



Frameworks for Success in Science – MSP Grant

WORKING DRAFT COHORT I & II

Ha‘aheo, Kalaniana‘ole, Kapiolani, Hilo Union and Ka‘ūmana Elementary Schools

Content Area: Interdisciplinary/Science

Grade Level: 1

<i>Timeline -&gt;</i>	<i>Semester One ( lessons)</i>
<p><b>Guiding Questions</b></p>	<p><b><u>Science:</u></b>            What are the characteristics/attributes of living and nonliving things?            What are the characteristics/attributes of plants and animals?            What do plants and animals need to live, thrive and survive?            How do plants and animals move through their life cycle?</p> <p><b><u>Language Arts:</u></b>            How can we relate the terms “beginning,” “middle” and “end” to help write about the life cycles of animals or plants?            How can we use non-fiction text to build our vocabulary word wall?            How can we use our science notebook to write about our observations, our learning, our class data and new vocabulary?            How can we use new science terms to describe our observations?</p> <p><b><u>Math:</u></b>            How can a chart be drawn to help collect observation data?            How is a bar graph drawn to show totals with collected data?            What conclusions can we draw from the data portrayed by the graph?            How can we use different measuring tools to collect data?</p> <p><b><u>Social Studies:</u></b>            Growing vegetables for a “Thanksgiving” salad – How did the Pilgrims survive in their new world and what did they eat to celebrate special occasions? What other cultures also use food to celebrate? What are the types of food they eat?            Customs, traditions and community.</p> <p><b><u>Art:</u></b>            How can we draw/illustrate and label sketches for a science notebook?</p>
<p><b>General Learner Outcomes</b></p>	<p><b><u>GLO#1: Self-Directed Learner:</u></b>            Students will follow directions to complete the class and homework tasks. Students will also self-select text sources to read on their own.</p> <p><b><u>GLO#2: Community Contributor:</u></b>            Students will share their math, science and literacy products with other members of their class or another classroom.</p> <p><b><u>GLO#3: Complex Thinker:</u></b>            Students will use their problem solving, math and writing skills to</p>



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	<p>investigate how plants and animals grow and survive. Specific skills to focus on include: cause &amp; effect, main idea/details, sequencing, compare/contrast, draw conclusions and summarize.</p> <p><b><u>GLO#4: Quality Producer:</u></b> Students will create several products (poster/charts/graphs/data tables) that illustrate their understanding about plants and animals.</p> <p><b><u>GLO#5: Effective Communicator:</u></b> 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 their products with other students and family.</p> <p><b><u>GLO#6: Effective and Ethical User of Technology:</u></b> Students will utilize technology to record observations, categorize items, and supplement their learning.</p>
<p><b><i>Assessments</i></b></p>	<p>Pre/post chapter assessments Performance assessment (Plants chapter)</p>

***Resources***

<http://www.hspscience.com>



## Standards and Benchmarks

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

There are different kinds of changes that occur in our natural environment.

Changes occur as the result of natural events.

Some of these changes may affect living things.

All organisms need water and nutrients, air, sunlight, space, shelter and the right temperature to survive).

Same kinds of plants and same kinds of animals differ in their characteristics (i.e., species).

### HCPS III Benchmarks:

#### ◇ 1.1.1 Scientific Inquiry

Collect, record, and organize data using simple tools, equipment, and techniques safely

#### ◇ 1.1.2 Scientific Inquiry

Explain the results of an investigation to an audience using simple data organizers (e.g., charts, graphs, pictures)

#### ◇ 1.2.1 Science, Technology, and Society

Explain why people create technological devices

#### • 1.2.2 Unifying Concepts and Themes

Describe a variety of changes that occur in nature

#### • 1.3.1 Cycles of Matter and Energy

Identify the requirements of plants and animals to survive (e.g., food, air, light, water)

#### • 1.5.1 Heredity

Identify ways in which the same kinds of plants and the same kinds of animals differ



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## Sample Performance Assessment Rubric

<b>Topic</b>	Scientific Inquiry		
<b>Benchmark SC.1.1.1</b>	Collect, record, and organize data using simple tools, equipment, and techniques safely		
<b>Sample Performance Assessment (SPA)</b>	The student: Uses simple tools safely (e.g., magnifying glass, balance scales) to make observations about common objects in the classroom and uses simple techniques to record and organize data for analysis.		
<b>Advanced</b>	<b>Proficient</b>	<b>Partially Proficient</b>	<b>Novice</b>
Collect, record, and organize data accurately, using a variety of simple tools, equipment, & techniques safely	Collect, record, and organize data using simple tools, equipment, & techniques safely	Collect, record, and organize data using simple tools, equipment, or techniques safely, with assistance	Collect, record, and organize data safely, with much assistance
<b>Benchmark SC.1.1.2</b>	Explain the results of an investigation to an audience using simple data organizers (e.g., charts, graphs, pictures)		
<b>Sample Performance Assessment (SPA)</b>	The student: Describes what was investigated, discovered, and learned to classmates, using simple data organizers.		
<b>Advanced</b>	<b>Proficient</b>	<b>Partially Proficient</b>	<b>Novice</b>
Clearly explain, in detail, the results of an investigation to an audience using data organizers	Explain significant results of an investigation to an audience using simple data organizers	Explain, with assistance, the results of an investigation to an audience	Explain, with much assistance, a part of an investigation to an audience
<b>Topic</b>	Cycles of Matter and Energy		
<b>Benchmark SC.1.3.1</b>	Identify the requirements of plants and animals to survive (e.g., food, air, light, water)		
<b>Sample Performance Assessment (SPA)</b>	The student: Lists what a selected plant or animal (e.g., cat, fish, orchid) must have to live.		
<b>Advanced</b>	<b>Proficient</b>	<b>Partially Proficient</b>	<b>Novice</b>
Describe the requirements of plants and animals for survival and well being	Identify the requirements of plants and animals to survive	Identify a few of the requirements of plants and animals to survive	Recognize that plants and animals have requirements for survival
<b>Topic</b>	Classification		
<b>Benchmark SC.1.4.1</b>	Describe how living things have structures that help them to survive		
<b>Sample Performance Assessment (SPA)</b>	The student: Identifies how the structures of a plant or animal help it to make or obtain food (e.g., in plants-leaves, roots; in animals-sharp teeth, good vision).		
<b>Advanced</b>	<b>Proficient</b>	<b>Partially Proficient</b>	<b>Novice</b>
Compare the structures of different living things that help them to survive	Describe how living things have structures that help them to survive	Name, with assistance, a few of the structures of living things that help them to survive	Recall, with assistance, that living things require structures to help them survive
<b>Topic</b>	Heredity		
<b>Benchmark SC.1.5.1</b>	Identify ways in which the same kinds of plants and the same kinds of animals differ		
<b>Sample Performance Assessment (SPA)</b>	The student: Names differences among the same kinds of plant or same kinds of animal (e.g., differences among roses, dogs, birds).		
<b>Advanced</b>	<b>Proficient</b>	<b>Partially Proficient</b>	<b>Novice</b>
Describe, in detail, the ways in which the same kinds of plants and the same kinds of animals differ	Identify ways in which the same kinds of plants and the same kinds of animals differ	Identify very few ways in which the same kinds of plants and the same kinds of animals differ	Recognize, with assistance, that there are differences between the same kinds of plants and the same kinds of animals



## Lessons Summary

Harcourt Text	Chapter 2 – All about Plants
	Chapter Assessment – PRETEST (teachers will read as students)
Harcourt Text	<b>Lesson 1 – What do Plants Need?</b> <ul style="list-style-type: none"> <li>Lesson Quick Study RS 14-15</li> </ul>
Harcourt Text	<b>Lesson 2 – What are the Parts of a Plant?</b> <ul style="list-style-type: none"> <li>Lesson Quick Study RS 16-17</li> </ul>
MSP Lesson Plan	<b>“What are the Parts of a Plant?”</b> <b>“Parts of a Plant”</b> The Plant Part Song
ART Lesson	Create a Plant (students bring in plant parts – combine in groups to produce a plant of their choice) or look at color picture examples. <b>HAVE STUDENTS LABEL THE PLANT PARTS</b> Use paint on hands to make handprint leaves, side of the hand to make the stem, brown eyelash yarn for the roots, sunflower shape with sunflower seeds glued on
AIMS	<b>“Inside a Seed”</b> <ul style="list-style-type: none"> <li>Can use grocery store lima beans</li> </ul>
MSP LP	<b>“Inside a Seed”</b>
Harcourt Text	<b>Lesson 3 – How do Plants Grow and Change?</b> <ul style="list-style-type: none"> <li>Lesson Quick Study RS 18-19</li> </ul>
Seed growing Lesson Plans	1) Plastic cup wrapped with paper towel, place seeds on wet paper towel, nest cup in another clear plastic cup to watch the seed sprout. You can water it with a little water on the paper towel daily. 2) Can also use a little potting soil in clear cups – plant seed right on the side to see it sprout and grow. 3) Can also use recycled milk cartons, egg cartons (cardboard – not plastic) or get a 1 or 2 cubic yard bag of potting soil. Lay it sideways, punch holes on the bottom. Cover the ground with flattened cardboard and then place the bag on top. Cut open the top to allow students to plant their plants in the “insta-garden”
AIMS	<b>It’s in the Bag</b> <ul style="list-style-type: none"> <li>THIS IS A 2<sup>ND</sup> GRADE LESSON – USE ONLY IN COMBO GRADE CLASSES</li> </ul>
AIMS	<b>A Plant Begins</b> <ul style="list-style-type: none"> <li>Little Brown Seeds booklet</li> </ul>
Harcourt Text	<b>Performance Assessment</b> <ul style="list-style-type: none"> <li>“How Plants Grow” AG11</li> <li>“What Plants Need” Concept Review AB-80</li> <li>“Observe/Plants Grow and Change” Concept Review AB 81-82</li> </ul>
AIMS	<b>Plant Part Mark Up</b> (bingo)



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Harcourt Text	<b>Lesson 4 – How Can we Group Plants?</b> <ul style="list-style-type: none"> <li>Lesson Quick Study RS 20-21</li> <li>Vocabulary Power “All About Plants” RS13</li> </ul>
	Chapter Assessment – POST TEST (teacher will read as student completes on paper)
<b>Harcourt Text Chapter 1 – All about Animals</b>	
	Chapter Assessment – <b>PRETEST</b> (teacher reads as students complete on paper)
Harcourt Text	<b>Lesson 1 – Living/non-living:</b> <ul style="list-style-type: none"> <li>review vocabulary and move on (taught in K)</li> <li>Use the RS 5-6 for the review</li> <li>Provide a “word bank” to assist the students in completing the Lesson Quick Study</li> </ul>
Harcourt Text	<b>Lesson 2 – What do Animals Need?</b> RS 7-8
AIMS	<b>Attending to Needs – “A Fish for Frances”</b> <ul style="list-style-type: none"> <li>Note: Connected learning questions are at the end of the teacher lesson plan. Could post the questions and have students respond (post-it notes,</li> <li>Students take home headbands today to color for next time activity</li> </ul>
Harcourt Text	<b>Lesson 3 – How Can We Group Animals?</b> <ul style="list-style-type: none"> <li>Read in the text this lesson, then do</li> <li>How Can we Group Animals t-chart where the reading provides the students the “notes” to fill in the chart in class</li> <li>Investigate Further “Classifying Animals” (optional = need pictures i.e. “animal library” LAKESHORE</li> <li>Lesson Quick Study RS 9-10</li> </ul>
MSP Lesson Plan	<b>Grouping Animals</b> “How Can We Group Animals” - T-chart to fill in and add pictures OR “Animal Groups” wkst with partially completed notes with boxes for pictures
Evan Moore	<b>Animals with Backbones (foldable booklets)</b> OPTIONAL
AIMS	<b>Banding Together</b> “ headbands” – use the <ul style="list-style-type: none"> <li>Transparency IS6 “Classify”</li> <li>Connected Learning questions to end lesson are on the T lesson plan.</li> </ul>
Harcourt Text	<b>Lesson 4 – How Do Animals Grow and Change?</b> <ul style="list-style-type: none"> <li>Lesson Quick Study - RS 11-12 – use the big butterfly life cycle chart</li> <li>Transparency – “Compare (pig) ” “Sequence” (tadpole)</li> <li>Investigate Log “Animals Grow and Change”</li> <li>Vocabulary Power “All About Animals”</li> </ul>
	Chapter Assessment – <b>POST TEST</b> (T reads while Ss complete on paper)
Start plant seedlings and unit/lessons after intersession – idea could be growing plants for a salad for Thanksgiving... (radish, lettuce, mizuna, nasturtium flower)	



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Notebook ideas: use vocab cards, have students copy word, definition and picture. Also, could use AIMS “key question, connected learning Q” as a reflection/remembering option.