

Grade 5

Unit 2: Matter

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
1	Matter	22
NJSL - Science: <i>Title</i>	NJSL - Science: <i>Performance Expectations</i>	Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSL-S within Unit
5-PS1 Matter and Its Interactions	<p>5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.</p> <p>5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.</p> <p>5-PS1-3 Make observations and measurements to identify materials based on their properties.</p> <p>5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</p>	
FOUNDATION Disciplinary: <i>Core Idea</i>	FOUNDATION Disciplinary: <i>Statement</i>	
PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions	<ul style="list-style-type: none"> Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gasses are made from matter particles that are too small to see and are moving freely around in space can explain many 	<p>Essential Questions:</p> <ul style="list-style-type: none"> What Is Matter? What Are The Properties Of Matter? How Does Matter Change? <p>Enduring Understanding:</p> <ul style="list-style-type: none"> Discover the different states of matter and how to measure matter. Explore the different properties of matter along with dissolving rates of certain matter. Compare and contrast physical and chemical changes of matter.

	<p>observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects. (5-PS1-1)</p> <ul style="list-style-type: none"> • The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. (5-PS1-2) • Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensations.) (5-PS1-3) • When two or more different substances are mixed, a new substance with different properties may be formed. (5-PS1-4) • No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) (5-PS1-2) 	<ul style="list-style-type: none"> • Describe and recognize properties of matter and how those properties are affected by different factors. <p><u>Activity Description:</u></p> <p>Lab Activities - Evaporate Salt Water and/or Dissolve Sugar in Water (SCI, ELA, MA)</p> <p>Performance Task - Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved (examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances). (SCI, MA, ELA)</p> <p>Career Education <u>Materials Scientist and Engineer</u> - Students explore how many of the materials we use in everyday life were developed by material scientists. (pg 95)</p> <p><u>People in Science & Engineering: Shirley Ann Jackson & Anthony Atala</u> - Students will read about the property of conductivity. Students will review the difference between insulators, which do not conduct electricity, and conductors, which allow electric current to flow. Both conductors and insulators are useful for many different technological applications. Dr. Surly Ann Jackson studies conductors called semiconductors. These materials differ from regular conductors in that they are engineered to carry electric current in a controlled way. This technology underlies modern electronics and computer engineer. (page 121 - 122) (Amistad Law / Diversity & Inclusion)</p> <p>Interdisciplinary Connections: Content: ;NJSL#: ELA/Literacy 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-PS1-1) W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (5-PS1-2), (5-PS1-3), (5-PS1-4)</p>
<p>FOUNDATION Science and Engineering Practices: <i>Core Idea</i></p>	<p>FOUNDATION Science and Engineering Practices: <i>Statement</i></p>	

<p>Developing and Using Models</p> <p>Planning and Carrying Out Investigation</p> <p>Using Mathematics and Computational Thinking</p>	<ul style="list-style-type: none"> ● Modeling in 3-5 builds on K-2 experiences and progresses to building and revising simple models and using models to represent events and design solutions <ul style="list-style-type: none"> ○ Develop a model to describe phenomena (5-PS1-1) ● Planning and carrying out investigations to answer questions or test solutions to problems in 3-5 builds on K-2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions. <ul style="list-style-type: none"> ○ Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. (5-PS1-4) ○ Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a 	<p>W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (5-PS1-2), (5-PS1-3), (5-PS1-4)</p> <p>W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (5-PS1-2), (5-PS1-3), (5-PS1-4)</p> <p>Mathematics</p> <p>MP.2 Reason abstractly and quantitatively (5-PS1-1), (5-PS1-2), (5-PS1-3)</p> <p>MP.4 Model with mathematics. (5-PS1-1), (5-PS1-2), (5-PS1-3)</p> <p>MP.5 Use appropriate tools strategically. (5-PS1-2), (5-PS1-3)</p> <p>5.NBT.A.1 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-PS1-1)</p> <p>5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (5-PS1-1)</p> <p>5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real-world problems. (5-PS1-2)</p> <p>5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. (5-PS1-1)</p> <p>5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. (5-PS1-1)</p>
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	<p>phenomenon (5-PS1-3)</p> <ul style="list-style-type: none"> ● Mathematical and computational thinking in 3-5 builds on K-2 experiences and progresses to extending quantitative measurements to a variety of physical properties and using computation and mathematics to analyze data and compare alternative design solutions. <ul style="list-style-type: none"> ○ Measure and graph quantities such as weight to address scientific data 	
<p>FOUNDATION Crosscutting Concepts: <i>Core Idea</i></p>	<p>FOUNDATION Crosscutting Concepts: <i>Statement</i></p>	
<p>Cause and Effect</p> <p>Scale, Proportions, and Quantity</p> <p>Scientific Knowledge Assumes and Order and Consistency in Natural Systems</p>	<ul style="list-style-type: none"> ● Cause and effect relations are routinely identified, tested, and used to explain change. (5-PS1-4) ● Natural objects exist from the very small to immensely large. (5-PS1-1) ● Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume. (5-PS1-2), (5-PS1-3) ● Science assumes consistent patterns in natural systems. (5-PS1-2) 	

Social and Emotional Learning: <i>Competencies</i>	Social and Emotional Learning: <i>Sub-Competencies</i>	
<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 thought 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 ● 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 	

	<ul style="list-style-type: none"> ● 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 skills to interact effectively with others ● Identify ways to resist appropriate social pressure ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways ● Identify who, when, where, or how to seek help for oneself or others when needed 	
<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>		<p><u>Benchmarks:</u></p> <ul style="list-style-type: none"> ● District 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) 	<p><u>Summative Assessments:</u></p> <ul style="list-style-type: none"> End of Unit/Chapter Test 		
<p>Differentiated Student Access to Content: Teaching and Learning Resources/Materials</p>			
<p>Core Resources</p>	<p>Alternate Core Resources <i>IEP/504/At-Risk/ESL</i></p>	<p>ELL Core Resources</p>	<p>Gifted & Talented Core Resources</p>
<ul style="list-style-type: none"> Lesson 1: pp. 83, 89, 96 Lesson 2: pp. 107, 111, 117, 121 Lesson 3 pp. 128, 136, 144 Leveled Readers - On-Level 	<ul style="list-style-type: none"> Lesson 1: pp. 79, 81, 84, 93 Lesson 2: pp. 103, 109, 119, 122 Lesson 3 pp. 131, 133 Leveled Readers - Extra Support 	<ul style="list-style-type: none"> Lesson 1: pp. 92 Lesson 2: pp. 104, 106, 114 Lesson 3 pp. 148 Leveled Readers - Extra Support 	<ul style="list-style-type: none"> Lesson 1: pp. 83, 89, 96 Lesson 2: pp. 107, 111, 117, 121 Lesson 3 pp. 128, 136, 144 Leveled Readers - Enrichment
<p>Supplemental Resources</p>			
<p>Technology:</p> <ul style="list-style-type: none"> Schoology HMH EBook Google Classroom Kahoot! MobyMax Quizlet / Quizlet Live Quizizz Mystery Science Newsela ReadWorks Crash Course Kids Legends of Learning You Solve It Simulations (Maze Matters) <p>Other:</p> <ul style="list-style-type: none"> 			

Differentiated Student Access to Content: Recommended <i>Strategies & Techniques</i>			
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: Creativity and Innovation		
	<i>Core Ideas:</i>	<p>Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.</p> <p>Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.</p>	
	<i>Performance Expectation/s:</i>	<ul style="list-style-type: none"> 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global 	

		<p>climate change issue and deliberate about possible solutions (e.g., W.4.6,3.MD.B.3,7.1.NM.IPERS.6).</p> <ul style="list-style-type: none"> 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7). 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a). 9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).
	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)									
X	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>