

# Unit III: Food Chains and Webs in Ecosystems

Content Area: **Science**  
Course(s): **Science 3**  
Time Period: **February**  
Length: **Jan 25 - Apr 8**  
Status: **Published**

## Enduring Understandings

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### Food Chains and Webs

Students explore Food Chains and Webs through twelve on-activities and the Delta Science Reader. Every bite we take connects us to a complex network known as a food web. Because most food webs begin with plants, students first explore plants as food producers. They experiment with soil and light to find the best growing conditions, and plant ryegrass in terrariums. Then they introduce crickets, earthworms, and anoles, and watch what happens. Students are soon able to classify each animal as a primary, secondary, or tertiary consumer, or decomposer, based on what it eats. For reinforcement, students role-play various predators and prey in a food chain game. By the end of the unit, students can apply their knowledge of specific plant and animal relationships to the understanding of food webs in nature.

In the Delta Science Reader Food Chains and Webs, students read about what an ecosystem is, how living things in an ecosystem get energy, and how ecosystems can change. Students explore the interaction of living things and discuss food chains and webs. The book also presents biographical sketches of key scientists—Charles Darwin and Rachel Carson—and describes the work of an ecologist. Students also will discover the relationship between moose and wolf populations on Isle Royale and consider the varied ecosystems on a mountain.

Organisms and their environments are interconnected.

Changes in one part of the system will affect other parts of the system.

Matter needed to sustain life is continually recycled among and between organisms and the environment.

Energy from the sun flows irreversibly through ecosystems and is conserved as organisms use and transform it.

Humans can alter the living and non-living factors within an ecosystem, thereby creating changes to the overall system.

## Essential Questions

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What is a pond ecosystem?

How do ecosystems Change?

How do living things interact?

## **Content**

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Vocabulary:

diversity, endangered, extinct, carnivore, consumer, decomposer, energy

pyramid, food chain, food web, herbivore, nutrients, omnivore, producer, scavenger, adaptation, camouflage, host, interact, mimicry, parasite, predator, prey, community, ecosystem, habitat, organism,

population, species

### ***Helping Plants Grow Well***

[www.bbc.co.uk/schools/scienceclips/index\\_flash.shtml](http://www.bbc.co.uk/schools/scienceclips/index_flash.shtml)  
*Choose ages 7 & 8, Helping Plants Grow Well*

### **Great Plant Escape**

[www.urbanext.uiuc.edu](http://www.urbanext.uiuc.edu)

Click on: Just for Kids; then click: Great Plant Escape;

### **Herman the Worm**

[www.urbanext.ujuc.edu](http://www.urbanext.ujuc.edu)

Click on *Just for Kids*; then *Herman the Worm*

### ***Owl Pellet Dissection***

[www.froguts.com](http://www.froguts.com)

click on demo; choose owl pellet; click begin

### **Interdependence and Adaption**

[www.bbc.co.uk/schools/scienceclips/index\\_flash.shtml](http://www.bbc.co.uk/schools/scienceclips/index_flash.shtml)

Select ages 10-11. Click on *Interdependence and Adaption* to begin food chain activity.

### **The Bell Museum of Natural History**

✘ <http://www.bellmuseum.org/ecogames.html>

### **Boston Museum of Science The Living Sea: Predators and Prey**

✘ <http://www.mos.org/oceans/life/webs.html>

✘ <http://www.mos.org/oceans/life/game.html>

### **Environmental Protection Agency Kids Page**

✘ <http://www.epa.gov/kids>

### **The Global Habitat Project**

✘ <http://www.greenscreen.org>

### **Kids Do Ecology**

✘ <http://www.nceas.ucsb.edu/nceas-web/kids/>

### **National Wildlife Federation Kidzone**

✘ <http://www.nwf.org/kids>

### **Population Growth and Balance Tool**

✘ <http://www.arcytech.org/java/population>

### **Smithsonian Museum of Natural History**

✘ [http://www.mnh.si.edu/edu\\_resources.html](http://www.mnh.si.edu/edu_resources.html)

### **Smithsonian National Zoological Park**

✘ <http://www.natzo.si.edu/Education/ClassroomResources>

### **U.S. Department of Agriculture for Kids**

✘ <http://www.usda.gov/news/usdakids/>

### **The World's Biomes**

✘ <http://www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html>

### **Videos:**

*Food Chains ,Food Webs, Energy Pyramid in Ecosystems*

✘ <https://www.youtube.com/watch?v=SWvtRf4TAO4>

*PBS Learning - Simple Machines*

✘ <http://www.pbslearningmedia.org/resource/idptv11.sci.phys.maf.d4ksim/simple-machines/i>

[https://sppublic.jefferson.kyschools.us/gheenswebsite/Public%20Documents/2014-15\\_4th\\_grade\\_Map\\_Cycle\\_1\\_Only.pdf](https://sppublic.jefferson.kyschools.us/gheenswebsite/Public%20Documents/2014-15_4th_grade_Map_Cycle_1_Only.pdf)

### **Videos**

<http://www.sciencea-z.com/scienceweb/fosscorrelations.do>

[http://archive.fossweb.com/NYC/modules3-5/DSM\\_Foodchains/foodchains.html](http://archive.fossweb.com/NYC/modules3-5/DSM_Foodchains/foodchains.html)

[http://www.ecokids.ca/pub/eco\\_info/topics/frogs/chain\\_reaction/index.cfm](http://www.ecokids.ca/pub/eco_info/topics/frogs/chain_reaction/index.cfm)

## Skills

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## Standards

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SCI.3	Interdependent Relationships in Ecosystems
SCI.3-LS2-1	Construct an argument that some animals form groups that help members survive.
SCI.3-LS4-1	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.
SCI.3-LS4-3	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
SCI.3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.