

**FAIRFIELD TOWNSHIP SCHOOL
Science Curriculum Guide Grade 5**

Key:

Climate

Equity and Inclusion

SEL

Holocaust

Amistad

Career Readiness, Life Literacies, and Key Skills

Subject: Science	Grade Level: 5 Uni1 1
Unit 1: Properties of Matter; Changes in Matter	Pacing: 8 Weeks
Essential Questions	Enduring Understandings
How do you describe properties of matter?	Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gasses are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects. (5-PS1-1)
How can you compare the properties of matter?	The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. (5-PS1-2)
What evidence do we have that matter changes?	Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.) (5-PS1-3)
What happens to mass when objects are mixed?	When two or more different substances are mixed, a new substance with different properties may be formed. (5-PS1-4)

<p>Which properties are affected by temperature?</p> <p>How can you identify chemical changes?</p> <p>How can you separate a mixture/solution?</p>	<p>No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) (5-PS1-2)</p>
<p>NJSL Standards</p>	<p>Classroom Applications</p>
<p>• 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.</p> <p>• 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.</p> <p>• 5-PS1-3 Make observations and measurements to identify materials</p>	<p><u>Science activities and Quests:</u></p> <p>Students will observe and compare properties of mass and matter and record those observations</p> <p>Students will mix substances/matter together to see if the matter changes</p> <p>Students will use physical properties to identify solids</p> <p>Students will study the career of a Robotics Engineer</p> <p>Students will test substances to identify them</p> <p>Students will make “goop” and observe its properties to decide whether it is a liquid or solid</p> <p>Students will record physical changes to matter due to changes in temperature</p> <p>Students will observe and record chemical changes to objects such as nails and pennies</p> <p>Students will try to separate the salt and the water in a saltwater solution</p>

based on their properties.
• 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances

Students will study the career of a Materials Scientist

Vocabulary: observe, measure, solubility, describe, atom, atomic theory, compound, molecule, conclude, temperature, mass, volume, organize, solid, liquid, gas, differentiate, Physical change, establish, chemical change, conservation of matter, chemical reaction, support, mixture, solution, component,

Elevate Science text/workbook

Lesson Structure: Anticipatory Set, Mini-Lesson, Whole Group, Small Group, Independent Work, Closure

Strategies: Think-Pair-Share, Read Aloud, Jigsaw, Investigations, Guided Explorations, Projects

Materials: Mentor Texts, DVDs, Internet, Technology (Smart Board, student computers/laptops, PowerPoint, Websites, etc.), supplemental books, visual aids, manipulatives, supplemental materials for investigations

Differentiation Strategies/Modifications

SWD/ Students at risk of failure: 1:1 teacher redirect / re-teach, peer helper, visual aids, modified tests/quizzes, modified homework

Gifted/Enrichment: computer-based research, high level task, class presentation

Connections to other content areas, including Career Readiness, Life Literacies, and Key Skills :

Connections to NJSL – English Language Arts

- 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.5.7 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)

- 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)

Connections to NJSL – Mathematics

- MP.2 Reason abstractly and quantitatively. (5-PS1-1)
- MP.4 Model with mathematics. (5-PS1-1)
- 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.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)

Career Readiness, Life Literacies, and Key Skills –

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.

9.4.2.CI.2: Demonstrate originality and inventiveness in work .

9.4.2.CT.1: Gather information about an issue, such as climate change and collaboratively brainstorm ways to solve the problem.

9.4.2.CT.2- Identify possible approaches and resources to execute a plan.

9.4.2.CT.3- Use a variety of types of thinking to solve problems (e.g. inductive, deductive).

Climate change activity:

<https://mysteryscience.com/lessons?query=climate>

Climate change lessons:

<https://www.brainpop.com/science/weather/climatechange/>

Holocaust

Amistad

African American & Differently abled/LGBTQ Scientists:

<https://www.brainpop.com/search/?keyword=scientists>

10 famous scientists with disabilities

- Thomas Edison. Born in 1847, Thomas Edison lost much of his hearing by his early twenties. ...
- Temple Grandin. ...
- Ralph Braun. ...
- Sang-Mook Lee. ...
- Stephen Hawking. ...
- Geerat Vermeij. ...
- Farida Bedwei. ...
- Richard Mankin.

<https://royalsociety.org/topics-policy/diversity-in-science/scientists-with-disabilities/>

<https://www.discovery.com/science/LGBT-Scientists-Who-Changed-World>

PRIDE Day STEM Activity:

<https://prideinstem.org/lgbtstemday/>

Unit Resources:

Savvas Elevate Science for 5th Grade, Topic 1 : Properties of Matter p.1-41

Topic 2: Changes in Matter P.42-95

STEM Quest PBL

Websites:

<https://www.fs.usda.gov/ccrc/index.php/>

<http://strandmaps.nsd.org/?id=SMS-MAP-1332>

Science Refreshers

<http://nsdl.org/refreshers/science/>

Science Kids <http://www.sciencekids.co.nz/gamesactivities/gases.html>

<http://archive.fossweb.com/modulesK-2/SolidsandLiquids/activities/changeit.swf>

http://coolsciencelab.com/ice_cream.htm

Unit Assessment Opportunities:

- Journal Entries and Response Sheets
- Observations, Questioning, and discussions
- Comprehension Checks in literature
- Class Webs
- Presentations
- Collaboration
- Projects
- Rubrics (<http://www.nextgenscience.org/resources>)
- Unit Test
- Lesson Check
- Lesson Quiz
- Performance Expectations Activities
- Topic Tests

FAIRFIELD TOWNSHIP SCHOOL
Science Curriculum Guide Grade 5 Unit 2

Subject: Science

Grade Level: 5

Unit 2:Earth's Systems; Earth's water; Human impact on Earth's systems	Pacing: 8 weeks
Essential Questions	Enduring Understandings
<p>What makes up the geosphere?</p> <p>What makes up the biosphere?</p> <p>What makes up the atmosphere?</p> <p>What makes up the hydrosphere?</p> <p>How does a greenhouse work?</p> <p>How do Earth's systems interact with each other?</p> <p>How does the ocean affect other systems on earth?</p> <p>What are the parts of the water cycle?</p>	<p>Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)</p> <p>Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (5-ESS2-2)</p> <p>Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)</p> <p>Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5- ETS1-1)</p>

<p>Where is most of earth's freshwater found?</p> <p>How is water filtered?</p> <p>What are earth's natural resources?</p> <p>Where does earth's energy come from?</p> <p>How do human activities affect earth's resources and environments?</p> <p>How can earth's resources and environments be protected?</p>	
<p>NJSL Standards</p>	<p>Classroom Applications</p>
<p>• 5-ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p>	<p>Science Classroom Activities/Quests:</p> <p>Students will model earth and its systems</p> <p>Students will design and build a greenhouse</p> <p>Students will create a model of the earth's spheres</p> <p>Students will study a precipitation map of a mountain range and compare and contrast the patterns on each side of the mountain</p>

<ul style="list-style-type: none"> • 5-ESS2-2 Describe and graph the amounts of salt 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, environment, and address climate change issues. • 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost 	<p>Students will study the career of an Air Pollution Analyst</p> <p>Students will design and build a terrarium</p> <p>Students will design and build a device to move water and record the data of the water's movements</p> <p>Students will design and create a water filter system</p> <p>Students will compare and contrast water resources</p> <p>Students will study the career of a Water Quality Specialist</p> <p>Students will create solar energy containers</p> <p>Students will build an energy efficient room</p> <p>Students will build a rainwater collection system</p> <p>Students will study the career of an Environmental Scientist</p> <p><u>Vocabulary:</u> biosphere, geosphere, lithosphere, system, atmosphere, hydrosphere, distinguish, greenhouse effect, glacier, aquifer, reservoir, distribute, circulation, tides, salinity, primary, natural resource, nonrenewable resource, renewable resource, mineral, rock, classify, efficient, natural gas, hydroelectric energy, pollution, conservation</p> <p>Teaching Strategies/Materials:</p> <p>Lesson Structure: Anticipatory Set, Mini-Lesson, Whole Group, Small Group, Independent Work, Closure</p>
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Strategies: Think-Pair-Share, Read Aloud, Jigsaw, Investigations, Guided Explorations, Projects

Materials: Mentor Texts, DVDs, Internet, Technology (Smart Board, s Quests:student computers/laptops, PowerPoint, Websites, etc.), supplemental books, visual aids, manipulatives, supplemental materials for investigations

Differentiation Strategies/Modifications

SWD/ Students at risk of failure: 1:1 teacher redirect / re-teach, peer helper, visual aids, modified tests/quizzes, modified homework

Gifted/Enrichment: computer-based research, high level task, class presentation

Connections to other content areas, including Career Readiness, Life Literacies, and Key Skills.

Connections to NJSLS - English Language Arts

- 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-ESS2-1), (5-ESS2-2)
- 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.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-ESS2-1), (5-ESS2-2)
- RI.5.1 Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text. (5-ESS3-1)
- RI.5.9 Integrate and reflect on (e.g. practical knowledge, historical/cultural context, and background knowledge) information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-ESS3-1)
- W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (5-ESS3-1)
- W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic. (3-5-ETS1-1), (3-5-ETS1-3)

Connections to NJSLS - Mathematics

- MP.2 Reason abstractly and quantitatively. (5-ESS2-1), (5-ESS2-2)

- MP.4 Model with mathematics. (5-ESS2-1), (5-ESS2-2)
- 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-ESS2-1)

Career Readiness, Life Literacies, and Key Skills –

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.

9.4.2.CI.2: Demonstrate originality and inventiveness in work .

9.4.2.CT.1: Gather information about an issue, such as climate change and collaboratively brainstorm ways to solve the problem.

9.4.2.CT.2- Identify possible approaches and resources to execute a plan.

9.4.2.CT.3- Use a variety of types of thinking to solve problems (e.g. inductive, deductive).

Unit Resources:

Savvas Elevate Science for 5th Grade Topic 3: Earth's Systems p.96-137

Savvas Elevate Science for 5th Grade Topic 4: Earths Water p.138-179

Savvas Elevate Science for 5th Grade Topic 5: Human Impacts on Earth's Systems p.180-229

Hands-on & Virtual Labs

STEM Quest PBL

List of books to be used:

*See media center for additional resources

Websites:

<https://www.fs.usda.gov/ccrc/index.php/>

Education.com

Easyscienceforkids.org

Kidsgrowingstrong.org/Plant Needs

Ducksters.com/science/photosynthesis.php

Animalatlas.tv

Unit Assessment Opportunities:

- Journal Entries and Response Sheets
- Observations, Questioning, and discussions
- Comprehension Checks in literature
- Class Webs
- Presentations
- Collaboration
- Projects
- Rubrics (<http://www.nextgenscience.org/resources>)
- Unit Test
- Lesson Check
- Lesson Quiz
- Performance Expectations Activities
- Topic Tests

Science Curriculum Guide Grade 5 Unit 3

Subject: Science	Grade Level: 5
Unit 3: Solar System; Patterns in Space	Pacing: 8 weeks
Essential Questions	Enduring Understandings
<p>How big is the sun?</p> <p>How can the brightness of a star determine its distance from earth?</p> <p>How does a planet's distance from the sun affect its path?</p> <p>What is in our solar system?</p> <p>What characteristics describe the outer planets?</p> <p>How are the outer planets aligned?</p> <p>How does gravity work?</p> <p>How does gravity affect matter?</p>	<p>The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1)</p> <p>The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)</p> <p>The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)</p> <p>Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5-ETS1-1)</p>

<p>How does the earth's rotation cause night and day?</p> <p>How and how often does earth revolve around the sun?</p> <p>Why does the time of year affect the amount of daylight?</p> <p>Why do the sun, moon and stars appear at different times?</p> <p>Why do shadows change size and direction during the day?</p>	
<p>NJSL Standards</p>	<p>Classroom Applications</p>
<ul style="list-style-type: none"> • 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-ESS1-2 Represent data in graphical 	<p>Science activities and quests:</p> <p>Students will experiment the correlation between light brightness and distance to model stars</p> <p>Students will build a model of the solar system</p> <p>Students will study the career of an Astronomical Technician</p> <p>Students will compare the sizes of the planets and record the data</p> <p>Students will create a model to study and investigate how gravity works</p>

<p>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.</p> <ul style="list-style-type: none"> • 5-PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed down • 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost 	<p>Students will model the earth's spinning motion</p> <p>Students will study and create a code for moon phases</p> <p>Students will study the career of a Planetarium Curator</p> <p>Vocabulary: star, solar systems, inner planets, orbit, moon, outer planet, asteroid, comet, gravity, exert, axis, rotation, revolution, pattern, shadow, constellation,</p> <p>Teaching Strategies/Materials:</p> <p>Lesson Structure: Anticipatory Set, Mini-Lesson, Whole Group, Small Group, Independent Work, Closure</p> <p>Strategies: Think-Pair-Share, Read Aloud, Jigsaw, Investigations, Guided Explorations, Projects</p> <p>Materials: Mentor Texts, DVDs, Internet, Technology (Smart Board, student computers/laptops, PowerPoint, Websites, etc.), supplemental books, visual aids, manipulatives, supplemental materials for investigations</p> <p>Differentiation Strategies/Modifications</p> <p>SWD/ Students at risk of failure: 1:1 teacher redirect / re-teach, peer helper, visual aids, modified tests/quizzes, modified homework</p> <p>Gifted/Enrichment: computer-based research, high level task, class presentation</p>
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Connections to other content areas, including Career Readiness, Life Literacies, and Key Skills.

Connections to NJSL – English Language Arts

- RI.5.1 Quote accurately from a text and make relevant connections 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 and reflect on (e.g. practical knowledge, historical/cultural context, and background knowledge) 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)
- 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)

Connections to NJSL – 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)

Readiness, Life Literacies, and Key Skills –

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.

9.4.2.CI.2: Demonstrate originality and inventiveness in work.

9.4.2.CT.1: Gather information about an issue, such as climate change and collaboratively brainstorm ways to solve the problem.

9.4.2.CT.2- Identify possible approaches and resources to execute a plan.

9.4.2.CT.3- Use a variety of types of thinking to solve problems (e.g. inductive, deductive).

Unit Resources:

Savvas Elevate Science for 5th Grade, Topic 6: Solar System p. 230-271

Savvas Elevate Science for 5th Grade, Topic 7: Patterns in space p. 272-313

Hands-on & Virtual Labs
STEM Quest PBL

List of books to be used:

Websites:

<https://www.fs.usda.gov/ccrc/index.php/>

<http://strandmaps.nsdl.org/?id=SMS-MAP-1332>

Science Refreshers

<http://nsdl.org/refreshers/science/>

<http://www.sciencekids.co.nz/earth.html>

<http://science.nationalgeographic.com/science/earth/>

SEL -

<https://www.brainpop.com/social-emotional-learning/>

SEL Biographies: <https://www.brainpop.com/social-emotional-learning/>

Unit Assessment Opportunities:

- Journal Entries and Response Sheets
- Observations, Questioning, and Discussions
- Comprehension Checks in Literature
- Class Webs
- Presentations
- Collaboration
- Unit Test
- Lesson Check
- Lesson Quiz
- Performance Expectations Activities

- Topic Tests

FAIRFIELD TOWNSHIP SCHOOL
Science Curriculum Guide Grade 5 Unit 4

Subject: Science	Grade Level: 5
Unit 4: Energy and Food; Matter and Energy in Ecosystems	Pacing: 8 weeks
Essential Questions	Enduring Understandings
<p>How much food do you need?</p> <p>Can you describe how the energy in an animal's food was once energy from the sun?</p> <p>How do plants make food?</p> <p>What are the components of the ecosystem?</p> <p>How do organisms use matter?</p>	<p>The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)</p> <p>Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion</p> <p>Plants acquire their material for growth chiefly from air and water. (5-LS1-1)</p> <p>The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2- 1)</p>

<p>What is the relationship between organisms in an ecosystem?</p> <p>What are the characteristics of a healthy ecosystem?</p> <p>How does change affect an ecosystem?</p> <p>How does matter move through an ecosystem?</p>	<p>Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gasses, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1)</p>
<p>NJSL Standards</p>	<p>Classroom Applications</p>
<ul style="list-style-type: none"> • 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. • 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 	<p>Science Activities and quests:</p> <p>Students will build a model to simulate how the sun is involved in food</p> <p>Students will classify organisms into their proper trophic levels</p> <p>Students will model a sugar molecule with beads</p> <p>Students will classify animals and determine how they get energy</p> <p>Students will study the career of a Nutritionist</p> <p>Students will observe and record the data from an ecosystem</p> <p>Students will conduct an experiment and record the data on how bananas (matter) change/break down in an ecosystem</p>

<p>movement of matter among plants, animals, decomposers, and the environment</p>	<p>Students will use building blocks to model the movement of matter through an ecosystem</p> <p>Students will build a biodome</p> <p>Students will study the career of a Zoologist</p> <p>Vocabulary: herbivore, carnivore, omnivore, photosynthesis, chlorophyll, obtain, endotherm, ectotherm, metabolism, ecosystem, biotic, biotic, community, producer, decomposer, microbe, consumer, food chain, food web, transfer, succession, competition, stable</p> <p>Teaching Strategies and Materials: Mentor Texts, DVDs, Internet, Technology (Smart Board, student computers/laptops, PowerPoint, Websites, etc.), supplemental books, visual aids, manipulatives, supplemental materials for investigations</p> <p>Differentiation Strategies/Modifications</p> <p>SWD/ Students at risk of failure: 1:1 teacher redirect / re-teach, peer helper, visual aids, modified tests/quizzes, modified homework</p> <p>Gifted/Enrichment: computer-based research, high level task, class presentation</p>
<p>Connections to other content areas, including Career Readiness, Life Literacies, and Key Skills:</p> <p><u>Connections to NJSLS - English Language Arts</u></p> <ul style="list-style-type: none"> • 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-PS3-1) • 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-PS3-1) <p>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)</p> <ul style="list-style-type: none"> • 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)

- W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)

Connections to NJSL – 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, real world problems. (5-LS1-1)

Readiness, Life Literacies, and Key Skills –

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.

9.4.2.CI.2: Demonstrate originality and inventiveness in work.

9.4.2.CT.1: Gather information about an issue, such as climate change and collaboratively brainstorm ways to solve the problem.

9.4.2.CT.2- Identify possible approaches and resources to execute a plan.

9.4.2.CT.3- Use a variety of types of thinking to solve problems (e.g. inductive, deductive).

Unit Resources:

Savvas Elevate Science for 5th Grade, Topic 8: Energy and Food p. 314-353

Topic 9: Matter and Energy in Ecosystems p. 354- 403

Hands-on & Virtual Labs

STEM Quest PBL

List of Books to be read:

Websites:

<https://www.fs.usda.gov/ccrc/index.php/>

Education.com

Easyscienceforkids.org

Kidsgrowingstrong.org/Plant Needs

Ducksters.com/science/photosynthesis.php

Animalatlas.tv

Unit Assessment Opportunities:

- Journal Entries and Response Sheets
- Observations, Questioning, and discussions
- Comprehension Checks in literature
- Class Webs
- Presentations
- Collaboration
- Projects
- Rubrics (<http://www.nextgenscience.org/resources>)
- Unit Test
- Lesson Check
- Lesson Quiz
- Performance Expectations Activities
- Topic Tests