



<i>Timeline -></i>	<u><i>Quarter Four (13 lessons)</i></u>
<p>Guiding Questions</p>	<p><u>Science:</u> What are the characteristics/attributes of matter? What is mass and/or weight? How do we measure it? What is the force of gravity? What pulls objects towards the ground? What can prevent objects from falling to the ground?</p> <p><u>Language Arts:</u> 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 the physical attributes of objects? How can we use new science terms to explain observations and make predictions?</p> <p><u>Math:</u> How can sorting circles or t-charts help sort items that are the same or different? 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><u>Art:</u> How can we draw/illustrate and label sketches for a science notebook? How can we build 3-D models that show what we have learned about gravity?</p>
<p>General Learner Outcomes</p>	<p><u>GLO#1: Self-Directed Learner:</u> Students will follow directions to complete the class and homework tasks.</p> <p><u>GLO#2: Community Contributor:</u> Students will share their math, science and literacy products with other members of their class, another classroom or other schools.</p> <p><u>GLO#3: Complex Thinker:</u> Students will use their problem solving, math and writing skills to investigate matter and gravity.</p> <p><u>GLO#4: Quality Producer:</u> Students will create several products (poster/model/graphs/data tables) that illustrate their understanding about matter and gravity</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 their products with other students.</p> <p><u>GLO#6: Effective and Ethical User of Technology:</u> Students will utilize technology to record observations, categorize items, and supplement their constructed response questions.</p>



Assessments	<p>AIMS Button Sort</p> <p>A) Sorting Assessment – In the Circle and Out of the Circle – justify your reasons for putting different items inside the circle. What is the rule for inclusion versus those that not included?</p> <ol style="list-style-type: none"> 1) Using the grouping circle, sort the objects. 2) Give at least one reason why the objects belong and don’t belong in the circle. <p>B) Gravity pre/post “Up and Down”</p>
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Standards and Benchmarks

Big Idea(s) / Major Understanding(s): *Students will understand that...*
 Objects will fall to the ground if dropped.

HCPS III Benchmarks:

- ◇ **Scientific Inquiry**
 K.1.1 Use the senses to make observations
- ◇ **Scientific Inquiry**
 K.1.2 Ask questions about the world around them
- ◇ **Science, Technology, and Society**
 K.2.1 Identify different types of technologies at home, in the classroom, and/or in the world
- ◇ **Nature of Matter**
 K.6.1 Classify objects by their attributes (e.g., physical properties, materials of which they are made)
- **Forces and Motion**
 K.7.1 Identify that objects that will fall to the ground unless something is holding them up

Topic	Nature of Matter		
Benchmark SC.K.6.1	Classify objects by their attributes (e.g., physical properties, materials of which they are made)		
Sample Performance Assessment (SPA)	The student: Sorts objects by their attributes and explains why objects belong or don’t belong in the groups they have made		
Advanced	Proficient	Partially Proficient	Novice
Classify objects by their attributes and provide more than one explanation of why objects belong or don’t belong in the group. Sort objects in more than one way	Classify objects by their attributes and provide at least one explanation of why objects belong or don’t belong in the group.	With minimal assistance, classify objects by their attributes and make an attempt to explain why objects belong/don’t belong	With much assistance, classify objects by a few attributes
Topic	Forces and Motion		
Benchmark SC.K.7.1	Identify that objects that will fall to the ground unless something is holding them up		
Sample Performance Assessment (SPA)	The student: Uses a variety of objects to show that things will fall to the ground unless something is holding them up.		
Advanced	Proficient	Partially Proficient	Novice
Explain why different objects will or will not fall to the ground	Identify, with consistency, whether different objects will or will not fall to the ground	Identify, with some consistency, whether different objects will or will not fall to the ground	Identify, inconsistently, whether different objects will or will not fall to the ground



Lessons Summary

Lesson Day #	Lesson Title	What students will be able to know, do & understand
Pretest	CONSTRUCTED RESPONSE	SORTING ASSESSMENT: Buttons (sorting circle) Pre/Post “Objects Around Us” nice activity and can reinforce
HARCOURT TEXT	1.2 How can matter be sorted?	Use the Big Book to work on vocabulary (pp. 9-11) Reader – “I CAN SORT” – could use classroom items to sort with sorting circles (Harcourt Science Text website: hspscience.com) Go to eProducts login using your teacher’s guide Use the “I Can Sort” song on your hard drive
HARCOURT TEXT	1.3 How can matter be described	Continue with Big Book to work on more vocabulary including location descriptions – geometry (pp. 9-11)
HARCOURT TEXT	Tell About TOYS (little book)	TG Chapter 1 p. 20 gives directions to use the book (compare & contrast physical attributes of items)
TECHNOLOGY	KID PIX	Students place items inside and outside of the circle – sorted by physical attributes
AIMS	Made of Matter	How can we sort objects based on the materials that they are made from? <u>Objects Center:</u> whole class - Matter = space & mass Choose object, make a list of what each object is made of Use 1 grouping circle – “wood” objects inside and outside of the circle. Part II: T describes object, each team puts an item in the bag, class graphs the bag contents
AIMS	The Joys of Jelly Beans (OPTIONAL)	Could also use Skittles/M&Ms but pay attention to the pre-written colors on the AIMS handouts.
AIMS	Texture Rough Texture Smooth (OPTIONAL)	Reinforces 1 st quarter observations of physical attributes – provides additional vocabulary
AIMS	Whoa! That’s Heavy	Mass or weight (balances) How can we sort objects by mass or weight? Class sort with objects on the floor with the bigger signs Then teach how to use the balance before moving on Make predictions and practice with two object set



Frameworks for Success in Science – MSP Grant SY 2010-11

WORKING DRAFT – COHORT I & II

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

Content Area: Interdisciplinary/Science

Grade Level: Kindergarten

		Then use balance to measure and then record pair of objects on the Whoa That’s Heavy student page Use a bathroom scale as a station for larger objects, themselves, etc.
REFLECTION And/or chapter test	Gravity PRE “Up and Down”	Gravity picture/constructed Response (paper airplane, ball, oranges on the tree)

Technology	Discovery ED	Check the Discovery Ed site/folder – my content and my district – download as you can.
AIMS	Keep it Up	Students will discover the effects of gravity on various objects and keep a balloon from being pulled toward the ground.
AIMS	Down, Down, Spin Around	Use the dropping bunnies to vary the speed and measure the force of gravity
AIMS	Reader’s Theater: The Law of Gravity	What can we learn about the law of gravity from a Reader’s Theater? Possible suggestions: a) shorten script read by teacher – student repeats. Then another group of students comes up to act out the script. Can continue with groups to reinforce. b) Have the 1 st grade students come to model the script and then set up a center with the props.
OPTIONAL	WE HAVE LIFT OFF....Airplane Challenge	funpaperairplanes.com (use internet explorer) paper airplanes with Steve Lundblad and do a map of the school yard (scale model) Could then record not only the length of flight but also record on a class chart the variables that affected the flights
REFLECTION	Gravity post	Gravity Post – Up and Down

Word Wall – Science words

Inquiry Standard: classify, compare/contrast, identify, sort, observe, describe, explain, measure

Earth Science: physical attributes, mass, weight, gravity, force

Technology: tool, equipment, scientist (physicist, aeronautical engineer, rocket scientist)

Math: tally, data, graph, data table