

Grade 5

Unit 3: Energy and Matter in Organisms

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
2	Energy and Matter In Organisms	28 days
NJSLS - Science: Title	NJSLS - Science: Performance Expectations	Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSL-S within Unit
5-LS1 From Molecules to Organisms: Structures and Processes	5-PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 5-LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment	
FOUNDATION Disciplinary: Core Idea	FOUNDATION Disciplinary: Statement	
5-LS1.C: Organization for Matter and Energy flow in Organisms	<ul style="list-style-type: none"> Plants acquire their material for growth chiefly from air and water (5-LS1-1) 	Essential Questions: <ul style="list-style-type: none"> How Does Energy Get Transformed By Plants?" How Do Organisms Use Matter And Energy? How Do Organisms Interact? Enduring Understanding: <ul style="list-style-type: none"> Investigate how living organisms get energy Explore how living organisms use energy and how they interact in this environment. Explain that plants get the materials they need to grow mostly from air and water. Explain how organisms use matter and energy obtained from their environments.
FOUNDATION Science and Engineering Practices: Core Idea	FOUNDATION Science and Engineering Practices: Statement	
Engaging in Argument from Evidence	<ul style="list-style-type: none"> 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 	

	<p>by citing relevant evidence about the natural and designed world(s).</p> <ul style="list-style-type: none"> ○ Support an argument within evidence, data, or a model. (5-LS1-1) 	<p><u>Activity Description:</u></p> <p><u>Lab Activities</u> - Conduct an experiment with seeds (soil vs. no soil). Keep a journal and record data. (SCI, ELA, ART)</p> <p><u>Performance Task</u> - Support an argument that plants get the materials they need chiefly from air and water. Use or create models to describe that energy in animals' food was once energy from the sun (may include diagrams and flowcharts) (SCI, MA, TECH, ELA, ART)</p> <p><u>Research Task</u> - Research an environment where organisms' needs are met. How do the organisms interact? Why is the environment thriving? (SCI, TECH, ELA)</p> <p><u>Career Education</u> <u>Animal Nutritionist</u> - Students read about animal nutrition. Then they must select an animal and complete research about that animal. (pg 191-192)</p> <p><u>Interdisciplinary Connections: Content: ;NJSL#:</u> <u>ELA / Literacy</u> RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-LS1-1) RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-LS1-1) W.5.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-LS1-1)</p> <p><u>Mathematics</u> MP.2 Reason abstractly and quantitatively. (5-LS1-1) MP.4 Model with mathematics. (5-LS1-1) MP.5 Use appropriate tools strategically. (5-LS1-1) 5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5cm to 0.05m), and use these conversions in solving multi-step, real world problems. (5-LS1-1)</p>
<p>FOUNDATION Crosscutting Concepts: <i>Core Idea</i></p>	<p>FOUNDATION Crosscutting Concepts: <i>Statement</i></p>	
<p>Energy and Matter</p>	<ul style="list-style-type: none"> ● Matter is transported into, out of, and within systems (5-LS1-1) 	
<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 ● Recognize the skills needed to establish and achieve personal and educational goals 	

	<ul style="list-style-type: none">● 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 skills to interact effectively with others● Identify ways to resist inappropriate social pressure	
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	<ul style="list-style-type: none"> • 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>Formative Assessments:</p> <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>Benchmarks:</p> <ul style="list-style-type: none"> • District Assessments <p>Summative Assessments:</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 IEP/504/At-Risk/ESL</p>	<p>ELL Core Resources</p>	<p>Gifted & Talented Core Resources</p>
<ul style="list-style-type: none"> • Lesson 1: p. 174 • Lesson 3: p. 203 • Leveled Readers - On-Level 	<ul style="list-style-type: none"> • Lesson 1: p. 165, 166, 168 • Lesson 2: p. 186, 191 • Lesson 3: p. 198, 200, 203, 206 • Leveled Readers - Extra Support 	<ul style="list-style-type: none"> • Lesson 1: p. 162, 170, 173 • Lesson 2: p. 182 • Lesson 3: p. 200, 207 • Leveled Readers - Extra Support 	<ul style="list-style-type: none"> • Lesson 1: p. 174 • Lesson 3: p. 203 • Leveled Readers - Enrichment
<p>Supplemental Resources</p>			
<p>Technology:</p> <ul style="list-style-type: none"> • Schoology • HMH EBook • Google Classroom • Kahoot! 			

<ul style="list-style-type: none"> ● MobyMax ● Quizlet / Quizlet Live ● Quizizz ● Mystery Science ● Newsela ● ReadWorks ● Crash Course Kids ● Legends of Learning ● You Solve It Simulations (What Do Plants Need?) <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 definitions with 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 & 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>		Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>		Standards in Action: <i>Climate Change</i>
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