Pine Hill Public Schools Curriculum			
Content Area:	**Sciences**		
Course Title/ Grade Level:	Grade 5		
Unit 1:	Structure and Properties of Matter	Duration:	**5 weeks**
Unit 2:	Matter and Energy in Organisms and Ecosystems	Duration::	5 weeks
Unit 3:	Earth Systems	Duration:	5 weeks
Unit 4:	Space Systems	Duration:	5 weeks
BOE Approved Revision:			
BOE Initial Adoption Date:	August 15, 2017		

Pine Hill Public Schools Curriculum	
Unit Title Structure and Properties of Matter	**Unit #: 1**
Course or Grade Level: Fifth	**Length of Time: five weeks**
Performance Expectations	5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-3. Make observations and measurements to identify materials based on their properties. 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
Content	● **Models of matter.** ● **Properties of matter.** ● **Physical and chemical changes of matter.**
Assessments	● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks
Inter-disciplinary Connections	ELA/Literacy – ● SL.5.5Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-PS3-1) ● RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-PS2-1) ● RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-PS1-1) ● RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-PS2-1) ● W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-PS2-1) Common Core State Standards Connections: ● W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (5-PS1-2),(5-PS1-3),(5-PS1-4) ● W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (5-PS1-2),(5-PS1-3),(5-PS1-4) ● W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (5-PS1-2),(5-PS1-3),(5-PS1-4) Mathematics - ● MP.2 Reason abstractly and quantitatively. (5-PS1-1),(5-PS1-2),(5-PS1-3) ● MP.4 Model with mathematics. (5-PS1-1),(5-PS1-2),(5-PS1-3) ● MP.5 Use appropriate tools strategically. (5-PS1-2),(5-PS1-3) ● 5.NBT.A.1 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. (5-PS1-1) ● 5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (5-PS1-1) ● 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real-world problems. (5-PS1-2) ● 5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. (5-PS1-1) ● 5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. (5-PS1-1) ●
Lesson resources / Activities	● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill

New Jersey Student Learning Standards for Science	
Science and Engineering Practices: ● Developing and Using Models ● Planning and Carrying Out Investigations ● Using Mathematics and Computational Thinking	**Disciplinary Core Ideas:** ● PS1.A: Structure and Properties of Matter ● PS1.B: Chemical Reactions
Cross-Cutting Concepts: ● Cause and Effect ● Scale, Proportion, and Quantity ● Connections to Nature of Science: Scientific Knowledge Assumes an Order and Consistency in Natural Systems	

21st Century Themes							
x	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy

21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
X	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Strand: **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*	**Content Statement:** Understand and use technology systems.	**Indicator:** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Pine Hill Public Schools
Curriculum

Unit Title Matter and Energy in Organisms and Ecosystems	**Unit #: 2**
Course or Grade Level: Fifth	**Length of Time: five weeks**

Performance Expectations	5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. 5-PS3-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.
Content	● **Flow of energy in living things. (sun . . .)** ● **Ecosystems (matter and energy)** ● **Interactions of species within an ecosystem.**
Assessments	● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks
Inter-disciplinary Connections	ELA/Literacy - ● RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1) ● RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-LS2-1) ● RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1) ● SL.5.5Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-LS2-1) ● W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1) Mathematics - ● MP.2 Reason abstractly and quantitatively. (5-LS1-1) ● MP.4 Model with mathematics. (5-LS1-1) ● MP.5 Use appropriate tools strategically. (5-LS1-1) ● 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step,
Lesson resources / Activities	● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill

New Jersey Student Learning Standards for Science

Science and Engineering Practices: ● Developing and Using Models ● Engaging in Argument from Evidence ● Connections to Nature of Science: Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena	**Disciplinary Core Ideas:** ● Energy in Chemical Processes and Everyday Life ● Organization for Matter and Energy Flow in Organisms ● Interdependent Relationships to Ecosystems ● Cycles of Matter and Energy in Ecosystems

Cross-Cutting Concepts:
- Systems and System Models
- Energy and Matter

21st Century Themes

x	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	X	Health Literacy

21st Century Skills

x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
X	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.		
Strand: A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*	**Content Statement:** Understand and use technology systems.	**Indicator:** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Pine Hill Public Schools Curriculum	
Unit Title Earth's Systems	**Unit #: 3**
Course or Grade Level: Fifth	**Length of Time: five weeks**
Performance Expectations	5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 5-ESS2-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
Content	● **Earth's four systems.** ● **Forms and sources of water on Earth.** ● **Human activities that affect Earth's resources.**
Assessments	● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks
Inter-disciplinary Connections	ELA/Literacy - ● RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-ESS1-1) ● RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS1-1) ● RI.5.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s). (5-ESS1-1) ● RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-ESS1-1) ● W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-ESS1-1) ● W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (5-ESS2-2) ● SL.5.5Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-ESS2-1),(5-ESS2-2) Mathematics - ● MP.2 Reason abstractly and quantitatively. (5-ESS1-1),(5-ESS1-2) ● MP.4 Model with mathematics. (5-ESS1-1),(5-ESS1-2) ● 5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. (5-ESS1-1) ● 5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS1-2)
Lesson resources / Activities	● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill

New Jersey Student Learning Standards for Science	
Science and Engineering Practices: ● Developing and Using Models ● Using Mathematics and Computational ● Thinking Obtaining, Evaluating, and Communicating Information	**Disciplinary Core Ideas:** ● ESS2.A: Earth Materials and Systems ● ESS2.C: The Roles of Water in Earth's Surface Processes ● ESS3.C: Human Impacts on Earth Systems

Cross-Cutting Concepts:

- Scale, Proportion, and Quantity
- Systems and System Models
- Connections to Nature of Science: Science Addresses Questions About the Natural and Material World

21st Century Themes							
x	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy	X	Civic Literacy		Health Literacy
21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
X	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Strand: **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*	**Content Statement:** Understand and use technology systems.	**Indicator:** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Pine Hill Public Schools Curriculum	
Unit Title Space	**Unit #: 4**
Course or Grade Level: Fifth	**Length of Time: five weeks**
Performance Expectations	5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down. 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
Content	● **Gravity and mass** ● **Stars and the solar system.**
Assessments	● Formative: Anecdotal Records; Teacher Observation; Independent Practice; Investigations; Student Journals ● Summative: Unit Tests; Performance Tasks
Inter-disciplinary Connections	ELA/Literacy – ● RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-PS2-1),(5-ESS1-1) ● RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS1-1) ● RI.5.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s). (5-ESS1-1) ● RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-PS2-1),(5-ESS1-1) ● W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-PS2-1),(5-ESS1-1) ● SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5- ESS1-2) Mathematics – ● MP.2 Reason abstractly and quantitatively. (5-ESS1-1),(5-ESS1-2) ● MP.4 Model with mathematics. (5-ESS1-1),(5-ESS1-2) ● 5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. (5-ESS1-1) ● 5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS1-2)
Lesson resources / Activities	● Front Row ● Internet Resources ● Classroom Library ● Google Drive ● Science A to Z ● Science textbook: Macmillan McGraw-Hill
New Jersey Student Learning Standards for Science	
Science and Engineering Practices: ● Analyzing and Interpreting Data ● Engaging in Argument from Evidence	**Disciplinary Core Ideas:** ● PS2.B: Types of Interactions ● ESS1.A: The Universe and its Stars ● ESS1.B: Earth and the Solar System
Cross-Cutting Concepts: ● Patterns ● Cause and Effect ● Scale, Proportion, and Quantity	
21st Century Themes	

X	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
X	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
X	Media Literacy	X	ICT Literacy	X	Life and Career Skills		
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.							
Strand: A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*			**Content Statement:** Understand and use technology systems.		**Indicator:** 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.		