Marking Period	Unit Title	Recommended Instructional Days
Trimester 3	Design Thinking	Approximately 14-16 days **(Meet Once Per Week)**

Disciplinary Concept:	Practice:	
ED ITH ETW EC	Fostering an Inclusive Computing and Design Culture Recognizing and Defining Computational Problems Developing and Using Abstractions Communicating About Computing and Design Interactions of Technology and Humans Effects of Technology on the Natural World Ethics and Culture	**Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-CSDT within Unit**
Core Idea:	**Performance Expectation/s:**	
Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions. Technology has changed the way people live and work. Various tools can improve daily tasks and quality of life. The use of technology developed for the human designed world can affect the environment,	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.	**Essential Question/s:** How do we effectively utilize materials when building? How can a design be affected by a constraint on materials? How can we communicate our design ideas and use the design process when working with a group? How do organisms change over their life cycle in relation to their environments?

including land, water, air, plants, and animals. Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants. Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment. The availability of technology for essential tasks varies in different parts of the world.	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. • 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.ETW.2: Identify the natural resources needed to create a product. 8.2.2.ETW.3: Describe or model the system used for recycling technology. • 8.2.2.ETW.4: Explain how the disposal of or reusing a product affects the local and global environment. 8.2.2.EC.1: Identify and compare technology used in different schools, communities, regions, and parts of the world.	How can writing be used as a tool by scientists and other professionals? How can we conduct an investigation to observe cause and effect relationships? How do simple machines make work easier? How can we use technology to improve our quality of life? What effect does human civilization have on the natural world? How can the element of design encourage innovation that can impact our world? **Activity Description**: Students will have the opportunity to practice 21st century skills that encourage design thinking and problem solving in a collaborative environment. They will learn to utilize in upcycled classroom materials to complete individual and group challenges in order to prepare them for safe, organized and effective use of the materials for future builds. Students will gain skills in building using recycled materials and additional materials from classroom items to complete challenges related to the natural environment and improving processes in our world. Discuss how pieces are different just as people are different. Using the Engineering Design Process and the Problem Solving Process, students will design solutions to environmental issues related to the animal kingdom, as well as use their imagination to instill the beginning basics of design thinking.
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 • 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 • 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 • 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 • Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways	**Interdisciplinary Connections: Content:** NGSS: 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3, 3-PS2-1, 3-PS2-2, 4-PS3-1, 4-PS3-4, 3-LS3-1, 3-LS3-2

	● 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 ● Project portfolios	**Benchmark:** ● Performance Assessment ● Unit Assessments ● Projects **Summative Assessments:** ● District/Department Assessments

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
- Smartboard
- Pens, Pencils, Paper

Other:
- Schoology
- GAFE (Docs, Sheets, Slides, Drawings, Sites)
- Recyclable Material
- YouTube

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 assignments into segments of shorter tasks.	● 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.

NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS	**Disciplinary Concept:**

Core Ideas:

- **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.**
- **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:

9.4.5.CI.1, 9.4.5.CI.2, 9.4.5.CI.3, 9.4.5.CI.4, 9.4.5.CT.1, 9.4.5.CT.2,.4.5.CT.3, 9.4.5.CT.4, 9.4.5.TL.1, 9.4.5.TL.2, 9.4.5.TL.3, 9.4.5.TL.4.

Career Readiness, Life Literacies, & Key Skills Practices

- **Demonstrate creativity and innovation**
- **Utilize critical thinking to make sense of problems and persevere in solving them**
- **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)							
Amistad Law: *N.J.S.A. 18A 52:16A-88*		Holocaust Law: *N.J.S.A. 18A:35-28*	X	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*