

Grade 5

Unit 5: Systems in Space

New Jersey Student Learning Standards
2022 - 2023

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

Marking Period	Unit Title	Recommended Instructional Days
3	Systems in Space	27 Days
NJSL-S - Science: <i>Title</i>	NJSL-S - Science: <i>Performance Expectations</i>	Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSL-S within Unit
5-ESS1 Earth's Place in the Universe	5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	
FOUNDATION Disciplinary: <i>Core Idea</i>	FOUNDATION Disciplinary: <i>Statement</i>	
ESS1.A: The Universe and its Stars ESS1.B: Earth and the Solar System	<ul style="list-style-type: none"> ● The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1) ● The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and 	<p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> ● How Does Gravity Affect Matter On Earth? ● What Daily Patterns Can Be Observed? ● What Patterns Can Be Observed In A Year? ● What Is The Sun? <p><u>Enduring Understanding:</u></p> <ul style="list-style-type: none"> ● Use evidence to explain that Earth's orbit, the moon's orbit and Earth rotation cause predictable patterns. ● Explain why the sun appears so large and bright from Earth. ● Explain that Earth is a sphere and that gravity pulls objects towards the Earth's center. ● Discuss how gravity affects all matter on Earth. ● Describe patterns caused by interactions between Earth, the sun, and the stars.

	<p>different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)</p>	<ul style="list-style-type: none"> Describe monthly and seasonal patterns of the sun, the moon, and the stars. <p>Activity Description:</p>
<p>FOUNDATION Science and Engineering Practices: <i>Core Idea</i></p>	<p>FOUNDATION Science and Engineering Practices: <i>Statement</i></p>	<p>Lab Activities- Using LEGO WeDo kits, represent one of Earth’s Systems and explain how the parts work together to interact. (SCI, TECH, ELA)</p> <p>Performance Task- Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. (Emphasis for the model is on gravity as the force that holds the solar system together). (SCI, ELA, ART)</p> <p>Research Task- Research one example of cause and effect in our solar system. Create/use a model in order to study the relationship more closely. (SCI, TECH, ART)</p> <p>Career Education <u>Astronomer</u> - Students explore careers in science, focusing on astronomy and the study of space. Encourage students to read more about the career field of astronomers. (pg 306 - 308)</p> <p>Research Annie Jump Cannon an astronomer and researcher of stars. She contracted scarlet fever; she was lucky to survive the devastating illness at all, but it cost her most of her hearing. Cannon was known for her speed at classifying the spectra of stars and reportedly classified more than 350,000 stars during her career. She also discovered more than 300 variable stars. (Diversity & Inclusion)</p> <p>Interdisciplinary Connections: Content: ;NJSL#: <i>ELA / Literacy</i></p> <p>RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-ESS1-1)</p> <p>RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS1-1)</p> <p>RI.5.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s). (5-ESS1-1)</p>
<p>Analyzing and Interpreting Data</p> <p>Engaging in Argument from Evidence</p>	<ul style="list-style-type: none"> Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. <ul style="list-style-type: none"> Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (5-ESS1-2) Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). <ul style="list-style-type: none"> Support an argument with 	

	evidence, data, or a model. (5- ESS1-1)	<p>RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-ESS1-1)</p> <p>W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-ESS1-1)</p> <p>SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5- ESS1-2)</p>
<p>FOUNDATION Crosscutting Concepts: <i>Core Idea</i></p>	<p>FOUNDATION Crosscutting Concepts: <i>Statement</i></p>	<p>Mathematics</p> <p>MP.2 Reason abstractly and quantitatively. (5-ESS1-1),(5-ESS1-2)</p> <p>MP.4 Model with mathematics. (5-ESS1-1),(5-ESS1-2)</p> <p>5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. (5-ESS1-1)</p> <p>5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS1-2)</p>
<p>Patterns</p> <p>Scale, Proportion, and Quantity</p>	<ul style="list-style-type: none"> • Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena. (5-ESS1-2) • Natural objects exist from the very small to the immensely large. (5-ESS1-1) 	
<p>Social and Emotional Learning: <i>Competencies</i></p>	<p>Social and Emotional Learning: <i>Sub-Competencies</i></p>	
<p>Self-Awareness</p> <p>Self-Management</p> <p>Social Awareness</p> <p>Responsible Decision-Making</p> <p>Relationship Skills</p>	<ul style="list-style-type: none"> • Recognize one’s feelings and thoughts • 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 • Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors 	

	<ul style="list-style-type: none">● Recognize the skills needed to establish and achieve personal and educational goals● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.● Recognize and identify the thoughts, feelings, and perspectives of others● Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds● 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 settings● Develop, implement, and model effective problem-solving and critical thinking skills● Identify the consequences associated with one's actions in order to make constructive choices● Evaluate personal, ethical, safety, and civic impact of decisions● Establish and maintain healthy relationships● Utilize positive communication and social	
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	skills to interact effectively with others		
Assessments (Formative) <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		Assessments (Summative) <i>To show evidence of meeting the standard/s, students will successfully complete:</i>	
Formative Assessments: <ul style="list-style-type: none"> Diagnostic tests used to modify teaching and learning activities to improve student attainment (Unit Pretest, Lesson Check, Lesson Roundup, Unit Review, Lesson quiz) 		Benchmarks: <ul style="list-style-type: none"> District Assessments Summative Assessments: <ul style="list-style-type: none"> End of unit / chapter test 	
Differentiated Student Access to Content: Teaching and Learning Resources/Materials			
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"> Lesson 1: pp. 278, 288 Lesson 2: p. 296 Lesson 3: pp. 316, 318, 328 Lesson 4: pp. 336, 340, 353 Leveled Readers - On Level Reader 	<ul style="list-style-type: none"> Lesson 1: pp. 274, 277, 283, 287, 290 Lesson 2: pp. 294, 299, 301 Lesson 3: pp. 315, 319, 326, 327 Lesson 4: pp. 340, 346 Leveled Readers - Extra Support 	<ul style="list-style-type: none"> Lesson 1: pp. 283, 290 Lesson 2: p. 296 Lesson 3: p. 330 Lesson 4: pp. 336, 342 Leveled Readers - Extra Support 	<ul style="list-style-type: none"> Lesson 1: pp. 278, 288 Lesson 2: p. 296 Lesson 3: pp. 316, 318, 328 Lesson 4: pp. 336, 340, 353 Leveled Readers - Enrichment
Supplemental Resources			
Technology: <ul style="list-style-type: none"> Schoology HMH EBook Google Classroom Kahoot! MobyMax Quizlet / Quizlet Live Quizizz Mystery Science 			

<ul style="list-style-type: none"> • Newsela • ReadWorks • Crash Course Kids • Legends of Learning • You Solve It Simulations (Measure Shadows) <p>Other:</p> <ul style="list-style-type: none"> • 			
<p>Differentiated Student Access to Content: Recommended <i>Strategies & Techniques</i></p>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core
<ul style="list-style-type: none"> • Model how to identify vocabulary terms within text. Discuss how to locate definition within the text, noting that some definitions will need to be inferred based on images as well as text. 	<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 tests 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. 	<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 students to related talent development opportunities.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	Disciplinary Concept: Critical Thinking and Problem-solving	
	Core Ideas:	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
	Performance Expectation/s:	<ul style="list-style-type: none"> 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2). 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1). 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
	Career Readiness, Life Literacies, & Key Skills Practices	
	Students work in cooperative groups and will use research strategies to complete labs	

New Jersey Legislative Statutes and Administrative Code
(place an "X" before each law/statute if/when present within the curriculum map)

	Amistad Law: <i>N.J.S.A. 18A 52:16A-88</i>		Holocaust Law: <i>N.J.S.A. 18A:35-28</i>		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>		Standards in Action: <i>Climate Change</i>
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