS

Chaperone Guide

RELATIONSHIPS IN ECOSYSTEMS

Student Guide

NAME _____

Think (before you explore)

What did you eat yesterday? What plants and animals were used to make that food?

At The Field Museum you will explore how organisms are connected in an ecosystem through a food web.

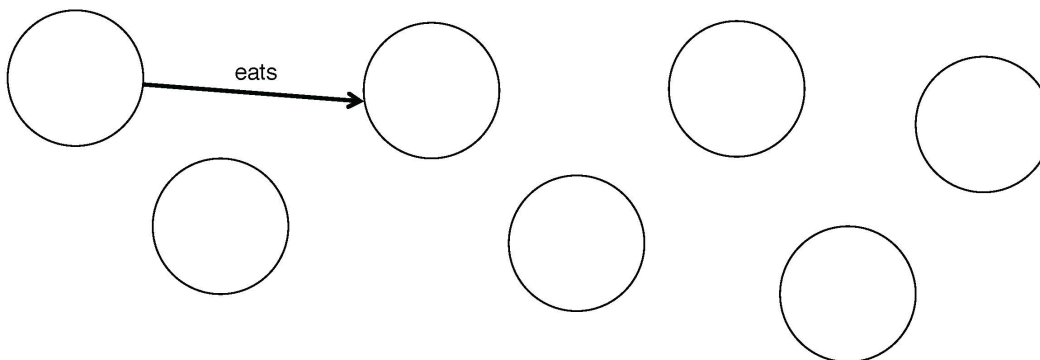
Observe and Explain (in the exhibition) – Part A

Travel to the **Nature Walk** exhibition located on the **Main Level**.

Choose one diorama in **Nature Walk** and **list** all of the organisms that you see in the table below. If you're not sure about the name of an organism, describe what it looks like. If there are no visible decomposers in the diorama, imagine what decomposers could be present (such as fungi or earthworms).

Producers (Plants)	Herbivores	Omnivores	Carnivores	Decomposers

Select seven organisms from the lists above and **write** their names in the circles below. Then **draw arrows** between the circles to show how the organisms are connected in a food web. **Note:** You can draw multiple arrows to or from each organism. You may not be able to connect all of the organisms.



Trip Tip: Before you begin, find a bench or a spot on the floor. Give students an overview of this activity and ask them the **Think** questions.

Trip Tip: As they answer the **Think** questions, ask students to be specific. Encourage them to think about all steps involved in food production and the animal or plant products used in each step.

Trip Tip: Students may choose any of the dioramas in **Nature Walk**, but encourage them to look at each diorama closely before deciding. Remind them to make sure that there are enough organisms to complete the food web.

Trip Tip: Ask students if they have made a food web before. If they haven't, you may want to complete a few circles together as an example.

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Chaperone Guide

Observe and Explain (in the exhibition) – Part B

Using the diorama from **Part A**, imagine that the ecosystem experiences a severe drought over the course of a year. In the panel below, draw a picture of what the ecosystem and organisms in the diorama would look like after the drought.

After the Drought

1. Imagine that the drought kills 60% of the plant life in this ecosystem. How would the decrease in producers affect the population of herbivores in the ecosystem?

2. How would the change in the population of herbivores affect the populations of carnivores and/or omnivores?

3. Due to the changes in the populations of herbivores, carnivores, and omnivores, how would the population of decomposers in the ecosystem change?

Create a Model (after you explore)

When you return to school, create your own diorama! Choose an environment and then create models of plants, animals, and landforms that would be typical of your chosen environment. (Tip: A shoebox can be used to make a great diorama!)

Guiding Questions:

How would the lack of water affect the way that the landscape looks? What organisms would die? What organisms would thrive? How else could organisms change if there was a lack of water?

Trip Tip: Encourage students to refer back to their food web from **Part A** to see how each of these types of organisms directly impacts the other organisms in the ecosystem.

Trip Tip: In addition to stating if the population of an organism in the ecosystem increases or decreases, encourage students to think about *how* the change would occur. Would the organisms move to a new place, die out, or be able to thrive in the new conditions?

Trip Tip: The **Create a Model** activity is a great extended homework assignment. If you have some extra time at the Museum, explore habitats in other exhibits and identify food webs.

RELATIONSHIPS IN ECOSYSTEMS

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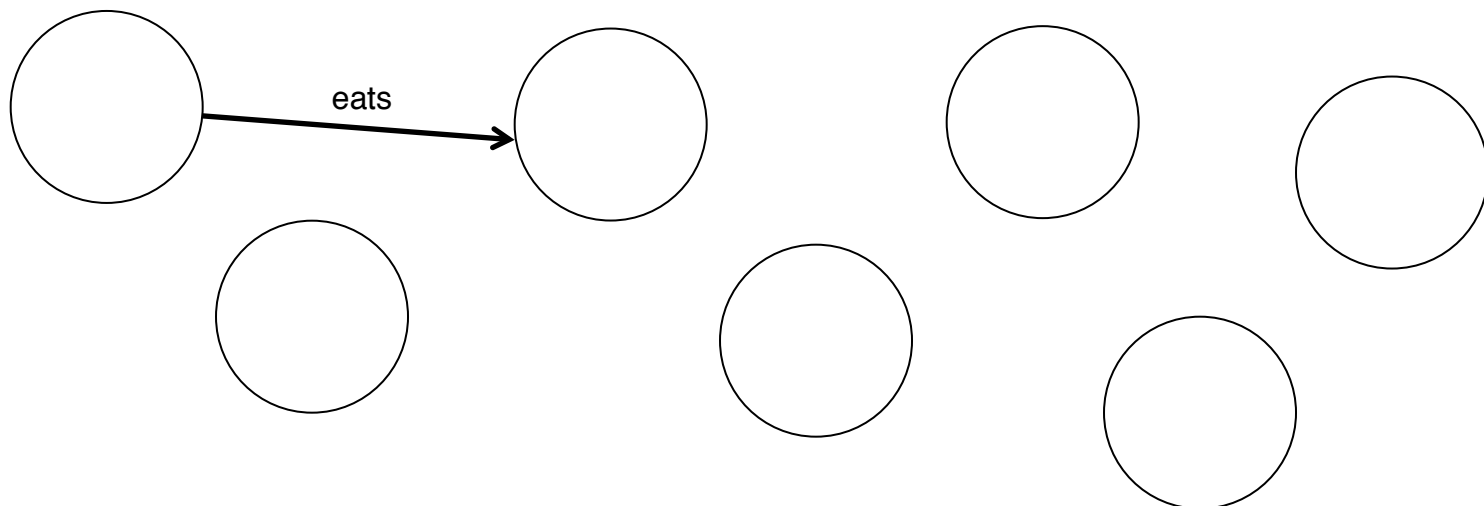
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Observe and Explain (in the exhibition) – Part B

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