

Grade 6

**Space Science
Module H**

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
2	Space Science	45 days
NJSLS - Science: Title	NJSLS - Science: Performance Expectations	Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-S within Unit
ESS1: Earth's Place in the Universe	<p>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</p> <p>MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.</p> <p>MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.</p>	<p>Essential Question/s:</p> <ol style="list-style-type: none"> 1. What predictable, observable patterns occur as a result of the interaction between the Earth, Moon, and Sun? 2. What is the role of gravity in the orbits of objects in the solar system and the Milky Way galaxy? 3. How can the relationship between the Earth's position and motion in space explain changes in seasons and eclipses? 4. How can information gathered by space instruments such as telescopes and satellites be used to determine the relative sizes and distances of objects in our solar system? <p>Activity Description: HMH Science Dimensions-5-E Model</p> <ul style="list-style-type: none"> ❖ 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
FOUNDATION Disciplinary: Core Idea	FOUNDATION Disciplinary: Statement	
ESS1.A: The Universe and Its	Patterns of the apparent	

<p>Stars</p> <p>ESS1.B: Earth and the Solar System</p>	<p>motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (MS-ESS1-1)</p> <p>Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. (MS-ESS1-2)</p> <p>The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. (MS-ESS1-2),(MS-ESS1-3)</p> <p>This model of the solar system can explain eclipses of the sun and the moon. Earth’s spin axis is fixed in direction over the short term but tilted relative to its orbit around the sun. The seasons are a</p>	<p>Lab and engineering activities will incorporate these skills:</p> <ul style="list-style-type: none"> ● Planning and Organization ● Critical Thinking ● Communication in a group ● Decision Making ● Reflection on activity and participation <p>Spotlight on scientists and their accomplishments: Ex. Sally Ride - Astronaut Katherine Johnson - Computer Scientist</p> <p>Human Impacts on the Earth: Satellites are an example of technology used to detect climate change. Refer to NASA’s Climate Kids website.</p> <p><u>Interdisciplinary Connection: Content: (NJSLS#)</u></p> <p><u>Connections to Math:</u></p> <ul style="list-style-type: none"> ● 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,
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	<p>result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (MS-ESS1-1)</p> <p>The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (MS-ESS1-2)</p>	<p>explaining the meaning of 0 in each situation. (6.NS.C.5)</p> <ul style="list-style-type: none"> 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)
FOUNDATION Science and Engineering Practices: <i>Core Idea</i>	FOUNDATION Science and Engineering Practices: <i>Statement</i>	<u>Connections to Language Arts:</u>
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 more abstract phenomena and design systems.	<ul style="list-style-type: none"> 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) 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)
Analyzing and Interpreting Data	Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to	<ul style="list-style-type: none"> Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (WHST.6-8.2) Gather relevant information from multiple print and

	investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.	<p>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)</p> <ul style="list-style-type: none"> Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (SL.8.5)
FOUNDATION Crosscutting Concepts: <i>Core Idea</i>	FOUNDATION Crosscutting Concepts: <i>Statement</i>	
<p>Patterns</p> <p>Scale, Proportion, and Quantity</p> <p>Systems and System Models</p>	<p>The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (MS-ESS1-2)</p> <p>Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. (MS-ESS1-3), (MS-ESS1-4)</p> <p>Models can be used to represent systems and their interactions. (MS-ESS1-2)</p>	

<p><i>Connections to Engineering, Technology, and Applications of Science</i></p> <p>Interdependence of Science, Engineering, and Technology</p>	<p>Engineering advances have led to important discoveries in virtually every field of science and scientific discoveries have led to the development of entire industries and engineered systems. (MS-ESS1-3)</p>	
<p><i>Connections to Nature of Science</i></p> <p>Scientific Knowledge Assumes an Order and Consistency in Natural Systems</p>	<p>Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation (MS-ESS1-1),(MS-ESS1-2)</p>	
<p>Social and Emotional Learning:</p> <p><i>Competencies</i></p>	<p>Social and Emotional Learning:</p> <p><i>Sub-Competencies</i></p>	
<p>Responsible Decision-Making</p> <p>Relationship Skills</p>	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills ● Utilize positive communication and social 	

<p>Self-Management</p> <p>Social Awareness</p> <p>Self Awareness</p>	<p>skills to interact effectively with others</p> <ul style="list-style-type: none"> • Recognize the skills needed to establish and achieve personal and educational goals • 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. • Recognize the importance of self-confidence in handling daily tasks and challenges 	
<p>Assessments (Formative) <i>To show evidence of meeting the standard/s, students will successfully engage within:</i></p>		<p>Assessments (Summative) <i>To show evidence of meeting the standard/s, students will successfully complete:</i></p>
<p><u>Formative Assessments:</u></p> <ul style="list-style-type: none"> • Diagnostic tests used to modify teaching and learning activities to improve student attainment 		<p><u>Benchmarks:</u></p> <ul style="list-style-type: none"> • District Assessment <p><u>Summative Assessments:</u></p> <ul style="list-style-type: none"> • End of unit/chapter tests/lesson quizzes
<p>Differentiated Student Access to Content:</p>		

Teaching and Learning <i>Resources/Materials</i>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Multilingual Glossary • Sciencosaur • Online Science Tools (Scientific Calculator, Graphing) • BrainPopEspanol 	<ul style="list-style-type: none"> • Multilingual Glossary • Sciencosaur • Online Science Tools (Scientific Calculator, Graphing) • Brain Pop ELL 	<ul style="list-style-type: none"> • 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			
<p>Technology:</p> <ul style="list-style-type: none"> • 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 <p>Other:</p>			

- 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 <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
<ul style="list-style-type: none"> • Large group instruction • Small group instruction • Think Pair Share • Peer editing • Cooperative group work • Multimedia presentations • Manipulatives • Choice Boards/Learning Menus 	<ul style="list-style-type: none"> • 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 credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break 	<ul style="list-style-type: none"> • Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of an online bilingual dictionary, and modified assessment and/or rubric. 	<ul style="list-style-type: none"> • Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities, and connect student to related talent development opportunities.

	assignments into segments of shorter tasks.		
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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:	<ol style="list-style-type: none"> 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:	<ol style="list-style-type: none"> 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

		<p>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).</p> <p>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).</p> <p>4. 9.4.8.GCA.2: Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.</p> <p>5. 9.4.8.DC.1: Analyze the resource citations in online materials for proper use.</p> <p>5. 9.4.8.DC.2: Provide appropriate citation and attribution elements when creating media products (e.g., W.6.8).</p> <p>6. 9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations.</p> <p>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).</p> <p>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).</p>
	Career Readiness, Life Literacies, & Key Skills Practices	
	<ul style="list-style-type: none"> ● 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. 	

Content Area: Science (NJSLS-S) Grades K - 12
Grade: 6

Dev. Date:
September
2022

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