Grade 1

Unit 3: Light

New Jersey Student Learning Standards

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

<table>
<tr><th>Trimester</th><th colspan="2">Unit
Title</th><th>Recommended
Instructional Days</th></tr>
<tr><td>1 and 2</td><td colspan="2">Light</td><td>27-31 Days</td></tr>
<tr><td>NJSLS - Science:
TItle</td><td>NJSLS - Science:
Performance Expectations</td><td colspan="2" rowspan="2">Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-S within Unit</td></tr>
<tr><td>Waves and their Applications in Technologies for Information Transfer</td><td>1-PS4-2: Make observations to construct an evidence-based account that objects can be seen only when illuminated.

1-PS4-3: Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.

1-PS4-4: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</td></tr>
<tr><td>FOUNDATION
Disciplinary:
Core Idea</td><td>FOUNDATION
Disciplinary:
Statement</td><td colspan="2" rowspan="2"><u>Essential Question/s:</u>
● How Does Light Help Us See?
● How Do Materials Block Light?
● How Does Light Travel?
<u>Activity Description</u>:
● Provide evidence, based on observations, of the relationship between the amount of light and how an object is seen.
● Explain, using evidence based on observations, why objects that give off their own light can be seen in the dark.
● Explain and demonstrate how different materials can allow different amounts of light to pass through.
● Explain how shadows are made.
● Observe that light shines in a straight line until it hits an object.
● Explore how reflection can be used to redirect light.</td></tr>
<tr><td>● PS4.B: Electromagnetic Radiation</td><td>● Objects can be seen if light is available to illuminate them or if they give off their own light. (1- PS4-2)
● Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (1-PS4-3)</td></tr>
</table>

FOUNDATION **Science and Engineering Practices:** ***Core Idea***	**FOUNDATION** **Science and Engineering Practices:** ***Statement***
• Constructing Explanations and Designing Solutions	• Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-PS4-2) • Use tools and materials provided to design a device that solves a specific problem. (1-PS4-4)
FOUNDATION **Crosscutting Concepts:** ***Core Idea***	**FOUNDATION** **Crosscutting Concepts:** ***Statement***
• Cause and Effect	• Simple tests can be designed to gather evidence to support or refute student ideas about causes. (1-PS4-1), (1-PS4-2), (1-PS4-3)
Social and Emotional Learning: ***Competencies***	**Social and Emotional Learning:** ***Sub-Competencies***
• Self-Awareness • Self-Management • Social Awareness	• Recognize one's feelings and thoughts.

- Explore how technology is used to send and receive information using light

Activity:

- Evidence Notebook - (ELA)
- Unit 3 Project - Make a Rainbow (ART)
- Vocabulary Game (ELA)
- Hands On Activity - Make Observations in Different Light (MA/ART)
- Hands-On Activity - Test How Light Passes Through Materials
- Do the Math! Solve Word Problems - (MA)
- Hands On Activity - Test What Happens to Light (MA/ART)
- Take It Further - Careers in Science & Engineering/Camera Engineer
- Unit 3 Performance Task - Observe Reflections

Interdisciplinary Connections:

Connections to Math-NJSLS:

- **MP.5** Use appropriate tools strategically. (1-PS4-4)
- **1.MD.A.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1- PS4-4)
- **1.MD.A.2** Express the length of an object as a whole number of length units, by layering multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (1-PS4-4)

Connections to ELA-NJSLS:

- **W.1.2** Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure. (1-PS4-2) •
- **W.1.7** Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions). (1-PS4-1), (1-PS4-2), (1-PS4-3), (1-PS4- 4)

• Responsible Decision Making • Relationship Skills	• Recognize the skills needed to establish and achieve personal and educational goals. • Recognize and identify the thoughts, feelings, and perspectives of others. • Develop, implement, and model effective problem-solving and critical thinking skills • Utilize positive communication and social skills to interact effectively with others	• **W.1.8** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-PS4-1), (1-PS4-2), (1-PS4-3) • **SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. (1-PS4-1), (1-PS4-2), (1-PS4-3)

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:***
<u>Formative Assessments:</u> • Unit Pretest • Lesson Check • Unit Review • Lesson quiz	**<u>Benchmarks:</u>** • District Assessments **<u>Summative Assessments:</u>** • Lesson Quizzes • Unit Test

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**
• Workbook • Leveled Readers • Hands-on Activities • Interactive Worktext	• Utilize a multi-sensory (VAKT) approach during instruction, provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.),	• Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of	• Create an enhanced set of introductory activities, integrate active teaching/learning opportunities, incorporate authentic components, propose interest-based extension activities, and

	modify test content and/or format, allow students to retake ● Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics, repeat instructions as needed.	online bilingual dictionaries, and modified assessment and/or rubric.	connect students to related talent development opportunities.

Supplemental Resources

Technology:
- HMH Co. Interactive Site
- You Solve It Simulations

Other:
- **Career Education:** Inventor and Camera Engineer
- **Spotlight on Scientist:** Thomas Edison

Differentiated Student Access to Content:
Recommended *Strategies & Techniques*

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ELL Core Resources**	**Gifted & Talented Core**
● Large group instruction ● Small group instruction ● Think Pair Share ● Cooperative group work ● Multimedia presentations ● K-W-L ● Manipulatives ● Leveled Readers	● 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..	● Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of online bilingual dictionaries, and modified assessment and/or rubric.	● 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**.**

	• Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics, repeat instructions as needed. • Students at Risk of School Failure: Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic, provide individual instruction as needed, modify assessments and/or rubrics, repeat instructions as needed.		

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept: Career Awareness & Planning, Creativity & Innovation, Critical Thinking & Problem Solving, Technology Literacy**	
	Core Ideas:	• Different types of jobs require different knowledge and skills. • Brainstorming can create new, innovative ideas. • Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem. • Collaboration can simplify the work an individual has to do and sometimes produce a better product.
	Performance Expectation/s:	• 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job • 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). • 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g.,

		1.3A.2CR1a). ● 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2). ● 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3). ● 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive). ● 9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).
	Career Readiness, Life Literacies & Key Skill Practices	
	● Demonstrate creativity and innovation. ● Utilize critical thinking to make sense of problems and persevere in solving them. ● 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*		LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35*	x	Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a*		Standards in Action: *Climate Change*