Green Township School District Grade 6 Science Curriculum - Revised 2017

Pacing: 3 weeks		**Unit 1: Ecology: Matter and Energy and the Environment**
Standards and Suggested Activities		**Skills and Knowledge**
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem	• Kinesthetic activities • Classroom demonstrations • C-O lab • nitrogen cycle lab	Students will be able to: • describe the role of biotic and abiotic factors in an ecosystem. • diagram and explain the water, nitrogen, carbon, and oxygen cycles. • explain how an organism can have a niche in multiple ecosystems. • identify the role of decomposers in the cycling of matter.

District/School Formative Assessment Plan	**District/School Summative Assessment Plan**
• Class discussions in which student share prior knowledge	• Teacher-created quizzes • Teacher-created unit assessments • Labs
Core Instructional Materials	**District/School Supplementary Resources**
• *Glencoe iScience Life Science Series* (Mcgraw-Hill Companies, Inc. 2012)	• Discovery Education videos • Glencoe ConnectEd online resources

Interdisciplinary Connections throughout the K-12 Curriculum
Mathematics **6.EE.C.9** *Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity,*

thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS2-3)
6.SP.B.5 *Summarize numerical data sets in relation to their context. (MS-LS2-2)*

English-Language Arts:
RI.6.4*. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.*
W.6.2. *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*
A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.
B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
C. Use appropriate transitions to clarify the relationships among ideas and concepts.
D. Use precise language and domain-specific vocabulary to inform about or explain the topic.
E. Establish and maintain a formal/academic style, approach, and form.
F. Provide a concluding statement or section that follows from the information or explanation presented.
W.6.4. *Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)*
W.6.7. *Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.* ***W.6.8****. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.*
SL.6.1. *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.*
A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. ***SL.6.2.*** *Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.*
SL.6.3. *Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.*
SL.6.4*. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).*
SL.6.5. *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.*
SL.6.6*. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

Integration of 21st Century Themes and Skills	
21st Century Skills/ Career Ready Practices:	**CRP1. Act as a responsible and contributing citizen and employee.** **CRP2. Apply appropriate academic and technical skills.** **CRP3. Attend to personal health and financial well-being.** **CRP4. Communicate clearly and effectively and with reason.**

	CRP5. Consider the environmental, social and economic impacts of decisions. **CRP6. Demonstrate creativity and innovation.** **CRP7. Employ valid and reliable research strategies.** **CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.** **CRP9. Model integrity, ethical leadership and effective management.** **CRP10. Plan education and career paths aligned to personal goals.** **CRP11. Use technology to enhance productivity.** **CRP12. Work productively in teams while using cultural global competence.**
2014 Technology Standards	
2014 NJ Technology Standards:	**8.1 Educational Technology** (Word | PDF) 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 Technology Education, Engineering, Design and Computational Thinking - Programming** (Word | PDF) 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. Please see relevant projects for technology standards 8.1 and 8.2:

Differentiation / Accommodations / Modifications

Gifted and Talented:

Extension Activities *(content, process, product and learning environment)*

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice

- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities:

Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.

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- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.

- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

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Pacing: 4 weeks	**Unit 2: Ecology: Interactions of Organisms in an Ecosystem**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services. MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. MS-ETS1-3. Analyze data from tests to	• Kinesthetic activities • Classroom demonstrations • predator- prey activity • predator- prey graphs • competition graphs • natural selection/ camouflage toothpick lab • sustainable fishing activity (6th grade edition- with cost control) • owl pellet lab	Students will be able to: • describe and give examples for the various trophic levels of the energy pyramid. • interpret and draw conclusions regarding how competition affects population size. • distinguish between predator-prey and symbiotic relationships among organisms. • interpret and draw conclusions from predator-prey graphs. • describe how natural selection affects the size of a population.

determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		

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Interdisciplinary Connections throughout the K-12 Curriculum

Mathematics

MP.2 *Reason abstractly and quantitatively. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4)*
MP.4 *Model with mathematics. (MS-LS2-5)(MS-LS4-6)*
6.RP.A.3 *Use ratio and rate reasoning to solve real-world and mathematical problems. (MS-LS2-5)*
6.RP.A.1 *Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-LS4-6)*
6.SP.B.5 *Summarize numerical data sets in relation to their context. (MS-LS4-6)*
7.RP.A.2 *Recognize and represent proportional relationships between quantities. (MS-LS4-6)*
7.EE.3 *Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)*
7.SP *Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (MS-ETS1-4)*

English-Language Arts:

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Pacing: 4 weeks	**Unit 3: Ecology: Ecosystems and Biomes**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-LS1-5. Construct a scientific explanation based on	● Kinesthetic activities	

evidence for how environmental and genetic factors influence the growth of organisms MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services. MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	● Classroom demonstrations ● Trout in the classroom program	Students will be able to: ● describe climate in terms of rainfall and temperature. ● identify temperature dependent land biomes and their characteristics. ● identify moisture dependent land biomes and their characteristics. ● identify the limiting factors that affect populations in various biomes. ● describe population movement between biomes. ● identify various saltwater and freshwater biomes and their characteristics. ● describe the process of ecological succession. ● distinguish between primary and secondary succession. ● explain how eutrophication occurs and identify ways to minimize human impact.

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Core Instructional Materials	**District/School Supplementary Resources**
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Interdisciplinary Connections throughout the K-12 Curriculum
Mathematics ***MP.2*** *Reason abstractly and quantitatively. (MS-ESS1-3)* ***MP.4*** *Model with mathematics. (MS-LS2-5)* ***6.EE.C.9*** *Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (MS-LS1-1)* ***6.SP.A.2*** *Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.*

(MS-LS1-5)
6.SP.B.4 *Summarize numerical data sets in relation to their context. (MS-LS1-5)*
6.RP.A.3 *Use ratio and rate reasoning to solve real-world and mathematical problems. (MS-LS2-5)*
6.RP.A.1 *Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS1-3)*
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- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
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Pacing: 3 weeks	**Unit 4: Waves and Their Applications**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.	• Kinesthetic activities • Classroom demonstrations • String telephone sound lab • Laser target lab	Students will be able to: • distinguish between mechanical and electromagnetic (EM) waves. • distinguish between transverse and longitudinal waves. • describe a wave in terms of amplitude, wavelength, and frequency. • explain how wave speed is affected by the medium through which it travels. • compare and contrast the absorption, transmission, reflection, refraction, and diffraction of waves in various mediums. • identify the various types of wave interference. • distinguish between digital and analog signals.
District/School Formative Assessment Plan		**District/School Summative Assessment Plan**
• Class discussions in which student share prior knowledge		• Teacher-created quizzes • Teacher-created unit assessments • Labs
Core Instructional Materials		**District/School Supplementary Resources**
• *Glencoe iScience Physical Science Series* (Mcgraw-Hill Companies, Inc. 2012)		• Discovery Education videos • Glencoe ConnectEd online resources

Interdisciplinary Connections throughout the K-12 Curriculum
Mathematics
MP.2 *Reason abstractly and quantitatively. (MS-PS4-1)*
MP.4 *Model with mathematics. (MS-PS4-1)*
6.RP.A.1 *Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-PS4-1)*
6.RP.A.3 *Use ratio and rate reasoning to solve real-world and mathematical problems. (MS-PS4-1)*
7.RP.A.2 *Recognize and represent proportional relationships between quantities. (MS-PS4-1)*
8.F.A.3 *Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. (MS-PS4-1)*
English-Language Arts:

RI.6.4. *Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.*
W.6.2. *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*
A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.
B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
C. Use appropriate transitions to clarify the relationships among ideas and concepts.
D. Use precise language and domain-specific vocabulary to inform about or explain the topic.
E. Establish and maintain a formal/academic style, approach, and form.
F. Provide a concluding statement or section that follows from the information or explanation presented.
W.6.4. *Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)*
W.6.7. *Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.* ***W.6.8***. *Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.*
SL.6.1. *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.*
A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. ***SL.6.2.*** *Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.*
SL.6.3. *Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.*
SL.6.4. *Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).*
SL.6.5. *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.*
SL.6.6. *Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

Integration of 21st Century Themes and Skills	
21st Century Skills/ Career Ready Practices:	**CRP1. Act as a responsible and contributing citizen and employee.** **CRP2. Apply appropriate academic and technical skills.** **CRP3. Attend to personal health and financial well-being.** **CRP4. Communicate clearly and effectively and with reason.** **CRP5. Consider the environmental, social and economic impacts of decisions.** **CRP6. Demonstrate creativity and innovation.** **CRP7. Employ valid and reliable research strategies.** **CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.** **CRP9. Model integrity, ethical leadership and effective management.** **CRP10. Plan education and career paths aligned to personal goals.** **CRP11. Use technology to enhance productivity.** **CRP12. Work productively in teams while using cultural global competence.**

2014 Technology Standards	
2014 NJ Technology Standards:	**8.1 Educational Technology** (Word | PDF) 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 Technology Education, Engineering, Design and Computational Thinking - Programming** (Word | PDF) 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. Please see relevant projects for technology standards 8.1 and 8.2:

Differentiation / Accommodations / Modifications

Gifted and Talented:

Extension Activities *(content, process, product and learning environment)*

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.

- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities:

Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.

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- Repetition and practice
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- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
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Modifications for Assessments

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- Distribute study guide for classroom tests.
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Students at Risk of School Failure:

Modifications for Classroom

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- Distribute study guide for classroom tests.

- Establish procedures for accommodations / modifications for assessments.

Pacing: 5 weeks	Unit 5: Electrical Energy	
Standards and Suggested Activities		**Skills and Knowledge**
MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.	• Kinesthetic activities • Classroom demonstrations • charging lab • circuits lab • appliances lab	Students will be able to: • identify parts of an atom and their charges. • describe electricity in terms of the movement of electrons. • make distinctions between static and current electricity. • describe the interaction of electric forces as a result of distance and strength of charge. • create charge by using friction, conduction, and induction. • describe how lightning forms. • build a simple circuit and identify its parts. • measure and identify voltage, current, and resistance in a circuit. • Use Ohm's Law. • compare direct and alternating current. • build and compare the effectiveness and use of series and parallel circuits. • describe electrical safety devices.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
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Core Instructional Materials	**District/School Supplementary Resources**
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Interdisciplinary Connections throughout the K-12 Curriculum
Mathematics ***MP.2*** *Reason abstractly and quantitatively. (MS-PS2-3)* ***English-Language Arts:*** ***RI.6.4****. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.* ***W.6.2.*** *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.* *A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.* *B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.* *C. Use appropriate transitions to clarify the relationships among ideas and concepts.* *D. Use precise language and domain-specific vocabulary to inform about or explain the topic.* *E. Establish and maintain a formal/academic style, approach, and form.* *F. Provide a concluding statement or section that follows from the information or explanation presented.* ***W.6.4.*** *Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)* ***W.6.7.*** *Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.* ***W.6.8****. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.* ***SL.6.1.*** *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.* *A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.* *B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.* *C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.* *D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.* ***SL.6.2.*** *Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.* ***SL.6.3.*** *Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.* ***SL.6.4****. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).* ***SL.6.5.*** *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.* ***SL.6.6****. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

Integration of 21st Century Themes and Skills	
21st Century Skills/ Career Ready Practices:	**CRP1. Act as a responsible and contributing citizen and employee.** **CRP2. Apply appropriate academic and technical skills.** **CRP3. Attend to personal health and financial well-being.** **CRP4. Communicate clearly and effectively and with reason.** **CRP5. Consider the environmental, social and economic impacts of decisions.**

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Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.

- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
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Pacing: 5 weeks	**Unit 6: Magnetic Forces**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. MS-PS2-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.	• Kinesthetic activities • Classroom demonstrations • magnetic materials lab • magnetic fields lab • magnetosphere activity • electromagnetic lab • electric motor lab • power plant activity • transformer demo	Students will be able to: • describe a magnetic field in terms of a non-contact force. • define a magnet in terms of its poles and domains. • determine the properties of magnetic materials. • demonstrate the interactions from two or more different magnetic fields. • describe Earth's magnetic field (magnetosphere) and its importance. • identify the relationship between magnetism and electricity. • create and use an electromagnet. • create and use an electric motor. • identify and describe the energy transformations that occur in electromagnets and motors. • describe and demonstrate how current electricity is created from electromagnetic induction. • trace the energy transformations that occur in a power plant. • categorize renewable and nonrenewable energy resources. • trace and describe the use of voltage transformers.
District/School Formative Assessment Plan		**District/School Summative Assessment Plan**
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- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests

- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.

- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Pacing: 3 weeks	**Unit 7: Geology- Plate Tectonics**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.	• Kinesthetic activities • Classroom demonstrations • magnetic striping activity • plate boundary pudding activity • plate tectonics model activity	Students will be able to: • describe the theory of Continental Drift and supporting evidence. • identify evidence for and explain the process of seafloor spreading. • diagram and describe the layers of the Earth. • identify and describe the geological processes involved in plate tectonics. • describe the rock cycle. • describe how weathering and the passage of time affect geological formations i.e. the abyssal plain, mountains) • describe the interactions of forces along plate boundaries. • name and explain the resultant landforms along plate boundaries.
District/School Formative Assessment Plan		**District/School Summative Assessment Plan**
• Class discussions in which student share prior knowledge		• Teacher-created quizzes • Teacher-created unit assessments • Labs
Core Instructional Materials		**District/School Supplementary Resources**

• *Glencoe iScience Earth and Space Series* (Mcgraw-Hill Companies, Inc. 2012)	• Discovery Education videos • Glencoe ConnectEd online resources

Interdisciplinary Connections throughout the K-12 Curriculum

Mathematics:

MP.2 *Reason abstractly and quantitatively. (MS-ESS2-2),(MS-ESS2-3)*

6.EE.B.6 *Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS1-4)(MS-ESS2-2),(MS-ESS2-3) (MS-ESS3-1)*

7.EE.B.4 *Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS1-4)(MS-ESS2-2),(MS-ESS2-3)(MS-ESS3-1)*

English-Language Arts:

RI.6.4*. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.*

W.6.2. *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*

A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.

B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

C. Use appropriate transitions to clarify the relationships among ideas and concepts.

D. Use precise language and domain-specific vocabulary to inform about or explain the topic.

E. Establish and maintain a formal/academic style, approach, and form.

F. Provide a concluding statement or section that follows from the information or explanation presented.

W.6.4. *Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)*

W.6.7. *Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.* ***W.6.8****. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.*

SL.6.1. *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.*

A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. ***SL.6.2.*** *Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.*

SL.6.3. *Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.*

SL.6.4*. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).*

SL.6.5. *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.*

SL.6.6*. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

Integration of 21st Century Themes and Skills	
21st Century Skills/ Career Ready Practices:	**CRP1. Act as a responsible and contributing citizen and employee.** **CRP2. Apply appropriate academic and technical skills.** **CRP3. Attend to personal health and financial well-being.** **CRP4. Communicate clearly and effectively and with reason.** **CRP5. Consider the environmental, social and economic impacts of decisions.** **CRP6. Demonstrate creativity and innovation.** **CRP7. Employ valid and reliable research strategies.** **CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.** **CRP9. Model integrity, ethical leadership and effective management.** **CRP10. Plan education and career paths aligned to personal goals.** **CRP11. Use technology to enhance productivity.** **CRP12. Work productively in teams while using cultural global competence.**
2014 Technology Standards	
2014 NJ Technology Standards:	**8.1 Educational Technology** (Word | PDF) 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 Technology Education, Engineering, Design and Computational Thinking - Programming** (Word | PDF) 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. Please see relevant projects for technology standards 8.1 and 8.2:

Differentiation / Accommodations / Modifications

Gifted and Talented:

Extension Activities *(content, process, product and learning environment)*

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities:

Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.

- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
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- Extended time on classroom tests and quizzes.
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- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Pacing: 3 weeks	**Unit 8: Geology- Earth Dynamics**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the	• Kinesthetic activities • Classroom demonstrations • convection current demonstration • stresses and faults activity • Hot spot model activity • Weathering and erosion lab	Students will be able to: • model and identify the stresses and resultant faults associated with the interaction of forces at plate boundaries. • distinguish between the effects of subsidence and uplift. • identify the various landforms resulting from specific stresses and faults. • identify the effects of weathering and erosion on landforms. • describe the causes and effects of hot spots on Earth's crust.

force of gravity.		

District/School Formative Assessment Plan	District/School Summative Assessment Plan
• Class discussions in which student share prior knowledge	• Teacher-created quizzes • Teacher-created unit assessments • Labs
Core Instructional Materials	**District/School Supplementary Resources**
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Interdisciplinary Connections throughout the K-12 Curriculum

Mathematics

MP.2 *Reason abstractly and quantitatively. (MS-ESS2-2),(MS-ESS2-3)*

6.EE.B.6 *Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS2-2),(MS-ESS2-3)*

7.EE.B.4 *Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS2-2),(MS-ESS2-3)*

English-Language Arts:

RI.6.4*. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.*

W.6.2. *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*

A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.

B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

C. Use appropriate transitions to clarify the relationships among ideas and concepts.

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B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

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SL.6.4*. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).*
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Integration of 21st Century Themes and Skills	
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Differentiation / Accommodations / Modifications

Gifted and Talented:

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- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest / cultural importance.
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- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
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Students with Disabilities:

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- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher

- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Pacing: 4 weeks	**Unit 9: Earthquakes and Volcanoes**	
Standards and Suggested Activities		**Skills and Knowledge**
MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects	• Kinesthetic activities • Classroom demonstrations • seismic wave Slinky demos • Triangulation lab • Richter scale activity • Earthquake-resistant building lab • volcano eruption demos	Students will be able to: • identify and describe the types of seismic waves associated with earthquakes. • differentiate between the focus and epicenter of an earthquake. • identify where earthquakes and volcanoes are most likely to occur (Ring of Fire) • identify and describe the function of instruments used to measure earthquakes. • demonstrate the process of triangulation to locate the epicenter of an earthquake. • use the Richter scale to compare the energy magnitude of various

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	● parts of a volcano activity	earthquakes. ● discuss how earthquakes impact human activity.. ● describe construction techniques used to minimize earthquake damage. ● design, test, and modify an earthquake-resistant building that meets predetermined criteria. ● identify and describe the three main types of volcanoes. ● describe the parts of a volcano. ● describe how the energy and composition of matter affect the type of volcanic eruption. ● identify the role of volcanoes in the rock cycle. ● explain the geological and human impact from a volcanic eruption.

District/School Formative Assessment Plan	District/School Summative Assessment Plan
● Class discussions in which student share prior knowledge	● Teacher-created quizzes ● Teacher-created unit assessments ● Labs
Core Instructional Materials	**District/School Supplementary Resources**
● *Glencoe iScience Earth and Space Series* (Mcgraw-Hill Companies, Inc. 2012)	● Discovery Education videos ● Glencoe ConnectEd online resources

Interdisciplinary Connections throughout the K-12 Curriculum

Mathematics

MP.2 *Reason abstractly and quantitatively. (MS-ESS3-2)(MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4)*

6.RP.A.1 *Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS3-3)*

7.RP.A.2 *Recognize and represent proportional relationships between quantities. (MS-ESS3-3)*

6.EE.B.6 *Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS3-1),(MS-ESS3-2),(MS-ESS3-3)*

7.EE.B.4 *Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS3-1),(MS-ESS3-2),(MS-ESS3-3)*

7.EE.3 *Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)*

7.SP *Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (MS-ETS1-4)*

English-Language Arts:

RI.6.4*. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.*

W.6.2. *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.*

A. Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aiding comprehension.

B. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.

C. Use appropriate transitions to clarify the relationships among ideas and concepts.

D. Use precise language and domain-specific vocabulary to inform about or explain the topic.

E. Establish and maintain a formal/academic style, approach, and form.

F. Provide a concluding statement or section that follows from the information or explanation presented.

W.6.4. *Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)*

W.6.7. *Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.* ***W.6.8****. Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.*

SL.6.1. *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.*

A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.

B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing. ***SL.6.2.*** *Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.*

SL.6.3. *Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.*

SL.6.4*. Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate speaking behaviors (e.g., eye contact, adequate volume, and clear pronunciation).*

SL.6.5. *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.* ***SL.6.6****. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.*

Integration of 21st Century Themes and Skills	
21st Century Skills/ Career Ready Practices:	**CRP1. Act as a responsible and contributing citizen and employee.** **CRP2. Apply appropriate academic and technical skills.** **CRP3. Attend to personal health and financial well-being.** **CRP4. Communicate clearly and effectively and with reason.** **CRP5. Consider the environmental, social and economic impacts of decisions.** **CRP6. Demonstrate creativity and innovation.** **CRP7. Employ valid and reliable research strategies.** **CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.** **CRP9. Model integrity, ethical leadership and effective management.** **CRP10. Plan education and career paths aligned to personal goals.** **CRP11. Use technology to enhance productivity.** **CRP12. Work productively in teams while using cultural global competence.**
2014 Technology Standards	
2014 NJ Technology Standards:	**8.1 Educational Technology** (Word | PDF) 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 Technology Education, Engineering, Design and Computational Thinking - Programming** (Word | PDF) 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. Please see relevant projects for technology standards 8.1 and 8.2:

Differentiation / Accommodations / Modifications

Gifted and Talented:

Extension Activities *(content, process, product and learning environment)*

- Conduct research and provide presentation of various topics.
- Design surveys to generate and analyze data to be used in discussion.

- Debate topics of interest / cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Exploration of art and/or artists to understand society and history.
- Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).

Anchor Activities

- Use of Higher Level Questioning Techniques
- Provide assessments at a higher level of thinking

English Language Learners:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work
- Provide copy of classnotes
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting

Modifications for Homework/Assignments

- Modified Assignments
- Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)
- Extended time for assignment completion as needed
- Highlight key vocabulary
- Use graphic organizers

Students with Disabilities:

Appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team.

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Extended time to complete class work

- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time
- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.

Students at Risk of School Failure:

Modifications for Classroom

- Pair visual prompts with verbal presentations
- Ask students to restate information, directions, and assignments.
- Repetition and practice
- Model skills / techniques to be mastered.
- Provide copy of classnotes
- Preferential seating to be mutually determined by the student and teacher
- Student may request to use a computer to complete assignments.
- Establish expectations for correct spelling on assignments.
- Extra textbooks for home.
- Student may request books on tape / CD / digital media, as available and appropriate.
- Assign a peer helper in the class setting
- Provide oral reminders and check student work during independent work time

- Assist student with long and short term planning of assignments
- Encourage student to proofread assignments and tests
- Provide regular parent/ school communication
- Teachers will check/sign student agenda daily
- Student requires use of other assistive technology device

Modifications for Homework and Assignments

- Extended time to complete assignments.
- Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases.
- Provide the student with clearly stated (written) expectations and grading criteria for assignments.
- Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic).

Modifications for Assessments

- Extended time on classroom tests and quizzes.
- Student may take/complete tests in an alternate setting as needed.
- Restate, reread, and clarify directions/questions
- Distribute study guide for classroom tests.
- Establish procedures for accommodations / modifications for assessments.