



<i>Timeline -></i>	<u><i>Quarter Four</i></u>
<p><i>Guiding Questions</i></p>	<p><u>Science:</u> What are the steps of the scientific method? What natural resources do we use? How do we conserve non-renewable resources?</p> <p><u>Language Arts:</u> What can we learn about the earth’s natural resources and pollution 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? How can we edit and improve our writing using a provided checklist? How can we use non-fiction to create informational reports?</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 can we use standard and non-standard measurement to gather data about natural resources and pollutants in our environment?</p> <p><u>Social Studies:</u> How does scarcity and demand for products make resources valuable? How can we use information to solve a societal problem? How do we balance the needs of humans with the effects on the environment?</p> <p><u>Art:</u> How can we draw/illustrate and label sketches for a scientific journal? How can we create illustrated booklets to show what we have learned about pollution and natural resources? How can we act like “Wumps” from the Wump World? (role play)</p>



Frameworks for Success in Science – MSP Grant 2010-2011

WORKING DRAFT COHORT I & II

Ka‘ūmana, Kalaniana‘ole, and Ha‘aheo Elementary Schools

Content Area: Interdisciplinary/Science

Grade Level: 2

<p>General Learner Outcomes</p>	<p><u>GLO#1: Self-Directed Learner:</u> Students will use a variety of measuring devices to categorize natural resources and develop graphs from their experimental data. They will also conduct experiments.</p> <p><u>GLO#2: Community Contributor:</u> Students will share their knowledge about pollution and natural resources with their classmates and others. They will also work in groups and teams to solve problems. They will also work in groups and teams to solve problems.</p> <p><u>GLO#3: Complex Thinker:</u> Students will use their problem solving, math and writing skills to investigate pollution and natural resources.</p> <p><u>GLO#4: Quality Producer:</u> Students will create a booklet that illustrates information about pollution and natural resources. Students will create math products (graphs, data tables, charts) that enhance posters and booklets.</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. Students will orally share with an audience their final products.</p>
<p>Assessments</p>	<p>Constructed response (math, language arts, science) that is based on the unit ideas and concepts</p> <p>A summative product rubric will be used to assess the science products that each student produces.</p> <p>The rubric criteria will include assessment of the presentation of concepts learned, as well as the written and drawn presentation quality.</p> <p>Oral communication of final project</p>

HCPS III Benchmarks:

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

Our limited supply of resources can be extended through conservation of wildlife, energy, and material resources.

Our limited supply of resources should be protected from pollution.

Magnets have positive and negative poles that attract and repel.



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Sample Performance Rubrics

Topic	Scientific Inquiry		
Benchmark SC.2.1.1	Develop predictions based on observations		
Sample Performance Assessment (SPA)	The student: Makes predictions based on observations about the world around him or her.		
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Make logical predictions based on justified inferences from observations	Make predictions based on observations	With assistance, make predictions partially based on observations	Make inaccurate predictions or make predictions not based on observations
Benchmark SC.2.1.2	Conduct a simple investigation using a systematic process safely to test a prediction		
Sample Performance Assessment (SPA)	The student: Implements a simple procedure safely to answer a question or test a prediction that relies on careful observations (e.g., collects, records, and organizes data).		
Advanced	Proficient	Partially Proficient	Novice
Consistently conduct a simple investigation using a systematic process safely to provide a valid test of a prediction	Usually conduct a simple investigation using a systematic process safely to provide a test of a prediction	Sometimes conduct a simple investigation using a systematic process safely to provide a test of a prediction	Rarely conduct a simple investigation using a systematic process safely to provide a test of a prediction
Topic	Forces and Motion		
Benchmark SC.2.7.1	Identify the properties of magnets		
Sample Performance Assessment (SPA)	The student: Identifies the properties of magnets (e.g., the attraction to iron, distinct positive and negative poles, attract and repel), using examples to illustrate each property.		
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Describe, in detail, the properties of magnets and how these properties can be used	Identify several properties of magnets	Give, with assistance, a few examples of how magnets work	Recognize, with assistance, examples of how magnets work
Topic	Earth Materials		
Benchmark SC.2.8.2	Identify the limited supply of natural resources and how they can be extended through conservation, reuse, and recycling		
Sample Performance Assessment (SPA)	The student: Identifies natural resources that are limited and ways to conserve those resources (e.g., fresh water, fuel, trees).		
Rubric			
Advanced	Proficient	Partially Proficient	Novice
Explain why a resource is limited and why it needs to be extended through conservation, reuse, and recycling	Identify some of the natural resources that are limited and how they can be extended through conservation, reuse, and recycling	Recognize that the supply of natural resources is limited and suggest a way to extend it	Recall that the supply of natural resources is limited



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Lesson #	Lesson Title	Materials/ What students will do....
Pre-test	Chapter Six	Natural Resources
AIMS	The Earth Has What We Need!	<p>What rocks & minerals come from the Earth? MY EARTH'S RESOURCES booklet</p> <p>How can we reduce our use of Earth's materials? USE IT AGAIN lab sheet</p> <p>METAL SEARCH – experiment</p> <p>Reader's Theater – We Use Rocks & Minerals</p> <p>Have students highlight as many things that they can find in the song that we get from the earth's resources. Have them list it as a class so they can see all of the things used.</p>
	CHAPTER SIX Harcourt Text	<p>Lesson 1: How can People use natural resources?</p> <p>RS41 – Natural Resources overview</p> <p>Lab Manual LM62 – Ways we Use Water p. 185</p> <p>Transparency IS19 – Draw Conclusions (about water use)</p> <p>Transparency RS19 – Main idea and Details – how people use air and water</p> <p>RS 42-43</p>
		<p>Lesson 2: How can people harm natural resources?</p> <p>Lab – What Happens to Pollution?</p> <p>Transparency IS 20 – OBSERVE</p> <p>Reading Support & Homework RS44-45 – Lesson #2: how do people harm the environment = use this at the end of the lessons so that students can review</p> <p>TEACHERS TEXT InstaLAB p. 197 – Modeling an Oil Spill</p> <p>Students could use the Experiment/Inquiry Log &/or the journal</p> <p>TEACHERS TEXT Lab idea – See What is in the Air p. 213</p> <p>Math p. 201 “Make a Bar Graph”</p>
		<p>Lesson 3: How can people protect natural resources?</p> <p>Transparency IS21 – Plan an Investigation</p> <p>Student worksheet for review at the end of the lesson RS 46-47</p> <p>Lesson 3</p>
MAGNETS Lessons		
AIMS	The Upside of Magnets	
AIMS	Willy the Worm	
AIMS	Maybe It's	



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	Magnetic	
VanCleave	Magnets – mini lessons	

Word Wall – Science words (vocabulary cards – Reading Support & Homework)

Inquiry Standard: observation, infer, identify, classify, compare/contrast, collect, record, communicate

Earth Science: pollutant, natural resource, magnet

Technology: tool, equipment, balance scale, ruler, scientist

Math: tally, data, graph, data table, VENN diagram, measure (length, width, mass), physical characteristics/attributes