

## What is an Ecosystem?

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### Overview

This lesson introduces 5<sup>th</sup> grade students to ecosystems in Michigan which are found in state parks like Belle Isle State Park in Detroit, Michigan. Student will learn what an ecosystem is, what the components of ecosystems are, and about one specific type of ecosystem--wetlands.

**Target Grade/Subject:** Gr. 5, Science

**Duration:** 1-2 class periods

**Instructional Setting:** classroom

**Advance preparation:** obtain tradebook: Wetland Food Chains by Bobbie Kalman; make copies of "Is THAT Really an Ecosystem?" from MEECS Ecosystems & Biodiversity notebook, obtain an aquarium or pictures of an aquarium

### Learning Objectives:

*At the end of the lesson, students will be able to:*

- Describe an ecosystem
- Explain how energy moves through a wetland ecosystem.

### Michigan Science Performance Expectation Addressed 5-LS2-1

**SEP: Developing and Using Models** -Develop a model to describe phenomena

**DCI:** LS2.A – Interdependent Relationships in Ecosystems

**CCC: Systems and System Models** -A system can be described in terms of its components and their interactions.

### MATERIALS:

*Wetland Food Chains* by Bobbie Kalman (multiple copies for students to share and read along, or document camera)

1 copy/ student of "Is THAT Really an Ecosystem?" from MEECS Ecosystems & Biodiversity Unit

1 sheet/student drawing paper

crayons

pencils

aquarium or a picture of an aquarium

**Guiding Question:** How do living organisms obtain the energy they need?

**Engage:**

Show a picture of an aquarium with fish, plants, gravel, etc. or have students observe an aquarium. Have a sheet of paper on each students' desk with the question- What is an ecosystem? – the paper should be turned over so the students cannot see the question until after they have observed the aquarium.

**Expected prior knowledge:** students should know the needs of living things.

**Explore:** Ask students to share their answer to the question “What is an ecosystem?” with their partner or table and rewrite a definition with their partner or table to share with the class. Write each group’s definition on the board.

After each group has shared their definition, give each student a copy of “Is THAT Really an Ecosystem?” instruct students to circle the pictures that are ecosystems. Poll the class to determine which pictures are ecosystems. Refer back to the group definitions to develop a class definition for ecosystems. Ask the students if the pictures match the class definition of ecosystem. Explain that there are different types of ecosystems and you will read part of a book about the parts of an ecosystem called a “wetland”.

Read the book, Wetland Food Chains, pages 1-13, aloud to students; show the pictures (if available, use a document camera).

**Explain/Elaborate:** Show the students the picture on page 9, if you can place the picture on a document camera. Explain that a food chain is the pattern of living things (organisms) eating and being eaten. All food chains start with the sun. Every plant and animal on Earth is part of at least one food chain.

Reread pages 10-11 and explain the different levels in a food chain.

Ask students to look at the class aquarium or picture of an aquarium and draw at least one food chain that they observe and label each part of the food chain. Give each student drawing paper and crayons to complete the activity. Ask several students to explain their food chain.

**Evaluate:** Show the class the front cover of the book and ask each student to write a description of the food chain they observe and label each part of the food chain. Ask the students to explain how the sun is part of this food chain.

**New Vocabulary**

**Ecosystem** - the community of organisms that live in a particular area, along with their nonliving surroundings.

**Food chain** – a series of events in which one organism eats another and obtains energy.

**Producers** – plants that capture the energy of sunlight and store it as food energy. These organisms use the sun’s energy to turn water and carbon dioxide into food molecules in a process called photosynthesis.

**Herbivores** – organisms that eat only plants.

**Carnivores** – organisms that eat meat.

**Wetland** – areas of land that are covered with water.

### **Sources**

Kalman, Bobbie. Wetland Food Chains, Crabtree Publishing Company [www.crabtreebooks.com](http://www.crabtreebooks.com)

Michigan Environmental Education Curriculum Support (MEECS) Ecosystems & Biodiversity (2012). Michigan Department of Environmental Quality. Worksheet “Is THAT Really an Ecosystem?” Lesson 1

Environmental Science Chapter 1 section 1 and Chapter 2 section 1.

<http://hgss.nsta.org/Professional-Learning.aspx> [www.pearsonsuccessnet.com](http://www.pearsonsuccessnet.com)