

Interdisciplinary Unit
Second Grade Unit 5

Concept: SYSTEMS

Essential Question:

What impact does one small thing have on a big system?

Deepening Question:

How do animals adapt to survive?

How do living things cause changes in their nonliving environment?

How do living things interact with one another and with the non-living elements of their environment?

What impact have people had on our community's environment?

How can we make a difference in our community?

*(Optional) How do the different systems in our bodies work together?

Hook:

Artwork: Restoration of a Walking Herd by Charles R. Knight

http://en.wikipedia.org/wiki/Charles_R._Knight



La Brea Tar Pits in California

http://en.wikipedia.org/wiki/La_Brea_Tar_Pits



Section 1: Living Things in a Habitat

Deepening Questions:

How do animals adapt to survive?

How do living things cause changes in their nonliving environment?

How do living things interact with one another and with the non-living elements of their environment?

- Needs of Living Things (review)
 - Living Things Needs (attachment)
- Animal Groups (brief review from 1st grade)
- Backbones vs. No Backbones
 - Vertebrae and invertebrate worksheet (attachment)
- Animal Life Cycle (if not covered in Unit 1)
- Adaptation
 - Behavioral adaptations flipbook (attachment)
 - Animal adaptation activities (TPT \$2:
<https://www.teacherspayteachers.com/Product/Animal-Adaptions-PowerPoint-Presentation-and-Worksheet-678455>)

- Ideas for creating adaptation stations in the classroom:
<http://eisforexplore.blogspot.com/2012/06/animal-adaptations.html>
 - What if You Had Animal Teeth?:
<http://oceansoffirstgradefun.blogspot.com/2013/03/what-if-you-had-animal-teeth.html?showComment=1362550086973>
 - Camouflage
 - Animal Camouflage worksheet (attachment)
 - Online information (<http://animals.howstuffworks.com/animal-facts/animal-camouflage.htm>)
 - Read the book *Animal Hide and Seek* (wegivebooks.org)
 - Migration (brief)
 - Helpful Traits (e.g. long neck for giraffe)
 - Helpful animal traits (attachment)
 - Animal Tracks (what feet animals have)
 - Inheriting Traits
 - Traits game (also reviews animal groups):
<http://mrfedsscienceclass.weebly.com/for-animals.html>
- Design an animal project (attachment)
- Kinds of Habitats (Forest, Hot and Cold Deserts, Oceans, Ponds)-(covered in detail in 1st grade)
 - Build an online habitat game:
<http://switchzoo.com/games/habitatgame.htm>
 - Main Idea and Details
 - Describe an animal habitat writing project
- Food Chains
 - Herbivore, carnivore, omnivores
 - Food chain video (<http://www.turtlediary.com/grade-2-games/science-games/food-chain.html>)
 - Food chain stackers (attachment)
 - Prey/Predator
 - Food chains online game:
<http://www.curriculumbits.com/prodimages/details/physics/food-chains.html>
- Food Webs
 - What are food webs?
 - Short video:
<http://www.macmillanmh.com/science/2008/student/il/scienceinmotion/Common/SIM.html?Module=../Grade2/Chapter3-FoodWeb/>
 - Text and Graphic Features
- Habitat Change
 - Cause/Effect
- Endangered Species

- Point of View
 - Endangered animals research project (TPT \$3.25):
<https://www.teacherspayteachers.com/Product/Endangered-Animals-Literacy-Center-and-Research-Activity-651295>
- Habitats of the Past (fossil, extinction)

*Optional Section: Plants

(if you haven't covered needs of plants, plant parts, and plant life cycles, it can be substituted here.)

Section 2: Going Green

What impact have people had on our community's environment?

How can we make a difference in our community?

- Human or Physical characteristics of Earth
 - Natural vs. Man-made resources sort (attachment)
- Review: Earth's natural resources (A Closer Look, Unit 3, Lesson 3)
 - How people use natural resources
 - Human actions-positive or negative (Adaptations)
 - Preserving natural resources (attachment)
- Plants/Animals and the Environment
 - Worm hotel: <https://suite.io/karrie-mcallister/1w152ef>
- Pollution
 - Types of pollution (land, water, air)
 - Harming the Earth wanted poster (attachment)
- Environmental Activism
 - Recycle, Reuse, Reduce
 - Protect the Earth booklet (attachment)
 - Earth Day superheroes (show here:
<http://buzzingaboutsecondgrade.blogspot.com/2012/04/calling-all-earth-day-superheros.html>)
 - Garbage patch drawing project (attachment)

*Health: Optional (based on health education standards in school and state

Deepening Question: How do the different systems in our bodies work together?

- Skeletal System
- Muscular & Nervous System
- Circulatory & Respiratory System
- Digestive System
- Persuasive Writing

*Space Science (Indiana)

Phases of the Moon

Shadows

Common Core Standards

ELA Standards

ELA.2.2.	They build strong content knowledge.
ELA.2.3.	They respond to the varying demands of audience, task, purpose, and discipline
ELA.2.6.	They use technology and digital media strategically and capably
L.2.1.	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking
L.2.2.	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing
L.2.4.	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies
L.2.5.	Demonstrate understanding of word relationships and nuances in word meanings
RI.2.1.	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text
RI.2.10.	By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2-3 text complexity band proficiently, with scaffolding as needed at the high end of the range
RI.2.4.	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area
RI.2.5.	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons)
RI.2.8.	Describe how reasons support specific points the author makes in a text
SL.2.2.	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media
W.2.1.	Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also).
W.2.2.	Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section
W.2.7.	Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations)

Standards by State

Ohio

Social Studies

OH.2.7	The work that people do is impacted by the distinctive human and physical characteristics in the place where they live.
OH.2.10	Personal accountability includes making responsible choices, taking responsibility for personal actions and respecting others
OH.2.14	14. Resources can be used in various ways.

Science

LS.2.1.	Living things cause changes on Earth.
LS.2.2.	Some kinds of individuals that once lived on Earth have completely disappeared, although they were something like others that are alive today.

Michigan

Social Studies

2 – G5.0.1	Suggest ways people can responsibly interact with the environment in the local community.
2 – G5.0.2	Describe positive and negative consequences of changing the physical environment of the local community
2 – C5.0.3	Design and participate in community improvement projects that help or inform others.

Science

MI.E.FE.02.11.	Identify water sources (wells, springs, lakes, rivers, oceans).
MI.E.FE.02.12.	Identify household uses of water (drinking, cleaning, food preparation).
MI.E.FE.02.21.	Describe how rain collects on the surface of the Earth and flows downhill into bodies of water (streams, rivers, lakes, oceans) or into the ground.
MI.S.IA.02.12.	Share ideas about science through purposeful conversation.
MI.S.IA.02.14.	Develop strategies and skills for information gathering and problem solving (books, internet, ask an expert, observation, investigation, technology tools).
MI.S.RS.02.11.	Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities

Missouri

Social Studies

	Identify and describe physical characteristics in the world (landforms, water bodies, etc.)
	Describe different types of communication and transportation and identify their advantages and disadvantages

Science

MO.2.3.1.B.a.	Identify and sequence life cycles (birth, growth, and development, reproduction, and death) of animals (i.e., butterfly, frog, chicken, snake, dog)
MO.2.3.1.B.b.	Record observations on the life cycle of different animals (e.g., butterfly, dog, frog, chicken, snake)
MO.2.3.3.D.a.	Identify and relate the similarities and differences among animal parents and their offspring or multiple offspring
MO.2.8.3.A.a.	Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of individuals solving everyday problems or learning through discovery)
MO.2.8.3.A.b.	Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member

Wisconsin

Social Studies

	A.4.4 Describe and give examples of ways in which people interact with the physical environment, including use of land, location of communities, methods of construction, and design of shelters
	A.4.8 Identify major changes in the local community that have been caused by human beings, such as a construction project, a new highway, a building torn down, or a fire; discuss reasons for these changes; and explain their probable effects on the community and the environment
	A.4.9 Give examples to show how scientific and technological knowledge has led to environmental changes, such as pollution prevention measures, air-conditioning, and solar heating
	B.4.8 Compare past and present technologies related to energy, transportation, and communications and describe the effects of technological change, either beneficial or harmful, on people and the environment

Science

WI.2.A.4.5.	When studying a science-related problem, decide what changes* over time are occurring or have occurred

WI.2.B.4.1.	Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations
WI.2.B.4.3.	Show* how the major developments of scientific knowledge in the earth and space, life and environmental, and physical sciences have changed over time
WI.2.C.4.1.	Use the vocabulary of the unifying themes* to ask questions about objects, organisms, and events being studied
WI.2.E.4.7.	Using the science themes*, describe* resources used in the home, community, and nation as a whole
WI.2.E.4.8.	Illustrate* human resources use in mining, forestry, farming, and manufacturing in Wisconsin and elsewhere in the world
WI.2.F.4.1.	Discover* how each organism meets its basic needs for water, nutrients, protection, and energy* in order to survive
WI.2.F.4.2.	Investigate* how organisms, especially plants, respond to both internal cues (the need for water) and external cues (changes in the environment)
WI.2.F.4.3.	Illustrate* the different ways that organisms grow through life stages and survive to produce new members of their type
WI.2.F.4.4.	Using the science themes*, develop explanations* for the connections among living and non-living things in various environments
WI.2.H.4.1.	Describe* how science and technology have helped, and in some cases hindered, progress in providing better food, more rapid information, quicker and safer transportation, and more effective health care
WI.2.H.4.2.	Using the science themes*, identify* local and state issues that are helped by science and technology and explain* how science and technology can also cause a problem
WI.2.H.4.4.	Develop* a list of issues that citizens must make decisions about and describe* a strategy for becoming informed about the science behind these issues

Minnesota

Social Studies

	2.2.4.5.1 Classify materials that come from nature as natural resources (or raw materials); tools, equipment and factories as capital resources; and workers as human resources. For example:
	2.3.4.9.1 Identify causes and consequences of human impact on the environment and ways that the environment influences people

Science

2.4.1.1.1.	Living things are diverse with many different observable characteristics.
2.4.2.1.1.	Natural systems have many components that interact to maintain the system
2.4.3.1.1.	Plants and animals undergo a series of orderly changes during their life cycles.

Illinois

Social Studies

17.B.1b	Describe physical components of ecosystems.
17.C.1a	Identify ways people depend on and interact with the physical environment (e.g., farming, fishing, hydroelectric power).
17.C.1c	Explain the difference between renewable and nonrenewable resources.

Science

2.12.4.01.	Distinguish between living and non-living things.
2.12.4.02.	Identify the basic divisions of animals and their common characteristics (e.g., define mammal, fish, bird, reptile, amphibian, insect, arachnid; give examples of each).
2.12.4.03.	Identify the life cycle of familiar animals and compare their various stages: birth, growth and development, reproduction, and death. Understand that metamorphosis occurs in some animals (e.g., butterflies, frogs).
2.12.4.04.	Identify the basic needs of living things: animals need air, water, food, and shelter; plants need air, water, nutrients, and light.
2.12.4.05.	Understand the functions of component parts of living things.
2.12.4.06.	Understand that some characteristics of living things are inherited from parents, such as the color of a flower in a plant, or the number of limbs on an animal. Understand that other features, however, are acquired by an organism through interactions with its environment (or learned) and cannot be passed down to the next generation merely through reproduction.
2.12.4.07.	Understand the concept of food chains and food webs and the related classifications of plants or animals (e.g., producers, decomposers, consumers, herbivores, carnivores).
2.12.4.08.	Know that the world contains many kinds of environments, and that different animals and plants are suited to live in different environments.
2.12.4.12.	Understand that some animals survive winter by being fitted for an active life during winter (e.g., penguins), others by hibernation (e.g., certain bears), and others by migration (e.g., monarch butterflies).
2.12.4.13.	Understand that human activities can change the number of species in an area, whether by increasing it or decreasing it.
2.12.4.30.	Understand that a natural resource is any material found on Earth that is used by people. Understand the difference between renewable and nonrenewable resources. Know that fossil fuels come from animals and plants, and that oil, coal, and natural gas are examples of fossil fuels.
2.12.4.31.	Identify which everyday materials decompose most slowly (e.g., plastics, glass and ceramics decompose slower than metals, wood, or food substances).

2.13.4.12.	Identify ways that technology has changed local, national, or global environments.
2.13.4.13.	Identify ways to reduce, reuse, and recycle materials.

Indiana

Social Studies

2.4.1	<p>Define the three types of productive resources (human resources, natural resources and capital resources)</p> <ul style="list-style-type: none"> • Human resources (labor) describe the human work effort, both physical and mental, expended in production • Natural resources (often called land resources) refer to resources such as coal, water, trees, and land itself • Capital resources are the man-made physical resources (such as buildings, tools, machines, and equipment) used in production.
2.3.3	Compare neighborhoods in your community and explain how physical features of the community affect people living there.

Science

N.2.2.8.	Investigate how the moon appears to move through the sky during the day by observing and drawing its location at different times.
IN.2.2.9.	Investigate how the shape of the moon changes from day to day in a repeating cycle that lasts about a month.
IN.2.3.1.	Observe closely over a period of time and then record in pictures and words the changes in plants and animals throughout their life cycles-including details of their body plan, structure and timing of growth, reproduction and death.
IN.2.3.2.	Compare and contrast details of body plans and structures within the life cycles of plants and animals.
IN.2.4.2.	Identify technologies developed by humans to meet human needs. Investigate the limitations of technologies and how they have improved quality of life.