Grade 3

Unit 1: Engineering and Technology

New Jersey Student Learning Standards

Established: 2024-2025

NJSLS Climate Change Companion Guide

Trimester	Unit Title	Recommended Instructional Days
3	**Unit 1: Engineering and Technology**	**18 Days**

NJSLS - Science: ***TItle***	**NJSLS - Science:** ***Performance Expectations***	**Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-S within Unit**
Engineering and Technology	**3-5-ETS1-1** **3-5-ETS1-2** **3-5-ETS1-3**	
FOUNDATION Disciplinary: ***Core Idea***	**FOUNDATION Disciplinary:** ***Statement***	
• **ETS1.A -** Defining and Delimiting Engineering Problems • **ETS1.B -** Developing Possible Solutions • **ETS1. C -** Optimizing the Design Solution	Before beginning to design a problem, research should be carried out to discover criteria and constraints.	**Essential Question/s:** • How do we define a problem? • How can we design a solution? • How do we test and improve a solution? **Activity Description:** **Anchoring Phenomenon:** When presented with a real world problem, engineers relate to the challenge and become invested in finding a solution **Engage** - Can You Explain It? - FUNomenal Reader **Explore/Explain** - Investigate phenomena through hands-on activities & explorations
FOUNDATION Science and Engineering Practices: ***Core Idea***	**FOUNDATION Science and Engineering Practices:** ***Statement***	
• Asking Questions and Defining Problems • Planning and Carrying Out Investigations • Constructing Explanations and Designing Solutions	• Define a simple design problem, plan and conduct an investigation, and generate and compare multiple solutions.	

FOUNDATION **Crosscutting Concepts:** ***Core Idea***	**FOUNDATION** **Crosscutting Concepts:** ***Statement***	**Suggested Activities** - **"Plant Problems"** - explore and investigate how engineers solve complicated problems by following a process. - **"Looking It Over"** - explore and investigate how engineers improve their solutions to problems by sharing ideas and testing prototypes. - **"Exploring Engineering Problems"** - Use district-approved resources to explore how engineers clearly define problems before they work on solving problems. - **" Making and Testing Solutions"** - Use district-approved resources to explore how engineers make and test solutions to understand where they might fail and learn from those failures. - **"Improving Over Time" -** Use district-approved resources to explore how engineers continue improving upon good solutions. **Elaborate: Take it Further** - Use district-approved online resources to research and elaborate on the anchoring phenomenon - **People in Science & Engineering**: Al Qoyawayma - **Model Work -** explore 3D printing - **Careers in Science & Engineering: Irrigation Designer -** explore the work of an engineering designer, who designs ways of bringing water to plants. **Amistad Law/Diversity & Inclusion** Conduct a research study on Al Qoyawayma, a Native American engineer who developed systems for flying vehicles. **Interdisciplinary Connections - Mathematics:** **3DL.A** - Understand data-based questions and data collection **3DL.B** - Represent and interpret data
• Influence of Engineering, Technology, and Science on Society and the Natural World	• Engineers improve existing technologies as people's needs and wants change over time.	
Social and Emotional Learning: ***Competencies***	**Social and Emotional Learning:** ***Sub-Competencies***	
• Self-Awareness • Self-Management • Social Awareness • Responsible Decision-Making • Relationship Skills	• Recognize the importance of self-confidence in handling daily tasks and challenges • Recognize the skills needed to establish and achieve personal and educational goals • Demonstrate an understanding of the need for mutual respect when viewpoints differ • Develop, implement, and model effective problem-solving and critical thinking skills • Utilize positive communication and social skills to interact effectively with others	

		Interdisciplinary Connections - English Language Arts: **RI.CR.3.1 -** Ask and answer questions to demonstrate understanding of a text **RI.IT.3.3-** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. **RI.CI.3.2.** Recount in oral and written form key details from a text and explain how they support the main idea (in multi-paragraph informational text). **RI.MF.3.6.** Use information gained from text features (e.g., illustrations, maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). **RI.AA.3.7**. Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text. **RI.CT.3.8**. Compare and contrast the elements of informational texts regarding the most important points and key details presented in two texts on the same topic. **W.WR.3.5.** Generate questions about a topic and independently locate related information from at least two reference sources (print and non-print) to obtain information on that topic. **W.SE.3.6 -** Use discussion, books, or media resources to gather ideas, outline them, and prioritize the information to include while planning to write about a topic. **SL.PI.3.4.** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an

		understandable pace.

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:***
Formative Assessments: ● Making Sense of Phenomena ● Lesson Check ● Lesson Quiz ● Evidence notebooks	**Benchmarks:** ● District Assessments 1, 2, 3 **Summative Assessments:** ● Unit Assessment **Alternative Assessment:** ● Performance-Based Assessment ● Unit Project ● Unit Performance Task

Differentiated Student Access to Content:
Teaching and Learning *Resources/Materials*

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ML Core Resources**	**Gifted & Talented Core Resources**
● Evidence Notebook ● Equipment Kit ● FUNomenal Readers ● Idea Organizer ● Language Development Worksheet ● Online Simulations ● Into Science TE	In addition to Core Resources: ● FUNomenal Readers ● Multilingual Glossary	In addition to Core Resources: ● FUNomenal Readers ● Multilingual Glossary ● Multilingual Home Letters	In addition to Core Resources: ● FUNomenal Readers

• Into Science SE • District Approved Resources			

Supplemental Resources

Technology:

- Chromebook
- SMARTBoard/Promethean Board
- District-Approved Resources

Ed Science Platform:

- Digital Assessments
- Digital Performance Tasks
- You Solve It Simulations
- Student eBook
- Video-Based Projects
- Science Tools
- Online Glossary

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

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ML Core Resources**	**Gifted & Talented Core**
• Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic • Provide individual instruction as needed	• 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	• 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	• Create an enhanced set of introductory activities • Integrate active teaching/learning opportunities • Incorporate authentic components • Propose interest-based extension activities • Connect students to

	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 assignments into segments of shorter tasks	modified assessment and/or rubric.	related talent development

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept:** 1. Career Awareness & Planning 2. Creativity and Innovation 3. Critical Thinking & Problem-Solving 4. Global & Cultural Awareness 5. Information and Media Literacy 6. Technology Literacy	
	Core Ideas:	● An individual's passions, aptitude and skills can affect his/her employment and earning potential. ● Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions ● Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills. ● The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills. ● Individuals from different cultures may have different points of view

		and experiences. ● Culture and geography can shape an individual's experiences and perspectives. ● Specific situations require the use of relevant sources of information. ● Different digital tools have different purposes. ● Collaborating digitally as a team can often develop a better artifact than an individual working alone.
	Performance Expectation/s:	● 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes. ● 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations. ● 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements ● 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate changE ● 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.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). ● 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view (e.g., 1.1.5.C2a, RL.5.9, 6.1.5.HistoryCC.8). ● 9.4.5.IML.6: Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM. IPRET.5). ● 9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols. ● 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

	Career Readiness, Life Literacies, & Key Skills Practices
	● Act as a responsible and contributing community member and employee. ● Consider the environmental, social and economic impacts of decisions. ● Demonstrate creativity and innovation. ● Utilize critical thinking to make sense of problems and persevere in solving them. ● Model integrity, ethical leadership and effective management. ● Plan education and career paths aligned to personal goals. ● 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*	X	Standards in Action: *Climate Change*