Grade 6

Earth and Human Activity
Module G

New Jersey Student Learning Standards

Established 2016-2017
Revised 2017-2018
Revised 2018-2019
Revised 2019-2020
Revised 2020-2021
Revised 2022-2023

Marking Period	Unit Title	Recommended Instructional Days
4	**Earth and Human Activity**	**45 Days**

NJSLS - Science: *Title*	NJSLS - Science: *Performance Expectations*	Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-S within Unit
Earth and Human Activity	**MS-ESS3-1.** Construct a scientific explanation based on evidence for how the uneven distribution 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. **MS-ESS3-3.** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.*	**Essential Question/s:** 1. What makes a natural resource renewable? Non-renewable? 2. How are natural resources used in society? What are some examples? 3. Why does the distribution of natural resources vary across the globe? 4. Is there a correlation between natural resource consumption and population growth? 5. What are some examples of sustainable activities and technologies? 6. How do human activities affect Earth systems? 7. How do we know our global climate is changing? 8. How can humans prepare for the event of natural hazards? **Activity Description:** **HMH Science Dimensions-5-E Model** ❖ **Engage** Lesson Phenomenon, Can You Explain it? ❖ **Explore/Explain**-Hands on Lab, Engineer It

	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.	❖ **Elaborate**- Take it Further, Careers in Science ❖ **Evaluate**-Lesson Self Check **Lab and engineering activities will incorporate these skills:** ● Planning and Organization ● Critical Thinking ● Communication in a group ● Decision Making ● Reflection on activity and participation **Spotlight on scientists and their accomplishments:** Ex. Alan Hart - Public Health Researcher Neil DeGrasse Tyson- Physicist Human Impacts on the Earth**:** An increase in the Greenhouse Gases contributes to climate change. HMH: Book G Unit 4 Lesson 3 - Climate Change Model the Greenhouse Effect Lab **<u>Interdisciplinary Connection: Content: (NJSLS#)</u>** **<u>Connections to Math</u>:** ● Reason abstractly and quantitatively. **(MP.2)** ● Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. **(6.RP.A.1)**
FOUNDATION **Disciplinary:** ***Core Idea***	**FOUNDATION** **Disciplinary:** ***Statement***	
ESS3.A: Natural Resources	Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes.	

ESS3.B: Natural Hazards **ESS3.C: Human Impacts on Earth Systems**	(MS-ESS3-1) Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. (MS-ESS3-2) Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS-ESS3-3) Typically, as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS-ESS3-3), (MS-ESS3-4)	• Recognize and represent proportional relationships between quantities. **(7.RP.A.2)** • 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. **(6.EE.B.6)** • 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. **(7.EE.B.4)** **<u>Connections to Language Arts</u>:** • Cite specific textual evidence to support analysis of science and technical texts. **(RST.6-8.1)** • 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.6-8.7)** • Write arguments focused on discipline content. **(WHST.6-8.1)** • Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information

ESS3.D: Global Climate Change	Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth's mean surface temperature (global warming). Reducing the level of climate change and reducing human vulnerability to whatever climate changes do occur depend on the understanding of climate science, engineering capabilities, and other kinds of knowledge, such as understanding of human behavior and on applying that knowledge wisely in decisions and activities. (MS-ESS3-5)	through the selection, organization, and analysis of relevant content. **(WHST.6-8.2)** ● Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. **(WHST.6-8.7)** ● Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. **(WHST.6-8.8)** ● Draw evidence from informational texts to support analysis, reflection, and research. **(WHST.6-8.9)**
FOUNDATION **Science and Engineering Practices:** ***Core Idea***	**FOUNDATION** **Science and Engineering Practices:** ***Statement***	
Asking Questions and Defining Problems	Asking questions and defining problems in grades 6–8 builds on grades K–5 experiences and progresses to specifying relationships between variables and clarifying arguments and	

	models.	
Analyzing and Interpreting Data	Analyzing data 6–8 builds on grades K–5 and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.	
Constructing Explanations and Designing Solutions	Constructing explanations and designing solutions in 6–8 builds on grades K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.	
Engaging in Argument from Evidence	Engaging in argument from evidence in 6–8 builds on grades K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and	

	designed world(s).	
FOUNDATION **Crosscutting Concepts:** ***Core Idea***	**FOUNDATION** **Crosscutting Concepts:** ***Statement***	
Patterns	Graphs, charts, and images can be used to identify patterns in data. (MS-ESS3-2)	
Cause and Effect	Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. (MS-ESS3-3) Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS3-1), (MS-ESS3-4)	
Stability and Change	Stability might be disturbed either by sudden events or gradual changes that accumulate over time. (MS-ESS3-5)	
Connections to Engineering, Technology, and Applications of Science		

Influence of Science, Engineering, and Technology on Society and the Natural World ***Connections to Nature of Science*** **Science Addresses Questions About the Natural and Material World**	All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ESS3-1), (MS-ESS3-4) The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus, technology use varies from region to region and over time. (MS-ESS3-2), (MS-ESS3-3) Scientific knowledge can describe the consequences of actions but does not necessarily prescribe the decisions that society takes. (MS-ESS3-4)	
Social and Emotional Learning:	**Social and Emotional Learning:**	

Competencies	*Sub-Competencies*	
Responsible Decision-Making	• Develop, implement, and model effective problem-solving and critical thinking skills	
Relationship Skills	• Utilize positive communication and social skills to interact effectively with others	
Self-Management	• Recognize the skills needed to establish and and achieve personal and educational goals	
Social Awareness	• Demonstrate an understanding of the need for mutual respect when viewpoints differ. • Demonstrate an awareness of the expectations for social interactions in a variety of ways.	
Self Awareness	• Recognize the importance of self-confidence in handling daily tasks and challenges	
Assessments (Formative) ***To show evidence of meeting the standard/s, students will successfully***		**Assessments (Summative)** ***To show evidence of meeting the standard/s, students will successfully***

engage within:	*complete:*
Formative Assessments: • Diagnostic tests used to modify teaching and learning activities to improve student attainment	**Benchmarks:** • District Assessment **Summative Assessments:** • End of unit/chapter tests/lesson quizzes

Differentiated Student Access to Content:
Teaching and Learning *Resources/Materials*

Core Resources	**Alternate Core Resources** *IEP/504/At-Risk/ESL*	**ELL Core Resources**	**Gifted & Talented Core Resources**
• **Interactive Worktext** • **Equipment Kits** • **Online Simulations** • **Evidence Notebook** • **Lab Safety Handbook** • **CK 12** • **Virtual Labs** • **Hands on Labs** • **Online Science Tools** • **(Scientific Calculator, Graphing)** • **BrainPop Science** • **IXL Science**	• Multilingual Glossary • Sciencesaurus • Online Science Tools (Scientific Calculator, Graphing) • BrainPopEspanol	• Multilingual Glossary • Sciencesaurus • Online Science Tools (Scientific Calculator, Graphing) • Brain Pop ELL	• Online Simulations • CK 12 • Virtual Labs • Webquests • PHET • Video-Based Projects • Take It Further • You Solve It! • Unit Performance Tasks • Unit Projects • Online Science Tools (Scientific Calculator, Graphing)

			• BrainPop Science • IXL Science

Supplemental Resources

Technology:

- **8.1.8.A.1, 8.1.8.A. 2, 8.1.8.A.3, 8.1.8.A. 4, 8.1.8.A. 5**

Other:

- CRP4 Communicate clearly and effectively and with reason.
- CRP6 Demonstrate creativity and innovation
- CRP7 Employ valid and reliable research strategies
- CRP11 Use technology to enhance productivity

Differentiated Student Access to Content:
Recommended Strategies & Techniques

Core Resources	**Alternate Core Resources** *IEP/504/At-Risk/ESL*	**ELL Core Resources**	**Gifted & Talented Core Resources**
• **Large group instruction** • **Small group instruction** • **Think Pair Share** • **Peer editing** • **Cooperative group work** • **Multimedia presentations** • **Manipulatives**	• Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.), modify test content and/or format, allow students to	• Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary,	• Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose

• **Choice Boards/Learning Menus**	retake test for additional credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break assignments into segments of shorter tasks.	supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric.	interest-based extension activities, and connect student to related talent development opportunities.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept: 1.Career Awareness and Planning, 2.Creativity and Innovation, 3.Critical Thinking and Problem Solving, 4.Global and Cultural Awareness 5. Digital Citizenship 6. Information and Media Literacy 7. Technology Literacy**	
	Core Ideas:	**1. There are a variety of resources available to help navigate the career planning process.** **2. Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking.** **3. Multiple solutions often exist to solve a problem.** **4. Awareness of and appreciation for cultural differences is critical to avoid barriers to productive and positive interaction.** **5. Detailed examples exist to illustrate crediting others when incorporating their digital artifacts in one's own work.** **6. Digital tools make it possible to analyze and interpret data, including text, images, and sound. These tools allow for broad concepts and data to be more effectively communicated.** **7. Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and**

		communicating with others
	Performance Expectation/s:	**1. 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential.** **2. 9.4.8.CI.1: Assess data gathered on varying perspectives on causes of climate change (e.g., cross cultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).** **3. 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).** **4. 9.4.8.GCA.2: Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.** **5. 9.4.8.DC.1: Analyze the resource citations in online materials for proper use.** **5. 9.4.8.DC.2: Provide appropriate citation and attribution elements when creating media products (e.g., W.6.8).** **6. 9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.** **7. 9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).** **7. 9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).**
	Career Readiness, Life Literacies, & Key Skills Practices	
	• **Act as a responsible and contributing community member and employee.** • **Demonstrate creativity and innovation.** • **Utilize critical thinking to make sense of problems and persevere in solving them.** • **Consider the environmental, social and economic impacts of decisions.**	

	• **Use technology to enhance productivity, increase collaboration and communicate effectively.** • **Work productively in teams while using cultural/global competence.**

New Jersey Legislative Statutes and Administrative Code (place an "X" before each law/statute if/when present within the curriculum map)									
X	Amistad Law: *N.J.S.A. 18A 52:16A-88*		Holocaust Law: *N.J.S.A. 18A:35-28*	X	LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35*	X	Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a*	X	Standards in Action: *Climate Change*