

**Hampton Borough Public School**

**Science Curriculum**

**Kindergarten-Grade 8**

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**Acknowledgements:**

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### **AFFIRMATIVE ACTION STATEMENT**

It is the policy of the Board of Education to provide equal employment and educational opportunities regardless of race, color, creed, religion, sex, ancestry, national origin, place of residence, social or economic condition, or non-applicable handicap.

Affirmative Action Office  
Alice Burtnick  
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32-41 South Street  
Hampton, NJ 08827  
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### **ADAPTATIONS FOR SPECIAL EDUCATION STATEMENT**

Although this curriculum guide has been developed for general education delivery, the knowledge, skills, attitudes, and behaviors identified are appropriate for the special education pupils in Hampton Public School. Modifications necessary to accommodate the education needs of individual pupil's handicaps will be described in the Individualized Educational Program (IEP). They are on file at:

Office of Special Services  
Hampton Borough Public School  
32-41 South Street  
Hampton, NJ 08827

### **PURPOSE/RATIONALE**

The purpose of this Science curriculum is to enhance scientific reasoning and critical thinking skills, which can be learned by a diverse and multicultural student population. These skills will promote literacy in Science with comprehensive programs, utilizing a variety of educational resources, materials, and technology. The Science curriculum is also designed to provide rigorous and challenging instructional experiences which enhance the ability of students to identify and propose solutions to problems which require thought and reflection.

### **FORMAT FOR INSTRUCTION**

The curriculum will challenge all students to actively investigate concepts and utilize a variety of resources. Students with special learning needs will have this curriculum adapted through the individualized educational program (I.E.P.). Through this course of study, the positive reinforcement of pre-learned skills may be necessary.

An integrated approach to the teaching of Science will help students understand how Science connects to literature and writing as well as other subjects. Cooperative learning strategies will be implemented to include multi-sensory experiences in a multi-cultural environment. Connections to everyday life through problem-solving will be emphasized. Hands-on inquiry-based Science instruction, as well as other ancillary materials, will be utilized to engage the students in activities promoting conceptual understandings and abstract reasoning.

This curriculum meets the New Jersey State Core Curriculum Content Standards for Science and the National Science Education Standards.

**Science Topics for Each Grade**

<u>Kindergarten</u>	Page	<u>First Grade</u>	Page	<u>Second Grade</u>	Page
Dinosaurs	7	Weather and Seasons (climate)	11	Energy, Force, and Motion	17
Plants	7	All About Me	11	Sun and Moon	18
Seasons	8	Africa	12	Habitat	19
Weather	8	Antarctica	12	Plants and Animals	19
Rainforest (Frogs and Toads)	9	Matter	14	Life Cycles	20
Insects	9	Water	15		
Farm and Zoo Life	10	Australia	15		
<u>Third Grade</u>		<u>Fourth Grade</u>		<u>Fifth Grade</u>	
Matter and Measurement	22	Moon Phases and Solar System	32	Weather and Climate	37
Energy	23	Body Systems	32	Plate Tectonics	38
Live Cycles and Adaptations	25	Ecosystems	33	Weathering, Soil Erosion, Deposition	39
Motion and Forces (Simple Machines)	26	Energy, Electricity, Magnetism	34	Oceans	39
Atmosphere and Weather	27	Light	35		
Plants and Animals	29	Rocks and Minerals	36		
<u>Sixth Grade</u>		<u>Seventh Grade</u>		<u>Eighth Grade</u>	
Scientific Processes	41	Scientific Processes	49	Scientific Processes	56
Water Ecosystems	42	Cell Theory and Structure	50	Energy Sources & Transformations	57
Matter	43	Food Webs, Photosynthesis, Ecosystems	51	Waves and Light	58
Chemical Reactions	45	Cell Growth and Heredity	52	Astronomy	60
Plate Tectonics and Volcanoes	46	Classification	54	Amphibians	61
		Viruses, Bacteria, Protists, Fungi	55	Forces and Fluids	62

KINDERGARTEN					
UNIT	CONCEPTS	STANDARDS	ESSENTIAL SKILLS/QUESTIONS ENDURING UNDERSTANDINGS	ASSESSMENT	INTERDISCIPLINARY CONNECTIONS
Dinosaurs	Extinction Carnivore/herbivore/ omnivore Concept of time Paleontologists Size and shape Measurement Weight and length Strength	5.1.4.A.1 5.3.4.A.2 5.5.2.B.2 5.8.4.A.3	Compare the characteristics of different types of dinosaurs. Conclude that dinosaurs were animals that lived on land a long time ago. Estimate the relative sizes of dinosaurs. Compare fossil imprints with fossil remains. Conclude that dinosaur teeth give us clues to what they are. What was the earth like long ago? What lived on earth long ago? What were the characteristics of various types of dinosaurs? What do fossils tell us?	Class projects Discussion Observation	<u>Language Arts</u> RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5 RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b L.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c .K.6 <u>Math</u> K.CC.4.a, K.CC.5-6, K.MD.1-3 <u>Social Studies</u> 6.1.2.A.1 <u>Health and Physical Education</u> 2.1.2.A.1-2, 2.1.2.B.1-2, 2.1.2.C1-3; 2.1.4.C.1-2, 2.1.4.C.4, <u>21<sup>st</sup> Century Skills and Careers</u> 9.1.4.A.5
Plants	Seeds to plants Seed leaves Roots Sun/lack of sun Water/lack of water Soil/lack of soil Observing and recording	5.1.4.A.1 5.5.2.A.1	What are the parts of a plant? How are plants grouped? Why do plants need the parts they have? How do plants adapt to their environment? How do people use plants? How do plants get food? What changes occur during the life cycle of a flowering green plant? How do the activities of humans affect plants? What conditions are needed for plant growth? How do plants interact with the environment? How are the structures of plants related to	Class projects Discussion Observation	<u>Language Arts</u> RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5; RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c; L.K.6 <u>Math</u> K.CC.4.a, K.CC.5-6, K.MD.1-3 <u>Visual and Performing Arts</u> 1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1 <u>Technology</u> 8.1.4.B.5-7

Kindergarten

			<p>their function?</p> <p>Identify the sources and uses of water.</p> <p>Associate organisms' basic needs with how they meet those needs with their surroundings.</p> <p>Raise questions about the world around them and be willing to seek answers through making careful observations and experimentation.</p>		
Seasons	<p>Seasons changing</p> <p>Hibernation</p> <p>Migration</p> <p>Animals in winter</p>	<p>5.5.2.A.1</p> <p>5.8.2.B.4</p>	<p>Describe the four seasons and the signs associated with these seasons.</p> <p>Identify how people adjust to the different weather conditions when seasons change.</p> <p>Identify ways in which animals change to fit the seasonal weather conditions.</p> <p>Describe how temperature and seasons also affect plant growth.</p> <p>How do the seasons affect food availability?</p>	<p>Class projects</p> <p>Discussion</p> <p>Observation</p>	<p><u>Language Arts</u></p> <p>RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5; RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c; L.K.6</p> <p><u>Math</u></p> <p>K.CC.4.a, K.CC.5-6, K.MD.1-3</p> <p><u>Visual and Performing Arts</u></p> <p>1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1</p> <p><u>Health</u></p> <p>2.1.2.A.1-2</p>
Weather	<p>Observation</p> <p>Weather charts</p> <p>Looking at clouds</p>	<p>5.1.4.A.1</p> <p>5.3.4.A.1</p> <p>5.3.4.D.1</p> <p>5.8.2.B.3</p> <p>5.8.2.B.4</p> <p>5.8.2.D.1</p>	<p>Recognize weather conditions can change from day to day based on a graph.</p> <p>Recognize factors which affect weather, including temperature, wind, precipitation, evaporation, condensation, and clouds.</p> <p>Demonstrate an understanding that materials absorb different amounts of the sun's heat.</p> <p>Identify wind can move at different speeds and can cause objects to move.</p> <p>Identify how weather conditions can affect water in different forms.</p> <p>Identify how people adjust to the different weather.</p>	<p>Class projects</p> <p>Discussion</p> <p>Observation</p>	<p><u>Language Arts</u></p> <p>RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5, RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c; L.K.6</p> <p><u>Math</u></p> <p>K.CC.4.a, K.CC.5-6, K.MD.1-3</p> <p><u>Social Studies</u></p> <p>6.6.2.C.1, 6.6.2.E.2</p> <p><u>Visual and Performing Arts</u></p> <p>1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1</p>

Kindergarten

<p>Rainforest Frogs &amp; Toads</p>	<p>Differences Comparisons Different types of frogs and toads Role in nature Rainforest layers</p>	<p>5.5.2.A.1 5.5.2.B.1</p>	<p>What are the characteristics of the rainforest? Why are rainforests important? How do people and animals life in rainforests? How do human actions impact the plants and animals of tropical rainforests? How can endangered species of plants and animals in the rainforests be protected? Recognize that different types of plants and animals live in different parts of the world Associate organisms’ basic needs with how they meet those needs within their surroundings. Plants and animals are found in different kinds of environments and are often hidden. There are many different plants and animals living in many different kinds environments (hot, cold, wet, dry, sunny, dark). Associate organisms’ basic needs with how they meet those needs within their surroundings.</p>	<p>Class projects Discussion Observation</p>	<p><u>Language Arts</u> RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5; RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d,dL.K.5.c; L.K.6 <u>Math</u> K.CC.4.a, K.CC.5-6, K.MD.1-3 <u>Social Studies</u> 6.6.2.B.1, 6.6.2.B.2, 6.6.2.C.1, 6.6.2.E.1-3 <u>Visual and Performing Arts</u> 1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1</p>
<p>Insects</p>	<p>Body parts Legs Different types of insects Roles they play in nature</p>	<p>5.5.2.A.1 5.5.2.B.1 5.10.2.B.1</p>	<p>How are things around me helpful or harmful? What is an insect? Are all insects the same size? Do all insects fly? How do scientists group insects? What are some ways that insects protect themselves?</p>	<p>Class projects Discussion Observation</p>	<p><u>Language Arts</u> RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5; RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c; L.K.6 <u>Math</u> K.CC.4.a, K.CC.5-6, K.MD.1-3 <u>Visual and Performing Arts</u> 1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1 <u>Technology</u></p>

			<p>How do insects affect me?</p> <p>Would we be better off with no insects in the world?</p> <p>What makes an insect an insect?</p> <p>How do I classify insects?</p> <p>Explain the stages of the life cycle of insects and what they need at each stage.</p> <p>Analyze ways the habitat helps insects survive.</p> <p>How do insects fit into the food web (chain)?</p> <p>What role do insects play in the environment?</p> <p>What are the names of different parts of insects' bodies?</p>		8.1.4.B.5-7
Farm and Zoo Life	<p>Animal Features</p> <p>Purpose of an animal</p> <p>Facts about animals</p> <p>Products we get from animals</p>	<p>5.5.2.A.1</p> <p>5.5.2.B.1</p> <p>5.10.2.B.1</p>	<p>Recognize that different types of plants and animals live in different parts of the world.</p> <p>How do people and animals interact?</p> <p>How are humans and animals alike and different from each other?</p> <p>What do animals need to live and grow?</p> <p>How are animals classified?</p> <p>Plants and animals may live in different habitats.</p> <p>How do animals' characteristics help them survive in their habitat?</p> <p>If living things do not get food, water, shelter, and space, they will die.</p>	<p>Class projects</p> <p>Discussion</p> <p>Observation</p>	<p><u>Language Arts</u></p> <p>RL.K.1-6, RL.K.10, RI.K.1-2, RI.K.4-5; RI.K.10, W.K.1-3, W.K.7-8, SL.K.1.a-b; SL.K.2-3, SL.K.5-6, L.K.1.a-d, L.K.5.c; L.K.6</p> <p><u>Math</u></p> <p>K.CC.4.a, K.CC.5-6, K.MD.1-3</p> <p><u>Social Studies</u></p> <p>6.5.2.B.1, 6.6.2.A.1, 6.6.2.D.1, 6.6.2.E.1</p> <p><u>Health and Physical Education</u></p> <p>2.1.2.A.1-2, 2.1.2.B.1-2, 2.1.2.C1-3, 2.1.4.C.1-2, 2.1.4.C.4</p> <p><u>Visual and Performing Arts</u></p> <p>1.2.2.A.4, 1.2.2.B.1-2, 1.3.2.B.1</p> <p><u>World Language</u></p> <p>7.1.A, 7.2.A</p>

GRADE 1					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Weather Conditions Ongoing	5.1.4.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.	Recognize weather conditions can change from day to day based on a graph.	Observation based on participation and discussion Q & A	
	5.4.2.F.1	Observe and document daily weather conditions and discuss how the weather influences your activities for the day.	<p>Recognize factors which affect weather, including temperature, wind, precipitation, evaporation, condensation, and clouds.</p> <p>Demonstrate an understanding that materials absorb different amounts of the sun's heat.</p> <p>Identify wind can move at different speeds and can cause objects to move.</p> <p>Identify how weather conditions can affect water in different forms.</p> <p>Describe the four seasons and the signs associated with these seasons.</p> <p>Identify how people adjust to the different weather conditions when seasons change.</p> <p>Identify ways in which animals change to fit the seasonal weather conditions.</p> <p>Describe how temperature and seasons also affect plant growth.</p>		
All About Me	5.3.2.C.1	Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs.	How are people alike and how are they different?	Observation based on participation and discussion Q & A	<u>Language Arts</u> RI.1.1, RI.1.2, RI.1.7 <u>Technology</u> 8.1.2.A.5 <u>21<sup>ST</sup> Century Life and Careers</u> 9.1.4.D.2, 9.1.4.F.3 9.3.4.A.2
	5.3.2.E.1	Describe similarities and differences in observable traits between parents and offspring.	What makes me unique in the world?		
	5.4.2.G.3		Investigate the basic needs of humans and other organisms. Associate organisms' basic needs with		

		Identify and categorize the basic needs of living organisms as they relate to the environment.	<p>how they meet those needs within their surroundings.</p> <p>Identify various needs of humans that are supplied by the natural or constructed environment.</p>		<p><u>Health</u></p> <p>2.1.2.E.1, 2.1.2.E.2 2.1.2.E.3, 2.2.2.A.1 2.4.2.A.1, 2.4.2.A.2, 2.4.4.A.1, 2.4.2.B.1</p> <p><u>Social Studies</u></p> <p>6.1.4.C.2</p>
Africa	<p>5.3.2.B.2</p> <p>5.3.2.C.1</p> <p>5.3.2.C.2</p> <p>5.3.2.E.2</p>	<p>Compare how different animals obtain food and water.</p> <p>Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs.</p> <p>Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals.</p> <p>Describe how similar structures found in different organisms (e.g. eyes, ears, mouths) have similar functions and enable those organisms to survive in different environments.</p>	<p>Where is Africa?</p> <p>What makes Africa unique?</p> <p>Recognize that different types of plants and animals live in different parts of the world.</p> <p>What plants/animals are native to Africa?</p> <p>How do different habitats affect human, plant, and animal life?</p> <p>How do plants/animals in Africa adapt to their habitat?</p> <p>Plants and animals are found in different kinds of environments and are often hidden.</p> <p>Recognize that there are many different plants and animals living in many different kinds of environments (hot, cold, wet, dry, sunny, dark).</p> <p>Associate organisms' basic needs with how they meet those needs within their surroundings.</p> <p>Develop strategies and skills for information-gathering and problem-solving, using appropriate tools and technologies.</p>	<p>Observation based on participation and discussion</p> <p>Question and answer</p> <p>Animal projects</p>	<p><u>Language Arts</u></p> <p>RI.1.1, RI.1.2, RI.1.4, RI.1.7</p> <p><u>Technology</u></p> <p>8.1.2.A.5</p> <p><u>21<sup>st</sup> Century Life and Careers</u></p> <p>9.1.4.A.5, 9.1.4.B.1, 9.1.4.D.1, 9.1.4.F.2, 9.1.4.F.3</p> <p><u>Social Studies</u></p> <p>6.1.4.A.15</p> <p><u>Visual and Performing Arts</u></p> <p>1.3.2.D.4</p> <p><u>World Languages</u></p> <p>7.1.NM.A.3</p>
Antarctica	5.1.4.C.3	Present evidence to interpret and/or predict	Where is Antarctica?	Observation	<u>Math</u>

		cause-and-effect outcomes of investigations	Why is Antarctica unique?	based on participation and discussion	1.MD.1, 1.MD.2, 1.MD.4
5.1.4.D.1	Actively participate in discussions about student data, questions, and understandings.		Recognize that different types of plants and animals live in different parts of the world.	Q&A	• Language Arts RI.1.1, RI.1.2, RI.1.4, RI.1.7
5.3.2.B.2	Compare how different animals obtain food and water.		What are the characteristics of Antarctica?	Observation of hands-on activities.	<u>Technology</u> 8.1.2.A.5
5.3.2.C.1	Describe the ways in which organisms interact with each other and their habitats in order to meet their basic needs.		How has the continent changed over time?		<u>21<sup>st</sup> Century Life and Careers</u> 9.1.4.A.5, 9.1.4.B.1, 9.1.4.D.1, 9.1.4.F.2, 9.1.4.F.3
5.3.2.C.2	Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals.		Why is Antarctica important?		<u>Social Studies</u> 6.1.4.C.17
5.3.2.C.3	Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats.		What plants/animals are native to Antarctica?		
5.3.2.D.1	Record the observable characteristics of plants and animals to determine the similarities and differences between parents and their offspring.		How do different habitats affect human, plant, and animal life?		
5.3.2.D.2	Determine the characteristic changes that occur during the life cycle of plants and animals by examining a variety of species, and distinguish between growth and development.		How do plants/animals in Antarctica adapt to their habitat?		
5.3.2.E.1	Describe similarities and differences in observable traits between parents and offspring.		Plants and animals are found in different kinds of environments and are often hidden.		
			Recognize that there are many different plants and animals living in many different kinds of environments (hot, cold, wet, dry, sunny, dark).		
			Associate organisms' basic needs with how they meet those needs within their surroundings.		
			Develop strategies and skills for information-gathering and problem-solving, using appropriate tools and technologies.		
			Understand that if living things do not get food, water, shelter, and space, they will die.		

	5.3.2.E.2	Describe how similar structures found in different organisms have similar functions and enable those organisms to survive in different environments.	Develop strategies and skills for information-gathering and problem-solving, using appropriate tools and technologies.		
	5.4.2.G.3	Identify and categorize the basic needs of living organisms as they relate to the environment.			
Matter	5.2.2.A.1	Sort and describe objects based on the materials of which they are made and their physical properties.	<p>Objects have many different observable properties.</p> <p>Substances can be classified by observable properties.</p> <p>Objects can be made up of many different materials.</p> <p>Recognize that objects are composed of parts that are too small to be seen without magnification (for examples, rocks, cookies, string, paper).</p> <p>Sort objects according to the materials from which they are made or their physical properties, and give a rationale for sorting.</p> <p>Verify that objects can be grouped according to their physical characteristics (for example, shape, color, texture, form, size).</p> <p>Understand that matter exists in different states (solid, liquid, gas).</p> <p>Explore the effects of heating and cooling on solids, liquids, and gases.</p>	Observation based on participation and discussion Q&A	<p><u>Language Arts</u></p> <p>RI.1.1, RI.1.2, RI.1.4 RI.1.7</p> <p><u>Math</u></p> <p>1.MD.4</p> <p><u>Technology</u></p> <p>8.1.2.A.5</p> <p><u>21<sup>st</sup> Century Life and Careers</u></p> <p>9.1.4.A.5, 9.1.4.B.1, 9.1.4.D.1, 9.1.4.F.2 9.1.4.F.3</p>
	5.2.2.A.2	Identify common objects as solids, liquids, or gases.			
	5.2.2.B.1	Generate accurate data and organize arguments to show that not all substances respond the same way when heated or cooled, using common materials, such as shortening or candle wax.			

			<p>Observe that water can be a liquid, gas, or solid and can change from one form to the other.</p> <p>Describe the physical properties of ice, water, and steam</p> <p>Explain the effects of heating and cooling on solids, liquids, and gases.</p> <p>Identify ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water).</p> <p>Heating and cooling can cause changes in the properties of materials, but not all materials change in the same way.</p> <p>Some features of things may stay the same even when other features change.</p> <p>The weight of the whole object is equal to the sum of its parts.</p>		
Water	<p>5.4.2.G.2</p> <p>5.4.2.G.1</p>	<p>Identify and use water conservation practices.</p> <p>Observe and discuss evaporation and condensation.</p>	<p>Identify the sources and uses of water.</p> <p>Identify ways to care for the Earth at home and in school (for example, limiting use of paper towels, turning off water while brushing teeth, turning off lights when no one will be in the room).</p> <p>Observe how water is absorbed by soil and how water puddles disappear over time.</p> <p>Discover that water flows downhill.</p> <p>Identify accumulated amounts of water can form different bodies of water, such as: puddles, lakes, oceans, or rivers.</p> <p>Identify the problems our natural world</p>	<p>Observation based on participation and discussion</p> <p>Q&amp;A</p>	<p><u>Language Arts</u> RI.1.1, RI.1.2, RI.1.4, RI.1.7</p> <p><u>Technology</u> 8.1.2.A.5</p> <p><u>21<sup>st</sup> Century Life and Careers</u> 9.1.4.A.5, 9.1.4.B.1, 9.1.4.D.1, 9.1.4.F.2, 9.1.4.F.3</p>

			<p>faces today.</p> <p>Water circulates through the Earth's crust, oceans and atmosphere in what is known as the "water cycle"</p>		
Australia	<p>5.3.2.B.2</p> <p>5.3.2.C.1</p> <p>5.3.2.C.2</p> <p>5.3.2.C.3</p> <p>5.3.2.D.1</p> <p>5.3.2.E.1</p> <p>5.3.2.E.2</p>	<p>Compare how different animals obtain food and water.</p> <p>Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs.</p> <p>Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals.</p> <p>Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats.</p> <p>Record the observable characteristics of plants and animals to determine the similarities and differences between parents and their offspring.</p> <p>Describe similarities and differences in observable traits between parent and offspring.</p> <p>Describe how similar structures found in different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive in different environments.</p>	<p>Where is Australia?</p> <p>Recognize that different types of plants and animals live in different parts of the world.</p> <p>What are the characteristics of Australia?</p> <p>How has the continent changed over time?</p> <p>What plants/animals are native to Australia?</p> <p>How do different habitats affect human, plant, and animal life?</p> <p>How do plants/animals in Australia adapt to their habitat?</p> <p>Plants and animals are found in different kinds of environments and are often hidden.</p> <p>Recognize that there are many different plants and animals living in many different kinds environments (hot, cold, wet, dry, sunny, dark).</p> <p>Associate organisms' basic needs with how they meet those needs within their surroundings.</p>	<p>Observation based on participation and discussion</p> <p>Q&amp;A</p> <p>Fact sheets and/or summaries of animals</p>	<p><u>Language Arts</u></p> <p>RI.1.1, RI.1.2, RI.1.4 RI.1.7</p> <p><u>Technology</u></p> <p>8.1.2.A.5</p> <p>21<sup>st</sup> Century Life and Careers</p> <p>9.1.4.A.5, 9.1.4.B.1, 9.1.4.D.1, 9.1.4.F.2, 9.1.4.F.3</p> <p><u>Visual and Performing Arts</u></p> <p>1.3.2.D.4</p> <p><u>World Languages</u></p> <p>7.1.NM.A.3</p>

GRADE 2					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Energy, Force, and Motion	5.1.4.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.	Recognize that the sun supplies light and heat to the Earth.	Teacher Observation	<u>Language Arts</u> (RI.2.1) (W.2.7) (W.2.8) (SL.2.1.b) (SL.2.2) (SL.2.3) <u>21<sup>st</sup> Century Life and Careers</u> (9.1.4.A.1)(9.1.4.B.1) <u>Math</u> (2.MD.3) <u>Technology</u> (8.2.2.G.1)
	5.1.4.C.2	Revise predictions or explanations on the basis of learning new information.	Understand the relationship of food to the need for energy for daily activities.	Discussions	
	5.2.2.D.1	Predict and confirm the brightness of a light, the volume of sound, or the amount of heat when given the number of batteries, or the size of batteries.	Identify different heat sources (for example, friction, solar, nuclear, and electric).	Journal Entries	
	5.2.2.E.1	Investigate and model the various ways that inanimate objects can move.	Understand the ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water).	Observations	
	5.2.2.E.2	Predict an object's relative speed, path, or how far it will travel using various forces and surfaces.	The student understands that some materials will allow light to pass through and others will not.	Experiments	
	5.2.2.E.3	Distinguish a force that acts by direct contact with an object (e.g., by pushing or pulling) from a force that can act without direct contact (e.g., the attraction between a magnet and a steel paper clip).	Explore the relationship between force and motion.  Distinguish among the different ways objects can move such as fast and slow, in a straight line, in circular path, and back and forth.  Demonstrate that the amount and direction of the force exerted on an object (for example, push, pull, friction, and gravity) determines how much the object move.  Show that the position and motion of an object can be changed by pushing or pulling the object.  Demonstrate how gravity affects the motion of objects (for example, an object on a ramp, an object that is dropped).		

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			<p>Distinguish among the different ways objects can move such as fast and slow, in a straight line, in a circular path, and back and forth.</p> <p>Observe the effects some objects have on others even when the two objects might not touch.</p> <p>Recognize that magnetism is a force that may attract or repel certain materials.</p> <p>Demonstrate that vibrations of objects (for example, strings, drumheads, rubber bands) cause sounds.</p> <p>Explore different sources of energy or heat (e.g., friction, solar, nuclear, electric).</p>		
Sun and Moon	<p>5.2.2.C.1</p> <p>5.2.2.C.2</p> <p>5.2.2.C.3</p> <p>5.4.2.A.1</p>	<p>Compare, citing evidence, the heating of different colored objects placed in full sunlight.</p> <p>Apply a variety of strategies to collect evidence that validates the principle that if there is no light, objects cannot be seen.</p> <p>Present evidence that represents the relationship between a light source, solid object, and the resulting shadow.</p> <p>Determine a set of general rules describing when the Sun and Moon are visible based on actual sky observations.</p>	<p>Observe and identify objects in the day and night sky.</p> <p>Discuss how the sun and moon affect our time, seasons, and years.</p> <p>Appreciate how humans used the objects in the sky for heat, light, etc.</p> <p>Recognize that the sun supplies light and heat to the Earth.</p> <p>Recognize that each time the Earth completes one rotation, one day has passed and that this takes 24 hours.</p> <p>Recognize that the appearance of sunrise and sunset is due to the rotation of Earth every 24 hours.</p> <p>Identify patterns when observing the natural and constructed world.</p> <p>Recognize that the Moon moves around the Earth, the Earth moves around the Sun, and the Moon is visible when it</p>	<p>Discussions</p> <p>Teacher Observations</p> <p>Experiments</p> <p>Art Project</p>	<p>Language Arts (RI.2.1) (W.2.7) (W.2.8) (SL.2.1.b) (SL.2.2) (SL.2.3)</p> <p><u>Technology</u> (8.1.2.A.5)</p> <p><u>21<sup>st</sup> Century Life and Careers</u> (9.1.4.A.1) (9.1.4.A.5) (9.1.4.B.1)</p> <p><u>Visual and Performing Arts</u> (1.3.2.D.1)</p> <p><u>World Language</u> (7.1.NM.C.3)</p>

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			<p>reflects the light from the Sun.</p> <p>Observe that the position of the stars, with respect to each other (constellations) is unchanging.</p> <p>Observe that the stars and planets are always in the sky.</p> <p>Identify patterns when observing the natural and constructed world.</p> <p>Observe that stars are many, scattered, and different in brightness.</p> <p>Identify the phases of the moon</p>		
Habitat	<p>5.4.2.G.4</p> <p>5.3.2.C.2</p> <p>5.3.2.C.3</p>	<p>Identify the natural resources used in the process of making various manufactured products.</p> <p>Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals.</p> <p>Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats.</p>	<p>How do different habitats affect human, plant and animal life?</p> <p>Why are there different types of habitats?</p> <p>Recognize that different types of plants and animals live in different parts of the world.</p> <p>How do different habitats affect human, plant, and animal life?</p> <p>How do plants/animals adapt to their habitat?</p> <p>Plants and animals are found in different kinds of environments and are often hidden.</p> <p>Recognize that there are many different plants and animals living in many different kinds environments (hot, cold, wet, dry, sunny, dark).</p> <p>Associate organisms' basic needs with how they meet those needs within their surroundings.</p>		<p><u>Language Arts</u> (RI.2.1) (W.2.7) (W.2.8) (SL.2.1.b) (SL.2.2) (SL.2.3)</p> <p><u>Visual and Performing Arts</u> (1.3.2.D.1) (1.3.2.D.4)</p> <p>Social Studies (6.1.4.B.5)</p> <p><u>Technology</u> (8.1.2.A.5)</p>
Plants and Animals	5.4.2.C.1	Describe Earth materials using appropriate terms, such as hard, soft, dry, wet, heavy,	Compare and contrast essential characteristics that distinguish living	Teacher Observation	<u>Language Arts</u> (RI.2.1) (W.2.7) (W.2.8)

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	<p>5.3.2.A.1 Group living and nonliving things according to the characteristics that they share.</p> <p>5.3.2.B.1 Describe the requirements for the care of plants and animals related to meeting their energy needs.</p> <p>5.3.2.B.3 Explain that most plants get water from soil through their roots and gather light through their leaves.</p> <p>5.4.2.E.1 Describe the relationship between the Sun and plant growth.</p>	<p>and light.</p> <p>things from nonliving things.</p> <p>Describe the basic needs of living things (for example, food, water, space)</p> <p>How do living things adapt to their environment?</p> <p>How do different plants and animals grow, develop, and survive?</p> <p>How are the structures of living things related to their function?</p> <p>How do living things change when their environment changes?</p> <p>How does an organism’s structure affect its ability to survive?</p> <p>What kinds of interactions occur between plants and animals in the environment?</p> <p>Recognize that plants and animals are composed of different parts performing different functions.</p> <p>Identify characteristics that distinguish the invertebrate group from the vertebrate group.</p> <p>Describe the characteristics of mammals, birds, amphibians, reptiles, and fish.</p> <p>Identify the basic needs of animals and how they meet them.</p> <p>Describe and explain how learned and instinctive behaviors help animals survive.</p>	<p>Discussions</p> <p>Students will sort items as living or nonliving</p> <p>Journal Entries</p>	<p>(SL.2.1.b) (SL.2.2) (SL.2.3)</p> <p><u>Visual and Performing Arts</u></p> <p>(1.3.2.D.1)</p> <p><u>Technology</u></p> <p>(8.1.2.A.5)</p> <p><u>21<sup>st</sup> Century Life and Career Skills</u></p> <p>(9.1.4.A.1)</p>
Life Cycles	<p>5.3.2.D.2 Determine the characteristic changes that occur during the life cycle of plants and animals by examining a variety of species, and distinguish between growth and development.</p> <p>5.1.4.D.3 Handle and treat organisms humanely,</p>	<p>How do different plants and animals grow, develop and survive?</p> <p>How do organisms change as they go through their life cycles?</p> <p>Life cycles are different for different organisms.</p>	<p>Teacher observation</p> <p>Class discussion</p> <p>Student will be able to describe changes in</p>	<p><u>Language Arts</u></p> <p>(RI.2.1) (W.2.7) (W.2.8) (SL.2.1.b) (SL.2.2) (SL.2.3)</p> <p><u>Health:</u></p> <p>(2.4.2.B.1)</p> <p><u>Technology:</u></p>

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		<p>responsibly, and ethically.</p>	<p>Why are the life cycles of plants and animals important for life on Earth to continue?</p> <p>Recognize that animals progress through life cycles of birth, growth and development, reproduction, and death.</p> <p>There is a genetic basis for the transfer of biological characteristics from one generation to the next through the reproductive process.</p> <p>Identify and relate the similarities and differences between animal parents and their offspring.</p> <p>Recognize similarities and differences among multiple offspring of an animal parent.</p>	<p>animals and discriminate between growth and development</p> <p>Journal Entries</p>	<p>(8.1.2.A.5)  <u>Visual and Performing Arts</u>          (1.3.2.D.1)</p>
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GRADE 3					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Matter and Measurement	5.1.3.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.	Describe a toy or other familiar object as a system with parts that work together.  Recognize that common objects are composed of parts that are too small to be seen without magnification (for example, hair, cloth, paper).	Teacher observation  Group checklist  Completed study guide  Completed labs  Tests	<u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.6.7.8, SL.3.1.A-D,, L.3.4.A.D, L.3.5.B  <u>Math</u> 3.NBT.1-.2, 3.MD.1-3.6.8 <u>21<sup>st</sup> Century Life &amp; Career Skills</u> 9.1.3.A.1,2,5, 9.1.3.B.1, 9.1.3.C.1, 9.1.3.D.1, 9.1.3.F.1,2,3  <u>Technology</u> 8.1.3.F.1  <u>Social Studies</u> 6.1.3.B.3
	5.1.3.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.	Explore ways objects can be grouped according to similarities or differences of their physical characteristics.		
	5.1.3.A.3	Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.	Identify examples of solids, liquids, and gases.		
	5.1.3.B.1	Design and follow simple plans using systematic observations to explore questions and predictions.	Describe the observable properties of solids, liquids, and gases.		
	5.1.3.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.	Show that the position and motion of an object can be changed by pushing or pulling the object.		
	5.1.3.B.3	Formulate explanations from evidence.	Verify that things can be done to materials to change some of their physical properties (e.g., cutting, heating freezing), but not all materials respond the same way (e.g., heating causes water to boil and sugar to melt).		
	5.1.3.B.4	Communicate and justify explanations with reasonable and logical arguments.	Observe that water can be a liquid or a solid and can change from one form to the other.		
	5.1.3.C.1	Monitor and reflect on one's own knowledge regarding how ideas change over time.	Recognize that not all objects or		
	5.1.3.C.2	Revise predictions or explanations on the basis of learning new information.			
	5.1.3.C.3	Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.			

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	5.1.3.D.1	Actively participate in discussions about student data, questions, and understandings.	materials respond to change in the same way (for example, a plastic object in the freezer compared with water in a freezer).		
	5.1.3.D.2	Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.	Understand the ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water).		
	5.1.3.D.3	Demonstrate how to safely use tools, instruments, and supplies.	Observe, infer, and predict the properties of objects.		
	5.2.3.A.1	Identify objects that are composed of a single substance and those that are composed of more than one substance using simple tools found in the classroom.	Compare and classify objects according to their properties and identify the properties of matter that make it useful. Measure mass, height, width, and volume.		
	5.2.3.A.2	Plan and carry out an investigation to distinguish among solids, liquids, and gases.	Investigate measuring systems. Predict and infer the behavior of matter and infer the state of matter.		
	5.2.3.A.3	Determine the weight and volume of common objects using appropriate tools.	Investigate the makeup of elements and compounds.		
	5.2.3.B.	Predict and explain what happens when a common substance, such as shortening or candle wax, is heated to melting and then cooled to a solid.	Observe and describe the behavior of matter during a change of state. Investigate the role energy plays in changes of state. Infer how lowering or raising the temperature of a substance can cause changes in its behavior. Investigate different types of physical changes.		
Energy	5.1.3.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.	Observe different types of energy. Infer causes, and predict effects of energy at work. Predict, observe, and record different	Teacher observation Group checklist Completed study	<u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.6.7.8, SL.3.1.A-D, L.3.4.A.D, L.3.5.B <u>Math</u>

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	<p>5.1.3.A.2</p> <p>5.1.3.A.3</p> <p>5.1.3.B.1</p> <p>5.1.3.B.2</p> <p>5.1.3.B.3</p> <p>5.1.3.B.4</p> <p>5.1.3.C.1</p> <p>5.1.3.C.2</p> <p>5.1.3.C.3</p> <p>5.1.3.D.1</p> <p>5.1.3.D.2</p> <p>5.1.3.D.3</p>	<p>Use outcomes of investigations to build and refine questions, models, and explanations.</p> <p>Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.</p> <p>Design and follow simple plans using systematic observations to explore questions and predictions.</p> <p>Measure, gather, evaluate, and share evidence using tools and technologies.</p> <p>Formulate explanations from evidence.</p> <p>Communicate and justify explanations with reasonable and logical arguments.</p> <p>Monitor and reflect on one’s own knowledge regarding how ideas change over time.</p> <p>Revise predictions or explanations on the basis of learning new information.</p> <p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.</p> <p>Demonstrate how to safely use tools, instruments, and supplies.</p>	<p>kinds of energy changes.</p> <p>Identify and hypothesize about how and why energy changes occur.</p> <p>Describe the effect of energy on temperature.</p> <p>Investigate the ways heat is produced.</p> <p>Predict, observe, and classify objects that transmit heat best.</p> <p>Experiment to find out which material transmits heat best.</p> <p>Investigate the different ways heat travels through different kinds of matter.</p> <p>Observe the cooling effect of evaporation.</p> <p>Predict and measure how much sugar will dissolve in cold and hot water.</p> <p>Investigate how adding and subtracting heat changes matter.</p> <p>Describe society’s dependence on fossil fuels.</p> <p>Explain how alternative energy sources are used.</p>	<p>guide</p> <p>Completed labs</p> <p>Tests</p>	<p>3.NBT.1-2, 3.MD.1.3</p> <p><u>21<sup>st</sup> Century Life &amp; Career Skills</u></p> <p>9.1.3.A.1,2,5, .1.3.B.1, 9.1.3.C.1, 9.1.3.D.1, 9.1.3.F.1,2,3</p> <p><u>Technology</u></p> <p>8.1.3.F.1</p> <p><u>Social Studies</u></p> <p>6.3.3.B.1</p>
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Grade 3

	5.2.3.C.1	Compare various forms of energy as observed in everyday life and describe their applications.			
	5.2.3.C.2	Compare the flow of heat through metals and nonmetals by taking and analyzing measurements			
	5.2.3.C.3	Draw and label diagrams showing several ways that energy can be transferred from one place to another			
Life Cycles & Adaptations	5.3.4.D.1	Compare the physical characteristics of the different stages of the life cycle of an individual organism, and compare the characteristics of life stages among species.	Infer what plants and animals need to survive. Classify foods as of plant or animal origin. Distinguish between producers and consumers.	Teacher observation Oral discussion Tests Homework Completed Labs Observations Journal Writing	<u>Language Arts</u> (W.4.2.A) (W.4.2.B) (RI.4.1) (RI.4.8) (SL.4.4) (SL.4.5) <u>Mathematics</u> (4.OA.3) (4.MD.1) (4.G.3) <u>Technology</u> (8.1.3.5.1) <u>Visual &amp; Performing Arts</u> (1.3.5.D.1) <u>21<sup>st</sup> Century Life &amp; Careers</u> (9.1.4.A.2), (9.1.4.C.1)
	5.3.4.E.1	Model an adaptation to a species that would increase its chances of survival, should the environment become wetter, drier, warmer, or colder over time.	Compare and contrast herbivores, carnivores, omnivores, and decomposers. Compare the parts of living things and show how they are adapted for a certain environment.		
	5.3.4.E.2	Evaluate similar populations in an ecosystem with regard to their ability to thrive and grow.	Identify defensive adaptations of organisms.		
	5.3.4.A.1	Develop and use evidence-based criteria to determine if an unfamiliar object is living or nonliving.	Investigate how changes animals and people make in an environment affect other living things.		
	5.3.4.A.2	Compare and contrast structures that have similar functions in various organisms, and explain how those functions may be carried out by structures that have different physical appearances.	Explain how some traits are inherited from their parents. Distinguish between inherited and learned traits.		
	5.1.4.A.1	Raise questions about the world around them and seek answers through making careful	Classify plants and animals by their structures.		

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	5.1.4.A.3	observations and experimentation. Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.			
	5.1.4.B.1	Design and follow simple plans using systematic observations to explore questions and predictions.			
	5.1.4.D.4	Handle and treat organisms humanely, responsibly, and ethically.			
	5.5.4.A.2	Differentiate between the needs of plants and those of animals.			
	5.5.4.A.3	Recognize that plants and animals are composed of different parts performing different functions and working together for the well-being of the organism.			
	5.5.4.B.1	Develop a simple classification scheme for grouping organisms.			
	5.5.4.B.2	Recognize that individuals vary within every species including humans.			
	5.5.4.C.1	Identify different stages in the lives of various organisms.			
Motion and Forces  Simple Machines	5.1.3.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.	Identify different forms of energy. Describe how energy can cause a change. Compare and contrast the way in which energy is transformed.	Teacher observation  Group checklist  Completed study guide	<u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.7.8, SL.3.1.A-D, L.3.4.A.D, L.3.5.B
	5.1.3.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.	Contrast potential and kinetic energy. Demonstrate that potential energy can	Completed labs	<u>Math</u> 3.NBT.1-.2 3.MD.1.3 <u>21<sup>st</sup> Century Life &amp;</u>

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	<p>5.1.3.A.3</p> <p>5.1.3.B.1</p> <p>5.1.3.B.2</p> <p>5.1.3.B.3</p> <p>5.1.3.B.4</p> <p>5.1.3.C.1</p> <p>5.1.3.C.2</p> <p>5.1.3.C.3</p> <p>5.1.3.D.1</p> <p>5.1.3.D.2</p> <p>5.1.3.D.3</p> <p>5.2.3.E.1</p>	<p>Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.</p> <p>Design and follow simple plans using systematic observations to explore questions and predictions.</p> <p>Measure, gather, evaluate, and share evidence using tools and technologies.</p> <p>Formulate explanations from evidence.</p> <p>Communicate and justify explanations with reasonable and logical arguments.</p> <p>Monitor and reflect on one’s own knowledge regarding how ideas change over time.</p> <p>Revise predictions or explanations on the basis of learning new information.</p> <p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.</p> <p>Demonstrate how to safely use tools, instruments, and supplies.</p> <p>Demonstrate through modeling that motion is a change in position over a period of time.</p>	<p>change to kinetic and back.</p> <p>Explain the scientific meaning of work and use a formula to calculate the amount of work done in various situations.</p> <p>Analyze the effect of friction on moving objects.</p> <p>Identify ways of increasing and decreasing friction.</p> <p>Observe how the slope of a ramp affects the effort required to move an object.</p> <p>Calculate the mechanical advantage of an inclined plane.</p> <p>Experiment to identify the variables that determine the mechanical advantage of levers.</p> <p>Observe the force required to lift objects with pulleys.</p> <p>Investigate different kinds of levers and pulleys.</p> <p>Make and use a model wheel and axle.</p> <p>Explain the effect of applying a force to either wheel in a wheel and axle.</p>	<p>Tests</p>	<p><u>Career Skills</u></p> <p>9.1.3.A.1,2,5, 9.1.3.B.1, 9.1.3.C.1, 9.1.3.D.1, 9.1.3.F.1,2,3</p> <p><u>Technology</u></p> <p>8.1.3.F.1</p> <p><u>World Languages</u></p> <p>7.1.NM.B.5</p>
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Grade 3

	5.2.3.E.2	Identify the force that starts something moving or changes its speed or direction of motion.			
	5.2.3.E.4	Investigate, construct, and generalize rules for the effect that force of gravity has on balls of different sizes and weights.			
Atmosphere and Weather	5.1.3.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.	Infer that air takes up space and has weight. Describe the makeup of the atmosphere. Compare the atmosphere to a green house.	Teacher observation Group checklist Completed study guide Completed labs Tests	<u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.7.8, SL.3.1.A-D, L.3.4.A.D, L.3.5.B <u>Math</u> 3.NBT.1-.2, 3.MD.1.3 <u>21<sup>st</sup> Century Life &amp; Career Skills</u> 9.1.3.A.1,2,5, 9.1.3.B.1, 9.1.3.C.1, 9.1.3.D.1, 9.1.3.F.1,2,3 <u>Technology</u> 8.1.3.F.1 <u>Visual and Performing Arts</u> 1.3.3.D.
	5.1.3.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.	Observe that the Earth is warmed unevenly. Infer why warm air rises.		
	5.1.3.A.3	Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.	Apply that hot air rises to understanding how hot air balloons work.		
	5.1.3.B.1	Design and follow simple plans using systematic observations to explore questions and predictions.	Describe how wind is produced. Predict and observe how temperature changes air pressure.		
	5.1.3.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.	Make and use a model of a barometer. Explain how gravity relates to air pressure.		
	5.1.3.B.3	Formulate explanations from evidence.	Discover how air pressure can be measured.		
	5.1.3.B.4	Communicate and justify explanations with reasonable and logical arguments.	Make and use a model of a wind vane and an anemometer. Explain how wind can be a source of energy.		
	5.1.3.C.1	Monitor and reflect on one's own knowledge regarding how ideas change over time.	Make and use a model of a rain gauge. Describe the way that snow affects people around the world.		
	5.1.3.C.2	Revise predictions or explanations on the basis of learning new information.			

Grade 3

	<p>5.1.3.C.3</p> <p>5.1.3.D.1</p> <p>5.1.3.D.2</p> <p>5.1.3.D.3</p> <p>5.4.3.E.1</p> <p>5.4.3.F.1</p> <p>5.4.3.G.1</p> <p>5.4.3.G.2</p> <p>5.4.3.G.3</p> <p>5.4.3.G.4</p>	<p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.</p> <p>Demonstrate how to safely use tools, instruments, and supplies.</p> <p>Develop a general set of rules to predict temperature changes of Earth materials, such as water, soil, and sand, when placed in the Sun and in the shade.</p> <p>Identify patterns in data collected from basic weather instruments.</p> <p>Explain how clouds form.</p> <p>Observe daily cloud patterns, types of precipitation, and temperature, and categorize the clouds by the conditions that form precipitation.</p> <p>Trace the path that a drop of water might follow through the water cycle.</p> <p>Model how the properties of water can change as water moves through the water cycle.</p>	<p>Explain ways that the amount of water vapor in the air affects the weather.</p> <p>Observe and classify cloud types.</p> <p>Identify clouds associated with different types of weather.</p> <p>Analyze, evaluate, and apply knowledge about weather conditions and patterns.</p> <p>Analyze, evaluate, and apply information about severe weather and safety precautions.</p> <p>Interpret data about hours of sunlight in winter and summer and its relationship to changes in seasons.</p> <p>Investigate how the tilt of the Earth’s axis affects the changing seasons worldwide.</p> <p>Infer why microclimates occur.</p> <p>Investigate three major types of climates.</p> <p>Discover how scientists study climate change.</p>		
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Grade 3

<p>Plants Animals</p>	<p>5.1.3.A.1  5.1.3.A.2  5.1.3.A.3  5.1.3.B.1  5.1.3.B.2  5.1.3.B.3  5.1.3.B.4  5.1.3.C.1  5.1.3.C.2  5.1.3.C.3  5.1.3.D.1  5.1.3.D.2</p>	<p>Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.</p> <p>Use outcomes of investigations to build and refine questions, models, and explanations.</p> <p>Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.</p> <p>Design and follow simple plans using systematic observations to explore questions and predictions.</p> <p>Measure, gather, evaluate, and share evidence using tools and technologies.</p> <p>Formulate explanations from evidence.</p> <p>Communicate and justify explanations with reasonable and logical arguments.</p> <p>Monitor and reflect on one’s own knowledge regarding how ideas change over time.</p> <p>Revise predictions or explanations on the basis of learning new information.</p> <p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and</p>	<p>Infer what plants and animals need to survive.</p> <p>Classify foods as of plant or animal origin.</p> <p>Describe how decomposers change food.</p> <p>Distinguish between producers and consumers.</p> <p>Compare and contrast herbivores, carnivores, omnivores, and decomposers.</p> <p>Identify sequence of feeding relationships in a food chain.</p> <p>Infer that all food chains begin with a producer.</p> <p>Describe how food chains form food webs.</p> <p>Explain how a chain in one part of the food web affects the rest of the food chain.</p> <p>Compare the parts of living things and show how they are adapted for a certain environment.</p> <p>Evaluate the behavior of living things that suit an organism to a particular lifestyle.</p> <p>Identify defensive adaptations of organisms.</p> <p>Describe how chemical the adaptations of many plants can be used by people as medicines.</p> <p>Infer the causes of change in an environment.</p> <p>Investigate how changes animals and people make in an environment affect that environment.</p>	<p>Teacher observation</p> <p>Group checklist</p> <p>Completed study guide</p> <p>Completed labs</p> <p>Tests</p>	<p><u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.7.8, SL.3.1.A-D, L.3.4.A.D, L.3.5.B,</p> <p><u>Math</u> 3.NBT.1-2, 3.MD.1.3</p> <p><u>21<sup>st</sup> Century Life &amp; Career Skills</u> 9.1.3.A.1,2,5, 9.1.3.B.1, 9.1.3.C.1, 9.1.3.D.1, 9.1.3.F.1,2,3</p> <p><u>Technology</u> 8.1.3.F.1</p> <p><u>Visual and Performing Arts</u> 1.3.3.D.1</p>
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Grade 3

		evaluate questions, investigations, models, and theories.			
	5.1.3.D.3	Demonstrate how to safely use tools, instruments, and supplies.			
	5.3.3.A.1	Develop and use evidence-based criteria to determine if an unfamiliar object is living or nonliving.			
	5.3.3.B.1	Identify sources of energy (food) in a variety of settings (farm, zoo, ocean, forest).			
	5.3.3.C.1	Predict the biotic and abiotic characteristics of an unfamiliar organism’s habitat.			
	5.3.3.C.2	Explain the consequences of rapid ecosystem change (e.g., flooding, wind storms, snowfall, volcanic eruptions), and compare them to consequences of gradual ecosystem change (e.g., gradual increase or decrease in daily temperatures, change in yearly rainfall).			
	5.3.3.D.1	Compare the physical characteristics of the different stages of the life cycle of an individual organism, and compare the characteristics of life stages among species.			

GRADE 4					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Moon Phases & Solar System	5.4.4.A.1	Formulate a general description of the daily motion of the Sun across the sky based on shadow observations. Explain how shadows could be used to tell the time of day.	Oral discussion Planet project/research Moon phase experiment	Teacher observation Oral discussion Tests	<u>Language Arts</u> (RI.4.1) (RI.4.10) (W.4.2.B) (SL.4.1.A)
	5.4.4.A.2	Identify patterns of the Moon's appearance and make predictions about its future appearance based on observational data.	Moon eclipse experiment Science safety posters Make a star finder	Homework Projects	<u>Mathematics</u> (4.OA.1) (4.NBT.1)
	5.4.4.A.3	Generate a model with explanatory value that explains both why objects roll down ramps, as well as why the Moon orbits Earth.	Role play Constellation project		<u>Technology</u> (8.1.4.A.2), (8.1.4.D.1)
	5.4.4.A.4	Analyze and evaluate evidence in the form of data tables and photographs to categorize and relate solar system objects (e.g., planets, dwarf planets, moons, asteroids, and comets).			<u>21<sup>st</sup> Century Life &amp; Careers</u> (9.1.4.D.1), (9.2.4.A.1)
	5.1.4.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.			<u>Social Studies</u> (6.1.4.B.9)
	5.1.4.A.2	Use outcomes of investigations to build and refine questions, models, and explanations.			<u>World Language</u> 7.1.NM.B.5 <u>Health</u> 2.2.4.A.2
Body Systems	5.1.3.A.1	Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.	How do body systems work together? How do humans grow, develop, and stay healthy? How do organs and tissues interact with	Completed journal entries Completed labs Teacher	<u>Language Arts</u> RT.3.1-.10, RF.3.4.A.B, W.3.4.7.8, SL.3.1.A-D, L.3.4.A.D, L.3.5.B <u>Math</u>

Grade 4

	<p>5.1.3.A.2</p> <p>5.1.3.A.3</p> <p>5.1.3.B.1</p> <p>5.1.3.B.2</p> <p>5.1.3.B.3</p> <p>5.1.3.B.4</p> <p>5.1.3.C.1</p> <p>5.1.3.C.2</p> <p>5.1.3.C.3</p> <p>5.1.3.D.1</p> <p>5.1.3.D.2</p>	<p>Use outcomes of investigations to build and refine questions, models, and explanations.</p> <p>Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.</p> <p>Design and follow simple plans using systematic observations to explore questions and predictions.</p> <p>Measure, gather, evaluate, and share evidence using tools and technologies.</p> <p>Formulate explanations from evidence.</p> <p>Communicate and justify explanations with reasonable and logical arguments.</p> <p>Monitor and reflect on one’s own knowledge regarding how ideas change over time.</p> <p>Revise predictions or explanations on the basis of learning new information.</p> <p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.</p>	<p>one another and carry out life functions?</p> <p>How do organ systems work and respond to changing demands of an organism?</p> <p>How do we keep our bodies healthy?</p> <p>How does the body use food?</p> <p>What are the components of the circulatory system and how do they work together?</p> <p>What are the parts of the respiratory system and how do they work together?</p> <p>What are parts of the immune system and how do they work together?</p> <p>What are parts of the digestive system and how do they work together?</p>	<p>observation</p> <p>Group checklist</p> <p>Completed study guide</p> <p>Oral presentation commercial rubric</p>	<p>3.NBT.1.-2, 3.MD.1.3</p> <p><u>Technology</u> 8.1.3.A.1.2.3, 8.1.3.F.1</p> <p><u>Health</u></p> <p>2.1.3.A.1 ,2.1.3.A.2</p> <p><u>21<sup>st</sup> Century Life and Careers</u></p> <p>9.1.3.A.1,2,3.5, 9.1.3.B.1</p> <p>9.1.3.C.1 , 9.1.3.D.1, 9.1.3.F.1.2.3</p> <p><u>World Languages</u></p> <p>7.1.NM.B.5</p>
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Grade 4

	5.1.3.D.3	Demonstrate how to safely use tools, instruments, and supplies.			
	5.3.3.A.3	Describe the interactions of systems involved in carrying out everyday life activities.			
Ecosystems	5.3.4.B.1	Identify sources of energy (food) in a variety of settings (farm, zoo, ocean, forest).	Oral discussion	Teacher observation	<u>Mathematics</u> (4.MD.1) (4.NBT.4)
	5.3.4.C.1	Predict the biotic and abiotic characteristics of an unfamiliar organism’s habitat.	Internet research	Oral discussion	<u>Technology</u> (8.2.4.C.1)
	5.3.4.C.2	Explain the consequences of rapid ecosystem change (e.g., flooding, wind storms, snowfall, volcanic eruptions), and compare them to consequences of gradual ecosystem change (e.g., gradual increase or decrease in daily temperatures, change in yearly rainfall).	Ecosystem poster	Tests	<u>Social Studies</u> (6.1.4.B.5)
	5.1.4.B.2	Measure, gather, evaluate, and share evidence using tools and technologies.	Food web	Homework	<u>Language Arts</u> (RI.4.1) (RI.4.2) (RI.4.5) (W.4.2.A) (W.4.2.B) (SL.4.2)65`
	5.1.4.B.3	Formulate explanations from evidence.	Owl pellet dissection	Projects	<u>21<sup>st</sup> Century Life &amp; Careers</u> (9.1.4.D.1)
Energy, Electricity, Magnetism	5.2.4.A.4	Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.	Identify the basic forms of energy (light, sound, heat, electrical, and magnetic)	Teacher observation	<u>Mathematics</u> (4.NBT.4) (4.MD.1)
	5.2.4.C.1	Compare various forms of energy as observed in everyday life and describe their applications.	How are electrical, magnetic, sound, and light energies transferred and transformed?	Oral discussion	<u>Language Arts</u> (RI.4.1) (RI.4.2) (RI.4.3)
	5.2.4.C.2	Compare the flow of heat through metals and nonmetals by taking and analyzing	What are magnetic fields?	Tests	(W.4.1.B) (W.4.2.B) (SL.4.2)
			What materials or objects can attract or repel a magnet?	Homework	(SL.4.1.A)
				Projects	

	<p>5.2.4.C.3</p> <p>5.2.4.D.1</p> <p>5.2.4.E.3</p> <p>5.2.4.E.4</p> <p>5.1.4.B.4</p> <p>5.1.4.C.1</p>	<p>measurements.</p> <p>Draw and label diagrams showing several ways that energy can be transferred from one place to another.</p> <p>Repair an electric circuit by completing a closed loop that includes wires, a battery (or batteries), and at least one other electrical component to produce observable change.</p> <p>Investigate and categorize materials based on their interaction with magnets.</p> <p>Investigate, construct, and generalize rules for the effect that force of gravity has on balls of different sizes and weights.</p> <p>Communicate and justify explanations with reasonable and logical arguments.</p> <p>Monitor and reflect on one's own knowledge regarding how ideas change over time.</p>	<p>Identify and classify objects and materials that a magnet will and will not attract.</p> <p>Recognize that magnets have poles that repel and attract each other.</p> <p>How is magnetism transformed to electricity?</p> <p>Explain how electromagnets can be made, and give examples of how they can be used.</p> <p>How do circuits complete a pathway to produce light, heat, or sound?</p> <p>Identify and classify objects and material that conduct electricity and that are insulators of electricity.</p> <p>Describe how batteries, wires, and bulbs can be used to determine what materials conduct electricity.</p> <p>Differentiate between open, closed, series, and parallel circuits.</p> <p>Recognize that some forces can act at a distance (magnetism, static electricity).</p> <p>Explain how objects become electrically charged.</p> <p>Observe the behavior of charged materials.</p> <p>Apply knowledge of static electricity in observations of everyday phenomena.</p>	<p>Teacher observation</p> <p>Oral discussion</p>	<p><u>21<sup>st</sup> Century Life &amp; Careers</u> (9.1.4.A.1), (9.1.4.A.5)</p> <p><u>Technology</u> (8.1.4.A.1), (8.2.4.A.1)</p> <p><u>Social Studies</u> (6.1.4.C.12)</p>
Light	5.2.4.A.4	Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.	<p>Light is a form of energy.</p> <p>What are the characteristics of light and how does it normally behave?</p>	<p>Teacher observation</p> <p>Oral discussion</p>	<p><u>Language Arts</u> (RI.4.1) (RI.4.2) (W.4.2.B) (W.4.2.D)</p>

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	<p>5.2.4.C.4</p> <p>5.2.6.C.2</p> <p>5.1.4.C.2</p> <p>5.1.4.C.3</p> <p>5.1.4.D.1</p> <p>5.1.4.D.2</p>	<p>Illustrate and explain what happens when light travels from air into water.</p> <p>Describe how prisms can be used to demonstrate that visible light from the Sun is made up of different colors.</p> <p>Revise predictions or explanations on the basis of learning new information.</p> <p>Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.</p> <p>Actively participate in discussions about student data, questions, and understandings.</p> <p>Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.</p>	<p>How does light travel?</p> <p>What can change the way light travels?</p> <p>Light moves in a straight line. It can be reflected, refracted, or absorbed.</p> <p>What is visible light?</p> <p>What is the electromagnetic spectrum?</p> <p>How are the colors of light different?</p> <p>What is a wavelength?</p> <p>Explain how light interacts with a material.</p>	<p>Tests</p> <p>Homework</p> <p>Projects</p>	<p>(SL.4.1.C)</p> <p><u>Mathematics</u></p> <p>(4.G.2)</p> <p><u>21<sup>st</sup> Century Life &amp; Careers</u></p> <p>(9.1.4.A.2)</p> <p><u>Social Studies</u></p> <p>(6.1.4.C.12)</p>
<p>Rocks and Minerals</p>	<p>5.4.4.B.1</p> <p>5.4.4.C.1</p> <p>5.4.4.C.2</p> <p>5.1.4.D.3</p>	<p>Use data gathered from observations of fossils to argue whether a given fossil is terrestrial or marine in origin.</p> <p>Create a model to represent how soil is formed.</p> <p>Categorize unknown samples as either rocks or minerals.</p> <p>Demonstrate how to safely use tools, instruments, and supplies.</p>	<p>Observe and describe rocks and soil.</p> <p>Observe that most rocks and soils are made of several substances or minerals.</p> <p>Observe that the properties of soil vary from place to place and will affect the soil's ability to support life.</p> <p>Recognize that fossils provide evidence about the plants and animals that lived long ago and the nature of the environment at that time.</p> <p>Describe minerals and explain how they form and how they can be identified and used.</p>	<p>Teacher observation</p> <p>Oral discussion</p> <p>Tests</p> <p>Homework</p> <p>Projects</p>	<p><u>Language Arts</u></p> <p>(RI.4.1) (RI.4.2) (RI.4.3)</p> <p>(RI.4.5) (W.4.2.A)</p> <p>(W.4.2.B) (W.4.2.D)</p> <p>(SL.4.1.D) (SL.4.2)</p> <p><u>Visual &amp; Performing Arts</u></p> <p>(1.3.5.D.1)</p> <p><u>21<sup>st</sup> Century Life &amp; Careers</u></p> <p>(9.1.4.A.5)</p> <p><u>Social Studies</u></p> <p>(6.1.4.B.8)</p>

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			<p>Observe the growth of crystals.</p> <p>Compare and contrast minerals and ores.</p> <p>Differentiate between igneous, sedimentary, and metamorphic rocks and list uses for these earth materials.</p> <p>Classify rocks and explain the processes that form them.</p> <p>Compare and contrast chemical, physical, and biological weathering.</p> <p>Relate the processes involved in the rock cycle to the changes that occur in rocks.</p>		
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GRADE 5					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Weather and Climate	5.4.6.E.1	Generate a conclusion about energy transfer and circulation by observing a model of convection currents.	What is the difference between weather and climate? What is climate?	Teacher Observation Worksheets	<u>Mathematics</u> (5.G.2) <u>Language Arts</u>
	5.4.6.F.1	Explain the interrelationships between daily temperature, air pressure, and relative humidity data.	How does climate change? How are people causing Earth's climate to change?	Quizzes/Tests Discussions	(RL.5.1; RL.5.4; RI.5.1; RI.5.2; RI.5.3; RI.5.4; RI.5.10; RF.5.3.a; RF.5.4.a; RF.5.4.c; W.5.2.a; W.5.2.d; W.5.4; W.5.9.b; W.5.10;
	5.4.6.F.2	Create climographs for various locations around Earth and categorize the climate based on the yearly patterns of temperature and precipitation.	How does climate change affect our world? How does the daily weather affect me and my future?	Projects/Models Presentations (ie Weather Forecast)	SL.5.1.c; SL.5.1.d; SL.5.2; SL.5.3; SL.5.4; L.5.1; L.5.2.a; L.5.2.e; L.5.4) <u>21<sup>st</sup> Century Life and Careers</u>
	5.4.8.E.1	Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.	What is the composition and structure of the Earth's atmosphere? What instruments are used to measure weather?		(9.1.8.B.1; 9.1.8.C.1; 9.1.8.C.2; 9.1.8.C.3; 9.1.8.D.3) <u>Social Studies</u>
	5.4.8.F.1	Determine the origin of local weather by exploring national and international weather maps.	In what forms does energy from the sun travel to Earth? What happens to the sun's energy when it reaches Earth?		(6.1.8.B.1.b) <u>World Language</u>
	5.4.8.F.2	Explain the mechanisms that cause varying daily temperature ranges in a coastal community and in a community located in the interior of the country.	What happens to the sun's energy when it reaches Earth? In what forms is heat transferred? What causes wind?		(7.1.IL.A.7) <u>Technology</u>
	5.1.8.A.1	Demonstrate understanding and use interrelationships among central and scientific concepts to revise explanations and to consider alternative explanations.	How does unequal heating affect wind patterns? How does the Earth's rotation affect wind patterns? How does the interaction of air masses		(8.2.8.B.3)

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	5.2.6.C.3	Relate the transfer of heat from oceans and land masses to the evolution of a hurricane.	cause a change in the weather?		
	5.2.8.C.1	Structure evidence to explain the relatively high frequency of tornadoes in “Tornado Alley.”	How do meteorologists forecast the weather?		
	5.4.8.C.3	Model the vertical structure of the atmosphere using information from active and passive remote sensing tools (e.g., satellites, balloons, and/or ground-based sensors) in the analysis.	What geographic features and climatic elements led us to settle in particular regions?  What kind of detrimental weather could occur where we live? Are we ready? What should we do?  How can we infer past climates and ways of living from artifacts here on Earth?		
Plate Tectonics	5.4.6.D.1	Apply understanding of the motion of lithospheric plates to explain why the Pacific Rim is referred to as the Ring of Fire.	What is the structure of the Earth’s interior?	Teacher Observation	<u>Language Arts</u> (RL.5.1; RL.5.4; RI.5.1; RI.5.2; RI.5.3; RI.5.4; RI.5.10; RF.5.3.a; RF.5.4.a;RF.5.4.c; W.5.2.a;W.5.2.d; W.5.4;W.5.9.b; W.5.10;SL.5.1.c; SL.5.1.d;SL.5.2; SL.5.3;SL.5.4; L.5.1;L.5.2.a; L.5.2.e; L.5.4)  <u>21<sup>st</sup> Century Life and Careers</u> (9.1.8.B.1; 9.1.8.C.1; 9.1.8.C.2; 9.1.8.C.3; 9.1.8.D.3)  <u>World Language</u> (7.1.IL.A.7)  <u>Visual and Performing Arts</u> (1.3.5.D.1; 1.4.5.B.2; 1.4.5.A.2)
	5.4.6.D.3	Apply knowledge of Earth’s magnetic fields to successfully complete an orienteering challenge.	What is the main idea of the theory of Plate Tectonics?	Worksheets	
	5.4.8.D.3	Explain why geomagnetic north and geographic north are at different locations.	What are the forces that initiate plate movement?	Quizzes/Tests	
	5.4.8.D.1	Model the interactions between the layers of the Earth.	What are floating plates?	Discussions	
	5.4.8.D.2	Present evidence to support arguments for the theory of plate motion.	What layers make up the Earth?	Projects/Models	
	5.4.6.B.2	Examine Earth’s surface features and identify those created on a scale of human life or on a geologic time scale.	How do high temperatures affect plate tectonics?	Presentations	
			Does density influence the Earth’s composition?		
			How does weight influence the Earth’s changes?		
			What are collisions?		
			What are the effects of collisions?		
			How do plate tectonics help explain earthquakes and volcanoes?		

Grade 5

			<p>What is the connection between plate tectonics and mountains?</p> <p>What impact does plate tectonics have on living things?</p>		<p><u>Technology</u></p> <p>(8.2.8.B.3)</p>
<p>Weathering, Soil Erosion, Deposition</p>	<p>5.2.6.B.1</p> <p>5.4.6.B.3</p> <p>5.4.6.B.4</p> <p>5.4.6.C.1</p> <p>5.4.6.C.3</p> <p>5.4.8.C.1</p> <p>5.4.8.C.2</p>	<p>Compare the properties of reactants with the properties of the products when two or more substances are combined and react chemically.</p> <p>Determine if landforms were created by processes of erosion (wind, water, and/or ice) based on evidence in pictures, video, and/or maps.</p> <p>Describe methods people use to reduce soil erosion.</p> <p>Predict the types of ecosystems that unknown soil samples could support based on soil properties.</p> <p>Deduce the story of the tectonic conditions and erosion forces that created sample rock or rock formations.</p> <p>Determine the chemical properties of soil samples in order to select an appropriate location for a community garden.</p> <p>Explain how chemical and physical changes are responsible for creating a variety of landforms.</p>	<p>Why does the Earth’s surface look the way it does?</p> <p>How do forces change Earth’s features over time?</p> <p>How do the properties and movements of water affect Earth’s systems?</p> <p>What are the characteristics of weathering and erosion, and how are they different?</p> <p>How does human activity change the Earth’s surface?</p> <p>How is soil formed?</p> <p>How does weathering break down rock materials?</p> <p>How does erosion affect the Earth’s surface?</p> <p>What measures can be taken to protect soil as a resource?</p> <p>What are some important features of rivers?</p> <p>How do streams erode and deposit rock materials?</p> <p>How do river valleys form?</p> <p>How and why do river floods occur?</p> <p>What factors affect the storage and</p>	<p>Teacher Observation</p> <p>Worksheets</p> <p>Quizzes/Tests</p> <p>Discussions</p> <p>Projects/Models</p> <p>Presentations</p>	<p><u>Language Arts</u></p> <p>(RL.5.1;RL.5.4; RI.5.1;RI.5.2; RI.5.3;RI.5.4; RI.5.10;RF.5.3.a; RF.5.4.a;RF.5.4.c; W.5.2.a;W.5.2.d; W.5.4;W.5.9.b; W.5.10;SL.5.1.c; SL.5.1.d;SL.5.2; SL.5.3;SL.5.4; L.5.1;L.5.2.a; L.5.2.e; L.5.4)</p> <p><u>21<sup>st</sup> Century Life and Careers</u></p> <p>(9.1.8.B.1; 9.1.8.C.1; 9.1.8.C.2; 9.1.8.C.3; 9.1.8.D.3)</p> <p><u>Health and Physical Education</u></p> <p>(2.2.6.B.1)</p> <p><u>World Language</u></p> <p>(7.1.IL.A.7)</p> <p><u>Technology</u></p> <p>(8.2.8.B.3; 8.2.8.G.1)</p>

			<p>movement of water in the ground?</p> <p>What measures can be taken to conserve and protect groundwater supplies?</p> <p>How does groundwater erode and deposit rock materials?</p>		
Oceans	<p>5.2.6.E.4</p> <p>5.4.6.E.1</p> <p>5.4.8.E.1</p> <p>5.4.6.G.1</p> <p>5.4.8.G.1</p> <p>5.4.8.G.2</p>	<p>Predict if an object will sink or float using evidence and reasoning.</p> <p>Generate a conclusion about energy transfer and circulation by observing a model of convection currents.</p> <p>Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.</p> <p>Illustrate global winds and surface currents through the creation of a world map of global winds and currents that explains the relationship between the two factors.</p> <p>Represent and explain, using sea surface temperature maps, how ocean currents impact the climate of coastal communities.</p> <p>Investigate a local or global environmental issue by defining the problem, researching possible causative factors, understanding the underlying science, and evaluating the benefits and risks or alternative solutions.</p>	<p>Why are oceans important?</p> <p>How do oceans shape the features of Earth?</p> <p>How do oceans influence weather and climate?</p> <p>How are humans and oceans interconnected?</p> <p>What is the human impact on the world's oceans?</p> <p>What technology is used to monitor the essential physical properties in our oceans and atmosphere, and why is this important to do?</p>	<p>Teacher Observation</p> <p>Worksheets</p> <p>Quizzes/Tests</p> <p>Discussions</p> <p>Projects/Models</p> <p>Presentations</p>	<p><u>Language Arts</u></p> <p>(RL.5.1; RL.5.4; RI.5.1; RI.5.2; RI.5.3; RI.5.4; RI.5.10; RF.5.3.a; RF.5.4.a; RF.5.4.c; W.5.2.a; W.5.2.d; W.5.4; W.5.9.b; W.5.10; SL.5.1.c; SL.5.1.d; SL.5.2; SL.5.3; SL.5.4; L.5.1; L.5.2.a; L.5.2.e; L.5.4)</p> <p><u>21<sup>st</sup> Century Life and Careers</u></p> <p>(9.1.8.B.1; 9.1.8.C.1; 9.1.8.C.2; 9.1.8.C.3; 9.1.8.D.3)</p> <p><u>Technology</u></p> <p>(8.2.8.B.3; 8.2.8.F.2)</p> <p><u>World Language</u></p> <p>(7.1.IL.A.7)</p>

GRADE 6					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Scientific Method (Ongoing)	5.1.8.A.1	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.	How do scientists make sense of the world?  How is scientific knowledge generated and validated?	Teacher Observation  Class Discussion  Notes and study guides	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d  <u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.  <u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2  <u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1  <u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4  <u>Social Studies</u> 6.2 (various)
	5.1.8.A.2	Use mathematical, physical and computational tools to build conceptual-based models and to pose theories.	Explain how to make measurements.  Understand how scientists use design technology to solve problems.	Labs  Tests	
	5.1.8.A.3	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.	Explain how to conduct a science experiment.  Understand how to make tables and graphs to make sense of data in a science experiment.	Quizzes	
	5.2.6.A.1	Determine the volume of common objects using water displacement methods.	Explain the rules for laboratory safety.		
	5.2.6.A.2	Calculate the density of substances after determining volume and mass.	How can we use the scientific method to find answers to problems?		
	5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.	What is a “fair test?”  How can models help us to predict the nature of objects and systems that we cannot see?		
	5.1.8.B.2	Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.	Why is following orderly steps important for scientists when conducting an experiment?		
	5.1.8.B.3	Use qualitative and quantitative evidence to develop evidence-based arguments.	How do control groups and multiple trials help scientists?		
	5.1.8.B.4	Use quality controls to examine data sets	Why is gathering and interpreting evidence important while trying to		

	<p>5.1.8.C.1 Monitor one's own thinking as understandings of scientific concepts are refined.</p> <p>5.1.8.C.2 Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.</p> <p>5.1.8.C.3 Generate new and productive questions to evaluate and refine core explanations.</p> <p>5.1.8.D.1 Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.</p> <p>5.1.8.D.2 Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.</p> <p>5.1.8.D.3 Demonstrate how to safely use tools, instruments, and supplies.</p> <p>5.1.8.D.4 Handle and treat organisms humanely, responsibly, and ethically.</p>	<p>and to examine evidence as a means of generating and reviewing explanations.</p>	<p>answer questions in science?</p> <p>Why is it important for scientists to replicate the experiments of others?</p>		
<p>Water Ecosystems (River Study)</p>	<p>5.4.8.F.3 Create a model of the hydrologic cycle that focuses on the transfer of water in and out of the atmosphere. Apply the model to different climates around the world.</p> <p>5.4.8.G.1 Represent and explain, using sea surface temperature maps, how ocean currents</p>		<p>What are the components of an ecosystem and how do they interact with one another?</p> <p>How does energy flow within an ecosystem?</p>	<p>Teacher Observation</p> <p>Class Discussion</p> <p>Notes and study guides</p>	<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u> 6.RP.1; 6NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2;</p>

Grade 6

	<p>5.4.8.G.2</p> <p>5.4.8.F.3</p> <p>5.4.8.D.3</p> <p>5.4.8.F.2</p>	<p>impact the climate of coastal communities.</p> <p>Investigate a local or global environmental issue by defining the problem, researching possible causative factors, understanding the underlying science, and evaluating the benefits and risks of alternative solutions.</p> <p>Create a model of the hydrologic cycle that focuses on the transfer of water in and out of the atmosphere. Apply the model to different climates around the world.</p> <p>Explain why geomagnetic north and geographic north are at different locations.</p> <p>Explain the mechanisms that cause varying daily temperature ranges in a coastal community and in a community located in the interior of the country.</p>	<p>Why is balance within an ecosystem essential for its sustainability?</p> <p>How have human activities impacted upon the balance of the ecosystem being studied?</p> <p>Can we meet the basic human and ecological needs for water, improve water quality, eliminate the overdraft of groundwater, and reduce the risks of political conflict over shared water?</p> <p>Describe and illustrate the water cycle.</p> <p>Describe the composition, circulation, and distribution of the world’s oceans, estuaries, and marine environments.</p> <p>Describe sources of freshwater on earth.</p> <p>Define and describe properties of ocean water.</p> <p>Explain causes of ocean tides and currents.</p> <p>Identify and describe water organisms and their special adaptations</p> <p>Observe, collect and analyze data about a local stream.</p> <p>Observe, collect and analyze data about the Atlantic Ocean.</p> <p>Explain the need for water conservation.</p> <p>Explain the question: “Who drank the water before you?”</p>	<p>Labs</p> <p>Tests</p> <p>Quizzes</p>	<p>6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u> 6.2 (various)</p>
<p>Matter</p>	<p>5.2.8.A.2</p>	<p>Analyze and explain the implications of the statement “all substances are composed of elements.”</p>	<p>What are the characteristics of the three states of matter?</p>	<p>Teacher Observation</p>	<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e</p>

	<p>5.2.8.A.6</p> <p>5.1.8.A.1</p> <p>5.1.8.A.2</p> <p>5.1.8.B.2</p> <p>5.1.8.B.3</p> <p>5.1.8.A.3</p> <p>5.1.8.B.4</p> <p>5.1.8.C.1</p> <p>5.1.8.D1</p>	<p>Determine whether a substance is a metal or nonmetal through student-designed investigations.</p> <p>Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.</p> <p>Use mathematical, physical, and computational tools to build conceptual-based models and to pose theories.</p> <p>Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.</p> <p>Use qualitative and quantitative evidence to develop evidence-based arguments.</p> <p>Use scientific principles and models to frame and synthesize scientific arguments and pose theories.</p> <p>Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.</p> <p>Monitor one's own thinking as understandings of scientific concepts are refined.</p> <p>Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and</p>	<p>How can matter change?</p> <p>How can we use scientific tools to measure and compare the properties of matter?</p> <p>Describe the parts of the atom and their charges.</p> <p>Use models to gain insight</p> <p>Define and give examples of elements, mixtures, and compounds.</p> <p>How does the atomic structure of a material determine its properties?</p> <p>Identify names, symbols, and formulas for elements and compounds.</p> <p>Determine the composition of an unknown sample of matter.</p> <p>Separate a heterogeneous mixture</p> <p>How are mass and weight related?</p> <p>How do we measure and calculate density?</p> <p>Identify and describe physical and chemical changes.</p> <p>Observe and recognize evidence of a chemical change.</p> <p>Describe how physical and chemical changes affect the world in which we live.</p> <p>What is meant by the statement "Matter cannot be created or destroyed?"</p>	<p>Class Discussion</p> <p>Notes and study guides</p> <p>Labs</p> <p>Tests</p> <p>Quizzes</p>	<p>WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u></p> <p>6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>
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	5.1.8.D.2	experiences. Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model building.			
Chemical Reactions	5.2.8.B.1	Explain, using an understanding of the concept of chemical change, why the mass of reactants is the same as the mass of the products.	Describe and model the structure of the atom. Identify how electrons are arranged in an atom.	Teacher Observation Class Discussion Notes and study guides Labs Tests Quizzes	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d <u>Mathematics:</u> 6.RP.1; 6.NS.1; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d. <u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2 <u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1 <u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4 <u>Social Studies</u> 6.2 (various)
	5.2.8.B.2	Compare/contrast the physical properties of reactants with products after a chemical reaction.	Compare electron arrangement in an atom to its place on the period table. How can we use the periodic table to make predictions about an element's chemical behavior and atomic structure? How do atoms and molecules interact with each other to form new substances?		
	5.2.A.7	Determine the relative acidity and reactivity of common acids, such as vinegar or cream of tartar, through a variety of student-designed investigations.	Explore the characteristics of families and periods on the periodic table. Define and model the difference between elements and compounds. Describe and distinguish physical and chemical changes. Observe and describe exothermic and endothermic reactions.		
	5.1.8.A.1	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.	Distinguish between substances and mixtures. Use models to enhance understanding.		
	5.1.8.A.2	Use mathematical, physical, and computational tools to build conceptual-based models and to pose theories.	Compare and contrast heterogeneous and homogeneous mixtures.		
	5.1.8.A.3	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.			
	5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and			

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	5.1.8.B.2	revising models and explanations. Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies	Explain how solutions form and describe different types of solutions. Separate heterogeneous mixtures based on physical properties.		
	5.1.8.B.3	Use qualitative and quantitative evidence to develop evidence-based arguments.	Define solvents and explain why water is a good general solvent.		
	5.1.8.C.1	Use quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.	Identify factors that affect how substances dissolve in solvents.		
	5.1.8.C.2	Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.	Explain how temperature affects reaction rate.		
	5.1.8.C.3	Generate new and productive questions to evaluate and refine core explanations.	Compare acids and bases.		
	5.1.8.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.	Describe practical uses of acids and bases.		
	5.1.8.D.2	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model building.	Explain how pH is used to determine the strength of an acid or base.		
	5.1.8.D.3	Demonstrate how to safely use tools, instruments & supplies.			
Plate Tectonics & Volcanoes	5.4.8.C.1	Determine the chemical properties of soil samples in order to select an appropriate location for a community garden.	Define and describe the earth's composition.	Labs Quiz Grades	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e

	<p>5.4.8.D.1</p> <p>5.4.8.E.1</p> <p>5.4.8.F.1</p> <p>5.4.8.D.2</p> <p>5.4.8.D.2</p> <p>5.4.8.B.2</p> <p>5.4.8.C.2</p> <p>5.4.8.C.2</p> <p>5.4.8.D.4</p>	<p>Model the interactions between the layers of Earth.</p> <p>Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.</p> <p>Determine the origin of local weather by exploring national and international weather maps.</p> <p>Present evidence to support arguments for the theory of plate motion.</p> <p>Present evidence to support arguments for the theory of plate motion.</p> <p>Evaluate the appropriateness of increasing the human population in a region (e.g., barrier islands, Pacific Northwest, Midwest United States) based on the region's history of catastrophic events, such as volcanic eruptions, earthquakes, and floods.</p> <p>Explain how chemical and physical mechanisms (changes) are responsible for creating a variety of landforms.</p> <p>Explain how chemical and physical mechanisms (changes) are responsible for creating a variety of landforms.</p> <p>Handle and treat organisms humanely, responsibly, and ethically.</p>	<p>Evaluate supporting evidence for the theories of Continental Drift and Plate Tectonics.</p> <p>Define and describe types of plate boundaries.</p> <p>Observe and explain convection currents</p> <p>Identify and describe types of volcanoes.</p> <p>Relate the theories of Continental Drift and Plate Tectonics to the processes of mountain building, seafloor spreading, earthquakes and volcanoes.</p> <p>Use models to support understanding.</p> <p>Describe the effects of earthquakes and volcanoes on people.</p> <p>Diagram the layers of the Sun and explain how physics of heat movement affect each.</p> <p>Identify the impact geological changes like earthquakes and volcanoes have on the land and organisms that live on the land.</p> <p>Explain the physics behind waves and the impact they have on geography.</p>	<p>Test Grades</p> <p>Assignment Grades</p> <p>Participation</p> <p>Teacher Observation</p> <p>Notes</p> <p>Study Guides</p> <p>Discussion</p>	<p>WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u></p> <p>6.RP.1; 6.NS.1; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>
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Grade 6

	5.4.8.B.1	Correlate the evolution of organisms and the environmental conditions on Earth as they changed throughout geologic time.			
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GRADE 7					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Essential skills/Questions Enduring Understandings	Assessment	Interdisciplinary connections
Scientific Method (Ongoing)	5.1.8.A.1	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.	How do scientists make sense of the world? How is scientific knowledge generated and validated?	Teacher Observation Class Discussion Notes and study guides Labs Tests Quizzes	<u>Language Arts:</u> <u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d <u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d. <u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2 <u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1 <u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4 <u>Social Studies</u> 6.2 (various)
	5.1.8.A.2	Use mathematical, physical and computational tools to build conceptual-based models and to pose theories.	Explain how to make measurements. Understand how scientists use design technology to solve problems.		
	5.1.8.A.3	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.	Explain how to conduct a science experiment. Understand how to make tables and graphs to make sense of data in a science experiment.		
	5.2.6.A.1	Determine the volume of common objects using water displacement methods.	Explain the rules for laboratory safety.		
	5.2.6.A.2	Calculate the density of substances after determining volume and mass.	How can we use the scientific method to find answers to problems?		
	5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.	What is a “fair test?” How can models help us to predict the nature of objects and systems that we cannot see?		
	5.1.8.B.2	Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.	Why is following orderly steps important for scientists when conducting an experiment? How do control groups and multiple trials help scientists?		
	5.1.8.B.3	Use qualitative and quantitative evidence to develop evidence-based arguments.	Why is gathering and interpreting evidence important while trying to		
	5.1.8.B.4	Use quality controls to examine data sets			

	5.1.8.C.1	and to examine evidence as a means of generating and reviewing explanations. Monitor one's own thinking as understandings of scientific concepts are refined.	answer questions in science? Why is it important for scientists to replicate the experiments of others?		
	5.1.8.C.2	Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.			
	5.1.8.C.3	Generate new and productive questions to evaluate and refine core explanations.			
	5.1.8.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.			
	5.1.8.D.2	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.			
	5.1.8.D.3	Demonstrate how to safely use tools, instruments, and supplies.			
	5.1.8.D.4	Handle and treat organisms humanely, responsibly, and ethically.			
Cell Theory & Structure	5.1.8.C.3	Generate new and productive questions to evaluate and refine established body of knowledge is continually revised, refined and extended.	Define and describe parts of plant and animal cells. Describe the purpose of different cell parts.	Teacher Observation Class Discussions Notes and Study	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d <u>Mathematics:</u> 6.RP.1; 6NS.1 ; 6.NS.2
	5.1.8.A.2	Use mathematical, physical, and			

	<p>5.1.8.C.1 Monitor one's own thinking as understanding so scientific concepts are refined.</p> <p>5.3.6.A.2 Model and explain ways in which organelles work together to meet the cell's needs.</p> <p>5.3.8.A.1 Compare the benefits and limitations of existing as a single-celled organism and as a multi-cellular organism.</p> <p>5.3.8.A.2 Relate the structures of cells, tissues, organs and systems to their functions in supporting life.</p> <p>5.2.6.B.1 Compare the properties of reactants with the properties of the products when two or more substances are combined and react chemically.</p>	<p>computational tools to build conceptual-based models and to pose theories.</p> <p>Compare plant and animal cells</p> <p>Describe cell functions.</p> <p>Relate cell form to function.</p> <p>Describe systems of organization in living things: cell, tissue, organ, organ system.</p> <p>Use models to gain insight.</p> <p>Explain the parts of the cell.</p> <p>Identify the parts of the compound microscope.</p> <p>Diagram and build different models of both the plant and animal cell.</p> <p>Recognize that cells differ in size, shape, function, and organization.</p> <p>Identify the parts of a cell and explain the function of each part.</p> <p>Explain how cells of one-celled organisms differ from many celled organisms.</p> <p>Demonstrate correct use of compound microscope to observe cells.</p>	<p>Guides</p> <p>Labs</p> <p>Quizzes</p> <p>Tests</p>	<p>6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>
<p>Food Webs, Photosynthesis, Ecosystems</p>	<p>5.1.4.A.1 Demonstrate understanding of the interrelationship among fundamental concepts in the physical, life, and Earth systems.</p> <p>5.1.8.D.1 Engage in multiple forms of discussions in order to process, make sense of, and learn from others' ideas, observations, and experiences.</p> <p>5.3.6.B.1 Describe the sources of the reactants of photosynthesis and trace the pathway to</p>	<p>Relate seasonal changes in ecosystems to the movement of Earth around the Sun.</p> <p>Describe the process of photosynthesis and its relationship to respiration.</p> <p>Dissection of an owl pellet to investigate animals in a specific food web.</p> <p>View "Our Human Footprint" and discuss and analyze the impact that each human has on an ecosystem.</p> <p>Discuss and analyze the impact of global</p>	<p>Teacher Observation</p> <p>Class discussions</p> <p>Notes and study guides</p> <p>Labs</p> <p>Quizzes</p> <p>Tests</p>	<p><u>Language Arts:</u></p> <p>RST.6-8 1,2,3,4,5,6,7,8,9</p> <p>WHST 6-8 1.a.b.c.e</p> <p>WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u></p> <p>6.RP.1; 6.NS.1; 6.NS.2</p> <p>6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1;</p>

	5.3.6.B.2	the products. Illustrate the flow of energy (food) through a community.	warming . has had on different biomes		8.2.4.F.1; 8.2.8.G.2 <u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1 <u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4 <u>Social Studies</u> 6.2 (various)
	5.3.8.B.2	Analyze the components of a consumer's diet and trace them back to plants and plant products.	Relate visible light to pigments in plants that are necessary for photosynthesis		
	5.3.6.C.1	Explain the impact of meeting human needs and wants on local and global environments.	Create an imaginary species and its supporting ecosystem.		
	5.3.6.C.2	Predict the impact that altering the biotic and abiotic factors has on an ecosystem.			
	5.2.6.C.2	Describe how prisms can be used to demonstrate that visible light from the sun is made up of different colors.			
	5.3.6.C.3	Describe how one population of organisms may affect other plants and /or animals in an ecosystem.			
	5.3.6.E.1	Describe the impact on the survival of species during specific times in geologic history when environmental conditions changed.			
	5.4.6.G.2	Create a model ecosystem in two different locations and compare and contrast the living and nonliving components.			
Cell Growth & Heredity	5.3.6.D.1	Predict long effects of interference with normal patterns of reproduction.	Describe mitosis and explain the importance.	Labs Quiz Grades	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d
	5.3.6.D.2	Explain how knowledge of inherited variations within and between generations	Explain the differences between mitosis	Test Grades	<u>Mathematics:</u>

		is applied to farming and animal breeding.	and its end products.	Assignment Grades	6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.
5.3.6.D.3	Distinguish between inherited and acquired traits and characteristics.		Name the cells involved in fertilization and explain how fertilization occurs.	Participation	
5.3.8.D.2	Explain the source of variation among siblings.		Describe the process of DNA replication.	Teacher Observation	<u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2
5.3.8.D.3	Describe environmental conditions or factors that may lead to a change in a cell's genetic information or to an organism's development and how these changes occur.		Explain how cancer is related to the cell cycle.	Notes	
5.3.8.D.3	Describe environmental conditions or factors that may lead to a change in a cell's genetic information or to an organism's development and how these changes occur.		Explain how probability dictates the results of genetic crosses.	Study Guides	<u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1
5.3.8.A.1	Compare the benefits and limitations of existing as a single-celled organism and as a multi-cellular organism.		Explain and investigate the role that chromosomes play in inheritance.	Discussion	<u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4
5.3.8.A.1	Compare the benefits and limitations of existing as a single-celled organism and as a multi-cellular organism.		Describe the genetic code .		<u>Social Studies</u> 6.2 (various)
5.3.8.A.2	Relate the structures of cells, tissues, organs, and systems to their functions in supporting life.		Describe patterns of inheritance in humans.		
5.3.8.A.2	Relate the structures of cells, tissues, organs, and systems to their functions in supporting life.		Describe the relationship between genes and environment.		
5.3.8.B.1	Relate the energy and nutritional needs of organisms in a variety of life stages and situations, including stages of development and periods of maintenance.		Observe individual variations within members of a species.		
5.3.8.B.1	Relate the energy and nutritional needs of organisms in a variety of life stages and situations, including stages of development and periods of maintenance.		Distinguish between acquired and inherited traits.		
5.3.8.B.2	Analyze the components of a consumer's diet and trace them back to plants and plant products.		Explain how traits are inherited		
5.3.8.B.2	Analyze the components of a consumer's diet and trace them back to plants and plant products.		Observe patterns of inheritance within families.		
5.3.8.C.1	Model the effect of positive and negative changes in population size on a symbiotic pairing.		Describe Mendel's role in the history of genetics.		
5.3.8.C.1	Model the effect of positive and negative changes in population size on a symbiotic pairing.		Identify dominant and recessive traits.		
5.3.8.D.1	Defend the principle that, through reproduction, genetic traits are passed		Predict inheritance using a Punnett Square.		
5.3.8.D.1	Defend the principle that, through reproduction, genetic traits are passed		Relate probability to patterns of inheritance.		

	<p>5.3.8.D.2 Explain the source of variation among siblings.</p> <p>5.3.8.D.3 Describe the environmental conditions or factors that may lead to a change in a cell's genetic information or to an organism's development, and how these changes are passed on.</p> <p>5.3.8.E.1 Organize and present evidence to show how the extinction of a species is related to an inability to adapt to changing environmental conditions using quantitative and qualitative data.</p> <p>5.3.8.E.2 Compare the anatomical structures of a living species with fossil records to derive a line of descent.</p>	<p>from one generation to the next, using evidence collected from observations of inherited traits.</p>	<p>Describe mutations and genetic disorders.</p> <p>Evaluate advances in the area of genetics and genetic engineering.</p> <p>Define reproductive and therapeutic cloning and evaluate their merits and shortcomings .</p> <p>Explain and give evidence for the theory of evolution by natural selection.</p> <p>Describe variations and adaptations within species.</p> <p>Explain the relationship between inherited traits and environmental factors.</p> <p>Identify the adaptations of primates.</p> <p>Discuss the evolution of primates.</p>		
Classification	<p>5.1.8.A.1 Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.</p> <p>5.1.8.B.3 Use qualitative and quantitative evidence to develop evidence based arguments.</p> <p>5.1.8.C.2 Revise predictions or explanations on the basis of discovering new evidence, leaning new information, or using models.</p> <p>5.3.6.D.2 Explain how knowledge of inherited variations within and between generations is applied to farming and animal breeding.</p>	<p>Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.</p>	<p>Describe the characteristics of living things</p> <p>Identify what living things need to survive.</p> <p>Give examples that show the need for classification systems.</p> <p>Describe Aristotle's system of classification.</p> <p>Explain Linnaeus's system of classification.</p> <p>Explain how taxonomic keys are used.</p> <p>Describe the relationship between classification and evolution.</p>	<p>Teacher observation</p> <p>Class discussion</p> <p>Notes and study guides</p> <p>Labs Quizzes</p> <p>Tests</p>	<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1;</p>

	5.3.6.E.1	Describe impact on survival of species during specific times in geologic history when environmental conditions changed.	<p>Identify the 3 domains used for classification.</p> <p>Name the four kingdoms in Domain Eukarya.</p> <p>Identify characters an members of each kingdom.</p> <p>List reasons scientific names are more useful to scientists than common names.</p> <p>Identify how the atmosphere of early earth differs from today and connect the development of modern atmosphere to development of animal species.</p>		<p>9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>
Viruses, Bacteria, Protists, Fungi	5.3.8.D.1  5.3.6.E.1	<p>Defend principle that through reproduction, genetic traits are passed form on generation to the using evidence collected from observations of inherited traits.</p> <p>Describe impact on the survival of species during specific times in geologic history when environmental conditions changed.</p>	<p>Describe the structure of viruses, and explain how viruses reproduce and cause disease.</p> <p>Explain the use of vaccines in viral diseases.</p> <p>Describe some helpful viruses.</p> <p>Explain how cells of bacteria differ from those of eukaryotes.</p> <p>Describe characteristics of bacterial cells.</p> <p>Describe conditions in which bacteria thrive and reproduce.</p> <p>Explain how infectious disease spreads.</p> <p>Describe treatments for bacterial and viral diseases.</p> <p>Identify characteristics shared by all protists.</p> <p>Compare and contrast protist groups.</p> <p>Describe cause and effects of saltwater</p>	<p>Teacher observation</p> <p>Class discussion</p> <p>Notes and study guides</p> <p>Labs Quizzes</p> <p>Tests</p>	<p><u>Language Arts:</u></p> <p>RST.6-8 1,2,3,4,5,6,7,8,9</p> <p>WHST 6-8 1.a.b.c.e</p> <p>WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u></p> <p>6.RP.1; 6.NS.1 ; 6.NS.2</p> <p>6.EE.1; 6.EE.9; 6.SP.2;</p> <p>6.SP.2; 6.SP.3; 6.SP.5;</p> <p>6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1;</p> <p>8.1.8.D.3; 8.1.8.E.1;</p> <p>8.2.8.B.3; 8.2.4.C.1;</p> <p>8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1;</p> <p>9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>

Grade7

			<p>and freshwater algae blooms and their effects on the environment.</p> <p>Identify characteristics shared by all fungi.</p> <p>Classify fungi into groups based on their method of reproductions.</p>		
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GRADE 8					
UNIT	CPI #	Cumulative Progress Indicator (CPI)	Possible Learning Activities	Assessment	Interdisciplinary connections
Scientific Method (Ongoing)	5.1.8.A.1	Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.	How do scientists make sense of the world? How is scientific knowledge generated and validated?	Teacher Observation Class Discussion Notes and study guides Labs Tests Quizzes	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d  <u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.  <u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2  <u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1  <u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4  <u>Social Studies</u> 6.2 (various))
	5.1.8.A.2	Use mathematical, physical and computational tools to build conceptual-based models and to pose theories.	Explain how to make measurements. Understand how scientists use design technology to solve problems.		
	5.1.8.A.3	Use scientific principles and models to frame and synthesize scientific arguments and pose theories.	Explain how to conduct a science experiment. Understand how to make tables and graphs to make sense of data in a science experiment.		
	5.2.6.A.1	Determine the volume of common objects using water displacement methods.	Explain the rules for laboratory safety.		
	5.2.6.A.2	Calculate the density of substances after determining volume and mass.	How can we use the scientific method to find answers to problems?		
	5.1.8.B.1	Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.	What is a “fair test?” How can models help us to predict the nature of objects and systems that we cannot see?		
	5.1.8.B.2	Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.	Why is following orderly steps important for scientists when conducting an experiment? How do control groups and multiple trials help scientists?		
	5.1.8.B.3	Use qualitative and quantitative evidence to develop evidence-based arguments.	Why is gathering and interpreting evidence important while trying to		
	5.1.8.B.4	Use quality controls to examine data sets			

	5.1.8.C.1	and to examine evidence as a means of generating and reviewing explanations. Monitor one's own thinking as understandings of scientific concepts are refined.	answer questions in science? Why is it important for scientists to replicate the experiments of others?		
	5.1.8.C.2	Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.			
	5.1.8.C.3	Generate new and productive questions to evaluate and refine core explanations			
	5.1.8.D.1	Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.			
	5.1.8.D.2	Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.			
	5.1.8.D.3	Demonstrate how to safely use tools, instruments, and supplies.			
	5.1.8.D.4	Handle and treat organisms humanely, responsibly, and ethically.			
Energy Sources & Transformations	5.2.8.C.1	Structure evidence to explain the relatively high frequency of tornadoes in "Tornado Alley."	Explain what energy is. Distinguish between potential energy and kinetic energy.	Multi-media project Teacher Observation	<u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d <u>Mathematics:</u> 6.RP.1; 6NS.1 ; 6.NS.2
	5.2.8.C.2	Model and explain current technologies used to capture solar energy for the	Explore factors that affect the amount of		

	<p>5.2.8.D.1</p> <p>5.2.8.D.2</p> <p>5.4.6.E.1</p> <p>5.4.8.E.1</p> <p>5.4.8.G.2</p> <p>5.2.6.C.3</p>	<p>purposes of converting it to electrical energy.</p> <p>Relate the kinetic and potential energies of a roller coaster at various points on its path.</p> <p>Describe the flow of energy from the Sun to the fuel tank of an automobile.</p> <p>Generate a conclusion about energy transfer and circulation by observing a model of convection currents.</p> <p>Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.</p> <p>Investigate a local or global environmental issue by defining the problem, researching possible causative factors, understanding the underlying science, and evaluating the benefits and risks of alternative solutions.</p> <p>Describe ways that humans can improve the health of ecosystems around the world.</p>	<p>energy produced (mass, speed, distance)</p> <p>Identify various forms of energy.</p> <p>Apply the law of the conservation of energy to energy transformations.</p> <p>Identify how energy changes form.</p> <p>Describe how electrical plants produce energy.</p> <p>Explain what renewable, non-renewable, and alternative resources are.</p> <p>Consider the advantages and disadvantages of using various energy sources.</p> <p>How do forms of energy interact within natural systems?</p> <p>What can you do to maximize the amount of energy an object can possess?</p>	<p>Class Discussion</p> <p>Notes and study guides</p> <p>Labs</p> <p>Tests</p> <p>Quizzes</p>	<p>6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p> <p><u>Health</u></p> <p>2.5.8.A.2; 2.5.8.C.2; 2.5.8.C.3</p>
Waves and Light	<p>5.2.6.C.1</p> <p>5.2.6.C.2</p> <p>5.2.8.D.2</p>	<p>Predict the path of reflected or refracted light using reflecting and refracting telescopes as examples.</p> <p>Describe how to prisms can be used to demonstrate that visible light from the Sun is made up of different colors.</p> <p>Describe the flow of energy from the Sun</p>	<p>How does science describe waves?</p> <p>How do waves interact with the environment?</p> <p>How do humans use their senses to interpret waves?</p> <p>What is the difference between waves and mediums?</p>		

		to the fuel tank of an automobile.	<p>Explain the relationship between waves, energy and matter.</p> <p>How can you recognize an energy transformation?</p> <p>What influence does motion have on the frequency of a wave?</p> <p>Describe the properties of transverse, mechanical and compressional waves.</p> <p>Define and describe wavelength, frequency, and amplitude of transverse waves.</p> <p>Describe wave reflection, refraction, diffraction, and interference.</p> <p>What is the difference between mechanical and electromagnetic waves?</p> <p>Identify the types of waves on the electromagnetic spectrum and their uses.</p> <p>Explain how light interacts with materials.</p> <p>Determine the colors in white light.</p> <p>Describe why objects appear to have different colors.</p> <p>Identify plane, convex and concave mirrors and describe their properties.</p> <p>Explore the law of reflection.</p> <p>Determine how plane, convex and concave mirrors produce images.</p> <p>Identify convex and concave lenses and describe their properties.</p> <p>Determine how plane, convex and</p>		
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			<p>concave lenses produce images.</p> <p>Describe the uses of mirrors and lenses in optical devices.</p> <p>Define and describe the parts of the human eye.</p>		
Astronomy	<p>5.2.8.E.1</p> <p>5.2.8.E.2</p> <p>5.4.8.A.1</p> <p>5.4.8.A.2</p> <p>5.4.8.A.3</p> <p>5.4.8.A.1</p>	<p>Analyze data regarding the motion of comets, planets, and moons to find general patterns of orbital motion.</p> <p>Compare the motion of an object acted on by balanced forces with the motion of an object acted on by unbalanced forces in a given specific scenario.</p> <p>Analyze moon-phase, eclipse, and tidal data to construct models that explain how the relative positions and motions of the Sun, Earth, and Moon cause these three phenomena.</p> <p>Use evidence of global variations in day length, temperature, and the amount of solar radiation striking Earth's surface to create models that explain these phenomena and seasons.</p> <p>Predict how the gravitational force between two bodies would differ for bodies of different masses or bodies that are different distances apart.</p> <p>Analyze moon-phase, eclipse, and tidal data to construct models that explain how the relative positions and motions of the Sun, Earth, and Moon cause these three</p>	<p>Examine Earth's physical characteristics.</p> <p>Describe earth's rotation and orbit around the sun.</p> <p>Explain how the motions of the Earth, sun and moon define units of time: days, months, and years.</p> <p>Describe how the tilt, rotation, and orbital pattern on Earth relative to the sun produce seasons.</p> <p>Describe the motions of the moon.</p> <p>Observe and define moon phases.</p> <p>Explain why solar and lunar eclipses occur.</p> <p>Infer what the moon's surface features may reveal about its history.</p> <p>Explain how the force of gravity holds space objects in orbit.</p> <p>Describe how gravity affects matter.</p> <p>Model the size and distance of the planets and sun in our solar system.</p> <p>Identify constellations in the sky.</p> <p>Define the individual stars that make up constellations.</p> <p>Describe properties of stars.</p>	<p>Labs</p> <p>Quiz Grades</p> <p>Test Grades</p> <p>Assignment Grades</p> <p>Participation</p> <p>Teacher Observation</p> <p>Notes</p> <p>Study Guides</p> <p>Discussion</p>	<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u> 6.2 (various)</p>

	<p>5.4.8.A.4</p> <p>4 5.4.8.E.1</p>	<p>phenomena.</p> <p>Analyze data regarding the motion of comets, planets, and moons to find general patterns of orbital motion.</p> <p>Explain how energy from the Sun is transformed or transferred in global wind circulation, ocean circulation, and the water cycle.</p>	<p>Use random sampling and estimation to estimate the number of stars and galaxies in the night sky.</p> <p>Discuss historical models of the solar system.</p> <p>Describe the current models of the formation of the solar system.</p> <p>Describe the physical features of the planets in the solar system.</p> <p>Compare and contrast the planets of the solar system.</p> <p>Define and describe other objects in the solar system: comets, meteoroids and asteroids.</p> <p>Explore the concept of an expanding universe.</p> <p>Describe the characteristics of stars.</p> <p>Explore how stars are classified.</p> <p>Describe how the temperature of a star is related to its color.</p> <p>Describe the evolution of stars.</p> <p>Explain why the position of the constellations change throughout the year.</p> <p>Distinguish between absolute and apparent magnitude of stars</p> <p>Explore how parallax is used to determine the distance of stars.</p> <p>Describe the structure of the Sun.</p> <p>Describe sunspots, prominences and</p>		
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			<p>solar flares and discuss how they are related.</p> <p>Describe the role of technology in our understanding of space science.</p>		
Amphibians	<p>5.1.8.D.3</p> <p>5.1.8.D.4</p> <p>5.3.8.A.2</p> <p>5.3.8.B.1</p> <p>5.3.8.D.3</p>	<p>Demonstrate how to safely use tools, instruments, and supplies.</p> <p>Handle and treat organisms humanely, responsibly, and ethically.</p> <p>Relate the structures of cells, tissues, organs, and systems to their functions in supporting life.</p> <p>Relate the energy and nutritional needs of organisms in a variety of life stages and situations, including stages of development and periods of maintenance.</p> <p>Describe the environmental conditions or factors that may lead to a change in a cell's genetic information or to an organism's development, and how these changes are passed on.</p>	<p>What cycles or patterns of living organisms do amphibians follow?</p> <p>Identify adaptations unique to amphibians.</p> <p>How are amphibians uniquely suited for life on land or in water?</p> <p>What features of a frog's anatomy and morphology lead us to classify it as an amphibian?</p> <p>Explain the evolutionary history of amphibians.</p> <p>In what ways do amphibians represent an evolutionary bridge between aquatic and terrestrial vertebrates?</p> <p>Evaluate theories that explain the cause of decline in amphibian populations.</p> <p>Describe the organization of tissues, organs, and organ systems in frogs.</p> <p>What are the similarities and differences between human and frog anatomy?</p> <p>Perform a frog dissection.</p>		<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2 6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u> 8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u> 9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u> 7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u> 6.2 (various)</p>
Forces and Fluids	<p>5.2.6.A.1</p> <p>5.2.6.A.2</p>	<p>Determine the volume of common objects using water displacement methods.</p> <p>Calculate the density of objects or substances after determining volume and mass.</p>	<p>How do fluids exert force?</p> <p>How do forces affect fluids and the objects in them?</p> <p>What factors affect the pressure of a</p>		<p><u>Language Arts:</u> RST.6-8 1,2,3,4,5,6,7,8,9 WHST 6-8 1.a.b.c.e WHST 6-8 2.a.b.d</p> <p><u>Mathematics:</u> 6.RP.1; 6.NS.1 ; 6.NS.2</p>

	<p>5.2.8.A.3</p> <p>5.2.12.A.2</p> <p>5.2.6.E.4</p> <p>5.2.8.E.2</p>	<p>Use the kinetic molecular model to predict how solids, liquids, and gases would behave under various physical circumstances, such as heating or cooling.</p> <p>Account for the differences in the physical properties of solids, liquids, and gases.</p> <p>Predict if an object will sink or float using evidence and reasoning.</p> <p>Compare the motion of an object acted on by balanced forces with the motion of an object acted on by unbalanced forces in a given specific scenario.</p>	<p>liquid?</p> <p>What is pressure and how does it work?</p> <p>What is the relationship between buoyancy and Archimedes Principles?</p> <p>How does pressure vary in the air and the ocean?</p> <p>How does a hydraulic device work?</p> <p>How does fluid pressure keep a boat afloat or a plane in the air?</p> <p>What is the Bernoulli Principle?</p> <p>Define and calculate pressure.</p> <p>Identify and describe forces.</p> <p>Isolate and test variables that affect pressure.</p> <p>Identify balanced and unbalanced forces.</p> <p>Accurately measure mass and volume.</p> <p>Accurately calculate density</p> <p>Demonstrate that forces in fluids can be used to perform work.</p>	<p>6.EE.1; 6.EE.9; 6.SP.2; 6.SP.2; 6.SP.3; 6.SP.5; 6.SP.5.a-d.</p> <p><u>Technology:</u></p> <p>8.1.8.A.5; 8.1.8.B.1; 8.1.8.D.3; 8.1.8.E.1; 8.2.8.B.3; 8.2.4.C.1; 8.2.4.F.1; 8.2.8.G.2</p> <p><u>21<sup>st</sup>. Century Careers:</u></p> <p>9.1.12.A.1; 9.1.4.B.1; 9.1.8.B.2; 9.1.8.F.1</p> <p><u>World Languages</u></p> <p>7.1.NH.A.1; 7.1.NH.A.4</p> <p><u>Social Studies</u></p> <p>6.2 (various)</p>
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