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

ood 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—CharlesDarwin 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

What is a pond ecosystem?

How do ecosystems Change?

How do living things interact?

Content

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
Choose ages 7 & 8, Helping Plants Grow Well

Great Plant Escape
www.urbanext.uiuc.edu
Click on: Just for Kids; then click: Great Plant Escape;

Herman the Worm
www.urbanext.ujuc.edu
Click on *Just for Kids;*then *Herman the Worm*

Owl Pellet Dissection
www.froguts.com
click on demo; choose owl pellet; click begin

Interdependence and Adapation
www.bbc.co.uk/schools/scienceclips/index_flash.shtml
Select ages 10-11. Click on *Interdependence and Adaptation* 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

Smithsonian National Zoological Park
http://www.natzoo.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

Videos

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

http://archive.fossweb.com/NYC/modules3-5/DSM_Foodchains/foodchains.html

http://www.ecokids.ca/pub/eco_info/topics/frogs/chain_reaction/index.cfm

Skills

Standards

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.