

CURRICULUM MAP

Subject: SCIENCE

Grade: 4TH

Quarter: 2ND

Teacher(s): 4th Grade

Month _____	WEEK 1-2 _____	WEEK 3-4 _____	WEEK 5 _____	WEEK 6 _____	Reflection/notes _____
<p>Concept</p> <p>GDOE &</p> <p>CCSS Standards</p>	<p>Guam Standards:</p> <p>4.3.7 Describe how using one form of energy produces another form of energy. EXAMPLE(S): gasoline fuels motors to produce motion, heat boils water to produce steam, solar light is captured to produce electricity</p> <p>4.W.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade- standards 1–</p>	<p>4.3.6 explain that energy in fossil fuels comes from plants that grew long ago. * Fossil fuel: a fuel, such as natural gas or coal, that was formed a long time ago from decayed plants and animals</p> <p>CCSS: 4.RI.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.</p> <ul style="list-style-type: none"> 4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 	<p>Guam Standards:</p> <p>4.3.2 Investigate, observe, and explain that heat is produced when one object rubs against another, such as one’s hands rubbing together.</p> <p>CCSS: 4.RI.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.</p>	<p>Guam Standards:</p> <p>4.3.1 Demonstrate that the mass of a whole object is always the same as the sum of the masses of its parts.* Mass: a measure of how much matter is in an object</p> <p>CCSS: 4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.</p>	
<p>Big Idea:</p> <p>Vocabulary</p>	<p>Big Idea 2, Quarter 2</p> <p>I can....</p> <p>make an inference based on an understanding of changes in properties of matter</p> <p>Predict the results of heat transfer in objects</p> <p>Predict the effects of forces on an object</p> <p>Identify the causes of sound</p>	<p>Big Idea 2, Quarter 2</p> <p>Students will compare and contrast ways that heat is produced. They will cite evidence to show its benefits to humans as energy sources.</p> <p>Key Vocabulary</p> <p>mass, physical change, chemical change, friction, light, heat, fossil fuels, energy, transfer of energy, motion graphs</p> <p>I can....</p> <p>make an inference based on an understanding of changes in properties of matter</p> <p>Predict the results of heat transfer in</p>	<p>Big Idea 2, Quarter 2</p> <p>Students will compare and contrast ways that heat is produced. They will cite evidence to show its benefits to humans as energy sources.</p> <p>Key Vocabulary mass, physical change, chemical change, friction, light, heat, fossil fuels, energy, transfer of energy, motion graphs</p> <p>I can....</p> <p>Identify a source of heat in a changing system</p> <p>Identify a result of friction</p> <p>Predict the effects of forces on an object</p>	<p>Big Idea 2, Quarter 2</p> <p>Students will compare and contrast ways that heat is produced. They will cite evidence to show its benefits to humans as energy sources.</p> <p>Key Vocabulary</p> <p>mass, physical change, chemical change, friction, light, heat, fossil fuels, energy, transfer of energy, motion graphs</p> <p>I can...</p> <p>Make inferences based on an understanding of changes in properties of matter</p> <p>Identify basic characteristics of matter</p>	

**Elements of the Standard(s) –
What’s the meaning?**

This unit will focus on physical science. Students will learn the following concepts:

- Students will be able to demonstrate that the mass of a whole object is always the same as the sum of the masses of the parts of the object. [SEP]
- Student must learn that heat is a form of energy. They should learn various sources of heat energy and how each one gives off heat. [SEP]
- Students will be able to identify and explain how heat transfers from one object to another. This includes recognizing that some materials are [SEP] better conductors than others. Students know that when warmer things are put with cooler things, the warmer things lose heat and the cool things gain it until they are all at the same temperature. They know that a warmer object can warm a cooler object by contact or at a distance. Conduction is the transfer of thermal energy between things that are touching. Conduction can happen within one object. (For example, thermal energy can be conducted through the handle of a metal pot or gases. Convection in the oceans and atmosphere helps to move thermal energy around Earth,

objects

Predict the effects of forces on an object

Identify the causes of sound

	<p>and is an important factor influencing weather and climate ^[1]_[SEP]</p> <ul style="list-style-type: none"> • Energy in the form of fossil fuels comes from plants. Students will learn about the sources of fossil fuels and how they are formed as another form of energy. ^[1]_[SEP] • One form of energy is often used to produce another form of energy. Students will be able to provide examples of this and explain how fossil fuels are used to produce motion or how solar energy is used to produce electrical energy. ^[1]_[SEP] <p>Key Vocabulary</p> <p>mass, physical change, chemical change, friction, light, heat, fossil fuels, energy, transfer of energy, motion graphs</p>				
<p>Assessment</p> <p>Resources:</p>	<p>Resources & Links to Technology</p> <p>Harcourt Grade 4, pp. x–xxiv; E2–E64; E96–E118; C50–C58</p> <p>Renewable Energy Activity Book</p> <p>^[1]_[SEP]</p>	<p>Resources & Links to Technology</p> <p>Harcourt Grade 4, pp. x–xxiv; E2–E64; E96–E118; C50–C58</p> <p>Renewable Energy Activity Book</p> <p>^[1]_[SEP]</p>	<p>Resources & Links to Technology</p> <p>Harcourt Grade 4, pp. x–xxiv; E2–E64; E96–E118; C50–C58</p> <p>Renewable Energy Activity Book</p> <p>Force and Motion Professional Development (Free online courses that include labs and activities for K–8 teachers for presenting concepts in force ^[1]_[SEP] and motion. ^[1]_[SEP])</p>	<p>Resources & Links to Technology</p> <p>Harcourt Grade 4, pp. x–xxiv; E2–E64; E96–E118; C50–C58</p> <p>Renewable Energy Activity Book</p>	<p>Resources & Links to Technology</p> <p>Harcourt Grade 4, pp. x–xxiv; E2–E64; E96–E118; C50–C58</p> <p>Renewable Energy Activity Book</p>

ESSENTIAL QUESTIONS	Essential Question(s): How is mass effected when a physical change occurs? How is heat produced? What are objects that produce heat? What is fossil fuel? How does one form of energy produce another form of energy? How can heat change the property of a substance?	Essential Question(s): How is mass effected when a physical change occurs? How is heat produced? What are objects that produce heat? What is fossil fuel? How does one form of energy produce another form of energy? How can heat change the property of a substance?	Essential Question(s): How is mass effected when a physical change occurs? How is heat produced? What are objects that produce heat? What is fossil fuel? How does one form of energy produce another form of energy? How can heat change the property of a substance?	Essential Question(s): How is mass effected when a physical change occurs? How is heat produced? What are objects that produce heat? What is fossil fuel? How does one form of energy produce another form of energy? How can heat change the property of a substance?	Essential Question(s): How is mass effected when a physical change occurs? How is heat produced? What are objects that produce heat? What is fossil fuel? How does one form of energy produce another form of energy? How can heat change the property of a substance?
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Month _____	WEEK 7-8 _____	WEEK 9 _____	ASSESSMENTS _____	ELEMENTS OF STANDARDS – WHATS THE MEANING? _____	Instructional Strategies (District) _____
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<p>Concept</p> <p>GDOE &</p> <p>CCSS Standards</p>	<p>Guam Standards:</p> <p>4.2.5 Observe and explain why most plants produce more seeds than the number that actually grow into new plants.</p> <p>Elements of the Standard(s) – What’s the meaning?</p> <p>In this unit, students will need to learn about the following concepts: □ Students will focus on what organisms require to survive and thrive in various ecosystems. This includes understanding how changes in the environment can be both beneficial and detrimental to an ecosystem. Students know that for any particular environment, some kinds of plants and animals survive well, some survive less well, and some do not survive at all. When the insect population grows in an area that is frequented by insect-eating birds, this is advantageous for the birds. Conversely, if the insect populations are decreased by disease in a similar scenario, the population of birds would be stressed and likely reduced. Students should look specifically at terrestrial or land-based ecosystems such as forests and grasslands, as well as aquatic or water-based ecosystems such as lakes or oceans.</p>	<p>Guam Standards:</p> <p>CCSS ELA Standards:</p> <p>4.RI.1 Refer to details and examples in a text when explaining what the ^[L]_[SEP]text says explicitly and when drawing inferences from the text. ^[L]_[SEP]</p> <p>4.RI.2 Determine the main idea of a text and explain how it is supported by ^[L]_[SEP]key details; summarize the text. ^[L]_[SEP]</p> <p>4.RI.3 Explain events, procedures, ideas, or concepts in a historical, ^[L]_[SEP]what happened and why, ^[L]_[SEP]based on specific information in the text.</p> <p>4.RI.5 Describe the overall structure (e.g., chronology, comparison, information in a text or part of a text.</p> <p>4.RI.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.</p> <p>4.W.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above).</p>	<p>ASSESSMENTS</p>	<p>Big Idea 1: Elements of the Standard(s) – What’s the meaning?</p> <p>Students should be learning the following concepts as they study the relationships of space and time.</p> <p>Students should focus on comparing and contrasting various objects in the solar system. This includes the relationships within the solar system as ^[L]_[SEP]well as galaxies and stars. One example would be length of years on the planets.</p> <p>Students should look for patterns and relationships between the objects and how these relationships affect the objects.</p> <p>As a continued study of patterns, students should be able to explain and predict weather patterns as it connects to specific periods of time during the year. While temperature doesn’t vary greatly in Guam, it is important that students connect their location to the equation as the stability that isn’t present in other locations on Earth.</p>	<p>New Prioritized Standards</p> <p>4.2.5 Observe and explain why most plants produce more seeds than the number that actually grow into new plants.</p> <p>4.3.1</p> <p>4.3.2</p> <p>4.3.6</p> <p>4.3.7 non negotiable</p>
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<p>Big Idea:</p> <p>Vocabulary</p>	<p>Big Idea 2, Quarter 1</p> <p>Students will explain the life cycle of organisms and how they depend on each other to survive. They will support their ideas with details and examples (i.e. illustrations, written descriptions, graph, etc).</p> <p>Key Vocabulary</p> <p>organisms, ecosystems, environments, food chain, food web, energy, survive, thrive, producer, consumer, produce, dying, and decomposing, cytoplasm, chloroplast, photosynthesis, chlorophyll, sepal, pistil, stamen, ovary, dormant, fertilization</p> <p>I can...</p> <p>Apply an understanding of functions of structures in organisms</p> <p>Infer methods of seed dispersal based on the form of fruits</p>			<p>Students know that it is possible to measure the motion of an object based on the distance it will travel in a certain amount of time. They should be experimenting with motions and measuring the speed of an object at different time intervals. Changes in motion—speeding up, slowing down, changing direction—are due to the effects of forces. Any object maintains a constant speed and direction of motion unless an unbalanced outside force acts on it. When an unbalanced force does act on an object, the object's motion changes. Depending on the direction of the force relative to the direction of motion, the object may change its speed (a falling apple) or its directing of motion (the moon in its curved orbit), or both (a fly ball). Students know that a graph can be created using one axis to represent the distance that an object travels and the other axis to represent the period of time the object is traveling. They know how to construct a graph that demonstrates a relation of distance to time.</p> <p>This data should be graphed so that students are seeing how motion appears over time in the form of a graph.</p>	
<p>Assessment /Resources</p>	<p>Resources & Links to Technology</p> <ul style="list-style-type: none"> • Harcourt Grade 4, pp. x–xxiv; pp. A36–A92; pp. B2–B18; pp. B48–B78 ^[1]_[SEP] • Deer Predation ^[1]_[SEP] • Predator Prey Simulation ^[1]_[SEP] • Graphic Organizers: Food Chains ^[1]_[SEP] • Bill Nye Classroom Episodes and Resources ^[1]_[SEP] • Bill Nye Episode 26: Food Web ^[1]_[SEP] • Bill Nye Episode 52: Ocean Life ^[1]_[SEP] 	<ul style="list-style-type: none"> • 		<p>Big Idea 2: Physical Science: Elements of the Standard(s) – What’s the meaning?</p> <p>This unit will focus on physical science. Students will learn the following concepts:</p> <p>Students will be able to demonstrate that the mass of a whole object is always the same as the sum of the masses of the parts of the object.</p> <p>Student must learn that heat is a form of energy. They should learn various sources of heat energy and how each one gives off heat.</p> <p>Students will be able to identify and explain how heat transfers from one object to another. This includes recognizing that some materials are ^[1]_[SEP]better conductors than others. Students know that when warmer things are put with cooler things, the warmer things lose heat and the cool things gain it until they are all at the same temperature. They know that a warmer object can warm a cooler object by contact or at a distance. Conduction is the transfer of thermal energy between things that are touching.</p>	

				<p>Conduction can happen within one object. (For example, thermal energy can be conducted through the handle of a metal pot? Convection is the movement of thermal energy by the movement of liquids or gases. Convection in the oceans and atmosphere helps to move thermal energy around Earth, and is an important factor influencing weather and climate</p> <p>Energy in the form of fossil fuels comes from plants. Students will learn about the sources of fossil fuels and how they are formed as another form of energy.</p> <p>One form of energy is often used to produce another form of energy. Students will be able to provide examples of this and explain how fossil fuels are used to produce motion or how solar energy is used to produce electrical energy.</p>	
<p>ESSENTIAL QUESTIONS</p>	<p>Essential Question(s):</p> <p>How do organisms rely on each other to survive?</p> <p>What sources of energy are needed for organisms to thrive?</p> <p>How do the life cycles of various organisms benefit the ecosystem?</p> <p>If plants produce many seeds, why don't we have an overabundance of plants?</p> <p>How does studying cycles help us understand actual processes?</p>				