

# 6th Grade Science Curriculum

Course Title: Earth and Space Systems

Content Area Science

Grade Level(s) 6th

Date Revised July & August of 2019

Date Adopted \_\_\_\_\_

**Course Description:** This year long course is an extensive earth and space study that includes topics such as sun-earth-moon system, the water cycle, weather patterns, human impacts on the environment and geological time that includes plate tectonics, natural resources and hazards such as earthquakes, volcanoes and severe weather. Units also include students completing extensive laboratory work within each unit being explored.

**Total Number of Units: 4**

## Pacing Guide

**Unit 1- Exploring Space: 17-20 days**

**Module 1: Sun-Earth-Moon System:**

Lesson 1: Earth's Motion Around the Sun : 6-7 days

Lesson 2: Lunar Phases: 5-6 days

Lesson 3: Eclipses: 6-7 days

**Module 2: Exploring the Universe:**

Lesson 1: Gravity and the Universe: 7-8 days

Lesson 2: The Solar System: 8-12 days

**Unit 2-Water and Climate: 45-50 Days**

**Module 1: Water Cycle:**

**Lesson 1: Water in the Atmosphere 5-7 days**

**Lesson 2: Water on Earth's Surface 5-6 days**

**Module 2: Weather and Climate**

**Lesson 1: Solar Energy on Earth 5-8 days**

**Lesson 2: Atmospheric and Oceanic Circulation: 5-6 days**

**Lesson 3: Weather Patterns: 6-8 days**

**Lesson 4: Climates of Earth: 4-6 days**

**Module Project and Wrap-Up: 4-6 days**

**Unit 3- Module 1: Human Impact on the Environment: 30-35 days**

**Lesson 1: Impact on Land: 5-7 days**

**Lesson 2: Impact on Water: 7-8 days**

**Lesson 3: Impact on the Atmosphere: 4-5 days**

**Lesson 4: Impact on Climate: 6-7 days**

**Module Project and Wrap-Up: 4-6 days.**

**Module 2: Earth and Human Activity**

**Lesson 1: Human Population Growth: 4-6 days**

**Lesson 2: People and the Environment: 4-5 days**

**Module Project and Wrap-Up: 3-4 days.**

**Unit 4- Module 1: Geological Time: 80 days.**

**Lesson 1: Analyzing Rock and Fossil Records; 6-7 days.**

**Lesson 2: Building a Time Line: 9-10 days**

**Module 2: Dynamic Earth**

**Lesson 1: Moving Continents 5-6 days**

**Lesson 2: Development of a Theory 4-5 days**

**Lesson 3: Shaping Earth's Surface 5-6 Days**

**Lesson 4: Changing Earth's Surface: 6-7 days**

**Lesson 5: The cycling of the Earth's Materials: 6-7 days**

**Module Project and Wrap-Up: 4 days**

**Module 3: Distribution of Earth's Resources**

**Lesson 1: Natural Resources 4-5 Days**

**Lesson 2: Distribution of Resources 4-5 Days**

**Lesson 3: Depletion of Resources 4-5 days**

**STEM Module Project: 3-4 days.**

**Module 4: Natural Hazards**

**Lesson 1: Earthquake Risks 6-7 days.**

**Lesson 2: Volcanic Risks 4-5 days.**

**Lesson 3: Severe Weather Risks 5-6 days.**

**Module Project and Wrap Up 3-4 days.**

**Unit Title: Exploring Space Unit 1**

**Time Frame: Approximately 40-45 Days**

**Essential Questions**

**To what extent does the earth's tilt cause the seasons?**

**How does the relative positions of the Earth, moon and the Sun create the appearance of the moon's phases and eclipses?**

**What causes the weather to change in same pattern every pattern every year?**

**How does the Earth move?**

**How does the view of the sy change over time?**

**Why is the Earth warmer at the equator and cooler at the poles?**

How do celestial bodies like galaxies form?  
What is gravity?  
What are galaxies?  
How do objects in the solar system compare to each other?

### Standards

**Standards / CPIs (cumulative Progress Indicators) taught and assessed:**

**MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.**

**MS-ESS1-2: Develop and use a model to describe the role of gravity within galaxies and the solar system.**

**MS-ESS1-3: Analyze and interpret data to determine scale properties of objects in the solar system.**

**6.NS.B.2: Fluently divide multi-digit numbers using the standard algorithm.**

**6.NS.B.3: Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.**

**6.RP.A.2: Ratios and proportions to remove real world problems.**

**RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).**

**RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.**

### Highlighted Career Ready Practices:

**CRP2. Apply appropriate academic and technical skills.**

**CRP4. Communicate clearly and effectively and with reason.**

**CRP5. Consider the environmental, social and economic impacts of decisions.**

**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.**

**CRP11. Use technology to enhance productivity.**

**CRP12. Work productively in teams while using cultural global competence**

### SEL Practices & Competencies:

**-Establish and maintain healthy relationships.**

**-Demonstrate an understanding of the need for mutual respect when viewpoints differ.**

- Develop implement and model effective problem solving and critical thinking skills.
- Recognize the impact of one's feelings and thoughts on one's own behavior
- Recognize one's personal traits, strengths and limitations
- Recognize the importance of self-confidence in handling daily tasks and challenges.
- Utilize positive communication and social skills to interact effectively with others.
- Identify who, when, where, or how to seek help for oneself or others when needed.
- Demonstrate and awareness of the differences among individuals, groups and others' cultural backgrounds.

**Overall Goal (What is the big idea?)**

Students will develop and use mathematical, physical, graphical or conceptual models to describe the cyclical patterns of lunar phases, eclipses of the sun and moon, and seasons. Students can use mathematics to create scale models of the solar system to investigate relative distances between the planets and their orbits around the sun or to represent the distance from the sun to the Earth during different Earth seasons. Students can also use physical models to examine the phases of the moon using a light source and a moon model to view the various shapes of the moon as it orbits the earth. Students may also keep a lunar calendar for one month and analyze the results by looking for differences and patterns. Using a model of the sun, Earth, and moon, students can view the positions of these planetary objects during a solar or lunar eclipse. To investigate seasons, students can simulate the position and tilt of the Earth as it revolves around the sun, using computer simulations, hands-on models, and videos. Movements of the Sun, Earth and Moon influence seasons, phases of the moon and eclipses. Analyzing data to determine relationships and pattern among different objects in our solar system.

**Pre-Assessments: "Science Probes" prior to each lesson presented.**

Please include interdisciplinary connections resources and plan in each activity

<b>(SLO) Student Learning Objectives (with standards)</b>	<b>Student Learning Strategies</b>	<b>Formative Assessment ***suggested but not limited to the following***</b>	<b>Activities ***suggested but not limited to the following***</b>	<b>Modifications &amp; Reflections ***suggested but not limited to the following***</b>

<p><b>W.A.L.T</b>  Develop and use a model to describe phenomena.  of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.  <a href="#">MS-ESS1-1</a></p>	<p>-Notetaking &amp; notemaking from viewing of videos.  -Facilitate whole group discussion.  -Think-Pair Share.’  -Close Reading: “Meteorological vs. Astronomical Seasons,’ p.19 - Student text.</p>	<p>“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observation. Module 1 Lesson Review, student text p.22</p>	<p>6.NS.B.2, RST.6-8.7  -/<a href="#">Brain-Pop Seasons</a></p> <p>-Introduce the model of the Sun-Earth system introducing the terms revolution and rotation.  -Introduce North Star Conduct a whole demonstration with students using the developed model.</p> <p><a href="#">Calculating sunrise and sunset</a>  -Calculate hours of sunlight for Roselle, NJ. (Note: 21 st of each month). Provide an example of a month to work together. (Students might have their own method to calculate elapsed time).  -Give each student pair one month to calculate.  -Enter data on their personal chart, then data on class chart.</p>	<p>- ELL &amp; Special Needs students - template of vocabulary at the beginning of each lesson which they will create their own quizlet page (See 21st Century themes).  -Extended completion time.  - Modifications as set forth by student’s IEP.  -Less complex reading level  - Speech-to text assistive technology.  -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.  -FOSS Video:  <a href="http://www.fossweb.com/delegate/ssi-wdf-ucm-webContent/Contribution%20Folders/FOSS/multimedia/Planetar">http://www.fossweb.com/delegate/ssi-wdf-ucm-webContent/Contribution%20Folders/FOSS/multimedia/Planetar</a></p>
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				<a href="#">y_Science/activities/seasons/index.html</a>
<p><b>W.A.L.T</b>  Develop and use a model to describe phenomena.  of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.  <a href="#">MS-ESS1-1</a></p>	<ul style="list-style-type: none"> <li>-Notetaking from viewing of videos.</li> <li>-Facilitate whole group discussion.</li> <li>-Small group investigation for lab.</li> <li>-Cooperative learning groups.</li> </ul>	<p>“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observation</p> <ul style="list-style-type: none"> <li>-Module 1 Lesson 2</li> </ul> <p>Review p. 38-40 student text.</p>	<p>(SL.6.1) (RST.6-8.7)</p> <p><a href="#">Moon Phases Lab</a></p> <ul style="list-style-type: none"> <li>-Lab: ‘Moon Phases’ pp. 33-37 student text.</li> </ul> <p><a href="#">Moon Observation Chart</a></p> <ul style="list-style-type: none"> <li>-Assign ‘Lunar Observing Record Chart.’ Students find/track the moon phases by recording the date, time, location in sky and any observable features.</li> </ul>	<ul style="list-style-type: none"> <li>-ELL, Special Needs, At Risk:</li> <li>-Extended completion time.</li> <li>- Modifications as set forth by student’s IEP.</li> <li>-Less complex reading level</li> <li>- Speech-to text assistive technology.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides, point out key word, and/or phrases.</li> <li>-Learning Cycle Challenge:</li> </ul>

				<p><a href="http://sciencenetlinks.com/interactives/moon/moon_challenge/moon_challenge.html">http://sciencenetlinks.com/interactives/moon/moon_challenge/moon_challenge.html</a></p> <p>-Phases of the Moon: <a href="http://teachers.henrico.k12.va.us/staffdev/clough_d/moon/Phases.html">http://teachers.henrico.k12.va.us/staffdev/clough_d/moon/Phases.html</a></p> <p><a href="#">-Craters of the Moon Activity</a></p>
<p><b>W.A.L.T</b> Develop and use a model to describe phenomena. of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. <a href="#">(MS-ESS1-1)</a></p>	<p>-Small group investigation for lab. -Cooperative learning groups viewing of Animation: "Eclipses." -'Making Predictions'-p.67. student text</p>	<p>"Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations -Module 1 Lesson 3 Review: Student text pp. 58-60.</p>	<p>(SL.6.1) (RST.6-8.7)</p> <p><a href="#">-Lab: 'Shadow of a Doubt'</a> student text pp. 46-47.</p> <p>-Lab: 'Casting a Shadow,' pp.49-50.</p>	<p>-Extended completion as stated in IEP's and 504's -Rewording of directions including the use of text to speech software. -Provide students with handouts, power-points, "Google Slide Presentations as study guides.point out key word,and/or phrases. -Individualized instruction.</p>

<p>W.A.L.T describe how the universe and other celestial objects form <a href="#">(MS-ESS1-2)</a></p> <p>W.A.L.T. compare objects in the solar systems <a href="#">(MS-ESS1-3)</a></p>	<p>-Copperative learning grouping. - “Quick Write” narriative on p.78 student text. -Notetaking: Video: “Viewing Galxies” -”Think, Pair and Share.”; Objects in Our System. student text pp. 91 -Graphic Organizer following Video: “In Our Neighborhood. -Compare and Contrast objects in our solar system , Student text p.110. Read Scientific Text- p.105</p>	<p>“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Obervations, Notebook obsevation. Module 2 Lesson Review 1 -student text pp. 88-90. “Do-Now’s,” “Exit Ticket,” Informal Anecdotal Obervations, Notebook obsevation. -Module 2 Lesson Review2 - ‘Solar System,” pp. 110 student text.</p>	<p>6.RP.A.1, RST.6-8.7, 6.EE.B.6., RST6-8.1, RST6-8.7</p> <p><a href="#">Solar System</a> <a href="#">-Peppercorn Model</a></p> <p><a href="#">How to Build a model solar system – DIY</a></p> <p>-Lab: “Changing Shape” pp. 79-80 “ pp. student text. -Lab: “Eliptical Orbits student text p.85</p> <p>Lab: “Model Inner Planets,” p. 100-101 student text.</p> <p>Lab: “Scaling Down” pp.101-102 student text. Math Activity</p>	<p>ELL, Special Needs, At Risk:</p> <p>-Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology. Use of calcaultors if needed for ‘Scaling Down.” lab and the alternate activity listed below. -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases. <u>Alternate Activity:</u> “The Earth as a PeppercornModel”(or The Thousoand-Yard Model). Introduce the model objects that will be used for ‘scaled sizes’ to be used as planets. -Use a scaling sheet to see which objects are</p>
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				matched to which specific planets. (establishing the scale). <b>Outdoor activity.</b> Website: <a href="#">Peppercorn Model</a>

<b>21<sup>st</sup> Century Theme Targeted – Global Awareness, Financial, Economic, Business and Entrepreneurial Literacy, Civic Literacy Health Literacy)</b>					
<b>21st Century Skills Targeted</b>					
<b>Creativity &amp; Innovation</b>	<b>Information Literacy</b>	<b>Media Literacy</b>	<b>Critical Thinking &amp; Problem Solving</b>	<b>Communication &amp; Collaboration</b>	<b>Life &amp; Careers</b>
Vocabulary game on various astronomical terms	list of vocabulary	“Quizlet”	Trying to formulate vocabulary based on given pictures and definitions.	Cooperative Learning Groups	Astronomer, Meteorology
“Peppercorn Model of the System.”	Reading charts of scaled planetary objects	You Tube video illustrating concept	Computing scaled down models of the solar system.	Cooperative learning groups	Mathematician

**Summative Assessments: (include rubrics & exemplars) Rubrics, Completed Lab Reports, Completed 'lesson review' at the conclusion of each lesson.**

**Unit Title: Weather and Climate Unit 2**

**Time Frame: Approximately 40-45 days**

**Essential Questions**

- How does water cycle into and through the atmosphere?
- How does water cycle on the Earth's surface?
- How does energy transfer from the Sun to Earth and the atmosphere?
- What causes air and water to flow?
- How do the interactions of air masses cause a change in weather?
- What factors determine regional climates?
- How is weather described?
- How do meteorologists predict the weather?

**Standards**

**Standards / CPIs (Cumulative Progress Indicators) taught and assessed:**

**MS-ESS2-4: Develop a model to describe the cycling of water through the Earth's systems driven by energy from the sun and the force of gravity.**

**MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.**

**MS-ESS2-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.**

**6.NS.5: Apply and extend previous understandings of numbers to the system of rational numbers.**

**RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).**

**RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.**

**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.**

**Highlighted Career Ready Practices:**

**CRP2. Apply appropriate academic and technical skills.**

**CRP4. Communicate clearly and effectively and with reason.**

**CRP5. Consider the environmental, social and economic impacts of decisions.**

**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.**

**CRP11. Use technology to enhance productivity.**

**CRP12. Work productively in teams while using cultural global competence**

**SEL Practices & Competencies:**

**-Establish and maintain healthy relationships.**

**-Demonstrate an understanding of the need for mutual respect when viewpoints differ.**

**-Develop implement and model effective problem solving and critical thinking skills.**

**-Recognize the impact of one's feelings and thoughts on one's own behavior**

**-Recognize one's personal traits, strengths and limitations**

**-Recognize the importance of self-confidence in handling daily tasks and challenges.**

**-Utilize positive communication and social skills to interact effectively with others.**

**-Identify who, when, where, or how to seek help for oneself or others when needed.**

**-Utilize positive communication and social skills to interact effectively with others**

**Overall Goal (What is the big idea?)**

- What drives the cycling of water among the oceans, atmosphere, land and organisms?
- How do patterns of atmospheric and oceanic circulation impact water and climate?

-This unit is broken down into three sub-ideas: Earth's large-scale systems interactions, the roles of water in Earth's surface processes, and weather and climate. Students make sense of how Earth's geosystems operate by modeling the flow of energy and cycling of matter within and among different systems. A systems approach is also important here, examining the feedbacks between systems as energy from the Sun is transferred between systems and circulates through the ocean and atmosphere. The crosscutting concepts of cause and effect, systems and system models, and energy and matter are called out as frameworks for understanding the disciplinary core ideas. In this unit, students are expected to demonstrate proficiency in developing and using models and planning and carrying out investigations as they make sense of the disciplinary core ideas. Students are also expected to use these practices to demonstrate understanding of the core ideas.

**Pre-Assessment: "Science Probes" at the beginning of each lesson.**

Please include interdisciplinary connections resources and plan in each activity

(SLO) Student Learning Objectives (with standards)	Student Learning Strategies	Formative Assessment ***suggested but not limited to the following***	Activities ***suggested but not limited to the following***	Modifications & Reflections ***suggested but not limited to the following***
<p>W.A.L.T develop a model that drives the processes of the water cycle. <a href="#">(MS-ESS2-4)</a></p>	<p>-'Think, Pair and Share View video: 'Who Drank My Water.' student text p. 3 - 'Quick Write' - explore the interactive presentation: "Water in the Atmosphere" and</p>	<p>"Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, Module 1 Lesson 1 Review, student text, pp. 20-22</p>	<p><a href="#">RST.6-8.7, SL.6.1</a>  <a href="#">Lab: "Into the Air," student text pp. 11-12.</a>  <a href="#">BrainPop - Water Cycle</a></p>	<p>ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student's IEP. -Less complex reading level</p>

	<p>compose a response, Student text p. 7</p> <ul style="list-style-type: none"> <li>-C.E.R.(Claim/Evidence/Reasoning)- Students construct explanations and craft scientific arguments, Student text pp.8-10.</li> <li>-Notetaking and notemaking.</li> <li>-Direction Instruction: STEM Module Project launch: Dinosaur and Dew,” pp. 4</li> </ul>		<p><a href="#">Water Cycle USGS</a></p> <p>Lab: “Out of Thin Air” student text pp. 16-17.</p>	<ul style="list-style-type: none"> <li>- Speech-to text assistive technology.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</li> </ul> <p>Gifted and Talented: STEM Module Project: “Dinosaurs and Dew.” student text pp. 38-42</p>
<p>W.A.L.T that water cycles among its subsystems focusing on runoff and precipitation. <a href="#">(MS-ESS2-4)</a></p>	<ul style="list-style-type: none"> <li>-Scaffolding Instruction:view video ‘On the Move,” student text p.25.</li> <li>-C.E.R.(Claim/Evidence/Reasoning) - construct explanations,student text pp. 26-27.</li> <li>-Reading a Scientific Text: “Close Reading,”student text, p.29.</li> <li>-Vocabulary Development: Create</li> </ul>	<ul style="list-style-type: none"> <li>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</li> <li>-Module 1, Lesson 2 Review, text pp.36-37.</li> <li>-Online: Lesson Check: “Water on the Earth’s Surface.”</li> </ul>	<p><b>RST.6-8.7, SL.6.1</b></p> <p>Lab: “Make it Rain,” text pp.28.</p> <p>Investigation: “Where Does All the Rain Go,” pp. 30-31.</p>	<p>ELL, Special Needs, At Risk:</p> <ul style="list-style-type: none"> <li>-Extended completion time.</li> <li>- Modifications as set forth by student’s IEP.</li> <li>-Less complex reading level</li> <li>- Speech-to text assistive technology.</li> <li>-Continue: STEM Module Project: “Dinosaurs and Dew.” student text pp. 38-42</li> </ul>

	<p><b>'Quizlet' study set on 'Weather and Climate'</b></p>			<p><b>-Create a Lab safety contract.</b></p>
<p><b>W.A.L.T the transfer of energy from the Sun to Earth and the atmosphere.</b>  <a href="#">(MS-ESS2-5)</a>  <a href="#">(MS-ESS2-6)</a></p>	<p><b>-K-W-L Chart: Construct one based on the lesson topic.</b>  <b>-View video: "Solar Energy on Earth," p. 49.</b>  <b>-C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text pp.50-51.</b></p>	<p><b>-"Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, -Module 2 Lesson 1 Review, student text: pp. 68-70.</b></p>	<p><b>MP.2, 6.NS.C.5, RST 6-8.1, RST 6-8.9, SL.8.5</b></p> <p><b>-Investigation: "Catching Some Rays," pp. 52-53.</b>  <b>-Lab: "Shine On," text: pp.54-55.</b>  <b>-Lab: "Warm Up and Cool Down, text: pp.56-57.</b>  <b>-Lab: 'Hot Air' pp. 58-59.</b>  <b>-Lab: 'To Absorb or Not to Absorb' pp.63-65.</b></p>	<p><b>ELL, Special Needs, At Risk:</b>  <b>-Extended completion time.</b>  <b>- Modifications as set forth by student's IEP.</b>  <b>-Less complex reading level.</b>  <b>- Speech-to text assistive technology for labs and investigations.</b>  <b>-Individualized instruction.</b>  <b>-STEM Project: "AS the Water Churns p.46</b></p>
<p><b>W.A.L.T explore atmospheric and ocean circulation.</b>  <a href="#">(MS-ESS2-5)</a>  <a href="#">(MS-ESS2-6)</a></p>	<p><b>-Direct Instruction: view video, "Atmospheric and Oceanic Circulation, student text, pp. 73.</b>  <b>--C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text pp.74-75.</b>  <b>-3D Thinking: "Why does air flow," Interactive Presentation.</b></p>	<p><b>-"Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, Module 2 Lesson 2 Review, student text pp. 94-96.</b></p>	<p><b>MP.2, 6.NS.C.5, RST 6-8.1, RST 6-8.9, SL.8.5</b></p> <p><b><a href="#">Wind Lab</a></b></p> <p><b><a href="#">-Air Masses Lab</a></b></p> <p><b>-Lab: "Moving Air," pp.76-77.</b>  <b>-Investigation: "It's a Breeze." pp. 78-79.</b></p>	<p><b>ELL, Special Needs, At Risk:</b>  <b>-Extended completion time.</b>  <b>- Modifications as set forth by student's IEP.</b>  <b>-Less complex reading level</b>  <b>- Speech-to text assistive technology.</b></p>

			<p>-Investigation:” “It’s a Blowin,” pp. 80-81.          -Lab: “Moving Water,” pp.84-85.          -Lab: “Toys Ahoy,”pp. 89-90.</p>	<p>-Continue STEM Project “AS the Water Churns,” p.46</p>
<p>W.A.L.T look for patterns in weather and explain how and why weather changes.  <a href="#">(MS-ESS2-5)</a>  <a href="#">(MS-ESS2-6)</a></p>	<p>-Notetaking and notemaking, video:’Weather Patterns,p.99.          --C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text pp.100-101.          -Direction Instruction: Investigation- “Listen Up,” pp. 102-103.          -Reading a scientific text: <u>Close Reading</u>: “Jet Stream and Reading.” text p. 109.</p>	<p>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations, Module 2 Lesson 3: pp. 126-128.          -Interactive Resource: “Lesson Check: Weather Patterns.”          -Interactive Presentation: “Lesson Review: Weather Patterns.”</p>	<p><b>MP.2, 6.NS.C.5, RST 6-8.1, RST 6-8.9, SL.8.5</b>          -<a href="#">Weather Maps</a> to use with labs and investigations.          -<a href="#">Satellite Maps</a> to use with investigations and labs.          -<a href="#">Air Masses</a> - to use with investigation “Air Mass Collision Course”          -Investigation: Describing the Weather” pp. 104-105.          -Lab: “Feel the Air.” pp.106-107.          -Investigation: “Characteristics of Air Masses,” p.107-108.          -Investigation: “Highs and Lows” pp.111-112.          -Investigation: “Air Mass Collision Course,” pp. 113-115.</p>	<p>ELL, Special Needs, At Risk:          -Extended completion time.- Modifications as set forth by student’s IEP. -Less complex reading level          - Speech-to text assistive technology for labs and investigations.          -Individualized instruction.          -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</p>

			<ul style="list-style-type: none"> <li>-Investigation: “Come Rain or Shine,” 116-118.</li> <li>-Lab: “Predicting the Weather,” pp. 119-123.</li> </ul>	
<p>W.A.L.T explore climate and the factors that determine regional climates.</p> <p><a href="#">(MS-ESS2-5)</a> <a href="#">(MS-ESS2-6)</a></p>	<ul style="list-style-type: none"> <li>-Notetaking and notemaking: view the video: “Climates of Earth”p.131.</li> <li>-C.E.R(Claim/Evidence/Reasoning), Construct evidence, student text pp.132-133.</li> <li>-Close Reading: “What is Climate?” pp. 134-135.</li> <li>-Shared Reading: “Life on Top of the World” p.138.</li> </ul>	<ul style="list-style-type: none"> <li>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</li> <li>- “Study Tools-Foldables” TM p.134.</li> <li>-Lesson Review: “Climates of The Earth.” Tmp.152</li> <li>-Module 2 Lesson 4 Review text pp. 152-154</li> </ul>	<p><b>MP.2, 6.NS.C.5, RST 6-8.1, RST 6-8.9, SL.8.5</b></p> <p><a href="#">-World Map</a></p> <ul style="list-style-type: none"> <li>-Investigations: “Takin Temp of the Earth.” pp.135-137.</li> <li>-Investigations: “In the Air,” pp. 139-141.</li> <li>-Investigations: “A Tale of Three Cities,” pp.143-145.</li> <li>-STEM Module Project: “As the Water Churns”pp. 154-160.</li> </ul>	<p>ELL, Special Needs, At Risk:</p> <ul style="list-style-type: none"> <li>-Extended completion time.</li> <li>- Modifications as set forth by student’s IEP.</li> <li>-Less complex reading level</li> <li>- Speech-to text assistive technology for labs and investigations.</li> <li>-Individualized instrution.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</li> </ul>

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<b>21<sup>st</sup> Century Theme Targeted – Global Awareness, Financial, Economic, Business and Entrepreneurial Literacy, Civic Literacy Health Literacy)</b>					
<b>21st Century Skills Targeted</b>					
<b>Creativity &amp; Innovation</b>	<b>Information Literacy</b>	<b>Media Literacy</b>	<b>Critical Thinking &amp; Problem Solving</b>	<b>Communication &amp; Collaboration</b>	<b>Life &amp; Careers</b>
<b>STEM Module Project</b>	<b>Reserach project</b>	<b>-reading scientific text.</b>	<b>Students develop models to investigate the continous cycling of water on Earth</b>	<b>Present to class via Cooperative Learning Groups: Jigsaw</b>	<b>Hydrologists</b>
<b>STEM Career</b>	<b>-View a video on water quality.</b>	<b>-Online activitiy.</b>	<b>Students read a article on what a waterkeeper does.</b>	<b>Interactive Presentation: ‘A Dy in the Yuba River.’<sup>a</sup></b>	<b>WaterKeeper</b>
<b>Predicting the weather.</b>	<b>-Interactive presentation</b>	<b>-3D thinking</b>	<b>Students reading types of weather maps</b>	<b>Cooperative learning groups</b>	<b>Meteorologists</b>
<b>Summative Assessments: (include rubrics &amp; exemplars) Rubrics, Completed Lab Reports, Completed ‘lesson review’ at the conclusion of each lesson. Model Project Rubric (on-line), Online: “LearnSmart.” STEM Module Projects,(Introduced at the beginning of the model competition at end of the model.</b>					

<p><b>Unit Title: Impacts on the Environment Unit 3</b></p> <p><b>Time Frame: Approximately 40-45 days</b></p>
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### Essential Questions

- How can humans minimize their impact on land?
- How does a growing population impact Earth?
- What are the consequences of using land as a resource?
- How can humans monitor and minimize their impact on water?
- How can satellites help monitor human impact on Earth's water?
- Why must humans minimize their impact on the atmosphere?
- How can we protect the atmosphere?
- How have human activities caused the rise in global temperatures and what is the environment impact of global warming?

### Standards

Standards / CPIs (Cumulative Progress Indicators) taught and assessed:

**MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.**

**MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.**

**MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.**

**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.**

**6.NS.5: Apply and extend previous understandings of numbers to the system of rational numbers.**

**6.NS.2: Fluently divide multi-digit numbers using the standard algorithm.**

**6.SP.A: Develop understanding of statistical variability.**

**RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).**

**RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.**

**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.**

**Highlighted Career Ready Practices:**

**CRP2. Apply appropriate academic and technical skills.**

**CRP4. Communicate clearly and effectively and with reason.**

**CRP5. Consider the environmental, social and economic impacts of decisions.**

**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.**

**CRP11. Use technology to enhance productivity.**

**CRP12. Work productively in teams while using cultural global competence**

**SEL Practices & Competencies:**

**-Establish and maintain healthy relationships.**

**-Demonstrate an understanding of the need for mutual respect when viewpoints differ.**

**-Develop implement and model effective problem solving and critical thinking skills.**

**-Recognize the impact of one's feelings and thoughts on one's own behavior**

**-Recognize one's personal traits, strengths and limitations**

**-Recognize the importance of self-confidence in handling daily tasks and challenges.**

**-Utilize positive communication and social skills to interact effectively with others.**

**-Identify who, when, where, or how to seek help for oneself or others when needed.**

**-Utilize positive communication and social skills to interact effectively with others.**

**-Demonstrate and awareness of the differences among individuals, groups and others' cultural backgrounds**

**-Demonstrate an awareness of the expectations for social interactions in a variety of settings**



**Overall Goal (What is the big idea?)**

-How do human activities impact Earth’s land, water, atmosphere, and climate?  
 -How does human population growth and increases in per-capita consumption on natural resources affect Earth’s systems?  
 Students today are born on a warming planet. The consequences of continued warming will be much better understood, and they will probably fall on the negative side of the equation. Students will live in a transition between an economy using ‘dirty’ fossil fuel to energize human powered by technologies and an economy powered by technologies that do not spew waste carbon dioxide in the atmosphere. One unit in middle school science won’t provide the knowledge to solve the problem of global warming, but it may spark interest and raise important questions.

**Pre-Assessment: “Science Probes” and/or “Encountering the Phenomenon” at the beginning of each lesson.**

**Please include interdisciplinary connections resources and plan in each activity**

<b>(SLO) Student Learning Objectives (with standards)</b>	<b>Student Learning Strategies</b>	<b>Formative Assessment ***suggested but not limited to the following***</b>	<b>Activities ***suggested but not limited to the following***</b>	<b>Modifications &amp; Reflections ***suggested but not limited to the following***</b>
<p>W.A.L.T explore the impact of human activities on the land. <a href="#">(MS-ESS3-3)</a></p>	<p>-Direct Instruction: View the Presentation: “Human Impact o the Environment,” text p. 3 -C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text pp. 8-9. -Cause and Effect: “Impacts of</p>	<p>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations, -Study Tools: “Foldables” Tmp.10 -3D Dimensional Thinking, student text pp. 22. -Module Lesson 1 Review pp. 30 - 31.</p>	<p><b>6.RP.A.1, 6.EE.B.6, WHST6-8.7, WHST 6-8.8</b>  -Lab: “Move Over” pp.11-13. - Investigation: “The Last Forest Frontier, test pp. 13-14. - math computational thinking activity.</p>	<p>ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for</p>

	<p>Agriculture.”student text, p.16</p> <p>-Read a Scientific Text: “Close Reading,” p. 20.</p>		<p>-Lab: “Modeling Earth’s Framland” text pp. 15-16.</p> <p>-Investigation: “Rainfall Runoff” text p.17. (outside science).</p> <p>-Lab: “Love the Leachate” pp. 26-27.</p>	<p>labs and investigations.</p> <p>-Small Group/Individualized instruction.</p> <p>-Lab Safety Form for outside science activity.</p>
<p>W.A.L.T explore the impact of human activities on water.</p> <p><a href="#">MS-ESS3-3</a></p>	<p>-Notetaking and notemaking: Interactive Phenomenon:”Impact on Water.”</p> <p>-C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text pp. 36-37.</p> <p>-Visual Literacy: “Reading a Pie Chart.” (math literacy - compose a math question relating to the chart). Tmp.39.</p> <p>-Read a Scientific Text: “Close Reading,” Tmp.42.</p> <p>-Direct Instruction: “Water Pollution”<sup>TM</sup> p.47 ( notetaking and making)</p>	<p>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</p> <p>-Study Tools: “Foldables” Tmp.39.</p> <p>-Interactive Presentation (on-line): “How to human and pollute Earth’s water Solid Waste,.” TM. p.51.</p> <p>-Module 1 Lesson 2 Review pp. 56-58.</p>	<p><b>6.RP.A.1, 6.EE.B.6, WHST6-8.7, WHST 6-8.8</b></p> <p><a href="#">Interactive Water Cycle Map</a></p> <p><a href="#">Land Pollution</a></p> <p><a href="#">Interactive Water Pollution</a></p> <p>-Lab: “Drip Drop,” pp. 38-39</p> <p>-Investigation: “Case Study: The Aral Sea,” pp. 40-41.</p> <p>-Lab: “Pollution in Motion,” pp. 45-46.</p> <p>-Lab: “Waves of Waste,” pp. 49-50.</p>	<p>ELL, Special Needs, At Risk:</p> <p>-Extended completion time.</p> <p>- Modifications as set forth by student’s IEP.</p> <p>-Less complex reading level</p> <p>- Speech-to text assistive technology for labs and investigations.</p> <p>-Small Group/Individualized instruction.</p> <p>-Add new terms with pictorial representation to class “Word Wall,”</p> <p>-Provide students with copies of Google Presentations.</p> <p>-World Map to reinforce</p>

	<p>-Student Metacognition: read article: “Down the Drain,” Tmp.48</p>		<p>-Investigation: “Ocean Garbage,” pp. 50-51. -Engineering Investigation; “Solution for Pollution.” pp. 53-55.</p>	<p>geography.:<a href="#">World Map</a> Alternative Project Engineering Project: Engineering is Elementary Project (EIE) - “Water Filtration Environmental Engineering.”</p>
<p>W.A.L.T the impact of human activities on the atmosphere <a href="#">(MS-ESS3-3)</a></p>	<p>-Notetaking and notemaking: Interactive Presentation: “Impact on the Atmosphere.” p.61. -C.E.R(Claim/Evidence/Reasoning), Construct evidence, student text pp.62-64. -Cause and Effect students discuss activities that result in air pollution: Investigation; “In a Haze p. 64.</p>	<p>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations, -3D Thinking:”Cause and Effect” chart, text p.70. -Module1 Lesson 3 Review pp. 76 ( also available on-line.</p>	<p><a href="#">6.RP.A.1, 6.EE.B.6, WHST6-8.7, WHST 6-8.8</a>  <a href="#">What is Acid Rain?   Acid Rain   US EPA</a>  <a href="#">Calculating Greenhouse Gases for Kids</a>  -Investigation: “Oh Ozone,” text, p. 65. -Investigation: “As a Matter of Fact,” p.66-67. -Investigation: “Damaging Drizzle” text p. 68. -Lab: “Close to Home,” p. 69. -Investigation: ‘International and</p>	<p>ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instruction. -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</p>

			<p>National Initiatives,” p. 71-72. (Math activity - reading graphs and charts).</p> <p>-Interactive Investigation: “It’s Your Turn,” text p. 73</p>	-Add unfamiliar words to the “Word Wall.”
<p>W.A.L.T explore the impact of human activities on climate and how humans cause changes to the Earth’s climate.</p> <p>(MS-ESS3-5) (MS-ESS3-3) (RST.6-8.7) (RST.6-8.1)</p>	<p>-Notetaking and Notemaking, “Encountering the Phenomenon: Impact on Climate,” text pp. 80-81, (on-line).</p> <p>-C.E.R.(Claim/Evidence/Reasoning), Construct evidence, student text- pp.82-83</p> <p>-Read a Scientific Text: “What Does a Warming climate mean for an ecosystem on land? text p.98-</p>	<p>-“Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</p> <p>- 3D Thinking: “What is Climate Change,” text p. 84.</p> <p>-3D Thinking: “Where is all the CO2 coming from?(Interactive Presentation).</p> <p>3D Thinking: “What Can Be Done?” p.99, interactive presentation.</p> <p>-Module 1 Lesson 4, Review, text. 102.</p>	<p>-Investigation: “For the Record.”text pp. 85-86.</p> <p>-Investigation “Greenhouse Gases,” text pp.86-87.</p> <p>“Investigation: “On the Rise,” p. 88-90 (**All 3 above activities use mathematical and computational thinking.”</p> <p>-Lab: “An Eggcellent Question.” p. 97.</p> <p>-STEM Module Project: “Who’s Moving Next Door?” text, pp. 105-111.</p>	<p>-ELL, Special Needs, At Risk:</p> <p>-Extended completion time.</p> <p>- Modifications as set forth by student’s IEP.</p> <p>-Less complex reading level</p> <p>- Speech-to text assistive technology for labs and investigations.</p> <p>-Small Group/Individualized instruction.</p> <p>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</p> <p>-Alternative Activity: Engineering Solutions: Envisioning Solutions</p>

<p>W.A.L.T investigate the cause-and-effect relationship between human population growth and the use of resources. <a href="#">(MS-ESS3-4)</a></p>	<p>-Notetaking and notemaking: "Human Population Growth," p.117. (available on-line). -C.E.R(Claim/Evidence/Reasoning), Construct evidence, student text-pp.118-119.</p>	<p>-Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, -Study Tools: "Foldables" Tmp. 120. -Investigation: "Resource Consumption, pp.130-132. Module 2 Lesson 1 Review, p.132-135.</p>	<p>6.RP.A.1, 6.EE.B.6, RST.6-8.1, WHST.6-8.1, WHST.6-8.9  -Investigation: "How We Grow Again?" student text, p. 120-121. -Investigation: "CompariNg Ages," pp.122-125. -Lab: "Bean There,Done That," pp. 126-127. -Investigation: "Population Simulation," p. 128-129,(Analyzing and Interpreting Data - Graphing Data , Proportional relationships, math skill)</p>	<p>pp. 100-101. ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student's IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instrutction. -Provide students with handouts, power-points, "Google Slide Presentations as study guides.point out key word,and/or phrases. -Addtional Resource: Investigation: "Graphing Population Growth," TM.121 (Math skill)</p>
<p>W.A.L.T how people use resources and increases of use of</p>	<p>-Notetaking and notemaking,Interactive Presentation: "People</p>	<p>-Do-Now's," "Exit Ticket," Informal</p>	<p>6.RP.A.1, 6.EE.B.6, RST.6-8.1,</p>	<p>ELL, Special Needs, At Risk:</p>

<p>resources affects Earth's systems.  <a href="#">MS-ESS3-4.</a>  <a href="#">MS-ETS1-1</a>  <a href="#">MS-ETS1-2</a></p>	<p>and the Environment,” text, pp138-139.  -C.E.R(Claim/Evidence/Reasoning), Construct evidence, student text-pp.140-141.  -Read a Scientific Text-Close Reading text p.151.  -Coperative Learning Groups:Return to the “Science Probe at the end of the unit to see if you agree or disagree.</p>	<p>Anecdotal Obervations, Notebook obsevatons,  -Study Tools: “Foldables” Tmp. 142.  -3D Thinking, text pp.150.  -Module 2 Lesson 2 Review,text pp. 152-154.</p>	<p><b>WHST.6-8.1,</b>  <b>WHST.6-8.9</b></p> <p><b><u>Rebuiding Forests</u></b></p> <p><b><u>Interactive growing Forests</u></b></p> <p>-Investigation-”Falling Forests,” text pp.142-143(Math calculations - finding %.)  -Investigation - “Arc of Deforestation,” text p.144-146.  -Engineering Investigation:”Engineer ring Solutions,” text pp.148-150.  -STEM Module Project: “7.6 Billion and Counting” pp. 155-161.</p>	<p>-Extended completion time.  - Modifications as set forth by student’s IEP.  -Less complex reading level  - Speech-to text assistive technology for labs and investigations.  -Small Group/Individualized instrutction.  -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</p> <p>Online resour-ces for students for the investigations and labs.</p>

21<sup>st</sup> Century Theme Targeted – Global Awareness, Financial, Economic, Business and Entrepreneurial Literacy, Civic Literacy Health Literacy)

<b>21st Century Skills Targeted</b>					
<b>Creativity &amp; Innovation</b>	<b>Information Literacy</b>	<b>Media Literacy</b>	<b>Critical Thinking &amp; Problem Solving</b>	<b>Communication &amp; Collaboration</b>	<b>Life &amp; Careers</b>
<b>Poster of wetlands restoration.</b>	<b>Article</b>	<b>Interactive video</b>	<b>-Share prior knowledge -Higher Order Questioning.</b>	<b>-Cooperative Learning Groups</b>	<b>Environment -alist</b>
<b>Ask the question; “What is algae?”</b>	<b>Article- “Green Zones, Dead Zones.”</b>	<b>Interactive Video: “Green Science: Dead Zones.”</b>	<b>-Using a map of the world plot 5 of the 150 ‘Dead Zones’ in the world oceans.</b>	<b>-Small Group Instruction</b>	<b>Marine biologist</b>
<b>Engineering Investigation</b>	<b>Article- “Debate It,”</b>	<b>Reading and writing</b>	<b>-Groups debating for or against using diferent forms of energy.</b>	<b>-Reciprocal Teaching.</b>	<b>Engineers</b>
<b>Article</b>	<b>Article- ‘Oceans-On the Rise-Again.</b>	<b>Reading</b>	<b>Rrelationship between Rising sea levles and melting ice sheets.</b>	<b>-Small group discussions</b>	<b>Geologists</b>
<b>STEM Career</b>	<b>Article: ‘A Day in the Life of a Demographer, ”</b>	<b>Reading, Article also available on-line.</b>	<b>Analyzing and interpreting population data.</b>	<b>-Whole group discussion.</b>	<b>Demographer</b>
<b>Summative Assessments: (include rubrics &amp; exemplars) Rubrics, Completed Lab Reports, Completed ‘lesson review’ at the conclusion of each lesson. Model Project Rubric (on-line), Online: “LearnSmart.” lessons, STEM Module Projects,(Introduced at the beginning of the model competition at end of the model. EngineeringInvestigation: ‘Solutions of Pollution.’ Module Test: “Human Impact on the Environmnt TM.111., Module Test:”Earth and Human Activity,” TM p.161 (online-resource).</b>					



Standards

**Standards / CPIs (cumulative Progress Indicators) taught and assessed:**

**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-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events.**

**MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.**

**MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.**

**MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.**

**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-ESS3-1: Construct a scientific explanation based on evidence for how the uneven distributions of Earth's material, energy and groundwater resource.**

**6.NS.5: Apply and extend previous understandings of numbers to the system of rational numbers.**

**6.NS.2: Fluently divide multi-digit numbers using the standard algorithm.**

**6.SP.A: Develop understanding of statistical variability.**

**6.RP.A3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.**

**RST 6-8.1:Cite specific textual evidence to support analysis of science and technical texts.**

**RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).**

**RST.6-8,9: Students compare information from the text to information for the text.**

**RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.**

**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.**

**Highlighted Career Ready Practices:**

**CRP2. Apply appropriate academic and technical skills.**

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**-Establish and maintain healthy relationships.**

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**-Recognize the importance of self-confidence in handling daily tasks and challenges.**

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**-Utilize positive communication and social skills to interact effectively with others.**

**-Demonstrate and awareness of the differences among individuals, groups and others' cultural backgrounds .**

**-Demonstrate an awareness of the expectations for social interactions in a variety of settings.**

**Overall Goal (What is the big idea?):**

**-How the analyses of rock strata and fossil be used to establish the relative of ages of major events in Earth's history**

**-How do geoscience processes shape the change the EARTH's surface over time?**

**-How do geoscience processes result in the uneven distribution of Earth's mineral, energy, and groundwater resources.?**

**-How do analyzing data on natural hazards forecast future events and develop ways to lessen their effects?**

**Students will learn how rock strata and fossil record are used to establish the relative ages of major events in the Earth's history and how the geologic time scale is used to organize that history. Geoscience processes shape the Earth's process.**

**Students learn how people use natural resources and how these resources come from geoscience processes. Students will analyze and interpret data about natural hazards and learn how these data are used, along with technology to help forecast catastrophic events. As a culminating event, Students will create a public service announcement about their results.**

**Pre-Assessment: "Science Probes" and "Encountering the Phenomenon" at the beginning of each lesson.**

**Please include interdisciplinary connections resources and plan in each activity**

(SLO) Student Learning Objectives (with standards)	Student Learning Strategies	Formative Assessment ***suggested but not limited to the following***	Activities ***suggested but not limited to the following***	Modifications & Reflections ***suggested but not limited to the following***
<p>W.A.L.T explore the sequencing of events preserved in the geological record by using models. <a href="#">(MS-ESS1-4.)</a></p>	<p>Notetaking and making: Interactive Presentation: “Geological Time” &amp; “Analyzing the Rock and Fossil Rocks” -C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text-pp.8-9. -Cornell Notes: Article: “A closer Look: Drilling Into the Past,” p. 23</p>	<p>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations, -Study Tools: “Foldables” TM.8 -3D Thinking: TM. p. 11 -Review Module 1 Lesson1 p. 24-26.</p>	<p>RST.6-8.1, WHST.6-8.2, 6.EE.B.6 <a href="#">Building a Geological Time Line</a>  -Investigation: “The Present is the Key to the Past,” pp. 10-11. -Lab: “Layers of Rock.” pp.12-13. -Investigation: “The Present is Key to the Past,” pp.10-11 -Investigation: “Relatively Speaking,” pp. 14-17. (Analyzing and interpreting Data). -Lab: “Layers Rock,” pp.12-13. (Developing and Using Models). Investigation: “Reconstruction Past Envrinments,” p. 22.</p>	<p>ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instrutction. Online resour-ces for students for the investigations and labs. -Use of highlighter to -Provide students with handouts, power-points, “Google Slide Presentations as study guides.point out key word,and/or phrases.</p>

				<p><b>Additional Activity:</b> Have student groups construct a collage of different photos of landscape features the picture layers of rocks and fossils.</p>
<p>W.A.L.T explore effects of weathering. <a href="#">(MS-ESS1-4.)</a></p>	<p>-Notetaking and making Online viewing: "Building the Timeline," p.29. -C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text-pp.31-32. -Read a Scientific Text, Primary Source: "Close Reading," p. 41 -Interactive Presentation: What is the geological time scale? (on-line)</p>	<p>-Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, -3D Thinking: Tmp. 36. (Scale,Proportional and Quantity Math Activity). -Review: Module 1 Lesson 2 pp. 46-48. (All resources available online).</p>	<p><b>RST.6-8.1, WHST.6-8.2, 6.EE.B.6</b></p> <p>-Investigation: "Gaps in the Record" pp.32-33. -Investigation: "Ashes, Ashes We All Fall Down." pp. 38-39. -Investigation: "The Riddle of Rocks."p.40. -Investigation: "It's About Time," p.42-43. -Investigation: "It's a Match Tmp. 34-35. -Investigation: "Ashes, Ashes We All Fall Down," TM.38-39. (Scale,Proportional and Quantity - Math Activity). Lab: "Modeling Metaphors," p. 44-45</p>	<p>-ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student's IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instruction. Online resources for students for the investigations and labs. -Use of highlighter to point out key word,and/or phrases -Additional Resource: "Building a Time-Line," TM.47</p>

			<p>(reading tables, charts and diagrams - ELA activity).</p> <p>-STEM Module Project: "The History of Rock," pp.49-53.</p>	<p>-Additional Activity: <a href="#">Geological Time Scale</a>-Provide students with handouts, power-points, "Google Slide Presentations as study guides. <b>alternate activity.</b></p>
<p>W.A.L.T explore how the continents have moved of time on the Earth's surface. <a href="#">(MS-ESS1-4.)</a></p>	<p>-Notetaking and making Online viewing: "Moving the Continents," p. 58-59. -C.E.R.(Claim/Evidence/Reasoning), Construct evidence, student text-pp. 61-62.</p>	<p>-Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, -3D thinking: "How do rocks provide evidence that continents move?" TM.p66 (Available on-line). "Foldables." TM. p. 63 -Lab: "Reconstructing Gondwana":pp. 67-69.</p>	<p><b>RST.6-8.1, WHST.6-8.2, 6.EE.B.6</b></p> <p>-Investigations: "A Surprising Fit," pp.62-63. -Lab: "Reconstructing Pangea," pp. 64-66. -Lab: "Reconstucting Gondwana," pp. 67-69. -Investigatios: "A Wegner's Thorn,pp. 71. (Alternate Activity: <a href="#">-Gondwana Puzzle</a> Student groups construct a Gondwanaland Puzzle and answer the questions after completion of the puzzle lab.</p>	<p>-ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student's IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instruction. Online resources for students for the investigations and labs. -Use of highlighter to point out key word,and/or phrases-Provide</p>

		-Review: Module2 Lesson 1 pp.72-74.		students with handouts, power-points, “Google Slide Presentations as study guides.
W.A.L.T explore the development jof the theory of plate tectonics. <a href="#">(MS-ESS2-1)</a> <a href="#">(MS-ESS2-3)</a>	-Notetaking and making Online viewing: “Encountiering the Phenomenon,” p.77 -C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text-pp.78-79. -Oral Presentation on explaining mid-ocean ridges and ocean trenches. TM. p.85. -Read a Scientific Text: “Discovering the Mid-Ocean Ridge,” p.63 <b>(Close Reading)</b> .	-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Obervations, Notebook obsevation, -3D thinking: “What is the theory of sea-floor spreading?” (on-line interactive presentation available). -Module 2 Lesson2 Review pp. 90-92.	-Lab: ‘Simulating the Sea,” p.80-81. <b>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6</b>  (Available for Online viewing). -Investigation: “Under the Sea,” <b>(Patterns)</b> p. 82. (Hyperlinks): -Investiagtion: “ Stripes on the Sea <a href="#">Sea-Floor Spreading</a> Floor, pp. 84-85. Alternate Activity: <a href="#">Sea-Floor Spreading</a>	-ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Provide students with handouts, power-points, “Google Slide Presentations as study guides.  -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instrutction. Online resour- ces for students for the investigations and labs.

				<ul style="list-style-type: none"> <li>-Use of highlighter to</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides, point out key word, and/or phrases.</li> </ul>
<p>W.A.L.T explore how the movement of plates forms mountain ranges and volcanoes and causes earthquakes.  <a href="#">(MS-ESS2-1)</a>  <a href="#">(MS-ESS2-2)</a></p>	<ul style="list-style-type: none"> <li>-Notetaking and making Online viewing: “Encountering the Phenomenon,” p. 94-95.</li> <li>-C.E.R.(Claim/Evidence /Reasoning), Construct evidence, student text-pp 96-97.</li> <li>-Text - Speech: “What happens where Earth’s plates meet?” p. 101 (Interactive Presentation).</li> <li>-Read a Scientific Text: Volcanic Landscapes p.109-110 <b>(Close Reading)</b></li> <li>-Reciprocal Teaching Read an Article, “How Nature Works: Hot Spots p. 111. research Yellowstone National Park and report to the class.</li> <li>Cornell Notes: Reading “When the Ground Shakes,”</li> </ul>	<ul style="list-style-type: none"> <li>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</li> <li>-3D Dimensional Thinking: “Fault Block Mountains,” p. 106.</li> <li>Review Module 2 Lesson 2, pp. 116-118.</li> <li>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook observations,</li> </ul>	<p><b>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6</b></p> <ul style="list-style-type: none"> <li>-Lab: “Living on the Edge,” pp.98-101.</li> <li>-Lab: :Fold Mountains,” pp.102-104.</li> <li>-Investigation: “A Tale of Two Mountain Ranges, p. 101 <b>(Analyzing and Interpreting Data)</b></li> </ul> <p>Additional Teaching Resources.</p> <ol style="list-style-type: none"> <li>1. <a href="#">Plate Tectonics</a></li> <li>2. <a href="#">Plate Tectonics Map</a></li> </ol> <ul style="list-style-type: none"> <li>-Investigation- “Take Cover” p.108. <b>(Designing and Using Models.)</b></li> </ul>	<ul style="list-style-type: none"> <li>-ELL, Special Needs, At Risk:</li> <li>-Extended completion time.</li> <li>- Modifications as set forth by student’s IEP.</li> <li>-Less complex reading level</li> <li>- Speech-to text assistive technology for labs and investigations.</li> <li>-Small Group/Individualized instruction.</li> <li>Online resources for students for the investigations and labs.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</li> </ul>

	<p>p.114. Also available online as an interactive presentation.</p>	<p>-Foldables - Study Tools, TM pp.98</p>	<p>-Lab: “Shake,Rattle and Roll” pp. 112-113.</p>	<p>-Use of highlighter to point out key word,and/or phrases. -Provide students with handouts, power-points, “Google Slide Presentations as study guides.</p>
<p>W.A.L.T. explore the proceses of weathering,erosion, and deposition, which shape Earth’s Surface. <a href="#">(MS-ESS2-1)</a> <a href="#">(MS-ESS2-2)</a></p>	<p>-Notetaking and making Online viewing: “Encountiering the Phenomenon,” pp.120-121(Available on-line). -C.E.R(Claim/Evidence /Reasoning), <b>Construct evidence</b>, student text-p.122-123. -Read article p.127 physical science connection. <b>(Cause and Effect)</b>. -Read a Scientific Text: “Landscape change Over Time.” <b>(Close Reading)</b> pp. 14.</p>	<p>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Obervations, Notebook obsevatons, -Foldables - Study Tools, TM pp. 125. -3D Thinking: p.133 Compare and contrast the 2 photos in the article. -3D Thinking: Article: Sediment transport and Wind” pp.137 <b>(constructing explanations)</b></p>	<p><b>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6</b>  -Lab: “Breaking Rocks,” pp. 124-125. <b>(Stability and Change)</b> -Lab: “Rock Reactions,” pp.126-126. <b>(Caue and Effect)</b>. -Lab: “Go With the Flow” pp. 129-132.<b>(Developing and Using Models)”</b> -Lab: “Blowing Breechers,” pp. 134-135, “Ice Cube Glaciers,” pp. 138. -Investigations: “ Glacial Shaping p. 139</p>	<p>-ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instrution. -Online resour-ces for students for the investigations and labs. -Provide students with handouts, power-points, “Google</p>

		<p>Available on-line.          -Review Module 2 Lesson 4, pp. 144-147.</p>	<p>(Earth Materials and Systems).</p>	<p>Slide Presentations as study guides.          -Use of highlighter to point out key word, and/or phrases.          -Provide students with handouts, power-points, "Google Slide Presentations as study guides.</p>
<p>W.A.L.T. explore the of melting, crystallization, weathering and deformation which act together to form minerals and rocks through the cycling of Earth's materials.  <a href="#">(MS-ESS2-1)</a></p>	<p>-Notetaking and making Online viewing: "Encountering the Phenomenon," pp.148-149.(Available on-line).          -C.E.R(Claim/Evidence/Reasoning), <b>Construct evidence</b>, student text-p.150-152 (<b>Reading Connection</b>)          - "Think, Pair and Share," <a href="#">Classification of Igneous Rocks.</a>          -Classification Activity of Sedimentary rocks- Show images of sedimentary rocks and id into category.</p>	<p>-Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations, -Foldables - Study Tools, TM pp. 125.          -Visual Literacy, article: "Where do Igneous Form?"          -distinguish between extrusive and intrusive rocks? (Available on-line).</p>	<p><b>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6</b>  <a href="#">-Images of rocks</a>          -Lab: "Rock Detail." pp. 152-153.          -Lab: "Settle Down" pp. 159-160 (<b>Analyzing and interpreting data</b>).          -<b>Additional Resources:</b> Specimens of Igneous, Sedimentary and Metamorphic Rocks.</p>	<p>-ELL, Special Needs, At Risk:          -Extended completion time.          - Modifications as set forth by student's IEP.          -Less complex reading level          - Speech-to text assistive technology for labs and investigations.          -Small Group/Individualized instruction.          -Online resources for students for the investigations and labs.          -Provide students with handouts,</p>

		<p>3D Thinking: article: what happens to rocks at Earth's surface?"</p> <p>-Article: 3D Dimensional Thinking: "How do sedimentary rocks form from layers of sediment?"</p> <p><b>(Constructing Explanations).</b></p> <p>- Review:Module 2 Lesson 5 pp. 174-176.</p>	<p>-Investigation: "Stick to It," p.163-164.</p> <p>-Lab: "Metamorphic Sandwich," pp.168-169.</p> <p>-Investigation "Rock Cycle" p. p.170 (view BrainPop video).</p> <p>-</p>	<p>power-points, "Google Slide Presentations as study guides.</p> <p>-Use of highlighter to point out key word,and/or phrases.</p> <p>-Provide students with handouts, power-points, "Google Slide Presentations as study guides.</p>
<p>W.A.L.T. construct explanations about how people depend the Earth's energy,land,water and air resources.</p> <p><a href="#">(MS-ESS3-1)</a></p>	<p>-Cornell Notes: "Encountering the Phenomenon:Natural Resources," pp. 188-189 (on-line resource).</p> <p>-C.E.R(Claim/Evidence /Reasoning), <b>Construct evidence,</b> student text-p.190-192.</p> <p>-Shared Reading/Independent Reading: Article "Desalination," p. 202. (available as an on-line resource).</p>	<p>-Do-Now's," "Exit Ticket," Informal Anecdotal Observations, Notebook observations,</p> <p>-Foldables - Study Tools, TM p.192 -study guide.</p> <p>-3D Thinking Lab: "Spill the Beans." pp.203 - 205.</p>	<p><b>6.EE.B.6, RST.6-8.1, WHST.6-8.2, WHST.6-8.9</b></p> <p><a href="#">-Personal Water Use Lab</a></p> <p>Lab: "Identifying Resources." pp. 192-193.</p> <p>Lab: "Daily Resource Use," pp. 194-195.</p> <p><b>(Natural Resources and Analyzing and Interpreting Data).</b></p>	<p>-ELL, Special Needs, At Risk:</p> <p>-Extended completion time.</p> <p>- Modifications as set forth by student's IEP.</p> <p>-Less complex reading level</p> <p>- Speech-to text assistive technology for labs and investigations.</p> <p>-Small Group/Individualized instruction.</p>

		<p><b>(Constructing, Explanations and Designing)</b></p> <ul style="list-style-type: none"> <li>-Review: Module 3 Lesson 1 pp. 206-207.</li> <li>-Start planing the STEM Module Project. TM p.208.</li> </ul>	<p>Investigation: “It Comes From the Land.”p.196-200. (on-line resource).</p>	<ul style="list-style-type: none"> <li>-Online resources for students for the investigations and labs.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</li> <li>-Use of highlighter to point out key word,and/or phrases.</li> <li>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</li> <li>-Various types of graphic organizers.</li> </ul>
<p>W.A.L.T analyze and interpret maps and other data to recognize patterns in the distribution of resources. <a href="#">(MS-ESS3-1)</a></p>	<ul style="list-style-type: none"> <li>-Notetaking and notemaking: Encountering the Phenomenon: ”Distribution of Resources,” pp.210-211.</li> <li>-C.E.R(Claim/Evidence /Reasoning), <b>Construct evidence</b>, student text-p.212-213.</li> <li>-”Quick Write” What is a mineral? TM p.214.</li> <li>-Read a Scientific Text: “Millions Of Years Ago,” <b>(Close Reading.)</b></li> </ul>	<ul style="list-style-type: none"> <li>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook obsevation, -Foldables - Study Tools, TM p.224. -study guide.</li> <li>-3D Thinking- TM, p.216</li> </ul>	<p><b>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6</b></p> <ul style="list-style-type: none"> <li>-<a href="#">Minerals and Gems in the US</a></li> <li>-<a href="#">Mineral identification</a></li> <li>-Investigation: “Location, Location, Location,” pp.214-215.</li> </ul>	<ul style="list-style-type: none"> <li>-ELL, Special Needs, At Risk:</li> <li>-Extended completion time.</li> <li>- Modifications as set forth by student’s IEP.</li> <li>-Less complex reading level</li> <li>- Speech-to text assistive technology for labs and investigations.</li> </ul>

	<p>-Visual Literacy: Investigaion- “Striking Oil.” pp.224-225</p>	<p>“Where are minerals found o Earth?” - Interactive Presentation. -3D Thinking: Students create a graphic organizer how oil, coal and natrual gas are formed. p.226. -Review: Module 3 Lesson 2, pp. 222-223.</p>	<p>obtain few samples of minerals, reserach common use for these minerals. -Investigation: “Digging In” p.218 (Natural Resources) -Investigaton - “Slippery Slope,” p. 219-220. -Investigation: “Between a Rock and A Hard Place.” p.223. -Investgation- “Fill the Void,” p..227-228 (Using Mathematical and Computational Thinking).</p>	<p>-Small Group/Individualized instrutction. -Online resour- ces for students for the investigations and labs. -Provide students with handouts, power-points, “Google Slide Presentations as study guides. -Use of highlighter to point out key word,and/or phrases. -Provide students with handouts, power-points, “Google Slide Presentations as study guides. -Various types of graphic organizers.</p>
<p>W.A.L.T. humans extract and obtain natural resources. (MS-ESS3-1)</p>	<p>-“Think, Pair &amp; Share” - View the video on ‘Depletion of Resources,’ p. 237. -C.E.R(Claim/Evidence /Reasoning), Construct evidence, student text-p 238-239. -Cause and Effect: Read a Scientific Text: “Saltwater Intrusion.” Close Reading</p>	<p>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations, Notebook obsevation, -Review: Module 3 Lesson 3 pp.</p>	<p>SL.8.5, RST.6-8.1, RST.6-8.7, RST. 6-8.9, 6.EE.B.6  <a href="#">Mineral Mining Interactive Map.</a>  -Lab; “Mineral Mining”- pp. 240-243</p>	<p>-ELL, Special Needs, At Risk: -Extended completion time. - Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for</p>

	<p>p.251.  <b>-Writing: guide students to collaborate in writing a blog post about how humans can save our natural resources.</b></p>	<p>252- 254 (online presentation).</p>	<p><b>(Analyzing and Interpreting data).</b>  <b>-Investigation: “Going,Going Gone” pp. 242-243.</b>  <b>-Lab:”Lab Mining” pp. 244-246.</b>  <b>(Constructing Models).</b>  <b>-Investigation: “Farewell Fossil Fuels,” p. 246-247.</b>  <b>-Investigation: “Out of Sight, Out of Mind,” pp.246-249. (Graphing and watch a video about groundwater systems).</b>  <b>STEM Module Project: “Where in the World.”p. 255-261.</b></p>	<p>labs and investigations.  <b>-Small Group/Individualized instruction.</b>  <b>-Online resources for students for the investigations and labs.</b>  <b>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</b>  <b>-Use of highlighter to point out key word,and/or phrases.</b>  <b>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</b>  <b>-Various types of graphic organizers.</b>  <b>-Add words to ‘Word Bank.’”</b></p>
<p><b>W.A.L.T construct explanations about the geologic forces that cause earthquakes.</b>  <u><a href="#">(MS-ESS3-2)</a></u></p>	<p><b>-‘K-W-L’Chart: discuss what students already know about earthquakes.</b>  <b>-Notetaking and making: Interactive</b></p>	<p><b>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal Observations,</b></p>	<p><b>MP.2, 6.EE.B.6, RST.6-8.1, RST.6-8-7</b>   <u><a href="#">Plate Tectonics Map</a></u></p>	<p><b>-ELL, Special Needs, At Risk:</b>  <b>-Extended completion time.</b>  <b>- Modifications as set forth by student’s IEP.</b></p>

	<p>Presentation:Earthquake Risks text p. 267.</p> <p>-C.E.R(Claim/Evidence/Reasoning), <b>Construct evidence</b>, student text- pp. 268-269.</p> <p>-Read a Scientific Text (Close Reading): ‘How often do Earthquakes Occur/’ (<b>Obtaining,Evaluating, Commuicating Information</b>).</p>	<p>Notebook obsevatons,</p> <p>-Foldables - Study Tools, TM p.270. -study guide.</p> <p>-3D Thinking: Article: “ Where do earthquakes occur? p. 271</p> <p>-Review: Module 3 Lesson 1 pp. 292-294.</p>	<p>-Investigation: “Round the World,” pp. 270-271.</p> <p>-Investigation: “Magnitude Measurement,” pp. 272-274. (<b>Math Connection</b>)</p> <p>Lab: “Damaging Detective,” pp. 275-278.</p> <p>-Lab: “Liquid Foundation text,pp. 281-282.(<b>Natural Hazards</b>).</p> <p>-Investigation: “Risky Regions,” pp. 285-287 (Available online).</p> <p>-Investigation: “The Next Big Quake,” pp.289-291.</p>	<p>-Less complex reading level</p> <p>- Speech-to text assistive technology for labs and investigations.</p> <p>-Small Group/Individualized instrutction.</p> <p>-Online resour-ces for students for the investigations and labs.</p> <p>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</p> <p>-Use of highlighter to point out key word,and/or phrases.</p> <p>-Provide students with handouts, power-points, “Google Slide Presentations as study guides.</p> <p>-Various types of graphic organizers.</p>
<p>W.A.L.T discover that scientists can reliably predict some natuaral</p>	<p>-Cornell Notes on “Encountering the Phenomenon text. pp. 296-297.</p>	<p>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal</p>	<p><b>MP.2, 6.EE.B.6, RST.6-8.1, RST.6-8-7</b></p> <p><a href="#">Volcanic Activity Map</a></p>	<p>-ELL, Special Needs, At Risk:</p> <p>-Extended completion time.</p>

<p>hazards such as volcanic eruptions. <a href="#">(MS-ESS3-2)</a></p>	<p>-C.E.R(Claim/Evidence/Reasoning), <b>Construct evidence</b>, student text- pp. 298-299.          -Visual Literacy - Map Interpretation.          -Read a Scientific Text (<b>Close Reading</b>): Coming Up: Island Under Construction</p>	<p>Observations, Notebook observations,          -Review Module 4 Lesson 2 pp. 318-320</p>	<p>-Investigation: “Volcanic Patterns” p.300-301 )Interactive Presentation).          -Investigation: “Danger Zones,” pp.306-3017.          -Lab: “the Dangers of Mount Ranier,” pp. 308-311.          -Investigations: “Cascades erupting,” (<b>Patterns</b>)pp.312-313. (interactive presentations).          -Engineering Investigations: “Volcanic Technologies” pp. 316-317</p>	<p>- Modifications as set forth by student’s IEP.          -Less complex reading level          - Speech-to text assistive technology for labs and investigations.          -Small Group/Individualized instruction.          -Online resources for students for the investigations and labs.          -Provide students with handouts, power-points, “Google Slide Presentations as study guides.          -Use of highlighter to point out key word,and/or phrases.          -Provide students with handouts, power-points, “Google Slide Presentations as study guides.</p>
<p>W.A.L.T construct explanations about the factors that cause severe such as</p>	<p>-Notetaking and making: Entecoutering the Phenomenon, “Severe Weather Risks,” pp.322-323.</p>	<p>-Do-Now’s,” “Exit Ticket,” Informal Anecdotal</p>	<p><b>MP.2, 6.EE.B.6, RST.6-8.1, RST.6-8-7</b></p>	<p>-ELL, Special Needs, At Risk:          -Extended completion time.</p>

<p>hurricanes, tornadoes, droughts and floods. <a href="#">(MS-ESS3-2)</a></p>	<p>-Cause and Effect: ‘Hurricane Damage’ p. 331. Show how hurricane damage non-living and living things. -Oral Presentation: Explang what to do it here isa tornado in their area after reading the a passage, TM.p. 337. -Interactive Presentation: Read Aloud, Where do floods and droughts occur? p. 342. -Read a Scientific Text (Close Reading): Floods and Mass Wasting. p.346-347 -Shared/Independent REading: “Ina Hurricane’s Path,”</p>	<p>Obervations, Notebook obsevatons, -Foldables - Study Tools, TM p.327. -study guide. -Review Module 4 Lesson 3, text p. 352-355. (Available on-line).</p>	<p><a href="#">Satellite Images of Hurricanes</a> <a href="#">Tornado Graphs - National Weather Service</a> -Investigations: “In the Billions,” pp. 326-327. (Natural Hazards). -Investiagtions: “Locating the Risk” p.327-329. -Investigation: “Gone With the Wind,” pp. 330-331  -Investigations: “A Slew of Cyclones,” pp.332-335. (Patterns) -Investigation: “Twisting in the Wind,” text, pp. 336-337. -Investigation: “Predict the Risk,” text pp.340-341. -Investiagtion: “ Severe Weather Prediction,” text p. 348-349 (Addtional Resouces:</p>	<p>- Modifications as set forth by student’s IEP. -Less complex reading level - Speech-to text assistive technology for labs and investigations. -Small Group/Individualized instrutction. -Online resour-ces for students for the investigations and labs. -Provide students with handouts, power-points, “Google Slide Presentations as study guides. -Use of highlighter to point out key word,and/or phrases. -Provide students with handouts, power-points, “Google Slide Presentations as study guides.</p>
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			<p>“WebQuest: Hurricanes” p. 349)          -Investigation: “Mitigating Severe Weather,” text. 350.          (Constructing Explanations and Designing Solutions).          -STEM Module Project: “Slippery Slopes” pp.357-361.</p>	
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21 <sup>st</sup> Century Theme Targeted – Global Awareness, Financial, Economic, Business and Entrepreneurial Literacy, Civic Literacy Health Literacy)					
21st Century Skills Targeted					
Creativity & Innovation	Information Literacy	Media Literacy	Critical Thinking & Problem Solving	Communication & Collaboration	Life & Careers
History Connection	Article-” ‘A Day in the Life of a Geologist.”	STEM Careers: “A Day in the life of a Geologist:Interactive Presentation.	Reserach the Alvarez hypothesis.	Small cooperative learning groups	Geologist

<b>Creating a Gondwana Puzzle.</b>	<b>Article: “Gondwana.”</b>	<b>Interactive Presentation.</b>	<b>Debate Wegner Theory: “Was there a Gondwana Puzzle?”</b>	<b>Cooperative Learning Groups - Shared Reading. Independent Reading.</b>	<b>Paleontologist,</b>
<b>Environmental Connection</b>	<b>Article; “Protecting our Water Supply,” p. 231</b>	<b>Available on an Interactive Presentation.</b>	<b>Discussion on how to prevent ground water pollution.</b>	<b>“Think, Pair and Share.”</b>	<b>Hydrologist</b>
<b>Seismology</b>	<b>Informational text</b>	<b>Make a Computer Tsunami</b>	<b>Draw a diagram tsunami to illustrate the movement of tectonic plates.</b>	<b>Cooperative Learning Groupings</b>	<b>Seismologist</b>