



<i>sTimeline -></i>	<u>Quarter Two</u>
<p>Guiding Questions</p>	<p><u>Science:</u> What are the steps of scientific inquiry and how can we use them to solve problems? How do plants produce food? How does energy pass through an ecosystem? How do organisms compete and survive in ecosystems? How do ecosystems change over time? How do people affect ecosystems?</p> <p><u>Language Arts:</u> What can we learn about energy and the flow of energy through ecosystems by reading? How can we write to show the steps we have used in the scientific method? How can adjectives help our written science descriptions?</p> <p><u>Math:</u> How can Venn diagrams help sort items that are the same or different? How is a bar graph drawn to show totals with provided data? What conclusions can we draw from the data portrayed by the graph? How are measurements used to gather and record data? How are different measurements converted to other measurements? (cm-in-ft) How can we use addition, subtraction, multiplication, division and percentages to solve problems? How are ratios used to solve problems?</p> <p><u>Social Studies:</u> How can we use information to solve a societal problem?</p> <p><u>Art:</u> How can we draw/illustrate and label sketches for a science notebook? How can we create 3-D models to showcase how energy (food) travels through ecosystems AND how ecosystems change over time?</p>



<p>General Learner Outcomes</p>	<p><u>GLO#1: Self-Directed Learner:</u> Students will create</p> <p><u>GLO#2: Community Contributor:</u> Students will share</p> <p><u>GLO#3: Complex Thinker:</u> Students will use their problem solving, math and writing skills to investigate</p> <p><u>GLO#4: Quality Producer:</u> Students will create a final product (poster/diorama/model) that illustrates the</p> <p>Students will create math products (graphs, data tables, charts) that enhance science products.</p> <p><u>GLO#5: Effective Communicator:</u> Students will listen, discuss and record information from their different lessons through oral, written and math pieces that illustrate concepts they have learned about.</p> <p>Students will orally share with younger students their final products.</p>
<p>Assessments</p>	<p>Formative and summative textbook assessments.</p> <p>Constructed response (math, language arts, science) that is based on the unit ideas and concepts</p>

Standards & Benchmarks

- ◇ 5.1.1 **Scientific Inquiry**
Identify the variables in scientific investigations and recognize the importance of controlling variables in scientific experiments
- ◇ 5.1.2 **Scientific Inquiry**
Formulate and defend conclusions based on evidence
- ◇ 5.2.1 **Unifying Concepts and Themes**
Use models and/or simulations to represent and investigate features of objects, events, and processes in the real world
- ◇ 5.3.1 **Cycles of Matter and Energy**
Describe the cycle of energy between producers, consumers and decomposers
- ◇ 5.2.1 **Interdependence**
Describe the interdependent relationships among producers, consumers, and decomposers in an ecosystem in terms of the cycles of matter



Big Idea(s) / Major Understanding(s): *Students will understand that...*

An ecosystem is all the living (producers, consumers, and decomposers) and nonliving (soil, air, water, and sunlight) things that interact with each other in an environment.

Matter (food, water and air) is changed and recycled in the ecosystem.

Energy usually enters an ecosystem from the sun, flows through producers (plants) in the form of water and carbon dioxide, and then is turned into glucose, a food (stored energy) for the plant.

All organisms need energy to live. They are categorized on the basis of how they get this energy. In most ecosystems, producers form the base of the food chain with the sun's energy flowing through consumers and decomposers, which end the food chain as it breaks down the organisms.

Sample Performance Rubrics

Topic	Cycles of Matter and Energy		
Benchmark SC.5.3.1	Describe the cycle of energy among producers, consumers, and decomposers		
Sample Performance Assessment (SPA)	The student: Diagrams and describes the flow of energy among producers, consumers, and decomposers (e.g., food chains, food webs).		
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Explain and give detailed examples of the cycle of energy among producers, consumers, and decomposers	Describe the cycle of energy among producers, consumers, and decomposers	Describe a part of the energy cycle with an example (e.g., describe one or two parts of a food chain)	Recognize an example of part of an energy cycle
Topic	Interdependence		
Benchmark SC.5.3.2	Describe the interdependent relationships among producers, consumers, and decomposers in an ecosystem in terms of the cycles of matter		
Sample Performance Assessment (SPA)	The student: Illustrates the relationships (e.g. carbon dioxide and oxygen exchange) among producers, consumers, and decomposers in an ecosystem.		
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Explain and give examples of how specific relationships among producers, consumers, and decomposers in an ecosystem affect the cycling of matter	Describe the interdependent relationships among producers, consumers, and decomposers in an ecosystem in terms of the cycling of matter	Identify a few relationships between producers, consumers, or decomposers in an ecosystem in terms of the cycling of matter	Recall, with assistance, that matter cycles in an ecosystem among producers, consumers, and decomposers



Lessons Summary

Resource	Lesson Title	What students will be able to know, do & understand
Harcourt	Chapter 5	PreTest
Harcourt	Chapter 5: Energy & Ecosystems	Lesson 1: How Do Plants Produce Food? <ul style="list-style-type: none"> • Text pp. 152-156 • Discuss p. 157 • Lesson Quick Study RS 30-31 • Vocabulary Power RS 29
Harcourt	Chapter 5: Energy & Ecosystems	Lesson 2: How is Energy Passed Through an Ecosystem? <ul style="list-style-type: none"> • Discuss p. 167 • Lesson Quick Study RS 32-33 • Ordering What Eats What Investigation p. 159 • Optional – transparency IS-15 “Classify & Order • Optional – Project Kahea also has a food chain PE game • Chapter 5 Review & Test Prep p. 172-173
	Culminating Project Part I	Ecosystems Research Project AIMS – Exploring Environments (pp. 21-29) GROUPS were assigned a specific habitat: ocean (use this one as the exemplar), prairie, lakes/ponds/marshes, savannah/desert, forest, grasslands, mountain, & polar/arctic. Groups had to create a travel brochure or cards that depicts the food web in a specified ecosystem OR Webquest (see link in resources) to have groups create a habitat research project
Harcourt	Chapter 5	PostTest
Harcourt	Chapter 6	PreTest
Harcourt	Chapter 6: Ecosystems and Change	Lesson 1: How Do Organisms Compete and Survive in an Ecosystem Text pp. 176-183 Lesson Quick Study RS 35-36
Harcourt	Chapter 6: Ecosystems and Change	Lesson 2: How do Ecosystems Change Over Time Text pp. 184-191 Lesson Quick Study RS 37-38
Harcourt	Chapter 6: Ecosystems and Change	Lesson 3: How People Affect Ecosystems Text pp. 192-199 Lesson Quick Study RS 39-40
	Culminating Project Part II	Ecosystems Research Project Continue to add information to specified ecosystems about how landforms change over time, and how humans affect ecosystems
Harcourt	Chapter 6	PostTest



Resources:

- Magic School Bus Gets Eaten (food chain)
- Magic School Bus All Dried Up (deserts)
- Magic School Bus Gets Swamped (swamps)
- Magic School Bus Goes to Mussel Beach (ocean)
- Magic School Bus in the Arctic
- Google “webquest”
http://www.trenton.k12.nj.us/parker/ncoty/a_webquest_for_5th_grade.htm
- Pond-er This (Discovery Ed virtual lab)
- Harcourt Textbook site
http://www.harcourtschool.com/menus/science2009/grade5_nl.html
www.harcourtschool.com/menus/science/grade5_nl.html
- Science Up Close (vocabulary reinforcement) Lesson on how ecosystem changed after a volcanic eruption – Mt St. Helens
- Smartboard Lessons – skool.com, education.smarttech.com

A+ Learning System (school-wide curriculum program which came with the science bundle) –