

FAME Public Charter School

Scope and Sequence: Grade Fourth

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Subject/Unit Title: Science				
Estimated Time Frame (#of Days): 52days				
Unit A: Interactions of Living Things				
Chapter Title	Lesson Title	Objectives	CA State Standards	Assessments
1. Animal Growth and Adaptations 12 days	Lesson 1: What are the basic needs of animals?	1. Recognize that all animals have five basic needs: food, water, oxygen, shelter, and climate. 2. Conclude that animals meet their needs in different ways.	2.a: Students know plants are the primary source of matter and energy entering most food chains 3.a: Students know ecosystems can be characterized by their living and nonliving components. 3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all. 3.c: Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter. 6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations. 6.b: Measure and estimate the weight, length, or volume of objects	Workbook
	Lesson 2: How do	1. Identify three adaptations	3.b: Students know that in any particular	Workbook

	<p>animals' body parts help them meet their needs?</p>	<p>birds have to help them meet their needs. 2. Describe body part adaptations that enable animals to meet their needs.</p>	<p>environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 3: How do animals' behaviors help them their needs?</p>	<p>1. Identify ways animals behave to enable them to meet their needs. 2. Distinguish between instinctual behavior and learner behavior in animals.</p>	<p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p>	<p>Workbook</p>

			6.f: Follow a set of written instructions for a scientific investigation	
	Chapter Review	<ol style="list-style-type: none"> 1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists. 4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts. 	<p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	Chapter Test
2. Plants Growth and Adaptations 9 days	Lesson 1: What do plants need to live?	<ol style="list-style-type: none"> 1. Identify the four basic needs of plants. 2. Explain how plants make food. 3. Give examples of plant adaptations. 	<p>2.a: Students know plants are the primary source of matter and energy entering most food chains</p> <p>3.b: Students know that in any particular</p>	Workbook

		<p>4. Explain how plants adaptations enable plants to survive in different environments.</p>	<p>environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 2: How do leaves, stems, and roots help plants live?</p>	<p>1. Identify ways that leaves, stems, and roots help plants live. 2. Give examples of unusual</p>	<p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from</p>	<p>Workbook</p>

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		plant adaptations.	what they observe and partly from how they interpret their observations. 6.f: Follow a set of written instructions for a scientific investigation	
	Lesson 3: How do plants reproduce?	1. Describe the ways plants reproduce. 2. Give examples of ways seeds are spread.	3.c: Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter 6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations. 6.b: Measure and estimate the weight, length, or volume of objects 6.e: Construct and interpret graphs from measurements. 6.f: Follow a set of written instructions for a scientific investigation	Workbook
	Chapter Review	1. Evaluate that impact of research and technology on scientific thought, society, and the environment.	2.a: Students know plants are the primary source of matter and energy entering most food chains	Chapter Test

		<p>2. Identify careers related to science.</p> <p>3. Connect chapter concepts with the contributions of scientists.</p> <p>4. Extend chapter concepts with hands-on investigations.</p> <p>5. Review chapter concepts.</p>	<p>3.a: Students know ecosystems can be characterized by their living and nonliving components.</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all</p> <p>3.c: Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
<p>3. Living Things Interact 11 days</p>	<p>Lesson 1: What are ecosystems?</p>	<p>1. Describe interactions that occur within an ecosystem</p> <p>2. Analyze adaptive characteristics that result in an organism’s unique niche in an ecosystem.</p> <p>3. Identify factors that limit the number and type of organism in an ecosystem.</p>	<p>2.a: Students know plants are the primary source of matter and energy entering most food chains</p> <p>3.a: Students know ecosystems can be characterized by their living and nonliving components</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight,</p>	<p>Workbook</p>

			<p>length, or volume of objects.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 2: How does energy flow through an ecosystem?</p>	<p>1. Identify the roles of producers, consumers, and decomposers in an ecosystem.</p> <p>2. Describe how energy flows from one organism to another in food chains and in food webs.</p> <p>3. Recognize that because energy is lost as heat as each level of consumption, ecosystems must have more producers than consumers.</p>	<p>2.a: Students know plants are the primary source of matter and energy entering most food chains.</p> <p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.</p> <p>2.c: Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.</p> <p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	<p>Workbook</p>

	<p>Lesson 3: How do organisms compete and survive in an ecosystem?</p>	<p>1. Identify ways in which organisms are adapted to compete for resources. 2. Describe some mutually beneficial interactions that occur within ecosystems.</p>	<p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>3.c: Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.</p> <p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p>	<p>Workbook</p>
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			<p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	<p>Lesson 4: What is extinction and what are its causes?</p>	<ol style="list-style-type: none"> 1. Identify trends in resource use. 2. Describe some natural and human causes of extinction. 3. Identify ways human can work to prevent the extinction of endangered species. 	<p>2.a: Students know plants are the primary source of matter and energy entering most food chains</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p>	<p>Workbook</p>

			<p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	Chapter Review	<ol style="list-style-type: none"> 1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists. 4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts. 	<p>2.a: Students know plants are the primary source of matter and energy entering most food chains.</p> <p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.</p> <p>2.c: Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals</p> <p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p> <p>6.f: Follow a set of written instructions for</p>	Chapter Test

			a scientific investigation	
4. Biomes 8 days	Lesson 1: What are land biomes?	<p>1. Recognize that the climate of an area determines which biome will develop there.</p> <p>2. Identify characteristics of each of the six major land biomes in North America.</p> <p>3. Compare the adaptive characteristics of species that improve their ability to survive in a particular biome.</p>	<p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem</p> <p>3.a: Students know ecosystems can be characterized by their living and nonliving components.</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	Workbook
	Lesson 2: What are water ecosystems?	<p>1. Observe pond organisms and classify them as producers or consumers.</p> <p>2. Identify three types of water ecosystems.</p>	<p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may</p>	Workbook

		<p>3. Describe adaptations that allow organisms to survive in saltwater environments.</p>	<p>compete with each other for resources in an ecosystem</p> <p>3.a: Students know ecosystems can be characterized by their living and nonliving components.</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
<p>Chapter Review</p>		<p>1. Evaluate that impact of research and technology on scientific thought, society, and the environment.</p> <p>2. Identify careers related to science.</p> <p>3. Connect chapter concepts with the contributions of scientists.</p> <p>4. Extend chapter concepts with</p>	<p>2.b: Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem</p> <p>3.a: Students know ecosystems can be</p>	<p>Chapter Test</p>

		<p>hands-on investigations.</p> <p>5. Review chapter concepts.</p>	<p>characterized by their living and nonliving components.</p> <p>3.b: Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
<p>5. Protecting and Preserving Ecosystems</p> <p>12 days</p>	<p>Lesson 1: How do ecosystems change naturally?</p>	<p>1. Identify actions that require time for changes to be measurable, like succession.</p> <p>2. Compare primary succession with secondary succession.</p> <p>3. Describe the features of a climax community.</p>	<p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p>	<p>Workbook</p>

			<p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 2: How do people change ecosystems?</p>	<p>1. Observe the effect of fertilizer runoff on an aquatic ecosystem.</p> <p>2. Identify ways in which ecosystems are affected by human activities, including development and pollution.</p> <p>3. Recognize that although ecosystems may recover from minor damages, some changes are irreversible.</p>	<p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	<p>Workbook</p>
	<p>Lesson 3: How can people treat ecosystems more wisely?</p>	<p>1. Investigate what happens to garbage in a landfill over time by constricting a model.</p> <p>2. Identify ways in which individuals can reduce impact</p>	<p>3.d: Students know that most microorganisms do not cause disease and that many are beneficial.</p>	<p>Workbook</p>

		on ecosystems.	<p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	Lesson 4: How can people help restore damaged ecosystems?	<ol style="list-style-type: none"> 1. Describe the role of wetlands in filtering water. 2. Recognize ways in which damaged ecosystems are restored. 3. Identify how students can restore natural ecosystems in their own backyards. 	<p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	Workbook
	Chapter Review	<ol style="list-style-type: none"> 1. Connect chapter concepts with the history of science. 2. Connect chapter concepts with the contributions of scientists. 3. Extend chapter concepts with hands-on investigations. 4. Review chapter concepts. 	<p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes</p> <p>6.f: Follow a set of written instructions for</p>	Chapter Test

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			a scientific investigation	
Unit Project and Wrap Up				
Subject/Unit Title: Science				
Estimated Time Frame (#of Days): 27days				
Unit B: The Changing Earth				
Chapter Title	Lesson Title	Objectives	CA State Standards	Assessments
1. Changes to Earth's Surface 9 days	Lesson 1: What processes change landforms?	1. Distinguish between erosion and deposition. 2. Explain how Earth's crust is broken down into soil. 3. Describe how water, wind, and ice change landforms.	5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes. 5.b: Students know natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces. 5.c: Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).	Workbook

			<p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	Lesson 2: What causes mountains, volcanoes, and earthquakes?	<ol style="list-style-type: none"> 1. Describe the three layers of Earth. 2. Explain how mountains form. 3. Describe what causes volcanoes and earthquakes. 	<p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	Workbook
	Lesson 3: How has Earth’s surface	<ol style="list-style-type: none"> 1. Explain the theory of continental drift. 	<p>5.a: Students know some changes in the earth are due to slow</p>	Workbook

	<p>changed?</p>	<p>2. Describe how features of Earth’s surface have changed over millions of years. 3. Explain how fossils help scientists learn about plants and animals of the past.</p>	<p>processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	<p>Chapter Review</p>	<p>1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists.</p>	<p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.</p>	<p>Chapter Test</p>

		<p>4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts.</p>	<p>5.b: Students know natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.</p> <p>5.c: Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
<p>2. Rocks and Minerals 9 days</p>	<p>Lesson 1: What are minerals?</p>	<p>1. Collect information about minerals using observational skills. 2. Describe properties of minerals. 3. Explain how minerals form and how they are used.</p>	<p>4.a: Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).</p> <p>6.a: Differentiate observation from inference (interpretation) and</p>	<p>Workbook</p>

			<p>know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 2: What are rocks?</p>	<ol style="list-style-type: none"> 1. Differentiate among different kinds of rocks. 2. Describe the relationship between rocks and minerals. 3. Explain how different rocks form. 4. Give examples of sedimentary, igneous, and metamorphic rocks. 	<p>4.a: Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).</p> <p>5.c: Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come</p>	<p>Workbook</p>

			<p>partly from what they observe and partly from how they interpret their observations.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	Lesson 3: What is the rock cycle?	<ol style="list-style-type: none"> 1. Observe patterns of change in Earth’s rock. 2. Describe processes involved in the rock cycle. 3. Identify the effects of erosion, dissolving, and weathering, which take place over time. 	<p>4.a: Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).</p> <p>4.b: Students know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.</p> <p>5.b: Students know natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.</p> <p>5.c: Students know moving water erodes landforms, reshaping the land by taking it away from some</p>	Workbook

			<p>places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	<p>Chapter Review</p>	<ol style="list-style-type: none"> 1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists. 4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts. 	<p>4.a: Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).</p> <p>4.b: Students know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.</p> <p>5.a: Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes</p>	<p>Chapter Test</p>

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			<p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
3. Soil – A natural Resource 9 days	Lesson 1: How does soil form?	<ol style="list-style-type: none"> 1. Explain why soil is important. 2. Describe how soil forms. 		Workbook
	Lesson 2: What are some properties of soil?	<ol style="list-style-type: none"> 1. Identify the properties of soil that make it good for sustaining life. 2. Describe ways soil can be improved. 		Workbook
	Lesson 3: What are some ways to conserve soil?	<ol style="list-style-type: none"> 1. Explain how soil and nutrients from soil can be lost through the eroding of landforms. 2. Give examples of ways to protect soil. 		Workbook
	Chapter Review	<ol style="list-style-type: none"> 1. Connect chapter concepts with the history of science. 2. Connect chapter concepts 		Chapter Test

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		with the contributions of scientists. 3. Extend chapter concepts with hands-on investigations. 4. Review chapter concepts.		
Unit Project and Wrap Up				
Subject/Unit Title: Science				
Estimated Time Frame (#of Days): 21days				
Unit C: Matter and Electricity				
Chapter Title	Lesson Title	Objectives	CA State Standards	Assessments
1. Physical Properties of Matter 9 days	Lesson 1: What are three states of matter?	1. Conclude that matter has three forms: solid, liquid, and gas. 2. Recognize that heat can cause a change in the state of matter. 3. Conduct tests, compare data, and draw conclusions about states of matter.	6.a: Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations. 6.b: Measure and estimate the weight, length, or volume of objects. 6.c: Formulate and justify predictions based on cause-and-	Workbook

			<p>effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	<p>Lesson 2: How can matter be measured and compared?</p>	<p>1. Use numerical data to measure, describe, and compare physical properties of matter.</p> <p>2. Conduct tests, compare data, and draw conclusions about mass, volume, and density.</p>	<p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	<p>Workbook</p>
	<p>Lesson 3: What are some useful properties of matter?</p>	<p>1. Identify buoyancy as a physical property of matter.</p> <p>2. Conduct tests, compare data, and draw conclusions about the buoyancy of different materials.</p> <p>3. Recognize that some</p>	<p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p>	<p>Workbook</p>

		materials combine to form solutions.	<p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	
	Chapter Review	<ol style="list-style-type: none"> 1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists. 4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts. 	<p>6.b: Measure and estimate the weight, length, or volume of objects.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation.</p>	Chapter Test
2. Electricity and Magnetism 12 days	Lesson 1: What is static electricity?	<ol style="list-style-type: none"> 1. Define static electricity. 2. Recognize that electrically charged objects attract or repel each other as can be 	1.e: Students know electrically charged objects attract or repel each other.	Workbook

		<p>seen from the effects of static electric. 3. Explain what cause an electric field.</p>	<p>1.g: Students know electrical energy can be converted to heat, light, and motion</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 2: What is an electric current?</p>	<p>1. Design and build a simple series circuit using components such as wires, batteries, and bulbs. 2. Compare data about physical properties of matter, including conduction. 3. Recognize that electrical energy can be converted to other forms of energy, such as heat, light, and motion.</p>	<p>1.a: Students know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs</p> <p>1.g: Students know electrical energy can be converted to heat, light, and motion</p> <p>6.a: Differentiate observation from</p>	<p>Workbook</p>

			<p>inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 3: What is a magnet</p>	<p>1. Construct a simple compass, and use it to detect magnetic effects.</p> <p>2. Recognize that magnets have two poles, labeled north and south, and that like poles repel each other; while unlike poles attract each other.</p>	<p>1.b: Students know how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.</p> <p>1.f: Students know that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret</p>	<p>Workbook</p>

			<p>their observations.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p> <p>6.e: Construct and interpret graphs from measurements.</p> <p>6.f: Follow a set of written instructions for a scientific investigation</p>	
	<p>Lesson 4: What is an electromagnet?</p>	<p>1. Recognize that all electric currents produce magnetic effects.</p> <p>2. Construct a simple electromagnet.</p> <p>3. Identify how electromagnets are useful to people.</p>	<p>1.c: Students know electric currents produce magnetic fields and know how to build a simple electromagnet.</p> <p>1.d: Students know the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones</p> <p>1.g: Students know electrical energy can be converted to heat, light, and motion</p> <p>6.c: Formulate and justify predictions based on cause-and-</p>	<p>Workbook</p>

			<p>effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p>	
	<p>Chapter Review</p>	<ol style="list-style-type: none"> 1. Connect chapter concepts with the history of science. 2. Connect chapter concepts with the contributions of scientists. 3. Extend chapter concepts with hands-on investigations. 4. Review chapter concepts. 	<p>1.a: Students know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.</p> <p>1.b: Students know how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.</p> <p>1.c: Students know electric currents produce magnetic fields and know how to build a simple electromagnet.</p> <p>1.e: Students know electrically charged objects attract or repel each other.</p> <p>1.f: Students know that magnets have two poles (north and south)</p>	<p>Chapter Test</p>

			<p>and that like poles repel each other while unlike poles attract each other.</p> <p>1.g: Students know electrical energy can be converted to heat, light, and motion</p> <p>6.a: Differentiate observation from inference (interpretation) and know scientists’ explanations come partly from what they observe and partly from how they interpret their observations.</p> <p>6.c: Formulate and justify predictions based on cause-and-effect relationships.</p> <p>6.d: Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.</p>	
Unit Project and Wrap Up				
Subject/Unit Title: Science				

FAME Public Charter School

Scope and Sequence: Grade Fourth

Estimated Time Frame (#of Days): 19days				
Unit Extension Chapters				
Chapter Title	Lesson Title	Objectives	CA State Standards	Assessments
1. Human Body Systems 9 days	Lesson 1: How do skeletal and muscular systems work?	1. Identify the basic parts that make up the body. 2. Explain how the skeletal and muscular systems work.		Workbook
	Lesson 2: How do the respiratory and circulatory systems work?	1. Describe what breathing does for the body. 2. Identify why blood is important to the body's cells.		Workbook
	Lesson 3: How do the nervous and digestive systems work?	1. Describe how the nervous system controls all the body's systems. 2. Analyze what the digestive system does for the body.		Workbook
	Chapter Review	1. Evaluate that impact of research and technology on scientific thought, society, and the environment. 2. Identify careers related to science. 3. Connect chapter concepts with the contributions of scientists. 4. Extend chapter concepts with hands-on investigations. 5. Review chapter concepts		Chapter Test
	Lesson 1: How does	1. Recognize that thermal		Workbook

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<p>2. Heat- Energy on the Move 10 days</p>	<p>heat affect matter?</p>	<p>energy is the motion of particles of matter. 2. Observe and record changes in the states of matter caused by the addition or reduction of thermal energy. 3. Explain how thermal energy and temperature differ.</p>		
	<p>Lesson 2: How can thermal energy be transferred?</p>	<p>1. Explain that adding or removing heat from a substance can change its state of matter. 2. Identify conduction as a physical property of matter. 3. Recognize that thermal energy can be transferred from one object to another.</p>		<p>Workbook</p>
	<p>Lesson 3: How is thermal energy produced and used?</p>	<p>1. Analyze information about temperature by using thermometers. 2. Identify ways to produce and use thermal energy. 3. Explain that the energy that comes from the sun to Earth can be used by people.</p>		<p>Workbook</p>
	<p>Chapter Review</p>	<p>1. Evaluate that impact of research and technology on scientific thought, society,</p>		<p>Chapter Test</p>

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		<p>and the environment.</p> <ol style="list-style-type: none">2. Identify careers related to science.3. Connect chapter concepts with the contributions of scientists.4. Extend chapter concepts with hands-on investigations.5. Review chapter concepts		
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