Grade 6

Earth's Water and Atmosphere
Module E

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
3	**Earth's Water and Atmosphere**	**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's Systems	**MS-ESS2-4**.Develop a model to describe the cycling of water through 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.	**Essential Question/s:** 1. What is the water cycle? 2. How does water move in the oceans? 3. What is the role of water in influencing weather and circulation of ocean currents? 4. How are the sun and oceans key factors that impact our weather? 5. What affects air masses? 6. What happens when air masses interact with one another? 7. How can you track severe storms? 8. How does understanding the properties of Earth materials and the physical laws that govern their behavior lead to prediction of Earth events? 9. How do changes in one part of the Earth system affect other parts of the system? 10. In what ways can Earth processes be explained as interactions among spheres? 11. How does technology extend human senses and understanding?

FOUNDATION Disciplinary: *Core Idea*	FOUNDATION Disciplinary: *Statement*	
ESS2.C: The role of Water in Earth's Surface Processes	Water continually cycles among land, oceans, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4) The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns. (MS-ESS2-5) Global movements of water and its changes in form are propelled by sunlight and gravity. (MS-ESS2-4)	**Activity Description:** **HMH Science Dimensions-5-E Model** ❖ **Engage** Lesson Phenomenon, Can You Explain it? ❖ **Explore/Explain**-Hands on Lab, Engineer It ❖ **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. Ruth Gates - Marine Biologist June Bacon-Bercey- Meteorologist Human Impacts on the Earth**:** Human activity is a factor that influences the absorption of the Sun's energy. HMH: Book E Unit 2 Lesson 3- Influences on Climate

ESS2.D: Weather and Climate	Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents. (MS-ESS2-6) Weather and climate are influenced by interactions involving sunlight, the ocean, atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. (MS-ESS2-6) Because these patterns are so complex, weather can only be predicted probabilistically. (MS-ESS2-5) The ocean exerts a major influence on weather and climate by absorbing energy from the	**Interdisciplinary Connection: Content: (NJSLS#)** **Connections to Math:** ● Reason abstractly and quantitatively. **(MP.2)** ● Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. **(6.NS.C.5)** **Connections to Language Arts:** ● Cite specific textual evidence to support analysis of science and technical texts. **(RST.6-8.1)** ● Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. **(RST.6-8.9)** ● 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)** ● Integrate multimedia and visual displays into

	sun, releasing it over time, and globally redistributing it through ocean currents. (MS-ESS2-6)	presentations to clarify information, strengthen claims and evidence, and add interest. **(SL8.5)**
FOUNDATION **Science and Engineering Practices:** ***Core Idea***	**FOUNDATION** **Science and Engineering Practices:** ***Statement***	
Developing and Using Models	Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.	
Planning and Carrying Out Investigation	Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.	
Analyzing and Interpreting Data	Analyzing data in 6–8 builds on K–5 experiences and	

	progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.	
FOUNDATION **Crosscutting Concepts:** ***Core Idea***	**FOUNDATION** **Crosscutting Concepts:** ***Statement***	
Patterns	Patterns in rates of change and other numerical relationships can provide information about natural systems. (MS-ESS2-3)	
Cause and Effect	Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS2-5)	
Scale Proportion and Quantity	Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or	

Systems and System Models	too small. (MS-ESS2-2) Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems. (MS-ESS2-6)	
Energy and Matter	Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter. (MS-ESS2-4)	
Stability and Change	Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale. (MS-ESS2-1)	
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 engage within:***		**Assessments (Summative)** ***To show evidence of meeting the standard/s, students will successfully 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** • **Choice Boards/Learning Menus**	• 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 retake test for additional	• Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental	• Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based

	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.	materials including use of an online bilingual dictionary, and modified assessment and/or rubric.	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*