Science Department
Geophysical Science Curriculum

Scope and Sequence

Number of Days Running (approximate) September - June (56 minute block base)	Unit
45 days	Earth: The Physical Environment
45 days	Exploring the Properties of Matter
45 days	Working with Motors and Simple Machines
45 days	Investigating Electricity and Circuit Design

Unit 1
Earth: The Physical Environment
Summary and Rationale
Students will participate in interactive lessons that provide opportunities to explore plate tectonics theories and movement, convection currents, paleomagnetism, volcanic formations and hazard, and earthquake activity. Through these investigations, students will have the opportunity to learn about the development of Earth and how predictions can be made about the future by examining where we have been in the past.
Recommended Pacing
45 days

Standards	
HS-ESS2-1	Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features
HS-ESS2-2	Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems
HS-ESS2-3	Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection
HS-ESS2-4	Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate
HS-ESS2-5	Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes
Interdisciplinary Connections	
NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
NJSLSA.R2	Determine the central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas
RI.11-12.1 RI.9-10.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of what the text says explicitly as well as inferentially, including determining where the text leaves matters uncertain.
NJSLSA.W1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence
Integration of Technology	
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge
8.2	All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment

Instructional Focus	
Enduring Understandings:	**Essential Questions:**
The Earth is composed of systems that work together. The systems of the Earth interact with one another an action in one has an effect on another.	What is the Rock Cycle? What is classification? What are rocks?

Rocks can tell a tale of geologic happenings on Earth by examining their cycle. Geologic hazards can change the landscape of the Earth as well as the populations that inhabit the planet. Fossil records provide evidence of Earth's past organization and can provide records of the movement of Earth's plates.	How are Igneous Rocks classified? What are Sedimentary Rocks? How do Metamorphic Rocks form? What is Earth's internal structure? What causes earthquakes? How are earthquakes measured? How are earthquakes located? What is inside Earth? How has geologic time been divided What are fossils and how do they provide evidence of our Earth's past? How do geologic hazards such as volcanoes and earthquakes change our Earth?
Evidence of Learning (Assessments)	
Unit I Assessment: Earth's Physical Composition Various formative assessments Lab write ups	
Objectives (SLO)	
Students will know: That rocks go through a never-ending process of change. The concept of a classification system. The three main types of rocks. That igneous rocks are identified by composition and texture. That sedimentary rocks that are formed chemically, organically, or by the compaction of sediments. Sedimentary rocks are identified by their texture. That metamorphic rocks are formed through the application of heat and pressure. The various transformations that rocks undergo and trace a rock through the rock cycle. Earth's interior and how it is related to plate tectonics That when plates come in contact with each other, various types of boundaries are formed: convergent, divergent and transform. The causes of earthquakes and how heat energy moves through Earth.	Students will be able to: Identify the main properties of rocks and minerals and identify the different ways of identification. Identify the main plates that make up Earth's crust and discuss their movement and theories behind their movement Discuss the Geologic Time Scale and associated fossil records.

The differences among the Richter, seismic moment, and Mercalli scales. Seismogram data and plot earthquake locations using the triangulation method. The shadow zone phenomenon is used to identify three layers of Earth. About natural hazards and specifically Earthquakes. About volcanic hazards.	

Suggested Resources/Technology Tools

Rock Cycle Exploration Online
Hands-on Rock Activity NASA
History of the Earth Classroom Activity
History of Earth Resource
https://nj.pbslearningmedia.org/resource/ess05.sci.ess.earthsys.lp_volcanoes/volcanoes/
http://stem-works.com/subjects/8-earthquakes/activities
https://www.teachengineering.org/lessons/view/cub_natdis_lesson03

Modifications

Teachers can choose from these suggested modifications based upon teaching style, instructional methods and needs of individual students.

General Modifications for students struggling to learn:

- Focus on building relationships in the classroom.
- Control the stressors for the student and manage alternate pathways for completion of assignments.
- Provide feedback utilizing a growth mindset and praise what is done correctly based upon effort, attitude and strategy.
- Boost engagement with material by providing opportunities of differentiation, group work and alternative assignments/assessments where appropriate.

ELL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.
- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow ELL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE “Take a stab at it.” Ensure students understand what is meant.
- Use directed reading activities. Ensure preview of text before assigned/read, provide pre-reading questions about the main idea and offer help utilizing key words.
- Allow the use of Google Translate where appropriate.
- Utilize bilingual reading texts provided by the STC program.

G/T

Utilize differentiation in the areas of acceleration, enrichment, and grouping. Examples include, but are not limited to:

- interdisciplinary and problem-based assignments with planned scope and sequence
- advance, accelerated, or compacted content
- abstract and advanced higher-level thinking
- allowance for individual student interests
- assignments geared to development in areas of affect, creativity, cognition, and research skills

- complex, in-depth assignments
- diverse enrichment that broadens learning
- variety in types of resources
- internships, mentorships and independent study where applicable

504/IEP

Modifications and accommodations must be aligned to stated plan and uphold expectations of the plan lawfully. Every student requires a different set of accommodations based upon need. Examples specific to science practice include, but are not limited to:

- Note taker or lab assistant
- Group lab assignments
- Use of scribe
- Adjustable tables and lab equipment within reach
- Classrooms, labs and field trips in accessible locations
- Additional time and separate room for test taking
- Additional time for in-class assignments
- Additional time in lab
- Visual and tactile instructional demonstrations
- Computer with voice output, spelling and grammar checker
- Seating in the front of the class
- Tactile drawings and graphs, and three-dimensional models
- Assignments in electronic format
- Large-print handouts, lab signs and equipment labels
- TV monitor connected to microscope to enlarge images
- Computer equipped to enlarge screen characters and images
- Auditory lab warning signals
- Adaptive lab equipment (talking calculators, talking thermometers, light probes, tactile timers)
- Staples on sticks to indicate units of measurement
- Visual warning system for lab emergencies

21ST CENTURY LIFE AND CAREER STANDARDS

Please select all standards that apply to this unit of study:

- ✓ Act as a responsible and contributing citizen and employee.
- ✓ Apply appropriate academic and technical skills.
- ○ Attend to personal health and financial well being.
- ✓ Communicate clearly and effectively and with reason.
- ✓ Consider the environmental social and economic impacts of decisions.
- ✓ Demonstrate creativity and innovation.
- ✓ Employ valid and reliable research strategies.
- ✓ Utilize critical thinking to make sense of problems and persevere in solving them.
- ✓ Model integrity, ethical leadership, and effective management.
- ✓ Plan education and career paths aligned to personal goals.
- ✓ Use technology to enhance productivity.
- ✓ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: http://www.state.nj.us/education/cccs/2014/career/9.pdf

LINKS TO CAREERS:

https://www.dal.ca/academics/programs/undergraduate/earth-sciences/what_can_I_do/career_opportunities.html

Unit 2	
Exploring the Properties of Matter	
Summary and Rationale	
In this unit, students will focus on the properties of matter and perform explorations to determine the identity of matter based upon these properties. Students will explore topics such as mass, volume, density, phase changes and others related to the characteristics of matter. Concepts from middle school will be reopened and expanded upon, utilizing increased independence in mathematical computation, experimental design and data analysis.	
Recommended Pacing	
45 days	
Standards	
MS-PS1-1	Develop models to describe the atomic composition of simple molecules and extended structures
MS-PS1-4	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed
MS-PS1-5	Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved
Interdisciplinary Connections	
NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
NJSLSA.R2	Determine the central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas
RI.11-12.1 RI.9-10.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of what the text says explicitly as well as inferentially, including determining where the text leaves matters uncertain.
NJSLSA.W1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence
HSN.Q.A.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays
Integration of Technology	

8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge
8.2	All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Matter has characteristic properties that can be used to identify it. Matter will behave in different conditions based upon its characteristic properties. Density is a constant and is a commonly used characteristic property of matter. Matter changes form but not identity in phase changes. Matter is a constant as per the Law of Conservation. Solutions can be made and the ratio of solute/solvent depends upon saturation.	How can unique characteristic properties of a substance be measured and used to identify the substance? What predictions about the activity of matter can be made when knowing its density? What is heat? What happens to density when it is exposed to various temperatures? Does matter change its identity in a phase change? What happens to the molecules in matter during phase changes? Does an object's mass change when it undergoes a phase change? What happens when solids and liquids interact with one another? What does it mean to saturate a solution? What is the relationship between solute, solvent and solution?

Evidence of Learning (Assessments)

Unit 2 Assessment: Properties of Matter
Various formative assessments
Lab write ups

Objectives (SLO)

Students will know:	Students will be able to:
The appropriate way to plan and conduct an investigation using the appropriate steps and requirements of the scientific method. The Law of Conservation of Matter. The concept of phase changes and how it relates to change in state but not composition of matter.	Students will be able to have ideas and misconceptions about matter and its properties Students will be able to calculate density. Students will be able to make predictions about density Students will be able to determine is gases have density

The application of heat to matter and how matter reacts to exposure to heat. The meaning of density and how to apply the concept to predict other items densities. IE- Density Column Solution chemistry basics - solvent, solute, solution, solubility and saturation.	Students will be able to explore the relationship between temperature and density. Students will be able to investigate physical and chemical changes produced by heating a substance Students will be able to observe phase changes of melting, boiling and freezing due to the addition or loss of heat Students will be able to see how mass remains constant during phase changes. Students will be able to independently investigate an object and explain the relationship between the object and its function. Students will be able to see that the changes that take place when solids are mixed with liquids. Students will be able to make a saturated solution, then calculate the amount of two solutes dissolved in the same solvent Students will be able to measure changes of mass and volume when a solid dissolves in a liquid Students will be able to devise an experiment to compare the effectiveness of different solvents as stain removers. Students will be able to complete a performance and written assessment on the concepts and processes studied in the unit.

Suggested Resources/Technology Tools

Properties of Matter Activity (download PDF)
https://www.nasa.gov/pdf/544895main_PS3_States_of_Matter_C1.pdf
Steve Spangler Science Resource
Exploring Density Activities
https://www.teachengineering.org/activities/view/wpi_bones_lesson01_activity1
http://www.physics4kids.com/files/thermo_laws.html
https://teachchemistry.org/classroom-resources/phase-changes-and-heat-transfer
https://learn.concord.org/resources/784/phase-change

Modifications

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- Provide feedback utilizing a growth mindset and praise what is done correctly based upon effort, attitude and strategy.
- Boost engagement with material by providing opportunities of differentiation, group work and alternative assignments/assessments where appropriate.

ELL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.

- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow ELL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE "Take a stab at it." Ensure students understand what is meant.
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- Utilize bilingual reading texts provided by the STC program.

G/T

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- complex, in-depth assignments
- diverse enrichment that broadens learning
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- ✓ Apply appropriate academic and technical skills.
- ○ Attend to personal health and financial well being.
- ✓ Communicate clearly and effectively and with reason.

- ✓ Consider the environmental social and economic impacts of decisions.
- ✓ Demonstrate creativity and innovation.
- ✓ Employ valid and reliable research strategies.
- ✓ Utilize critical thinking to make sense of problems and persevere in solving them.
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LINKS TO CAREERS:

American Chemical Society Careers

Unit 3

Working with Motors and Simple Machines

Summary and Rationale

Students will participate in inquiries that provide opportunities to explore force, work, power, and efficiency; enabling students to begin constructing a knowledge base of their own. Students will have the opportunity to work towards building experimental set ups that examine the topics listed as well as a mathematical understanding of the concepts. Students will be able to apply the concepts of force, work, power and efficiency to real-life scenarios and examples.

Recommended Pacing

45 days

Standards

HS-PS3-1	Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known
HS-PS2-2	Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration
MS-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object
HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more

	manageable problems that can be solved through engineering
Interdisciplinary Connections	
NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
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HSN.Q.A.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays
Integration of Technology	
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge
8.2	All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment

Instructional Focus

Enduring Understandings:	**Essential Questions:**
Work, force and power are related concepts. Utilizing machines and motors can change the required amount of work in a system. Motors and simple machines will directly impact the force required in a system.	What is the working definition for work, force and power? What is the relationship between work, force and power? How do you calculate work, force and power? What is a simple machine? How do machines change the work required in a system? How can lever specifically change the amount of force needed to move an object? What are the components of a motor? What are the roles of the components of motors? How do motors affect work in a system?

Evidence of Learning (Assessments)

Unit 3 Assessment: Motors and Machines
Various formative assessments
Lab write ups

Objectives (SLO)

Students will know:	Students will be able to:
Preconceptions, and misconceptions about motors, work, and machines. Scientific meaning of work, how to calculate work, and measure the work done by a motor when it lifts a load. Power and how the power of a motor depends on the batteries connected to it. The force needed to pull a load up an inclined plane depends on the angle of the incline. Using levers to balance forces.	Conduct investigations to gather evidence on how the force a motor exerts depends on how it is connected to a source of power. Explain how work is the product of force and distance. Communicate scientific and technical information about how machines reduce the effort needed to do a given amount of work by increasing the distance over which the work is done. Take apart a motor to find out the components that make it work. Determine the conditions that make a motor exert maximum force to lift a load. Calculate force, work and power. Build different pulley systems and measure the effort force that each system exerts to lift a load. Independently investigate an object and explain the relationship between the object and its function. Calculate and compare the ideal and actual mechanical advantage of the inclined planes and pulley systems. Calculate the efficiency of the inclined planes and pulley systems.

Suggested Resources/Technology Tools

http://www.scientificjam.com/SCIENCE404WEB/science404web_unit2/7thwebfiles/LAB_levers.pdf
http://science-class.net/archive/science-class/Physics/simple_machines.htm
Simple Machines Activity Resource

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LINKS TO CAREERS:

https://www.lockheedmartin.com/en-us/news/features/2018/careers-working-with-machines.html
https://educatingengineers.com/career-specialties

Unit 4

Investigating Electricity and Circuit Design

Summary and Rationale

Students will participate in inquiries that provide opportunities to explore electrical energy, voltage, power, electrical circuits, and energy transformation. Students will begin by isolating each of the concepts above in meaning and definition. They will then progress to mathematical computation and application through building electrical circuits and energy transformation systems.

Recommended Pacing

45 days

Standards

HS-PS3-1	Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known
HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects)

HS-PS3-5	Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction
HS-PS2-6	Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.*
HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts
Interdisciplinary Connections	
NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
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RI.11-12.1 RI.9-10.1	Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of what the text says explicitly as well as inferentially, including determining where the text leaves matters uncertain.
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8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge
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Instructional Focus

Enduring Understandings:	**Essential Questions:**

Electrons are charged particles that are the basis for electricity. Electron flow is electricity. Electricity can be investigated through circuits, looking at current, power, resistance and voltage. Manipulating circuit design and control where electricity flows. Electricity can be transformed into other forms of energy via electrical circuits. Inventory of usage of electric devices can assist us in understanding our overall usage, the cost of that electrical usage and ways in which it can be responsibly managed. There are alternative energy sources, one specifically being solar energy. Solar cells capture light energy and convert it to usable electrical energy.	What are electrons? How can we create and transfer static charge? How can a build up of static charge light a light bulb? What is the definition of: current, voltage, resistance? What are the symbols appropriate for schematics? What is an electrical circuit? What is the difference between a parallel and series circuit? How can electricity be manipulated in circuits to have specific outcomes? How can we measure voltage and current within a circuit? How do we calculate the specific measurements of current, voltage and resistance in a circuit? What are the parts of a battery? How does a battery work? More specifically, what are the energy changes in a battery and what type of energy does it produce? Can changing the battery combinations that power a circuit have effects on the outcome of a system? How and why? How much electricity do we use in a day, month and year? As a family? As a school? As individuals? How can we tell and what information do we use to determine the answer? What is the cost of electricity usage? What are the parts of a solar cell? How does a solar cell utilize sunlight? What types of energy do solar cells create? How can we utilize solar energy to help cut down on our consumption of energy from natural, fixed resources?
Evidence of Learning (Assessments)	
Unit 4 Assessment: Electricity and Circuits Various formative assessments Lab write ups	
Objectives (SLO)	

Students will know:	Students will be able to:
How static electrical charges can light a bulb. Schematics of electrical circuits. Series and parallel configurations The manner in which batter combinations affect brightness and voltage. How to generate electrical energy. Solar cells ability to use light and turn it into electrical energy.	Set up/design electrical circuits by reading and understanding schematics. Differentiate between series and parallel circuits. Use voltmeters and ammeters to obtain measurements Discuss electric currents, voltage and power. Make a zinc-copper battery and light a grain-of-wheat light bulb with the battery. Build different circuits to light bulbs in specified ways. Construct definitions of “series circuit” and “parallel circuit.” Use an ammeter to measure current in electrical circuits. Predict how changing the number of batteries and the way the batteries are connected (series or parallel) will affect the light bulbs brightness and the voltage across the lightbulb. Design experiments to test their predictions and report their results. Investigate electric current. Predict how changing the number of batteries and the way they are connected will affect the current through the light bulb. Observe and record the change in the light bulb’s brightness as electric current passes through it. Conduct an inventory of the electrical energy used by various household appliances over a specified amount of time. Determine the power rating of the appliances and observe and record the number of hours they are used daily. Determine the average amount of energy the appliance uses daily and monthly. Calculate the average cost of electrical energy and use that to estimate the cost of using their appliances for a day and for a month. Calculate the electrical power of difference devices in circuits. Explore an alternative source of electrical energy--solar cells. Students will be able to observe how solar cells can power a circuit and investigate how the intensity of light affects the output of the cell.
Suggested Resources/Technology Tools	

https://nj.pbslearningmedia.org/resource/phy03.sci.phys.mfe.lp_electric/electric-circuits/
Lesson Electric Circuits
Electricity Lesson Plan
School Energy Survey
Energy Audit PBS - more than electricity, big picture energy and carbon dioxide emissions

Modifications

Teachers can choose from these suggested modifications based upon teaching style, instructional methods and needs of individual students.

General Modifications for students struggling to learn:

- Focus on building relationships in the classroom.
- Control the stressors for the student and manage alternate pathways for completion of assignments.
- Provide feedback utilizing a growth mindset and praise what is done correctly based upon effort, attitude and strategy.
- Boost engagement with material by providing opportunities of differentiation, group work and alternative assignments/assessments where appropriate.

ELL

- Provide additional wait time for student responses to questions to allow students the ability to undergo the process of translation between languages, composition of response and attempted response.
- Simplification of sentence structure and repetition of questions/sentences exactly as stated before trying to rephrase to allow ELL students to hear the sentence and try to comprehend it.
- Rephrase idioms and teach their meanings as when learning a new language, translations are often very literal. IE “Take a stab at it.” Ensure students understand what is meant.
- Use directed reading activities. Ensure preview of text before assigned/read, provide pre-reading questions about the main idea and offer help utilizing key words.
- Allow the use of Google Translate where appropriate.
- Utilize bilingual reading texts provided by the STC program.

G/T

Utilize differentiation in the areas of acceleration, enrichment, and grouping. Examples include, but are not limited to:

- interdisciplinary and problem-based assignments with planned scope and sequence
- advance, accelerated, or compacted content
- abstract and advanced higher-level thinking
- allowance for individual student interests
- assignments geared to development in areas of affect, creativity, cognition, and research skills
- complex, in-depth assignments
- diverse enrichment that broadens learning
- variety in types of resources
- internships, mentorships and independent study where applicable

504/IEP

Modifications and accommodations must be aligned to stated plan and uphold expectations of the plan lawfully. Every student requires a different set of accommodations based upon need. Examples specific to science practice include, but are not limited to:

- Note taker or lab assistant
- Group lab assignments
- Use of scribe
- Adjustable tables and lab equipment within reach
- Classrooms, labs and field trips in accessible locations
- Additional time and separate room for test taking
- Additional time for in-class assignments

- Additional time in lab
- Visual and tactile instructional demonstrations
- Computer with voice output, spelling and grammar checker
- Seating in the front of the class
- Tactile drawings and graphs, and three-dimensional models
- Assignments in electronic format
- Large-print handouts, lab signs and equipment labels
- TV monitor connected to microscope to enlarge images
- Computer equipped to enlarge screen characters and images
- Auditory lab warning signals
- Adaptive lab equipment (talking calculators, talking thermometers, light probes, tactile timers)
- Staples on sticks to indicate units of measurement
- Visual warning system for lab emergencies

21ST CENTURY LIFE AND CAREER STANDARDS

Please select all standards that apply to this unit of study:

- ✓ Act as a responsible and contributing citizen and employee.
- ✓ Apply appropriate academic and technical skills.
- ○ Attend to personal health and financial well being.
- ✓ Communicate clearly and effectively and with reason.
- ✓ Consider the environmental social and economic impacts of decisions.
- ✓ Demonstrate creativity and innovation.
- ✓ Employ valid and reliable research strategies.
- ✓ Utilize critical thinking to make sense of problems and persevere in solving them.
- ✓ Model integrity, ethical leadership, and effective management.
- ✓ Plan education and career paths aligned to personal goals.
- ✓ Use technology to enhance productivity.
- ✓ Work productively in teams while using cultural global competence.

Suggestions on integrating these standards can be found at: http://www.state.nj.us/education/cccs/2014/career/9.pdf

LINKS TO CAREERS:

https://www.engineering.unsw.edu.au/electrical-engineering/what-we-do/what-do-electrical-engineers-do