<table>
<tr><th>Marking Period</th><th colspan="2">Unit Title</th><th>Recommended Instructional Days</th></tr>
<tr><td>Trimester 3</td><td colspan="2">Design Thinking/STEM</td><td>Approximately 14-16 days
(Meet Once Per Week)</td></tr>
<tr><td>Disciplinary Concept:</td><td>Practice:</td><td rowspan="2">Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CSDT within Unit</td><td></td></tr>
<tr><td>ED
ITH
NT</td><td>Fostering an Inclusive Computing and Design Culture
Collaborating Around Computing and Design
Creating Computational Artifacts
Testing and Refining Computational Artifacts
Communicating About Computing and Design</td><td></td></tr>
<tr><td>Core Idea:</td><td>Performance Expectation/s:</td><td rowspan="2"><u>Essential Question/s:</u>
What is an engineer?

What are the steps in the engineering design process?

How can we predict the speed of an object using a zip line?

How can we use measurements to create specific products?

What can we create with everyday objects?

How can we recycle and reuse everyday objects to solve a problem?

<u>Activity Description</u>:
Design a flying machine for Rosie Revere with certain limitations.

Work together as a group to solve problems using the Engineering Design Process.

Write a fictional story about Rosie Revere.</td><td></td></tr>
<tr><td>Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
Limitations (constraints) must be considered when engineering designs.
Human needs and desires determine which new tools are developed.
Technology has changed the way people live and work.
Various tools can improve daily tasks and quality of life.
Innovation and the improvement of existing technology involves creative thinking.</td><td>8.2.2.ED.1: Communicate the function of a product or device.
8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.
8.2.2.ED.4: Identify constraints and their role in the engineering design process.
8.2.2.ITH.1: Identify products that are designed to meet human wants or needs.
8.2.2.ITH.2: Explain the purpose of a product and its value.
8.2.2.ITH.3: Identify how technology impacts or improves life.
8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks.</td><td></td></tr>
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	8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution. 8.2.2.NT.1: Model and explain how a product works after taking it apart, identifying the relationship of each part, and putting it back together. 8.2.2.NT.2: Brainstorm how to build a product, improve a designed product, fix a product that has stopped working, or solve a simple problem.	Design a crayon box to fit the most amount of crayons using limited resources. Create a dancing box with limited materials. **Interdisciplinary Connections: Content:** **ELA:** W.1.3 NGSS: K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3
Social and Emotional Learning: ***Competencies***	**Social and Emotional Learning:** ***Sub-Competencies***	
Self Awareness Self-Management Social Awareness Responsible-Decision Making Relationship Skills	● Recognize one's feelings and thoughts ● Recognize the impact of one's feelings and thoughts on one's own behavior ● 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 and identify the thoughts, feelings, and perspectives of others ● Demonstrate an understanding of the need for mutual respect when viewpoints differ ● 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 ● Establish and maintain healthy relationships ● Utilize positive communication and social skills to interact effectively with others ● 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	

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: ● Exit Slips ● Quizzes ● Self Assessments/Reflection ● Lesson Activity Worksheets/Drawings	**Benchmarks:** ● Performance Assessment ● Lesson Quizzes/Tests ● Projects **Summative Assessments:** ● District/Department Performance Assessment

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**
● STEM/STEAM projects	● Reteaching worksheets ● Spanish version of lesson activities	● Dictionary for native language	● Enrichment/Extension activities
Supplemental Resources			

Technology:

- Chromebooks, MacBook
- Projector
- Interactive Whiteboard
- SeeSaw
- GAFE
- YouTube

Other:

- Building materials (straws, toilet paper rolls, tissue boxes, pipe cleaners, blocks, newspaper, paper, tape, aluminum foil)
- Timer
- Markers
- Scissors
- Measuring tape/rulers
- Whole Group/Center task cards

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

Core Resources	**Alternate Core Resources** ***IEP/504/At-Risk/ESL***	**ELL Core Resources**	**Gifted & Talented Core**
• 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.	• Special Education: Adhere to IEP/504s. 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 test for additional credit, provide additional times and preferential seating as needed, review, restate and repeat directions, provide study guides, and/or break	• English Language Learners: Extend time requirements, preferred seating, positive reinforcement, check often for understanding/review, oral/visual directions/prompts when necessary, supplemental materials including use of online or paper bilingual dictionary, and modified assessment and/or rubric.	• Provide extension activities related to the topic being discussed. 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.

	assignments into segments of shorter tasks. ● 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: Creativity and Innovation (CI), Critical Thinking and Problem Solving (CT), Technology Literacy(TL)**	
	Core Ideas:	● **Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.** ● **Digital tools have a purpose.** ● **Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.**
	Performance Expectation/s:	**9.4.2.CT.1, 9.4.2.CT.2, 9.4.2.TL.1, 9.4.2.TL.6, 9.4.5.CI.3**
	Career Readiness, Life Literacies, & Key Skills 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.**	

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