



Committed to Excellence

Course Name: Environmental Science	Grade Level(s): 9 th through 12 th
Department: Science	Credits: 1.0
BOE Adoption Date: October 2016	Revision Date(s): October 2017; October 2018; October 2019; September 2022

Course Description and Outcomes

This course is designed to assist the student in becoming more aware of the scientific principles governing the environment. It is intended to develop and refine the ability to identify problems existing or emerging in the environment. This course will help students to evaluate situations and to apply scientific knowledge and skills to make responsible decisions. These goals will be achieved through a systematic and coordinated application of classroom activities, laboratory experiences, and site visitations to local areas of interest.

Most of the content within this course centers on the theme of Earth’s sustainability. As students go through each of the units, they also address the effect that humans have had on planet Earth. As students explore the different themes of the course, they try to investigate solutions to various environmental problems. Major emphasis is placed on how environmental science can help students make informed decisions and how these choices can lead to various outcomes. The growing awareness of global environmental issues is considered a positive indication of a developing global ethic that is necessary to prevent major catastrophe. Instructional time will focus on six critical areas: (1) the forces that shape the earth; (2) meteorological and climatic patterns; (3) abiotic and biotic factors that affect an ecosystem; (4) Human Impact on Biodiversity; (5) Natural Resources; and (6) how pollution affects the biosphere of the Planet Earth.

Proficiencies and Pacing Guide:

Course Title: Environmental Science

Prerequisite(s): N/A

Unit Title:	Duration/ Month(s)	Related Standards:	Learning Goals:	Topics and Skills: Identify the DOK Level
<p>Unit 1: Forces that change the Planet Earth</p>	<p>September to October 6 weeks</p>	<p>Subject Area: NJ Student Learning Standards-S:</p> <ol style="list-style-type: none"> 1. NJSLS-S.HS- ESS2-1 2. NJSLS-S.HS- ESS2-2. 3. NJSLS-S.HS- ESS2-3. 4. NJSLS-S.HS- ESS1-5 	<ul style="list-style-type: none"> •Students will explain how erosional forces (wind, water, and ice) change the landscape of the planet. (2 weeks) •Students will compare and contrast how plate tectonics (volcanoes and earthquakes) change the geology of the planet over time. (2 weeks) •Students will be able to model and describe how different types of erosional forces change the landscape of Earth. (2 weeks) •Students will be able to map and graph different tectonic forces. (2 weeks) 	<ul style="list-style-type: none"> • Students will be able to model costal erosion. • Students will be able to construct a farm that will be able to withstand erosional processes. • Students will be able to define the terms associated with erosional processes and plate tectonics. • Students will be able to differentiate between the destructive properties of basaltic and granitic volcanoes. • Students will be able to graph the destructive power of volcanic eruptions worldwide over written history. • Students will be able to map the location of the ring of fire. • Students will be able to analyze data to find the epicenter of an earthquake. • Students will be able to Design and test how a bridge stands withstands the power of an earthquake.

Unit Title:	Duration/ Month(s)	<u>Related Standards:</u>	Learning Goals:	Topics and Skills: <u>Identify the DOK Level</u>
Unit 2: Climate and Meteorology	October to November 6 weeks	Subject Area: NJ Student Learning Standards-S: 1. NJSLS-S.HS-ESS2-2 2. NJSLS-S.HS-ESS2-4 3. NJSLS-S.HS-ESS2-5 4. NJSLS-S.HS-ESS2-6 5. NJSLS-S.HS-ETS1-3 6. NJSLS-S.HS-ETS1-4	<ul style="list-style-type: none"> • Students will be able to create and monitor a weather station. (6 weeks) • Students will be able to analyze weather maps to predict extreme weather. (2 weeks) • Students will be able to compare and contrast the different types of fronts. (1 weeks) • Students will be able to determine the climate of different locations around the globe. (3 weeks) 	<ul style="list-style-type: none"> • Students will be able to make observations of daily weather in the Woolwich New Jersey area. • Students will be able to analyze a weather map. • Students will be able to compare and contrast different types of fronts. • Students will be able to model the Water Cycle. • Students will be able to model heat transfer in the troposphere. • Students will be able to measure the temperature on wet and dry bulb thermometers to determine relative humidity. • Students will be able to graph temperature and precipitation data of New Jersey. • Students will be able to demonstrate how scientists estimate historical climate data using ice cores. • Students will be able to investigate the link between carbon dioxide and temperature.
Unit 3: Abiotic and Biotic Factors in an Ecosystem	November to December 6 weeks	Subject Area: NJ Student Learning Standards-: 1. NJSLS-S.HS-LS2-1 2. NJSLS-S.HS-LS2-2	<ul style="list-style-type: none"> • Students will be able to compare and contrast the different types of abiotic and biotic factors that influence an ecosystem. (6 weeks) • Students will be able to design and 	<ul style="list-style-type: none"> • Students will be able to investigate how light (normal and dark light) intensity affects plant growth. • Students will be able to analyze ecological data and graphs to

Unit Title:	Duration/ Month(s)	Related Standards:	Learning Goals:	Topics and Skills: Identify the DOK Level
		3. NJSLS-S.HS-LS2-3 4. NJSLS-S.HS-LS2-4. 5. NJSLS-S.HS-LS2-5 6. NJSLS-S.HS-LS2-6 7. NJSLS-S.HS-LS2-7 8. NJSLS-S.HS-LS2-8	<p>run a long term project on how light intensity affects plant growth. (6 weeks)</p> <ul style="list-style-type: none"> • Students will be able to determine how abiotic factors affect a species. (3 weeks) • Students will be able to determine how biotic factors affect a species. (3 weeks) 	<p>come to a conclusion on how different factors shape an ecosystem.</p> <ul style="list-style-type: none"> • Students will be able to measure the water holding capacity of three different types of soils to conclude which soil is best for growing flowers in New Jersey. • Students will be able to simulate a molecule of carbon’s movement throughout various locations within the carbon cycle. • Students will be able to investigate how dark land surfaces, light land surfaces and water all heat at different rates. • Students will be able to test a how a cricket subject responds to temperature changes. • Students will be able to compare and contrast the similarities and differences between different groups of animals. • Students will be able to test how different chemicals found in a lake environment affects the blood flow in a goldfish. • Students will be able to explain how completion in an ecosystem occurs.

Unit Title:	Duration/ Month(s)	<u>Related Standards:</u>	Learning Goals:	Topics and Skills: <u>Identify the DOK Level</u>
Unit 4: Human Impact on biodiversity	January to February 6 weeks	Subject Area: NJ Student Learning Standards-: 1. NJSLS-S. HS-ESS3-1. 2. NJSLS-S. HS-ESS3-2. 3. NJSLS-S. HS-ESS3-3. 4. NJSLS-S. HS-ESS3-4. 5. NJSLS-S. HS-ESS3-5. 6. NJSLS-S. HS-ESS3-6.	<ul style="list-style-type: none"> •Students will be able to connect how human population growth causes a decrease of overall biodiversity in an ecosystem. (1 week) •Students will be able to investigate how urbanization of an area can cause a loss of habitat. (1 week) •Students will be able to connect how habitat destruction causes a reduction in overall biodiversity. (6 weeks) •Students will be able to explain how biodiversity is increased by the formation of new species (speciation) and decreased by the loss of species (extinction). (2 weeks) 	
Unit 5: Resources on the Planet Earth	March to April 6 weeks	Subject Area: NJ Student Learning Standards-: 1. NJSLS-S. HS-ESS3-1. 2. NJSLS-S. HS-ESS3-2. 3. NJSLS-S. HS-ESS3-3. 4. NJSLS-S. HS-ESS3-4. 5. NJSLS-S. HS-ESS3-5. 6. NJSLS-S. HS-ESS3-6.	<ul style="list-style-type: none"> •Students will be able to investigate how land resources are developed. (2 weeks) •Students will be able to investigate the different uses of water resources (2 weeks) •Students will be able to analyze the cost of using nonrenewable resources to an ecosystem. (2 weeks) •Students will be able to develop a logical argument that a renewable resource is the right choice for the 	<ul style="list-style-type: none"> •Students will be able to construct a watershed model to determine the movement of water resources. •Students will be able to calculate the amount of water for human consumption to determine if the planet is in water crisis. •Students will be able to develop a plan to use land resources in a responsible matter. •Students will be able to compare and contrast the positive and negatives of renewable resources.

Unit Title:	Duration/ Month(s)	Related Standards:	Learning Goals:	Topics and Skills: Identify the DOK Level
			<p>future energy consumption. (2 weeks)</p> <ul style="list-style-type: none"> •Students will be able to research and present information on the different types of natural resources. (2 weeks) 	<ul style="list-style-type: none"> •Students will be able to compare and contrast the positive and negatives of nonrenewable resources. •Students will be able to investigate which types of fossil fuels are the most likely to be replaced in the future
Unit 6: Pollution	May to June 6 weeks	Subject Area: NJ Student Learning Standards-: <ol style="list-style-type: none"> 1. NJSLS-S. HS-ESS3-1. 2. NJSLS-S. HS-ESS3-2. 3. NJSLS-S. HS-ESS3-3. 4. NJSLS-S. HS-ESS3-4. 5. NJSLS-S. HS-ESS3-5. 6. NJSLS-S. HS-ESS3-6. 	<ul style="list-style-type: none"> •Students will be able investigate how air pollution affects the health of an ecosystem. (2 weeks) •Students will be able to analyze how pollution affects water quality. (2 weeks) •Students will be able to research how noise pollution affects the wellness of humans. (2 weeks) •Students will be able to investigate how light pollution affects different organisms in an ecosystem. •Students will be able to research and present information about the damage pollution does to an ecosystem. (2 weeks) 	<ul style="list-style-type: none"> •The student will be able to explain the effect of human influences on the atmosphere. •The student will be able to Identify major air pollutants and their sources. •The student will be able to investigate the impact of air pollutants on human health. •The student will be able to compare and contrast the effects of acid rain, ozone depletion, and global warming on living and nonliving environments. •The student will be able to investigate the problems caused by noise and light pollution. •The student will be able to model the affects to an environment of an oil spill. •The student will be able to complete a long term stem project detailing how acid rain affects the growth of plants.

Unit 1: Forces that Change the Planet Earth	Unit Length: 6 weeks
<p>Unit Description: This unit is designed to guide students in understanding and identifying processes that shape the planet Earth over time and how these processes affect humans in terms of cost to governments and the loss of habitat. The students will learn that the planet has been subjected since its formation to much different type of forces such as platonic and erosional and that these forces are still active today. Vocabulary will be taught in context throughout the unit. The unit culminates with a STEM Project (Build of a bridge that can withstand an earthquake) and a summative written assessment.</p>	
<p>To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet. These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.</p>	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will explain how erosional forces (wind, water, and ice) change the landscape of the planet. • Students will compare and contrast how plate tectonics (volcanoes and earthquakes) change the geology of the planet over time. • Students will be able to model and describe how different types of erosional forces change the landscape of Earth. • Students will be able to map and graph different tectonic forces. 	<ul style="list-style-type: none"> • Students will be able to model costal erosion. • Students will be able to construct a farm that will be able to withstand erosional processes. • Students will be able to define the terms associated with erosional processes and plate tectonics. • Students will be able to differentiate between the destructive properties of basaltic and granitic volcanoes. • Students will be able to graph the destructive power of volcanic eruptions worldwide over written history. • Students will be able to map the location of the ring of fire. • Students will be able to analyze data to find the epicenter of an earthquake. • Students will be able to Design and test how a bridge stands withstands the power of an earthquake.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • How do forces change the Planet Earth? 	<ul style="list-style-type: none"> • The surface of the earth changes. Some changes are due to slow processes, such as erosion and weathering, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes. The slow processes include Wind, water, and ice which erode and shape the land. The faster processes of volcanic activity and earthquakes alter the landscape in a dramatic and often violent manner. And on a much longer timescale, the movement of earth’s plates slowly changes oceans and continents.

Secondary Assessments (Formative)	Primary Assessments(Summative):
Weathering, Erosion and Deposition Quiz Unit 1 Quiz Convection Lab CER	Density Lab Convection Lab

Interdisciplinary Connections: [Core Area Connections](#)

- Math
- NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking
- ELA
- Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.
 - Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
 - Read and comprehend complex literary and informational texts independently and proficiently.
 - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Equity Integration (Using James Banks' Levels of Multicultural Integration):
- Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2)
 - #Scientistswhoselfie activity: Students will investigate and explore multiple scientists from backgrounds unlike their own (differing cultures, races, ethnicities, genders) (Level 2-3)
 - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information. (Level 1)
 - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts (such as density) creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)

Career Ready Practices: [Note Career Ready Practices used](#)

- NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.
- NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.
- NJSLS.CLKS.4 Demonstrate creativity and innovation.
- NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.
- NJSLS.CLKS.6 Model integrity, ethical leadership and effective management.
- NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.
- NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.
- NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.
NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.
NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
NJSLS.9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities.
NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy
NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA
Schoology materials
Explore Learning Gizmos
Those materials/texts/resources needed/referred to throughout the unit. Possible supplemental materials throughout the unit.

Unit 2: Climate and Meteorology	Unit Length: 6 weeks
Unit Description: The purpose of this unit is to identify how climatic and meteorological patterns form locally and globally. The student's will model how these patterns are affected by geological and manmade structures. Also students will investigate daily weather patterns in our area by creating and monitoring a weather station in the classroom. The Unit will wrap up with the students analyzing and graphing the data gathered from the weather station over time.	
To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet . These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will be able to create and monitor a weather station. • Students will be able to analyze weather maps to predict extreme weather. • Students will be able to compare and contrast the different types of fronts. • Students will be able to determine the climate of different locations around the globe. 	<ul style="list-style-type: none"> • Students will be able to make observations of daily weather in the Woolwich New Jersey area. • Students will be able to analyze a weather map. • Students will be able to compare and contrast different types of fronts. • Students will be able to model the Water Cycle. • Students will be able to model heat transfer in the troposphere. • Students will be able to measure the temperature on wet and dry bulb thermometers to determine relative humidity. • Students will be able to graph temperature and precipitation data of New Jersey. • Students will be able to demonstrate how scientists estimate historical climate data using ice cores. • Students will be able to investigate the link between carbon dioxide and temperature.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • How do climatic and meteorological patterns form locally and globally? 	<ul style="list-style-type: none"> • Weather, which varies from day to day and seasonally throughout the year, is the condition of the atmosphere at a given place and time. Climate is longer term and location- sensitive; it is the range of a region's weather over one year or many years, and, because it depends on latitude and geography, it varies from place to place. Weather and climate are shaped by complex interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions can drive changes that occur over

	multiple time scales—from days, weeks, and months for weather to years, decades, centuries, and beyond for climate.
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Secondary Assessments (Formative)	Primary Assessments(Summative):
Ocean Acidification Lab Graphing Global Annual Temperatures	Heat Transfer Lab Climate Change CER Ocean Acidification Analysis Questions

Interdisciplinary Connections: [Core Area Connections](#)

- Math
- NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking
- ELA
- Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.
 - Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
 - Read and comprehend complex literary and informational texts independently and proficiently.
 - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Equity Integration (Using James Banks’ Levels of Multicultural Integration):
- Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2)
 - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information.(Level 1)
 - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)

Career Ready Practices: [Note Career Ready Practices used](#)

- NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.
- NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.
- NJSLS.CLKS.4 Demonstrate creativity and innovation.
- NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.
- NJSLS.CLKS.6 Model integrity, ethical leadership and effective management.
- NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.
- NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.
- NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.

NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.

NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.

NJSLS.9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities.

NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy

NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.

NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.

NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).

NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA

Schoology materials

Explore Learning Gizmos

New York Times- Climate Articles

Those materials/texts/resources needed/referred to throughout the unit.

Possible supplemental materials throughout the unit.

Unit 3: Abiotic and Biotic Factors that Shape an Ecosystem	Unit Length: 6 weeks
<p>Unit Description: Students will learn how abiotic and biotic factors influence the type of organisms in an ecosystem. The number of organisms an ecosystem can support depends on the resources available and abiotic factors (e.g., quantity of light and water, range of temperatures, soil composition). Given adequate biotic and abiotic resources and no diseases or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem.</p>	
<p>To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet. These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.</p>	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will be able to compare and contrast the different types of abiotic and biotic factors that influence an ecosystem. • Students will be able to design and run a long term project on how light intensity affects plant growth. • Students will be able to determine how abiotic factors affect a species. • Students will be able to determine how biotic factors affect a species. 	<ul style="list-style-type: none"> • Students will be able to investigate how light (normal and dark light) intensity affects plant growth. • Students will be able to analyze ecological data and graphs to come to a conclusion on how different factors shape an ecosystem. • Students will be able to measure the water holding capacity of three different types of soils to conclude which soil is best for growing flowers in New Jersey. • Students will be able to simulate a molecule of carbon’s movement throughout various locations within the carbon cycle. • Students will be able to investigate how dark land surfaces, light land surfaces and water all heat at different rates. • Students will be able to test a how a cricket subject responds to temperature changes. • Students will be able to compare and contrast the similarities and differences between different groups of animals. • Students will be able to test how different chemicals found in a lake environment affect the blood flow in a goldfish. • Students will be able to explain how completion in an ecosystem occurs.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • How do abiotic and biotic factors shape an ecosystem? 	<ul style="list-style-type: none"> • Both abiotic and biotic factors determine both where an organism can live and how much a population can grow. Abiotic factors include moisture, sunlight, soil chemistry, temperature, water chemistry and

	<p>precipitation. These factors have a significant impact on the reproduction and survival of each species in an ecosystem. Without the right amount of sunlight or moisture, for example, some plants are unable to survive. If these plants die, there is less food available for plant-eating animals. Biotic factors include all the living organisms in an ecosystem, their interactions and their waste products. Some organisms produce their own food, while others eat plants and animals. A few organisms even eat waste products and decaying matter. All of these interactions affect the reproduction and survival of each species.</p>
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Secondary Assessments (Formative)	Primary Assessments(Summative):
Energy Transfer Quiz Limiting Factors Quiz Levels of Organization Quiz Symbiosis Quiz	Energy Transfer Project Growing Plants Gizmo CER

Interdisciplinary Connections: <u>Core Area Connections</u>
<p>Math</p> <ul style="list-style-type: none"> - NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking <p>ELA</p> <ul style="list-style-type: none"> - Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. - Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. - Read and comprehend complex literary and informational texts independently and proficiently. - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. <p>Equity Integration (Using James Banks’ Levels of Multicultural Integration):</p> <ul style="list-style-type: none"> - Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2) - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information.(Level 1) - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)
Career Ready Practices: Note Career Ready Practices used

NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.
 NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.
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 NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.
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 NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.
 NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.
 NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.
 NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.
 NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
 NJSLS.9.4.12.Cl.2: Identify career pathways that highlight personal talents, skills, and abilities.
 NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy
 NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
 NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
 NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
 NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
 NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA
 Schoology materials
 Explore Learning Gizmos
 Those materials/texts/resources needed/referred to throughout the unit.
 Possible supplemental materials throughout the unit.

Unit 4: Human Impact on Biodiversity	Unit Length: 6 weeks
<p>Unit Description: In this unit of study, mathematical models provide support for students’ conceptual understanding of systems and students’ ability to design, evaluate, and refine solutions for reducing the impact of human activities on the environment and maintaining biodiversity. Students create or revise a simulation to test solutions for mitigating adverse impacts of human activity on biodiversity. Crosscutting concepts of systems and system models play a central role in students' understanding of science and engineering practices and core ideas of ecosystems. Mathematical models also provide support for students' conceptual understanding of systems and their ability to develop design solutions for reducing the impact of human activities on the environment and maintaining biodiversity.</p>	
<p>To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet. These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.</p>	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will be able to connect how human population growth causes a decrease of overall biodiversity in an ecosystem. • Students will be able to investigate how urbanization of an area can cause a loss of habitat. • Students will be able to connect how habitat destruction causes a reduction in overall biodiversity. • Students will be able to explain how biodiversity is increased by the formation of new species (speciation) and decreased by the loss of species (extinction). 	<ul style="list-style-type: none"> • Students will be able to graph human population growth. • Students will be able to model population growth. • Students will be able to critique their own ecological footprint. • Students will be able to map a changing urban setting. • Students will be able to formulate possible solutions to the problem of conserving biodiversity in a human-managed ecosystem. • Students will be able to graph how the pesticide DDT affected the biodiversity of eagle populations in the United States. • Students will be able to model how the overharvesting of red drum fish affects biodiversity. • Students will be able to demonstrate the need for habitat preservation for the benefit of threatened and endangered species.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • How does human development impact the biodiversity in an ecosystem? 	<ul style="list-style-type: none"> • Due to evolution, there are a great number of different organisms which fill many different roles in ecosystems. Increased biodiversity increases the stability of the ecosystem. As diversity is lost, potential sources of these materials for these discoveries may be lost with it. A great diversity of species provides for variations which increase the chance that at least some living things will survive in the face of large changes in the environment. When humans alter ecosystems either by removing specific organisms, serious

	consequences may result. Human beings are part of the Earth’s ecosystems. Human activities can, deliberately or accidentally, change the equilibrium in ecosystems. Humans are destroying other species as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is especially threatening current global biodiversity.
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Secondary Assessments (Formative)	Primary Assessments(Summative):
Human Impact Vocabulary Quiz Sustainable Agriculture CER	Human Impact/Endangered Species Project

Interdisciplinary Connections: [Core Area Connections](#)

<p>Math</p> <ul style="list-style-type: none"> - NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking <p>ELA</p> <ul style="list-style-type: none"> - Integrate and evaluate content presented in diverse formats and media,including visually and quantitatively, as well as in words. - Delineate and evaluate the argument and specific claims in a text,including the validity of the reasoning as well as the relevance and sufficiency of the evidence. - Read and comprehend complex literary and informational texts independently and proficiently. - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. <p>Equity Integration (Using James Banks’ Levels of Multicultural Integration):</p> <ul style="list-style-type: none"> - Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2) - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information.(Level 1) - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)
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Career Ready Practices: [Note Career Ready Practices used](#)

<p>NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.</p> <p>NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.</p> <p>NJSLS.CLKS.4 Demonstrate creativity and innovation.</p> <p>NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>NJSLS.CLKS.6 Model integrity, ethical leadership and effective management.</p> <p>NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.</p> <p>NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.</p>

NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.

NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.

NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.

NJSLS.9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities.

NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy

NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.

NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.

NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).

NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA

Schoology materials

Explore Learning Gizmos

Those materials/texts/resources needed/referred to throughout the unit.

Possible supplemental materials throughout the unit.

Unit 5: Earth's Resources	Unit Length: 6 weeks
<p>Unit Description: We all rely on energy in our daily lives, from the foods that we eat to transportation to lighting and heating our homes. As our human population continues to grow exponentially, our consumption of coal, oil, and natural gas rises with it—along with global temperatures. The energy that we currently use comes from non-renewable sources, which produce the greenhouse gas carbon dioxide. This unit explores the consequences of our current energy consumption habits. It addresses renewable energy sources such as biomass, biofuels, solar, wind, and hydrogen technologies. Carbon sequestration is also discussed as a potential solution for removing carbon dioxide from the atmosphere and storing it in the ground.</p>	
<p>To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet. These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.</p>	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will be able to investigate how land resources are developed. • Students will be able to investigate the different uses of water resources • Students will be able to analyze the cost of using nonrenewable resources to an ecosystem. • Students will be able to develop a logical argument that a renewable resource is the right choice for the future energy consumption. • Students will be able to research and present information on the different types of natural resources. 	<ul style="list-style-type: none"> • Students will be able to construct a watershed model to determine the movement of water resources. • Students will be able to calculate the amount of water for human consumption to determine if the planet is in water crisis. • Students will be able to develop a plan to use land resources in a responsible matter. • Students will be able to compare and contrast the positive and negatives of renewable resources. • Students will be able to compare and contrast the positive and negatives of nonrenewable resources. • Students will be able to investigate which types of fossil fuels are the most likely to be replaced in the future.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • What are the different types of natural resources found on the planet earth? 	<ul style="list-style-type: none"> • There are many different type of resources that humans use to make their life easier. Nonrenewable energy resources (fossil fuels and nuclear), like coal, nuclear, oil, and natural gas, are available in limited supplies. This is usually due to the long time it takes for them to be replenished. Renewable resources (wind, solar, water, and geological) are replenished naturally and over relatively short periods of time. Water resources are under major stress around the world. Rivers, lakes, and underground aquifers supply

	<p>water for drinking and sanitation, while the oceans provide habitat for a large share of the planet’s food supply. Land Resources occupy nearly 20 percent of the earth surface. The houses, roads and factories occupy nearly one third of the land. The forests occupy another one third of the land. The rest of land is used for plowing and for meadows and pastures.</p>
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Secondary Assessments (Formative)	Primary Assessments(Summative):
<p>Resources Vocabulary Quiz Renewable Resources Project Presentation</p>	<p>Renewable Resources Project</p>

Interdisciplinary Connections: [Core Area Connections](#)

- Math
- NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking
- ELA
- Integrate and evaluate content presented in diverse formats and media,including visually and quantitatively, as well as in words.
 - Delineate and evaluate the argument and specific claims in a text,including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
 - Read and comprehend complex literary and informational texts independently and proficiently.
 - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Equity Integration (Using James Banks’ Levels of Multicultural Integration):**
- Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2)
 - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information.(Level 1)
 - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)

Career Ready Practices: [Note Career Ready Practices used](#)

- NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.
- NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.
- NJSLS.CLKS.4 Demonstrate creativity and innovation.
- NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.
- NJSLS.CLKS.6 Model integrity, ethical leadership and effective management.
- NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.
- NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.
- NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.

NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.

NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.

NJSLS.9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities.

NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy

NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.

NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.

NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).

NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA

Schoology materials

Explore Learning Gizmos

Those materials/texts/resources needed/referred to throughout the unit.

Possible supplemental materials throughout the unit.

Unit 6: Pollution	Unit Length: 6 weeks
<p>Unit Description: The increase in world population and the growth of industry have resulted in an increase in atmospheric pollution. This pollution is the cause of many deaths and serious health problems. To further understand atmospheric pollution, we must study where pollutants come from, how they behave, and how they are globally transported. Then it will be possible to make changes in our society that will allow us to live longer, healthier lives.</p>	
<p>To ensure the needs of all learners (including but not limited to, special education, 504, ELL, & advanced learners) are met when delivering instruction and assessing students, please refer to the district approved Instructional & Assessments Supports: Accommodations/Modification Reference Sheet. These must be used in the planning and delivery of instruction. Specific student learning activities, differentiated instructional techniques and accommodations/modifications are noted in Schoology.</p>	

Learning Goals:	Learning Objectives:
<ul style="list-style-type: none"> • Students will be able investigate how air pollution affects the health of an ecosystem. • Students will be able to analyze how pollution affects water quality. • Students will be able to research how noise pollution affects the wellness of humans. • Students will be able to investigate how light pollution affects different organisms in an ecosystem. • Students will be able to research and present information about the damage pollution does to an ecosystem. 	<ul style="list-style-type: none"> • The student will be able to explain the effect of human influences on the atmosphere. • The student will be able to identify major air pollutants and their sources. • The student will be able to investigate the impact of air pollutants on human health. • The student will be able to compare and contrast the effects of acid rain, ozone depletion, and global warming on living and nonliving environments. • The student will be able to investigate the problems caused by noise and light pollution. • The student will be able to model the effects to an environment of an oil spill. • The student will be able to complete a long term stem project detailing how acid rain affects the growth of plants.
Essential Questions:	Enduring Understandings:
<ul style="list-style-type: none"> • How does pollution affect biodiversity in an ecosystem? 	<ul style="list-style-type: none"> • Pollution is the introduction of harmful contaminants into air, water or soil. These contaminants can have dire effects on entire ecosystems, making life more difficult for humans, plants and animals. Children and the elderly are particularly susceptible to the health effects from these toxins. In many cases, exposure to pollution has a cumulative effect on the body. Air pollution consists of solid particles and gases. Many pollutants are carcinogens. People who breathe in these poisons are at a higher risk for asthma and reproductive-system damage. Water is a necessity of life. People and animals need clean drinking water. Farmers need water to irrigate crops. People enjoy using lakes and rivers for recreation. Unfortunately, this precious resource is

	easily contaminated by agricultural runoff, mining activities, waste treatment plants and improperly disposed-of industrial waste.
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Secondary Assessments (Formative)	Primary Assessments(Summative):
Pollution Vocabulary Quiz Pollution Types Analysis	Pollution Project

Interdisciplinary Connections: [Core Area Connections](#)

- Math
- NJSLS-Science practices require the analysis and interpretation of data, the use of mathematical and computational thinking
- ELA
- Integrate and evaluate content presented in diverse formats and media,including visually and quantitatively, as well as in words.
 - Delineate and evaluate the argument and specific claims in a text,including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
 - Read and comprehend complex literary and informational texts independently and proficiently.
 - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- Equity Integration (Using James Banks’ Levels of Multicultural Integration):**
- Classroom supplies: students will have access to all needed classroom supplies regardless of socioeconomic background. (Level 2)
 - Posters of minority scientist contributors are posted around the classroom, and the contributions of minority members are emphasized when presenting information.(Level 1)
 - Physical demonstrations and Labs: These activities demonstrate over-arching class concepts creating a shared experience for students who may not have background knowledge of those concepts. (Level 2)

Career Ready Practices: [Note Career Ready Practices used](#)

- NJSLS.CLKS.1 Act as a responsible and contributing community member and employee.
- NJSLS.CLKS.3 Consider the environmental, social and economic impacts of decisions.
- NJSLS.CLKS.4 Demonstrate creativity and innovation.
- NJSLS.CLKS.5 Utilize critical thinking to make sense of problems and persevere in solving them.
- NJSLS.CLKS.6 Model integrity, ethical leadership and effective management.
- NJSLS.CLKS.7 Plan education and career paths aligned to personal goals.
- NJSLS.CLKS.8 Use technology to enhance productivity, increase collaboration and communicate effectively.
- NJSLS.CLKS.9 Work productively in teams while using cultural/global competence.

Career Readiness, Life Literacies, & Key Skills (21st Century Themes and Skills): [Note applicable 2020 NJ standards 9.1, 9.2, 9.3 or 9.4 within the unit](#)

NJSLS.9.2.12.CAP.6 Identify transferable skills in career choices and design alternative career plans based on those skills.
NJSLS.9.2.12.CAP.8 Determine job entrance criteria (e.g., education credentials, math/writing/ reading comprehension tests, and drug tests) used by employers in various industry sectors.
NJSLS.9.2.12.CAP.7 Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
NJSLS.9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities.
NJSLS.9.3.ST.4: Understand the nature and scope of the Science, Technology, Engineering, and Mathematics career cluster and role of STEM in society and the economy
NJSLS.9.3.ST.5: Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM pathways

Integration of Technology: [Note applicable 2020 standards 8.1 & 8.2 used within the unit](#)

NJSLS.8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
NJSLS.8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
NJSLS.8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
NJSLS.8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
NJSLS.8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution

Course/Unit Resources:

NewsELA
Schoology materials
Explore Learning Gizmos
Pollution Videos
Those materials/texts/resources needed/referred to throughout the unit.
Possible supplemental materials throughout the unit.