

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: THE NATURE OF SCIENCE		Pacing: First Nine Weeks		
Essential Question(s)	<p>Big Idea 1: The Practice of Science</p> <p>A: Scientific inquiry is a multifaceted activity; The processes of science include the formulation of scientifically investigable questions, construction of investigations into those questions, the collection of appropriate data, the evaluation of the meaning of those data, and the communication of this evaluation.</p> <p>B: The processes of science frequently do not correspond to the traditional portrayal of "the scientific method."</p> <p>C: Scientific argumentation is a necessary part of scientific inquiry and plays an important role in the generation and validation of scientific knowledge.</p> <p>D: Scientific knowledge is based on observation and inference; it is important to recognize that these are very different things. Not only does science require creativity in its methods and processes, but also in its questions and explanations.</p>			
Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Weeks 1-3	<ul style="list-style-type: none"> Recognize the importance of communication among scientists. Recognize that scientists question, discuss, and check each others' evidence and explanations. Explain that empirical evidence is information, such as observations or measurements that is used to help validate explanations of natural phenomena. 	SC.3.N.1.4(M) SC.3.N.1.5(M) SC.3.N.1.7(H)	Scientist Investigate Inquiry Observe Predict	Houghton Mifflin Text Pgs.S2-S5 HMH Fusion Unit 1 Lessons 1-6
Weeks 1-3 Scientific Process Data Collection And Analysis	<ul style="list-style-type: none"> Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations. Infer based on observation. Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations. Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena. 	S.C.3.N.1.2(H) SC.3.N.1.6(H) SC3.N.1.1(H) SC.3.N.1.7(H) MC, SR, ER	Experiments Hypothesis Problem Tool Microscope Graduated cylinder Temperature Infer	Houghton Mifflin Text Pgs. S6-S9 Pg. S16 Tools and measurement H1- H15 HMH Fusion Unit 1 Lessons 1-6 Additional Resources for Lessons

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Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Record Keeping	<ul style="list-style-type: none"> Keep records as appropriate, such as pictorial, written, or simple charts and graphs, of investigations conducted. 	SC.3.N.1.3(M) MC	Data Bar graph Data table	Houghton Mifflin Text Pgs. S10-S15 HMH Fusion Unit 1 Lessons 1-6
Variables and Control Groups	<ul style="list-style-type: none"> Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations. Recognize the importance of communication among scientists. Recognize that scientists question, discuss, and check each others' evidence and explanations. 	SC3.N.1.1(H) SC.3.N.1.4(M) SC.3.N.1.5(M) MC,SR	Variable Control group	HMH Fusion Unit 1 Lessons 1-6 Additional Resources for Lessons

Week 4-5 Models	<ul style="list-style-type: none"> Recognize that scientists use models to help understand and explain how things work. Recognize that all models are approximations of natural phenomena; as such, they do not perfectly account for all observations. 	SC.3.N.3.2(L) SC.3.N.3.3(M)	Model	HMH Fusion Unit 1 Lesson 1 & 2 Additional Resources for Lessons
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Essential Question(s)	<p>Big Idea 8: Properties of Matter A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass. B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.</p> <p>Big Idea 9: Changes in Matter A. Matter can undergo a variety of changes. B. Matter can be changed physically or chemically.</p>			
Concepts/Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Weeks 6-7 Properties of Matter Sum of Its Parts	<ul style="list-style-type: none"> Measure and compare temperatures of various samples of solids and liquids. Measure and compare the mass and volume of solids and liquids. Compare materials and objects according to properties such as size, shape, color, texture, and hardness. Recognize that words in science can have different or more specific meanings than their use in everyday language; for example, energy, cell, heat/cold, and evidence. 	SC.3.N.3.1(M) SC.3.P.8.1(M) SC.3.P.8.2(M) SC.3.P.8.3(M) MC	Gas Liquid Mass Matter Physical Property Solid Volume Temperature	Houghton Mifflin Text Unit E: Chapter 11 Pgs. E6-E11 Exp. E4-E5 <u>Chapter 12</u> Pgs. E34- E56 Exp. E32-E34 Exp. E40-E41 HMH Fusion Unit 3 Lessons 1-4 Additional Resources for Lessons

Essential Question(s)	<p>Big Idea 8: Properties of Matter</p> <p>A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.</p> <p>B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.</p> <p>Big Idea 9: Changes in Matter</p> <p>A. Matter can undergo a variety of changes.</p> <p>B. Matter can be changed physically or chemically.</p>			
Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
<p>Week 8-9</p> <p>States of Matter</p> <p>Phase Changes</p> <p>Chemical vs. Physical Change</p>	<ul style="list-style-type: none"> • Compare materials and objects according to properties such as size, shape, color, texture, and hardness. • Measure and compare temperatures of various samples of solids and liquids. • Measure and compare the mass and volume of solids and liquids. • Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation. <p>Continued in 2nd Nine Weeks</p>	<p>SC3.P.9.1(M)</p> <p>SC.3.P.8.1(M)</p> <p>SC.3.P.8.2(M)</p> <p>SC.3.P.8.3(M)</p> <p>MC</p>	<p>Condense</p> <p>Evaporate</p> <p>Freeze</p> <p>Melt</p> <p>Physical Change</p> <p>Texture</p> <p>Hardness</p> <p>Chemical Change</p> <p>Chemical Property</p>	<p>Houghton Mifflin Text</p> <p>Unit E: <u>Chapter 11</u></p> <p>Pgs. E14- E25</p> <p>Physical</p> <p>Exp. E12-E13</p> <p>Chemical</p> <p>Exp. E20-E21</p> <p>HMH Fusion</p> <p>Unit 3</p> <p>Lessons 1-5</p> <p>Additional Resources for Lessons</p>

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE: THE NATURE OF SCIENCE		Pacing: Second Nine Weeks		
Essential Question(s)	<p>Big Idea 8: Properties of Matter</p> <p>A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.</p> <p>B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or "stuff") in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth.</p> <p>Big Idea 9: Changes in Matter</p> <p>A. Matter can undergo a variety of changes.</p> <p>B. Matter can be changed physically or chemically.</p>			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Resources
Week 10 States of Matter Phase Changes Chemical vs. Physical Change	<ul style="list-style-type: none"> Compare materials and objects according to properties such as size, shape, color, texture, and hardness. Measure and compare temperatures of various samples of solids and liquids. Measure and compare the mass and volume of solids and liquids. Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation. 	SC3.P.9.1(M) SC.3.P.8.1(M) SC.3.P.8.2(M) SC.3.P.8.3(M) MC	Condense Evaporate Freeze Melt Physical Change Texture Hardness Chemical Change Chemical Property	Houghton Mifflin Text Unit E: <u>Chapter 11</u> Pgs. E14- E25 Physical Exp. E12-E13 Chemical Exp. E20-E21 HMH Fusion Unit 3 Lessons 1-5 Additional Resources for Lessons

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE		Pacing: Second Nine Weeks		
Essential Question(s)	<p>Big Idea 5: Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.</p> <p>Big Idea 6: Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.</p>			
Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Week 11 Stars	<ul style="list-style-type: none"> Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light. Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye. 	SC.3.E.5.1 (H) SC3.E.5.5.(M)	Stars telescope	Houghton Mifflin Text Unit D: <u>Chapter 10</u> Pgs: D84 Exp. D82-D83 HMH Fusion Unit 2 Lessons 1 & 2 Additional Resources for Lessons

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Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Week 12-13 Sun as a Star	<ul style="list-style-type: none"> Identify the Sun as a star that emits energy; some of it in the form of light. Recognize that the Sun appears large and bright because it is the closest star to Earth. Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost. 	SC.3.E.5.2.(M) SC.3.E.5.3.(H) SC.3.E.5.5.(M) SC.3.E.6.1(H)	Sun Solar Energy	Houghton Mifflin Text Unit D: <u>Chapter 10</u> Pgs: D85 HMH Fusion Unit 2 Lessons 1 & 3 Additional Resources for Lessons
Week 14-15 Law of Gravity	<ul style="list-style-type: none"> Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome. 	SC.3.E.5.4(H)	Gravity Force Motion	Unit F: <u>Chapter 15</u> F72-F74 HMH Fusion Unit 2 Lesson 4 Additional Resources for Lessons

Essential Question(s)	Big Idea10 : Forms of Energy A. Energy is involved in all physical processes and is a unifying concept in many areas of science. B. Energy exists in many forms and has the ability to do work or cause a change.			
Concepts/ Content	Learning Targets/Skills Students will:	Benchmarks	Key Terminology	Resources
Week 16-18 Forms of Energy	<ul style="list-style-type: none"> Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. Recognize that energy has the ability to cause motion or create change. 	SC.3.P.10.1(L) SC.3.P.10.2(L)	Energy Electrical energy Mechanical energy Sound energy Kinetic energy Potential energy Waves	Houghton Mifflin Text Unit F: <u>Chapter 13</u> Pgs: F6-F11 Pgs: F28-F33 Exp. 26-27 HMH Fusion Unit 4 Lesson 1 Additional Resources for Lessons

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE:			Pacing: Third Nine Weeks	
Essential Question(s)	<p>Big Idea10 : Forms of Energy</p> <p>A. Energy is involved in all physical processes and is a unifying concept in many areas of science.</p> <p>B. Energy exists in many forms and has the ability to do work or cause a change.</p>			
Concepts/Content	Learning Targets/Skills	Benchmarks	Key Terminology	Resources
<p>Week 19-20</p> <p>Light as Energy</p>	<ul style="list-style-type: none"> Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. Demonstrate that light can be reflected, refracted, and absorbed. 	<p>SC.3.P.10.3(M)</p> <p>SC.3.P.10.4(M)</p>	<p>Light energy</p> <p>Reflect</p> <p>Refract</p> <p>Absorb</p> <p>Shadow</p>	<p>Houghton Mifflin Text</p> <p>Unit F: <u>Chapter 14</u></p> <p>Pgs.: F58-F62</p> <p>HMH Fusion</p> <p>Unit 4</p> <p>Lessons 2 & 3</p> <p>Additional Resources for Lessons</p>

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Essential Question(s)	<p>Big Idea10 : Forms of Energy</p> <p>A. Energy is involved in all physical processes and is a unifying concept in many areas of science. B. Energy exists in many forms and has the ability to do work or cause a change.</p> <p>Big Idea11:</p> <p>A. Waves involve a transfer of energy without a transfer of matter. B. Water and sound waves transfer energy through a material. C. Light waves can travel through a vacuum and through matter.</p>			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Resources
<p>Week 21-22</p> <p>Heat Waves</p>	<ul style="list-style-type: none"> Investigate, observe, and explain that things that give off light often also give off heat. Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together. 	<p>SC.3.P.11.1(H)</p> <p>SC.3.P.11.2(H)</p>	<p>Friction</p> <p>Heat</p> <p>Thermal energy</p>	<p>Houghton Mifflin Text Unit F: <u>Chapter 14</u> Pgs: F42-47 Exp. 40-41</p> <p>HMH Fusion Unit 5 Lessons 1 & 2</p> <p>Additional Resources for Lessons</p>

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE:		Pacing: Third Nine Weeks		
Essential Question(s)	<p>Big Idea14: Organization and Development of Living Organisms</p> <p>A. All plants and animals, including humans, are alike in some ways and different in others.</p> <p>B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.</p> <p>C. Humans can better understand the natural world through careful observation.</p>			
<p>Week 23-25</p> <p>Parts of Plants</p> <p>Growth of Plants</p>	<ul style="list-style-type: none"> Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. 	<p>SC.3.L.14.1(M)</p> <p>SC.3.L.14.2(H)</p>	<p>Leaf</p> <p>Nutrient</p> <p>Flower</p> <p>Root</p> <p>Stem</p> <p>Cone</p> <p>Seed</p> <p>Environment</p> <p>Reproduce</p> <p>Carbon dioxide</p> <p>Oxygen</p> <p>Germinate</p>	<p>Houghton Mifflin Text</p> <p>Unit A:</p> <p><u>Chapter 1</u></p> <p>Pgs: A4- A31</p> <p>Exp. A4-5</p> <p>Exp. A14-15</p> <p>HMH Fusion</p> <p>Unit 6</p> <p>Lessons 1-3</p> <p>Additional Resources for Lessons</p>

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE:			Pacing: Third Nine Weeks	
Essential Question(s)	<p>Big Idea15:</p> <p>A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.</p> <p>B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.</p>			
<p>Week 26-28</p> <p>Classify Plants</p>	<ul style="list-style-type: none"> Classify flowering and non-flowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. 	SC.3.L.15.2	<p>Non-flowering plant</p> <p>Conifer</p> <p>Fruit</p> <p>Seed</p> <p>Spores</p> <p>Flowering plant</p>	<p>Houghton Mifflin Text</p> <p>Unit A: <u>Chapter 3</u> Pgs: A70-73</p> <p>HMH Fusion</p> <p>Unit 7 Lesson 1</p> <p>Additional Resources for Lessons</p>

UNIT/ORGANIZING PRINCIPLE: BODY OF KNOWLEDGE		Pacing: Fourth Nine Weeks		
Essential Question(s)	<p>Big Idea 17: A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs. B. Both human activities and natural events can have major impacts on the environment. C. Energy flows from the sun through producers to consumers.</p>			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Resources
Week 29-31	<ul style="list-style-type: none"> Recognize that plants use energy from the Sun, air, and water to make their own food. Describe how animals and plants respond to changing seasons. 	SC.3.L.17.1(M) SC.3.L.17.2(L)	Germination Adaptation Season Migrate Hibernate Producer Photosynthesis Consumer Food Chain	Houghton Mifflin Text Unit B <u>Chapter 4</u> Pgs. B6-B10 Pgs. B22-B35 <u>Chapter 5</u> Pg. B44-B47 HMH Fusion Unit 8 Lessons 1-3 Additional Resources for Lessons

Essential Question(s)	Big Idea 15 : A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival. B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Key Terminology	Resources
Weeks 32-34	<ul style="list-style-type: none"> Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. 	SC.3.L.15.1(M)	Amphibian Backbone Insect Bird Fish Mammal Reptile Vertebrate Arthropod Invertebrate	Houghton Mifflin Text Unit A <u>Chapter 2</u> Pgs. A32-A49 HMH Fusion Unit 7 Lessons 2-3 Additional Resources for Lessons