

**East Newark Public School**

**Computer Science and Design Thinking Curriculum  
Grades 3-5**



Established 2022

**Equity Statement:**

East Newark Public School District does not discriminate on the basis of race, color, creed, religion, sex, ancestry, or national origin. The East Newark Board of Education ensures that all students enrolled in the schools of this district shall be afforded equal educational opportunities in strict accordance with the law. No student shall be denied access to or benefit from any educational program or activity on the basis of the student's race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability. The school district's curricula will eliminate discrimination, promote mutual acceptance and respect among students, and enable students to interact effectively with others, regardless of race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability.

**Course Description**

Computer Science and Design Thinking familiarizes the students with the resources of technology, technology systems, and the evolution of technology. Students will be taught the design process and use it to explore the concept of design. They will be introduced to common materials and processes as they challenge themselves to solve problems innovatively.

**Technology Standards**

Rapidly changing technologies and the proliferation of digital information have permeated and radically transformed learning, working, and everyday life. To be well-educated, global-minded individuals in a computing-intensive world, students must have a clear understanding of the concepts and practices of computer science. As education systems adapt to a vision of students who are not just computer users but also computationally literate creators who are proficient in the concepts and practices of computer science and design thinking, engaging students in computational thinking and human-centered approaches to design through the study of computer science and technology serves to prepare students to ethically produce and critically consume technology.

**Mission:** Computer science and design thinking education prepares students to succeed in today's knowledge-based economy by providing equitable and expanded access to high-quality, standards-based computer science and technological design education.

**Vision:** All students have equitable access to a rigorous computer science and design thinking education. Students will benefit from opportunities to engage in high-quality technology programs that foster their ability to:

- develop and apply computational and design thinking to address real-world problems and design creative solutions;
- engage as collaborators, innovators, and entrepreneurs on a clear pathway to success through postsecondary education and careers;
- navigate the dynamic digital landscape to become healthy, productive, 21st-century global-minded individuals; and
- participate in an inclusive and diverse computing culture that appreciates and incorporates perspectives from people of different genders, ethnicities, and abilities.

**Intent and Spirit of the Computer Science and Design Thinking Standards**

All students receive computer science and design thinking instruction from Kindergarten through grade 8. The study of these disciplines focuses on deep understanding of concepts that enable students to think critically and systematically about leveraging technology to solve local and global issues. Authentic learning experiences that enable students to apply content knowledge, integrate concepts across disciplines, develop computational thinking skills, acquire and incorporate varied perspectives, and communicate with diverse audiences about the use and effects of computing prepares New Jersey students for college and careers.

Unit: Keyboarding		Duration: Ongoing
NJSLS:		Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b>Essential Question/s:</b></p> <ol style="list-style-type: none"> <li>1. How does good posture help to promote good health?</li> <li>2. How does an accurate document promote a positive image?</li> <li>3. How does speed influence one's image?</li> </ol> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Students will demonstrate the skills that make up proper ergonomic techniques to promote a healthy lifestyle while using the computer.</li> <li>• A tool is only as good as the person using it.</li> <li>• Technology is constantly changing and requires continuous learning of new skills.</li> <li>• Accurate documents reflect one's image.</li> </ul> <p><b>Suggested Activities:</b></p> <ul style="list-style-type: none"> <li>• Students will graph their results on their daily typing quiz.</li> </ul> <p><b>Interdisciplinary Connections: Content: ;NJSLS#:</b></p> <ul style="list-style-type: none"> <li>• NJLSLA.W.5. With some guidance and support from adults and peers, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.</li> <li>• NJLSLA.W.6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>• NJLSLA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>• NJLSLA.SL.5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations</li> </ul>
Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).	<b>8.1.5.CS.2:</b> Model how computer software and hardware work together as a system to accomplish tasks.	
The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.	<p><b>8.1.5.IC.1:</b> Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.</p> <p><b>8.1.5.IC.2:</b> Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.</p>	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	
<ul style="list-style-type: none"> <li>• Self-Awareness</li> <li>• Self-Management</li> <li>• Social Awareness</li> <li>• Responsible Decision Making</li> <li>• Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Recognize the impact of one's feelings and thoughts on one's own behavior</li> <li>• Recognize the skills needed to establish and achieve personal and educational goals</li> <li>• Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>• Develop, implement, and model effective problem-solving and critical thinking skills</li> </ul>	

	<ul style="list-style-type: none"> <li>Utilize positive communication and social skills to interact effectively with others</li> </ul>		
<b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		<b>Unit Goals</b>	
<b>Assessments:</b> <ul style="list-style-type: none"> <li>Online assessments for speed and accuracy.</li> <li>Teacher observation of proper techniques.</li> </ul>		<ul style="list-style-type: none"> <li>Demonstrate proper keyboarding techniques.</li> <li>Proper ergonomic posture, proper seating and hand and feet placement.</li> <li>Familiarization of touchpad.</li> </ul>	
<b>Differentiated Student Access to Content:  Teaching and Learning Resources/Materials</b>			
<b>Core Resources</b>	<b>Alternate Core Resources  IEP/504/At-Risk/ESL</b>	<b>ELL Core Resources</b>	<b>Gifted &amp; Talented Core Resources</b>
<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>
<b>Supplemental Resources</b>			
<b>Technology:</b> <ul style="list-style-type: none"> <li>Appropriate educational videos</li> </ul>			
<b>Differentiated Student Access to Content:  Recommended Strategies &amp; Techniques</b>			
<b>Core Resources</b>	<b>Alternate Core Resources  IEP/504/At-Risk/ESL</b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>
<ul style="list-style-type: none"> <li>Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>Provide short breaks when refocusing is needed</li> <li>Monitor on-task performance</li> <li>Provide modeling</li> <li>Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>Specific collaborative groupings of students</li> <li>Vocabulary and concept resources, diagrams and videos</li> <li>Assistance with hands-on activities/projects and research.</li> <li>Teacher modeling and/or providing (more or less) guidance</li> <li>Choice of activity.</li> <li>Sentence starters</li> </ul>	<ul style="list-style-type: none"> <li>Allow extra time for task completion</li> <li>Frequently check for understanding</li> <li>Emphasize use of visual aids</li> <li>Simplify task directions</li> <li>Provide hands-on learning activities</li> <li>Provide modeling</li> <li>Assign peer buddies</li> <li>Modify pace of instruction to allow additional processing time</li> </ul>	<ul style="list-style-type: none"> <li>Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>Extend activities as appropriate.</li> <li>Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>Offer additional opportunities for synthesis - Asking questions that</li> </ul>

	<ul style="list-style-type: none"> <li>● Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>● Multiple check-in opportunities</li> <li>● Opportunities to rewatch/listen to technology specific read alouds.</li> <li>● Picture checklists.</li> <li>● Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Allow for repetition and/or clarification of directions, as needed</li> <li>● Directions repeated, clarified or reworded</li> <li>● Establish and maintain eye contact when giving oral directions</li> </ul>	<p>encourage students to create new information from existing information.</p> <ul style="list-style-type: none"> <li>● Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>● Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>
<b>Life Literacy &amp; Key Skills Disciplinary Concept:</b>		<b>Career Awareness, Exploration, Preparation, &amp; Training Disciplinary Concept:</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b>Core Ideas:</b>	<b>Performance Expectation:</b>
The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.	<b>9.4.5.CT.3:</b> Describe how digital tools and technology may be used to solve problems.	An individual's passions, aptitude and skills can affect his/her employment and earning potential.	<b>9.2.5.CAP.4:</b> Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., lifeguards, child care, medicine, education) and examples of these requirements.
Digital tools have positively and negatively changed the way people interact socially.	<b>9.4.5.DC.6:</b> Compare and contrast how digital tools have changed social interactions (e.g., 8.1.5.IC.1).		
<b>Career Readiness, Life Literacies, and Key Skills Practices:</b>			
<ul style="list-style-type: none"> <li>● Act as a responsible and contributing community members and employee.</li> <li>● Attend to financial well-being</li> <li>● Consider the environmental, social and economic impacts of decisions.</li> <li>● Demonstrate creativity and innovation.</li> <li>● Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● Use technology to enhance productivity increase collaboration and communicate effectively.</li> <li>● Work productively in teams while using cultural/global competence.</li> </ul>			

Unit: Digital Citizenship		Duration: Ongoing
NJSLs:		Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b>Essential Question/s:</b></p> <ol style="list-style-type: none"> <li>1. What information can you share online?</li> <li>2. What information should you not share online?</li> <li>3. What personal information should always remain private?</li> <li>4. What should you do to protect you and your friends from cyberbullies?</li> <li>5. How is cyberbullying different from in-person bullying?</li> <li>6. How should you handle it?</li> <li>7. What is an upstander?</li> <li>8. How can you be an upstander?</li> <li>9. Why do you need a password to get onto the computer or different websites?</li> <li>10. How do you search on the Internet for best results?</li> <li>11. Which websites are a good source of information?</li> <li>12. Which websites will not provide you with reliable/trusted information?</li> <li>13. What is an advertisement and what is an authentic informative Website?</li> <li>14. How can you communicate with people online?</li> <li>15. What different methods of communication are there?</li> <li>16. When is it okay to talk to a stranger online?</li> <li>17. How can you protect yourself from identity theft?</li> <li>18. How can you prove that you created something and take credit for what you created?</li> <li>19. What is plagiarism?</li> <li>20. When is it okay to use the work of others?</li> <li>21. When is it okay to alter photos digitally?</li> <li>22. How should it be done to protect the owner and subject?</li> </ol> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Privacy and Security - Students learn strategies for managing their online information and keeping it secure from online risks such as</li> </ul>
Connecting devices to a network or the Internet provides great benefits, but care must be taken to use authentication measures, such as strong passwords, to protect devices and information from unauthorized access.	<p><b>8.1.2.NI.3:</b> Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.</p> <p><b>8.1.2.NI.4:</b> Explain why access to devices need to be secured.</p>	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	
<ul style="list-style-type: none"> <li>• Self-Awareness</li> <li>• Self-Management</li> <li>• Social Awareness</li> <li>• Responsible Decision Making</li> <li>• Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>• Recognize the skills needed to establish and achieve personal and educational goals</li> <li>• Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>• Develop, implement, and model effective problem-solving and critical thinking skills</li> <li>• Utilize positive communication and social skills to interact effectively with others</li> </ul>	

		<p>identity thieves and phishing. They learn how to create strong passwords, avoid scams and schemes, and analyze privacy policies.</p> <ul style="list-style-type: none"> <li>● Digital Footprint and Reputation - Students learn to protect their own privacy and respect others' privacy. Our digital world is permanent, and with each post, students are building a digital footprint. By encouraging students to self-reflect before they self-reveal, they will consider how what they share online can impact themselves and others.</li> <li>● Self-Image and Identity - Students explore their own digital lives, focusing on their online versus their offline identity.</li> <li>● Creative Credit and Copyright - Living in a "copy/paste" culture, students need to reflect on their responsibilities and rights as creators in the online spaces where they consume, create, and share information.</li> <li>● Information Literacy - Information literacy includes the ability to identify, find, evaluate, and use information effectively. From effective search strategies to evaluation techniques, students learn how to evaluate the quality, credibility, and validity of websites, and give proper credit.</li> <li>● Cyberbullying - Students learn what to do if they are involved in a cyberbullying situation. They explore the roles people play and how individual actions both negative and positive can impact their friends and broader communities.</li> <li>● Internet Safety - Students explore how the Internet offers an amazing way to collaborate with others world-wide, while staying safe through employing strategies such as distinguishing between inappropriate contact and positive connections.</li> </ul> <p><b>Interdisciplinary Connections: Content: ;NJSLS#:</b></p> <ul style="list-style-type: none"> <li>● NJLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>● NJLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>● NJLSA.RI.3.7. 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).</li> </ul>
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		<ul style="list-style-type: none"> <li>● NJLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>● NJLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</li> <li>● NJLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.</li> <li>● NJLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>● NJLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.</li> </ul>	
<b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		<b>Unit Goals/Objectives</b>	
<u><b>Assessments:</b></u> <ul style="list-style-type: none"> <li>● Exit slips</li> <li>● Peer/Self Assessments</li> <li>● Teacher Observation Data</li> <li>● Student Feedback</li> <li>● Think Pair Share</li> <li>● Strategic Questioning</li> </ul>		<ul style="list-style-type: none"> <li>● What information can you share online? What information should you not share online?</li> <li>● What personal information should always remain private?</li> </ul>	
<b>Differentiated Student Access to Content:  Teaching and Learning Resources/Materials</b>			
<b>Core Resources</b>	<b>Alternate Core Resources  IEP/504/At-Risk/ESL</b>	<b>ELL Core Resources</b>	<b>Gifted &amp; Talented Core Resources</b>
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>
<b>Supplemental Resources</b>			



<b>Technology:</b> <ul style="list-style-type: none"> <li>• Appropriate educational videos</li> <li>• BrainPop</li> <li>• Commonsense.org</li> <li>• Code.org</li> <li>• NewsELA</li> <li>• Reading A-Z</li> </ul>			
<b>Differentiated Student Access to Content: Recommended <i>Strategies &amp; Techniques</i></b>			
<b>Core Resources</b>	<b>Alternate Core Resources <i>IEP/504/At-Risk/ESL</i></b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>
<ul style="list-style-type: none"> <li>• Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>• Provide short breaks when refocusing is needed</li> <li>• Monitor on-task performance</li> <li>• Provide modeling</li> <li>• Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Specific collaborative groupings of students</li> <li>• Vocabulary and concept resources, diagrams and videos</li> <li>• Assistance with hands-on activities/projects and research.</li> <li>• Teacher modeling and/or providing (more or less) guidance</li> <li>• Choice of activity.</li> <li>• Sentence starters</li> <li>• Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>• Multiple check-in opportunities</li> <li>• Opportunities to rewatch/listen to technology specific read alouds.</li> <li>• Picture checklists.</li> <li>• Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Allow extra time for task completion</li> <li>• Frequently check for understanding</li> <li>• Emphasize use of visual aids</li> <li>• Simplify task directions</li> <li>• Provide hands-on learning activities</li> <li>• Provide modeling</li> <li>• Assign peer buddies</li> <li>• Modify pace of instruction to allow additional processing time</li> <li>• Allow for repetition and/or clarification of directions, as needed</li> <li>• Directions repeated, clarified or reworded</li> <li>• Establish and maintain eye contact when giving oral directions</li> </ul>	<ul style="list-style-type: none"> <li>• Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>• Extend activities as appropriate.</li> <li>• Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>• Offer additional opportunities for synthesis - Asking questions that encourage students to create new information from existing information.</li> <li>• Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>• Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>
<b>Life Literacy &amp; Key Skills Disciplinary Concept:</b>		<b>Career Awareness, Exploration, Preparation, &amp; Training Disciplinary Concept:</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b>Core Ideas:</b>	<b>Performance Expectation:</b>
Intellectual property rights exist to protect the original works of individuals. It is allowable to use other people's ideas in	<b>9.4.5.DC.1:</b> Explain the need for and use of copyrights. <b>9.4.5.DC.2:</b> Provide attribution according to intellectual property rights guidelines using	An individual's passions, aptitude and skills can affect his/her employment and earning potential.	<b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

<p>one's own work provided that proper credit is given to the original source.</p> <p>Sending and receiving copies of media on the internet creates the opportunity for unauthorized use of data, such as personally owned video, photos, and music.</p> <p>Digital identities must be managed in order to create a positive digital footprint.</p> <p>Digital tools have positively and negatively changed the way people interact socially.</p> <p>Digital engagement can improve the planning and delivery of climate change actions.</p>	<p>public domain or creative commons media.</p> <p><b>9.4.5.DC.3:</b> Distinguish between digital images that can be reused freely and those that have copyright restrictions.</p> <p><b>9.4.5.DC.4:</b> Model safe, legal, and ethical behavior when using online or offline technology.</p> <p><b>9.4.5.DC.5:</b> Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.</p> <p><b>9.4.5.DC.6:</b> Compare and contrast how digital tools have changed social interactions.</p> <p><b>9.4.5.DC.7:</b> Explain how posting and commenting in social spaces can have positive or negative consequences.</p> <p><b>9.4.5.DC.8:</b> Propose ways local and global communities can engage digitally to participate in and promote climate action</p>		<p><b>9.2.5.CAP.2:</b> Identify how you might like to earn an income.</p> <p><b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p>
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**Career Readiness, Life Literacies, and Key Skills Practices:**

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being
- 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.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence.

Unit: Algorithms and Programming		Duration: Ongoing
NJSLs:		Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b>Essential Question/s:</b></p> <ol style="list-style-type: none"> <li>1. How can we get computers to do what we want them to do?</li> <li>2. What is an algorithm?</li> <li>3. How can you break down a task into a sequence of steps?</li> <li>4. How can writing out an algorithm before programming be helpful when coding (pseudocode)?</li> <li>5. How does debugging allow us to find errors in a program?</li> <li>6. How do loops improve our programs (code efficiency)?</li> <li>7. How can we control our sprites' movements (events)?</li> <li>8. How can we animate our sprites (behaviors)?</li> <li>9. How do we use conditionals to help a computer make decisions?</li> <li>10. What is a variable and how do you clearly name variables to store and modify data?</li> <li>11. When is it okay to modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program?</li> <li>12. new program?</li> <li>13. When should you test your program to ensure it works as intended?</li> </ol> <p><b>Enduring Understandings:</b></p> <ul style="list-style-type: none"> <li>• Designing a program requires algorithms and abstraction just as in general problem solving.</li> <li>• Proper program design requires several steps, and often requires the developer to go back and redesign the program several times.</li> <li>• Programming is a collaborative endeavor, as many are often modified by others to improve upon or use for another purpose.</li> <li>• Identify web programming languages.</li> <li>• Identify the types of applications that can be made through the use of a computer program.</li> <li>• Identify situations where the use of looping is appropriate.</li> <li>• Explain the difficulty of translating real problems into programs.</li> <li>• Demonstrate that ideas may feel clear and yet still be misinterpreted by a computer</li> </ul>
Different algorithms can achieve the same result.  Some algorithms are more appropriate for a specific use than others	<b>8.1.5.AP.1:</b> Compare and refine multiple algorithms for the same task and determine which is the most appropriate.	
Programming languages provide variables, which are used to store and modify data.	<b>8.1.5.AP.2:</b> Create programs that use clearly named variables to store and modify data.	
A variety of control structures are used to change the flow of program execution (e.g., sequences, events, loops, conditionals).	<b>8.1.5.AP.3:</b> Create programs that include sequences, events, loops, and conditionals.	
Programs can be broken down into smaller parts to facilitate their design, implementation, and review. Programs can also be created by incorporating smaller portions of programs that already exist.	<p><b>8.1.5.AP.4:</b> Break down problems into smaller, manageable sub-problems to facilitate program development.</p> <p><b>8.1.5.AP.5:</b> Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.</p>	
Individuals develop programs using an iterative process involving design, implementation, testing, and review.	<b>8.1.5.AP.6:</b> Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	

<ul style="list-style-type: none"> <li>● Self-Awareness</li> <li>● Self-Management</li> <li>● Social Awareness</li> <li>● Responsible Decision Making</li> <li>● Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>● Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>● Recognize the skills needed to establish and achieve personal and educational goals</li> <li>● Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>● Develop, implement, and model effective problem-solving and critical thinking skills</li> <li>● Utilize positive communication and social skills to interact effectively with others</li> </ul>	<p><b><u>Instructional Strategies and Assignments:</u></b></p> <ul style="list-style-type: none"> <li>● Design a program to accomplish a task.</li> <li>● Break down a task into a sequence of steps.</li> <li>● Describe a program’s sequence of events, goals, and expected outcomes.</li> <li>● Model the way programs store and manipulate data by using numbers or other symbols to represent information.</li> <li>● Explain the importance of pseudocode (why is it important to write out an algorithm before coding?)</li> <li>● Describe how we can get computers to do what we want them to do.</li> <li>● Create a program to control a sprites’ movements.</li> <li>● Analyze your code for bugs and explain how debugging allows us to improve our projects.</li> <li>● Design an algorithm that uses loops to improve code efficiency.</li> <li>● Develop a program that will animate our sprites.</li> <li>● How do we use conditionals to help a computer make decisions?</li> <li>● Compare and refine multiple algorithms for the same task and determine which is the most appropriate.</li> <li>● Create programs that use clearly named variables to store and modify data.</li> <li>● Break down problems into smaller, manageable sub-problems to facilitate program development.</li> <li>● Modify, remix, or incorporate pieces of existing programs into one’s own work to add additional</li> <li>● features or create a new program.</li> <li>● Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.</li> </ul> <p><b><u>Interdisciplinary Connections: Content: ;NJSLA#:</u></b></p> <ul style="list-style-type: none"> <li>● NJSLA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.</li> <li>● NJSLA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.</li> <li>● NJSLA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> </ul>
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		<ul style="list-style-type: none"> <li>• NJSLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>• NJSLSA.RI.3.7. 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).</li> <li>• NJSLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>• NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</li> <li>• NJSLSA.SL3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</li> <li>• NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>• NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.</li> <li>• NJSLS.3.G.A Spatial Reasoning and Fluency with Operations</li> <li>• NJSLS.3.NF.A Introductory Fraction Concepts</li> <li>• NJSLS.4.G.A Geometry and Measurement</li> <li>• NJSLS.4.MD.C Geometry and Measurement</li> <li>• NJSLS.5.G.A The Coordinate System and Classifying Two-Dimensional Figure</li> </ul>	
<p style="text-align: center;"><b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i></p>		<p style="text-align: center;"><b>Unit Goals/Objectives</b></p>	
<p><b>Assessments:</b></p> <ul style="list-style-type: none"> <li>• Completed programs, mini-projects, end of course projects</li> <li>• Teacher created exit tickets</li> <li>• Journals and self-reflection</li> </ul>		<ul style="list-style-type: none"> <li>• Unplugged activities and Online activities are used for various programming applications</li> </ul>	
<p><b>Differentiated Student Access to Content: Teaching and Learning Resources/Materials</b></p>			
<p><b>Core Resources</b></p>	<p><b>Alternate Core Resources</b> <i>IEP/504/At-Risk/ESL</i></p>	<p><b>ELL Core Resources</b></p>	<p><b>Gifted &amp; Talented Core Resources</b></p>

<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>
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**Supplemental Resources**

**Technology:**

- Appropriate educational videos
- BrainPop
- Commonsense.org
- Code.org
- NewsELA
- Reading A-Z

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

<b>Core Resources</b>	<b>Alternate Core Resources <i>IEP/504/At-Risk/ESL</i></b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>
<ul style="list-style-type: none"> <li>● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>● Provide short breaks when refocusing is needed</li> <li>● Monitor on-task performance</li> <li>● Provide modeling</li> <li>● Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>● Specific collaborative groupings of students</li> <li>● Vocabulary and concept resources, diagrams and videos</li> <li>● Assistance with hands-on activities/projects and research.</li> <li>● Teacher modeling and/or providing (more or less) guidance</li> <li>● Choice of activity.</li> <li>● Sentence starters</li> <li>● Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>● Multiple check-in opportunities</li> <li>● Opportunities to rewatch/listen to technology specific read alouds.</li> <li>● Picture checklists.</li> <li>● Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Allow extra time for task completion</li> <li>● Frequently check for understanding</li> <li>● Emphasize use of visual aids</li> <li>● Simplify task directions</li> <li>● Provide hands-on learning activities</li> <li>● Provide modeling</li> <li>● Assign peer buddies</li> <li>● Modify pace of instruction to allow additional processing time</li> <li>● Allow for repetition and/or clarification of directions, as needed</li> <li>● Directions repeated, clarified or reworded</li> <li>● Establish and maintain eye contact when giving oral directions</li> </ul>	<ul style="list-style-type: none"> <li>● Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>● Extend activities as appropriate.</li> <li>● Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>● Offer additional opportunities for synthesis - Asking questions that encourage students to create new information from existing information.</li> <li>● Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>● Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>

Life Literacy & Key Skills Disciplinary Concept:		Career Awareness, Exploration, Preparation, & Training Disciplinary Concept:	
Core Ideas:	Performance Expectation:	Core Ideas:	Performance Expectation:
<p>Intellectual property rights exist to protect the original works of individuals. It is allowable to use other people's ideas in one's own work provided that proper credit is given to the original source.</p> <p>Sending and receiving copies of media on the internet creates the opportunity for unauthorized use of data, such as personally owned video, photos, and music.</p> <p>Digital identities must be managed in order to create a positive digital footprint.</p> <p>Digital tools have positively and negatively changed the way people interact socially.</p> <p>Digital engagement can improve the planning and delivery of climate change actions.</p>	<p><b>9.4.5.DC.1:</b> Explain the need for and use of copyrights.</p> <p><b>9.4.5.DC.2:</b> Provide attribution according to intellectual property rights guidelines using public domain or creative commons media.</p> <p><b>9.4.5.DC.3:</b> Distinguish between digital images that can be reused freely and those that have copyright restrictions.</p> <p><b>9.4.5.DC.4:</b> Model safe, legal, and ethical behavior when using online or offline technology.</p> <p><b>9.4.5.DC.5:</b> Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.</p> <p><b>9.4.5.DC.6:</b> Compare and contrast how digital tools have changed social interactions.</p> <p><b>9.4.5.DC.7:</b> Explain how posting and commenting in social spaces can have positive or negative consequences.</p> <p><b>9.4.5.DC.8:</b> Propose ways local and global communities can engage digitally to participate in and promote climate action</p>	<p>An individual's passions, aptitude and skills can affect his/her employment and earning potential.</p>	<p><b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p><b>9.2.5.CAP.2:</b> Identify how you might like to earn an income.</p> <p><b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p>
<b>Career Readiness, Life Literacies, and Key Skills Practices:</b>			
<ul style="list-style-type: none"> <li>● Act as a responsible and contributing community members and employee.</li> <li>● Attend to financial well-being</li> <li>● Consider the environmental, social and economic impacts of decisions.</li> <li>● Demonstrate creativity and innovation.</li> <li>● Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● Use technology to enhance productivity increase collaboration and communicate effectively.</li> <li>● Work productively in teams while using cultural/global competence.</li> </ul>			

<b>Unit:</b> Computing Systems		<b>Duration:</b> 4 weeks
<b>NJSLS:</b>		<b>Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences</b>
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b><u>Essential Question/s:</u></b></p> <ol style="list-style-type: none"> <li>1. What is the difference between hardware and software?</li> <li>2. What are the images or actual components of hardware or software?</li> <li>3. Describe the relationship between hardware and software. How does one require the other?</li> <li>4. What are the different parts of the computer?</li> <li>5. Which component is the brain of the computer?</li> <li>6. What are the different peripheral devices available for different types of computers?</li> <li>7. How does input-output-processing work?</li> <li>8. How can some parts be both input and output devices?</li> <li>9. How do computers and/or software impact your family and community?</li> <li>10. What are common problems that arise in computer hardware/software?</li> <li>11. What are some troubleshooting strategies that you can use to repair a computer problem?</li> </ol> <p><b><u>Enduring Understandings:</u></b></p> <ul style="list-style-type: none"> <li>• Individuals use computing devices to perform a variety of tasks accurately and quickly.</li> <li>• Computing devices interpret and follow the instructions they are given literally.</li> <li>• A computing system is composed of software and hardware.</li> <li>• Describing a problem is the first step toward finding a solution when computing systems do not work as expected.</li> <li>• Computing devices may be connected to other devices to form a system as a way to extend their capabilities.</li> <li>• Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).</li> </ul>
Computing devices may be connected to other devices to form a system as a way to extend their capabilities.	<b>8.1.5.CS.1:</b> Model how computing devices connect to other components to form a system	
Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).	<b>8.1.5.CS.2:</b> Model how computer software and hardware work together as a system to accomplish tasks.	
Shared features allow for common troubleshooting strategies that can be effective for many systems.	<b>8.1.5.CS.3:</b> Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	
<ul style="list-style-type: none"> <li>• Self-Awareness</li> <li>• Self-Management</li> <li>• Social Awareness</li> <li>• Responsible Decision Making</li> <li>• Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>• Recognize the skills needed to establish and achieve personal and educational goals</li> <li>• Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>• Develop, implement, and model effective problem-solving and critical thinking skills</li> </ul>	



	<ul style="list-style-type: none"> <li>Utilize positive communication and social skills to interact effectively with others</li> </ul>	<ul style="list-style-type: none"> <li>Shared features allow for common troubleshooting strategies that can be effective for many systems</li> </ul> <p><b><u>Instructional Strategies and Assignments:</u></b></p> <ul style="list-style-type: none"> <li>Videos on computer components.</li> <li>See and touch the inside of various types of computers.</li> <li>Build your own paper computer.</li> <li>Research the different parts of the computer and define what they do.</li> <li>Use physical devices to explain input-output-processing.</li> <li>Use a journal to reflect on the lesson.</li> <li>Discuss with a partner, group, or whole class.</li> </ul> <p><b><u>Interdisciplinary Connections: Content: ;NJSLS#:</u></b></p> <ul style="list-style-type: none"> <li>NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>NJSLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>NJSLSA.RI.3.7. 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).</li> <li>NJSLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</li> <li>NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations</li> </ul>
<p style="text-align: center;"><b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i></p>		<p style="text-align: center;"><b>Unit Goals/Objectives</b></p>
<p><b><u>Assessments:</u></b></p>		<ul style="list-style-type: none"> <li>The students will understand how to use:</li> </ul>

<ul style="list-style-type: none"> <li>Completed programs, mini-projects, end of course projects</li> <li>Teacher created exit tickets</li> <li>Journals and self-reflection</li> </ul>	<ul style="list-style-type: none"> <li>Hardware</li> <li>Software</li> <li>Input-output-processing</li> <li>When to choose a particular device over another.</li> <li>Troubleshooting</li> </ul>
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**Differentiated Student Access to Content:  
Teaching and Learning *Resources/Materials***

Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>

**Supplemental Resources**

<p><b>Technology:</b></p> <ul style="list-style-type: none"> <li>Appropriate educational videos</li> <li>BrainPop</li> <li>Commonsense.org</li> <li>Code.org</li> <li>NewsELA</li> <li>Reading A-Z</li> </ul>
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**Differentiated Student Access to Content:  
Recommended *Strategies & Techniques***

Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Resources	Gifted & Talented Core
<ul style="list-style-type: none"> <li>Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>Provide short breaks when refocusing is needed</li> <li>Monitor on-task performance</li> <li>Provide modeling</li> <li>Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>Specific collaborative groupings of students</li> <li>Vocabulary and concept resources, diagrams and videos</li> <li>Assistance with hands-on activities/projects and research.</li> <li>Teacher modeling and/or providing (more or less) guidance</li> <li>Choice of activity.</li> <li>Sentence starters</li> </ul>	<ul style="list-style-type: none"> <li>Allow extra time for task completion</li> <li>Frequently check for understanding</li> <li>Emphasize use of visual aids</li> <li>Simplify task directions</li> <li>Provide hands-on learning activities</li> <li>Provide modeling</li> <li>Assign peer buddies</li> <li>Modify pace of instruction to allow additional processing time</li> </ul>	<ul style="list-style-type: none"> <li>Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>Extend activities as appropriate.</li> <li>Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>Offer additional opportunities for synthesis - Asking questions that</li> </ul>

	<ul style="list-style-type: none"> <li>• Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>• Multiple check-in opportunities</li> <li>• Opportunities to rewatch/listen to technology specific read alouds.</li> <li>• Picture checklists.</li> <li>• Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Allow for repetition and/or clarification of directions, as needed</li> <li>• Directions repeated, clarified or reworded</li> <li>• Establish and maintain eye contact when giving oral directions</li> </ul>	<p>encourage students to create new information from existing information.</p> <ul style="list-style-type: none"> <li>• Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>• Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>
<b>Life Literacy &amp; Key Skills Disciplinary Concept:</b>		<b>Career Awareness, Exploration, Preparation, &amp; Training Disciplinary Concept:</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b>Core Ideas:</b>	<b>Performance Expectation:</b>
<p>Intellectual property rights exist to protect the original works of individuals. It is allowable to use other people’s ideas in one’s own work provided that proper credit is given to the original source.</p> <p>Sending and receiving copies of media on the internet creates the opportunity for unauthorized use of data, such as personally owned video, photos, and music.</p> <p>Digital identities must be managed in order to create a positive digital footprint.</p> <p>Digital tools have positively and negatively changed the way people interact socially.</p> <p>Digital engagement can improve the planning and delivery of climate change actions.</p>	<p><b>9.4.5.DC.1:</b> Explain the need for and use of copyrights.</p> <p><b>9.4.5.DC.2:</b> Provide attribution according to intellectual property rights guidelines using public domain or creative commons media.</p> <p><b>9.4.5.DC.3:</b> Distinguish between digital images that can be reused freely and those that have copyright restrictions.</p> <p><b>9.4.5.DC.4:</b> Model safe, legal, and ethical behavior when using online or offline technology.</p> <p><b>9.4.5.DC.5:</b> Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.</p> <p><b>9.4.5.DC.6:</b> Compare and contrast how digital tools have changed social interactions.</p> <p><b>9.4.5.DC.7:</b> Explain how posting and commenting in social spaces can have positive or negative consequences.</p> <p><b>9.4.5.DC.8:</b> Propose ways local and global communities can engage digitally to participate in and promote climate action</p>	<p>An individual’s passions, aptitude and skills can affect his/her employment and earning potential.</p>	<p><b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p><b>9.2.5.CAP.2:</b> Identify how you might like to earn an income.</p> <p><b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p>

**Career Readiness, Life Literacies, and Key Skills Practices:**

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being
- 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.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence.

<b>Unit:</b> Impacts of Computing		<b>Duration:</b> 4 weeks
<b>NJSLS:</b>		<b>Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences</b>
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b><u>Essential Question/s:</u></b></p> <ol style="list-style-type: none"> <li>1. How do computers help us? How would you get certain jobs done without a computer?</li> <li>2. What were the first computers like?</li> <li>3. Reflect and discuss how computers have changed over time. How have some of these computers changed from what they used to look like and what we use them for?</li> <li>4. What futurist’s predictions do you think will come to fruition? What predictions have already been realized?</li> <li>5. What technology available might help someone with a disability?</li> <li>6. What could you design to help someone that is not already available?</li> </ol> <p><b><u>Enduring Understandings:</u></b></p> <ul style="list-style-type: none"> <li>● Computing technology has positively and negatively changed the way individuals live and work (e.g., entertainment, communication, productivity tools). In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today,</li> </ul>
The development and modification of computing technology is driven by individual’s needs and wants and can affect individuals differently.	<p><b>8.1.5.IC.1:</b> Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.</p> <p><b>8.1.5.IC.2:</b> Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.</p>	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	

<ul style="list-style-type: none"> <li>● Self-Awareness</li> <li>● Self-Management</li> <li>● Social Awareness</li> <li>● Responsible Decision Making</li> <li>● Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>● Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>● Recognize the skills needed to establish and achieve personal and educational goals</li> <li>● Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>● Develop, implement, and model effective problem-solving and critical thinking skills</li> <li>● Utilize positive communication and social skills to interact effectively with others</li> </ul>	<p>students can view and read information on the Internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. The development and modification of computing technology is driven by people’s needs and wants and can affect individuals differently. New computing technology is created and existing technologies are modified for many reasons, including to increase their benefits, decrease their risks, and meet societal needs.</p> <p><b><u>Instructional Strategies and Assignments:</u></b></p> <ul style="list-style-type: none"> <li>● Teacher created slide presentations.</li> <li>● Videos on the history of computers.</li> <li>● Use a journal to reflect on the lesson.</li> <li>● Discuss with a partner, group, or whole class.</li> <li>● Research and design something that might help someone with a diverse need or want.</li> <li>● Use physical devices to build something that might help someone with a diverse need or want.</li> </ul> <p><b><u>Interdisciplinary Connections: Content: ;NJSL#:</u></b></p> <ul style="list-style-type: none"> <li>● NJLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>● NJLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>● NJLSA.RI.3.7. 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).</li> <li>● NJLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>● NJLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.</li> <li>● NJLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> </ul>
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		<ul style="list-style-type: none"> <li>NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.</li> </ul>	
<b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		<b>Unit Goals/Objectives</b>	
<b>Assessments:</b> <ul style="list-style-type: none"> <li>Completed programs, mini-projects, end of course projects</li> <li>Teacher created exit tickets</li> <li>Journals and self-reflection</li> </ul>		<ul style="list-style-type: none"> <li>Student discussion on topics that relate to the history of technology and the changes in the world due to technology. Topics could include robotics, wearable computing, artificial intelligence, cybersecurity, or current news content</li> </ul>	
<b>Differentiated Student Access to Content:  Teaching and Learning Resources/Materials</b>			
<b>Core Resources</b>	<b>Alternate Core Resources  IEP/504/At-Risk/ESL</b>	<b>ELL Core Resources</b>	<b>Gifted &amp; Talented Core Resources</b>
<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>Chromebooks</li> <li>Apps within G Suite and other age appropriate apps</li> <li>Print and Digital Media</li> <li><a href="#">Design Challenge Book List</a></li> </ul>
<b>Supplemental Resources</b>			
<b>Technology:</b> <ul style="list-style-type: none"> <li>Appropriate educational videos</li> <li>BrainPop</li> <li>Commonsense.org</li> <li>Code.org</li> <li>NewsELA</li> <li>Reading A-Z</li> </ul>			
<b>Differentiated Student Access to Content:  Recommended Strategies &amp; Techniques</b>			
<b>Core Resources</b>	<b>Alternate Core Resources  IEP/504/At-Risk/ESL</b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>

<ul style="list-style-type: none"> <li>● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>● Provide short breaks when refocusing is needed</li> <li>● Monitor on-task performance</li> <li>● Provide modeling</li> <li>● Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>● Specific collaborative groupings of students</li> <li>● Vocabulary and concept resources, diagrams and videos</li> <li>● Assistance with hands-on activities/projects and research.</li> <li>● Teacher modeling and/or providing (more or less) guidance</li> <li>● Choice of activity.</li> <li>● Sentence starters</li> <li>● Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>● Multiple check-in opportunities</li> <li>● Opportunities to rewatch/listen to technology specific read alouds.</li> <li>● Picture checklists.</li> <li>● Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Allow extra time for task completion</li> <li>● Frequently check for understanding</li> <li>● Emphasize use of visual aids</li> <li>● Simplify task directions</li> <li>● Provide hands-on learning activities</li> <li>● Provide modeling</li> <li>● Assign peer buddies</li> <li>● Modify pace of instruction to allow additional processing time</li> <li>● Allow for repetition and/or clarification of directions, as needed</li> <li>● Directions repeated, clarified or reworded</li> <li>● Establish and maintain eye contact when giving oral directions</li> </ul>	<ul style="list-style-type: none"> <li>● Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>● Extend activities as appropriate.</li> <li>● Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>● Offer additional opportunities for synthesis - Asking questions that encourage students to create new information from existing information.</li> <li>● Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>● Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>
<b>Life Literacy &amp; Key Skills Disciplinary Concept:</b>		<b>Career Awareness, Exploration, Preparation, &amp; Training Disciplinary Concept:</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b>Core Ideas:</b>	<b>Performance Expectation:</b>
<p>Intellectual property rights exist to protect the original works of individuals. It is allowable to use other people's ideas in one's own work provided that proper credit is given to the original source.</p>	<p><b>9.4.5.DC.1:</b> Explain the need for and use of copyrights.</p>	<p>An individual's passions, aptitude and skills can affect his/her employment and earning potential.</p>	<p><b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p><b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p>
<b>Career Readiness, Life Literacies, and Key Skills Practices:</b>			
<ul style="list-style-type: none"> <li>● Act as a responsible and contributing community members and employee.</li> <li>● Attend to financial well-being</li> <li>● Consider the environmental, social and economic impacts of decisions.</li> <li>● Demonstrate creativity and innovation.</li> <li>● Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● Use technology to enhance productivity increase collaboration and communicate effectively.</li> <li>● Work productively in teams while using cultural/global competence.</li> </ul>			

<b>Unit:</b> Networks and the Internet		<b>Duration:</b> 4 weeks
<b>NJSLS:</b>		<b>Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences</b>
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<p><b><u>Essential Question/s:</u></b></p> <ol style="list-style-type: none"> <li>1. What is the Internet?</li> <li>2. What is the World Wide Web?</li> <li>3. What is the difference between the Internet and the World Wide Web?</li> <li>4. What types of information might you find on the Internet? Where else can you find the same information?</li> <li>5. How do you communicate with others on the Internet?</li> <li>6. How are devices connected to the Internet? Explain the difference between wired and wireless connections.</li> <li>7. Why is it important to keep your information private?</li> <li>8. How do you protect yourself from hackers?</li> <li>9. How do you keep your information safe?</li> </ol> <p><b><u>Enduring Understandings:</u></b></p> <ul style="list-style-type: none"> <li>● Computer networks can be used to connect individuals to other individuals, places, information, and ideas.</li> <li>● The Internet enables individuals to connect with others worldwide.</li> <li>● Connecting devices to a network or the Internet provides great benefits, but care must be taken to use authentication measures, such as strong passwords, to protect devices and information from unauthorized access.</li> <li>● Information needs a physical or wireless path to travel to be sent and received.</li> <li>● Distinguishing between public and private information is important for safe and secure online interactions.</li> <li>● Information can be protected using various security measures (cybersecurity i.e., physical and digital).</li> </ul> <p><b><u>Instructional Strategies and Assignments:</u></b></p> <ul style="list-style-type: none"> <li>● Teacher created slide presentations.</li> <li>● Videos on the networks and the internet.</li> </ul>
Information needs a physical or wireless path to travel to be sent and received.	<b>8.1.5.NI.1:</b> Develop models that successfully transmit and receive information using both wired and wireless methods.	
Distinguishing between public and private information is important for safe and secure online interactions.  Information can be protected using various security measures (i.e., physical and digital).	<b>8.1.5.NI.2:</b> Describe physical and digital security measures for protecting sensitive personal information.	
<b>Social and Emotional Learning:</b> <i>Competencies</i>	<b>Social and Emotional Learning:</b> <i>Sub-Competencies</i>	
<ul style="list-style-type: none"> <li>● Self-Awareness</li> <li>● Self-Management</li> <li>● Social Awareness</li> <li>● Responsible Decision Making</li> <li>● Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>● Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>● Recognize the skills needed to establish and achieve personal and educational goals</li> <li>● Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>● Develop, implement, and model effective problem-solving and critical thinking skills</li> <li>● Utilize positive communication and social skills to interact effectively with others</li> </ul>	



		<ul style="list-style-type: none"> <li>• Use a journal to reflect on the lesson.</li> <li>• Discuss with a partner, group, or whole class.</li> <li>• Use physical devices to replicate how networks work.</li> </ul> <p><b>Interdisciplinary Connections: Content: ;NJSLS#:</b></p> <ul style="list-style-type: none"> <li>• NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>• NJSLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>• NJSLSA.RI.3.7. 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).</li> <li>• NJSLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>• NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</li> <li>• NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>• NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations</li> </ul>
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<b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>	<b>Unit Goals/Objectives</b>
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<p><b>Assessments:</b></p> <ul style="list-style-type: none"> <li>• Completed programs, mini-projects, end of course projects</li> <li>• Teacher created exit tickets</li> <li>• Journals and self-reflection</li> </ul>	<ul style="list-style-type: none"> <li>• Explain what we use the Internet for.</li> <li>• Explain what a network is.</li> <li>• Demonstrate how information is transmitted over the Internet.</li> <li>• Use the internet to connect with other classes or with information</li> </ul>
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**Differentiated Student Access to Content:  
Teaching and Learning Resources/Materials**

<b>Core Resources</b>	<b>Alternate Core Resources</b> <i>IEP/504/At-Risk/ESL</i>	<b>ELL Core Resources</b>	<b>Gifted &amp; Talented Core Resources</b>
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<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>
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**Supplemental Resources**

<p><b>Technology:</b></p> <ul style="list-style-type: none"> <li>● Appropriate educational videos</li> <li>● BrainPop</li> <li>● Commonsense.org</li> <li>● Code.org</li> <li>● NewsELA</li> <li>● Reading A-Z</li> </ul>
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**Differentiated Student Access to Content:  
Recommended *Strategies & Techniques***

<b>Core Resources</b>	<b>Alternate Core Resources <i>IEP/504/At-Risk/ESL</i></b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>
<ul style="list-style-type: none"> <li>● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>● Provide short breaks when refocusing is needed</li> <li>● Monitor on-task performance</li> <li>● Provide modeling</li> <li>● Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>● Specific collaborative groupings of students</li> <li>● Vocabulary and concept resources, diagrams and videos</li> <li>● Assistance with hands-on activities/projects and research.</li> <li>● Teacher modeling and/or providing (more or less) guidance</li> <li>● Choice of activity.</li> <li>● Sentence starters</li> <li>● Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>● Multiple check-in opportunities</li> <li>● Opportunities to rewatch/listen to technology specific read alouds.</li> <li>● Picture checklists.</li> <li>● Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Allow extra time for task completion</li> <li>● Frequently check for understanding</li> <li>● Emphasize use of visual aids</li> <li>● Simplify task directions</li> <li>● Provide hands-on learning activities</li> <li>● Provide modeling</li> <li>● Assign peer buddies</li> <li>● Modify pace of instruction to allow additional processing time</li> <li>● Allow for repetition and/or clarification of directions, as needed</li> <li>● Directions repeated, clarified or reworded</li> <li>● Establish and maintain eye contact when giving oral directions</li> </ul>	<ul style="list-style-type: none"> <li>● Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>● Extend activities as appropriate.</li> <li>● Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>● Offer additional opportunities for synthesis - Asking questions that encourage students to create new information from existing information.</li> <li>● Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>● Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>

Life Literacy & Key Skills Disciplinary Concept:		Career Awareness, Exploration, Preparation, & Training Disciplinary Concept:	
Core Ideas:	Performance Expectation:	Core Ideas:	Performance Expectation:
<p>Digital identities must be managed in order to create a positive digital footprint.</p> <p>Digital tools have positively and negatively changed the way people interact socially.</p> <p>Digital engagement can improve the planning and delivery of climate change actions.</p>	<p><b>9.4.5.DC.5:</b> Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.</p> <p><b>9.4.5.DC.7:</b> Explain how posting and commenting in social spaces can have positive or negative consequences.</p> <p><b>9.4.5.DC.8:</b> Propose ways local and global communities can engage digitally to participate in and promote climate action.</p>	<p>An individual's passions, aptitude and skills can affect his/her employment and earning potential.</p>	<p><b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p><b>9.2.5.CAP.2:</b> Identify how you might like to earn an income.</p> <p><b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.</p>
<b>Career Readiness, Life Literacies, and Key Skills Practices:</b>			
<ul style="list-style-type: none"> <li>● Act as a responsible and contributing community members and employee.</li> <li>● Attend to financial well-being</li> <li>● Consider the environmental, social and economic impacts of decisions.</li> <li>● Demonstrate creativity and innovation.</li> <li>● Utilize critical thinking to make sense of problems and persevere in solving them.</li> <li>● Use technology to enhance productivity increase collaboration and communicate effectively.</li> <li>● Work productively in teams while using cultural/global competence.</li> </ul>			

Unit: Multimedia Presentations		Duration: 6 weeks
NJSLS:		Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences
Core Ideas:	Performance Expectation:	Essential Question/s:
Data can be organized, displayed, and presented to highlight relationships.	<b>8.1.5.DA.1:</b> Collect, organize, and display data in order to highlight relationships or support a claim.	<ol style="list-style-type: none"> <li>1. What are the characteristics of an exemplary multimedia presentation?</li> <li>2. How are multimedia presentations used in school? Outside of school?</li> <li>3. How can you make your presentation visually appealing?</li> </ol>

<p>Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.</p>	<p><b>8.1.5.DA.3:</b> Organize and present collected data visually to communicate insights gained from different views of the data.</p> <p><b>8.1.5.DA.4:</b> Organize and present climate change data visually to highlight relationships or support a claim.</p>	<ol style="list-style-type: none"> <li>4. When should you use graphics? Video? Animations? Transitions?</li> <li>5. How do you change the font type, font styles, font color, etc.?</li> <li>6. How can you modify images to remove backgrounds, resize, crop, etc.?</li> </ol>
<p align="center"><b>Social and Emotional Learning: Competencies</b></p>	<p align="center"><b>Social and Emotional Learning: Sub-Competencies</b></p>	<p><b><u>Enduring Understandings:</u></b></p> <ul style="list-style-type: none"> <li>● Multimedia presentations allow presenters to display information visually which makes the delivery of the content more efficient and the information more memorable</li> <li>● Multimedia presentations can display images, graphs, charts, video, audio, and other components that make the content more interesting and easier to understand</li> </ul>
<ul style="list-style-type: none"> <li>● Self-Awareness</li> <li>● Self-Management</li> <li>● Social Awareness</li> <li>● Responsible Decision Making</li> <li>● Relationship Skills</li> </ul>	<ul style="list-style-type: none"> <li>● Recognize the impact of one’s feelings and thoughts on one’s own behavior</li> <li>● Recognize the skills needed to establish and achieve personal and educational goals</li> <li>● Demonstrate an understanding of the need for mutual respect when viewpoints differ</li> <li>● Develop, implement, and model effective problem-solving and critical thinking skills</li> <li>● Utilize positive communication and social skills to interact effectively with others</li> </ul>	<p><b><u>Instructional Strategies and Assignments:</u></b></p> <ul style="list-style-type: none"> <li>● Brochures</li> <li>● Slide presentations</li> <li>● Project created using a coding platform</li> <li>● Posters</li> <li>● Video</li> <li>● Audio</li> <li>● Physical computing</li> </ul> <p><b><u>Interdisciplinary Connections: Content: ;NJSLS#:</u></b></p> <ul style="list-style-type: none"> <li>● NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.</li> <li>● NJSLSA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.</li> <li>● NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>● NJSLSA.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</li> <li>● NJSLSA.RI.3.7. 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).</li> </ul>

		<ul style="list-style-type: none"> <li>● NJSLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.</li> <li>● NJSLSA.SL1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.</li> <li>● NJSLSA.SL3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.</li> <li>● NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>● NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.</li> </ul>
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<b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>	<b>Unit Goals/Objectives</b>
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<b>Assessments:</b> <ul style="list-style-type: none"> <li>● Completed programs, mini-projects, end of course projects</li> <li>● Teacher created exit tickets</li> <li>● Journals and self-reflection</li> </ul>	<ul style="list-style-type: none"> <li>● Students will be able to communicate information and ideas to multiple audiences using a variety of media and formats.</li> <li>● Students will create projects using various media formats.</li> </ul>
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**Differentiated Student Access to Content:  
Teaching and Learning Resources/Materials**

Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources
<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>● Chromebooks</li> <li>● Apps within G Suite and other age appropriate apps</li> <li>● Print and Digital Media</li> <li>● <a href="#">Design Challenge Book List</a></li> </ul>

**Supplemental Resources**

<b>Technology:</b> <ul style="list-style-type: none"> <li>● Appropriate educational videos</li> <li>● BrainPop</li> <li>● Commonsense.org</li> </ul>
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- Code.org
- NewsELA
- Reading A-Z

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

<b>Core Resources</b>	<b>Alternate Core Resources <i>IEP/504/At-Risk/ESL</i></b>	<b>ELL Resources</b>	<b>Gifted &amp; Talented Core</b>
<ul style="list-style-type: none"> <li>● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment.</li> <li>● Provide short breaks when refocusing is needed</li> <li>● Monitor on-task performance</li> <li>● Provide modeling</li> <li>● Frequently check for understanding</li> </ul>	<ul style="list-style-type: none"> <li>● Specific collaborative groupings of students</li> <li>● Vocabulary and concept resources, diagrams and videos</li> <li>● Assistance with hands-on activities/projects and research.</li> <li>● Teacher modeling and/or providing (more or less) guidance</li> <li>● Choice of activity.</li> <li>● Sentence starters</li> <li>● Scaffolding the amount of work (decrease or increase) based on skill sets and time allocations.</li> <li>● Multiple check-in opportunities</li> <li>● Opportunities to rewatch/listen to technology specific read alouds.</li> <li>● Picture checklists.</li> <li>● Multisensory learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Allow extra time for task completion</li> <li>● Frequently check for understanding</li> <li>● Emphasize use of visual aids</li> <li>● Simplify task directions</li> <li>● Provide hands-on learning activities</li> <li>● Provide modeling</li> <li>● Assign peer buddies</li> <li>● Modify pace of instruction to allow additional processing time</li> <li>● Allow for repetition and/or clarification of directions, as needed</li> <li>● Directions repeated, clarified or reworded</li> <li>● Establish and maintain eye contact when giving oral directions</li> </ul>	<ul style="list-style-type: none"> <li>● Provide choice of activity, presentation, and groups among appropriate projects.</li> <li>● Extend activities as appropriate.</li> <li>● Extend readings by offering varying and different text, including nonfiction, that is on a student's Lexile Level.</li> <li>● Offer additional opportunities for synthesis - Asking questions that encourage students to create new information from existing information.</li> <li>● Extend Metacognition - Asking questions which prompt students to think about their own thinking process, (successes and challenges).</li> <li>● Increase connections - Asking students questions that ensure the ability to apply new learning to their lives.</li> </ul>
<b>Life Literacy &amp; Key Skills Disciplinary Concept:</b>		<b>Career Awareness, Exploration, Preparation, &amp; Training Disciplinary Concept:</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b>Core Ideas:</b>	<b>Performance Expectation:</b>
<p>Digital tools can be used to modify and display data in various ways that can be organized to communicate ideas.</p> <p>Different digital tools have different purposes.</p>	<p><b>9.4.5.IML.2:</b> Create a visual representation to organize information about a problem or issue</p> <p><b>9.4.5.TL.3:</b> Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.</p>	<p>An individual's passions, aptitude and skills can affect his/her employment and earning potential.</p>	<p><b>9.2.5.CAP.1:</b> Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.</p> <p><b>9.2.5.CAP.2:</b> Identify how you might like to earn an income.</p>

Collaborating digitally as a team can often develop a better artifact than an individual working alone.	<b>9.4.5.TL.5:</b> Collaborate digitally to produce an artifact.		<b>9.2.5.CAP.3:</b> Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
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**Career Readiness, Life Literacies, and Key Skills Practices:**

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being
- 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.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence.

<b>Unit:</b> Data and Analysis		<b>Duration:</b> 6 weeks	
<b>NJSLS:</b>		<b>Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences</b>	
<b>Core Ideas:</b>	<b>Performance Expectation:</b>	<b><u>Essential Question/s:</u></b>  1. How can you use data to predict an event? 2. What are some ways you can use to collect data? 3. What is a table? 4. What is a graph? 5. What are the common types of graphs (bar, column, pie, line)? 6. How can you display data in a way that helps you make a decision? 7. What inferences and/or predictions can you make about the data you collected? 8. How can you store data? 9. How can spreadsheets be used to efficiently manage data? 10. How can you use multimedia presentations to create and share data with a purpose?  <b><u>Enduring Understandings:</u></b>	
Data can be organized, displayed, and presented to highlight relationships.	<b>8.1.5.DA.1:</b> Collect, organize, and display data in order to highlight relationships or support a claim.		
The type of data being stored affects the storage requirements.	<b>8.1.5.DA.2:</b> Compare the amount of storage space required for different types of data.		
Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	<b>8.1.5.DA.3:</b> Organize and present collected data visually to communicate insights gained from different views of the data.		
Many factors influence the accuracy of inferences and predictions.	<b>8.1.5.DA.5:</b> Propose cause and effect relationships, predict outcomes, or communicate ideas using data.		

<p><b>Social and Emotional Learning:</b> <i>Competencies</i></p>	<p><b>Social and Emotional Learning:</b> <i>Sub-Competencies</i></p>	<ul style="list-style-type: none"> <li>• Individuals collect, use, and display data about individuals and the world around them.</li> <li>• Computers store data that can be retrieved later. Data can be copied, stored in multiple locations, and retrieved.</li> <li>• Data can be used to make predictions about the world.</li> <li>• Data can be organized, displayed, and presented to highlight relationships.</li> <li>• The type of data being stored affects the storage requirements.</li> <li>• Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.</li> <li>• Many factors influence the accuracy of inferences and predictions</li> </ul> <p><b>Instructional Strategies and Assignments:</b></p> <ul style="list-style-type: none"> <li>• Teacher created activities to collect data, analyze, and display data.</li> <li>• Work with a partner, group, or whole class.</li> <li>• Use a journal to reflect on the lesson.</li> <li>• Class discussion on the findings.</li> </ul> <p><b>Interdisciplinary Connections: Content: ;NJSLS#:</b></p> <ul style="list-style-type: none"> <li>• NJLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.</li> <li>• NJLSA.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area</li> <li>• NJLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.</li> <li>• NJLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.</li> <li>• NJSLS.2.MD.D.10 Measurement Data and Data Representations</li> <li>• NJSLS.3.MD.B.3 Spatial Reasoning and Fluency with Operations</li> </ul>
<p align="center"><b>Assessments</b> <i>To show evidence of meeting the standard/s, students will successfully engage within:</i></p>		<p align="center"><b>Unit Goals/Objectives</b></p>
<p><b>Assessments:</b></p> <ul style="list-style-type: none"> <li>• Completed programs, mini-projects, end of course projects</li> </ul>		<ul style="list-style-type: none"> <li>• Students collect data on various subjects.</li> <li>• Students record the data on a survey, paper tally sheet, or spreadsheet.</li> </ul>



<ul style="list-style-type: none"> <li>• Teacher created exit tickets</li> <li>• Journals and self-reflection</li> </ul>	<ul style="list-style-type: none"> <li>• Students analyze the data.</li> <li>• Students present the data in a multimedia format.</li> </ul>
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**Differentiated Student Access to Content:  
Teaching and Learning *Resources/Materials***

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<ul style="list-style-type: none"> <li>• Chromebooks</li> <li>• Apps within G Suite and other age appropriate apps</li> <li>• Print and Digital Media</li> <li>• <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>• Chromebooks</li> <li>• Apps within G Suite and other age appropriate apps</li> <li>• Print and Digital Media</li> <li>• <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>• Chromebooks</li> <li>• Apps within G Suite and other age appropriate apps</li> <li>• Print and Digital Media</li> <li>• <a href="#">Design Challenge Book List</a></li> </ul>	<ul style="list-style-type: none"> <li>• Chromebooks</li> <li>• Apps within G Suite and other age appropriate apps</li> <li>• Print and Digital Media</li> <li>• <a href="#">Design Challenge Book List</a></li> </ul>

**Supplemental Resources**

<p><b>Technology:</b></p> <ul style="list-style-type: none"> <li>• Appropriate educational videos</li> <li>• BrainPop</li> <li>• Commonsense.org</li> <li>• Code.org</li> <li>• NewsELA</li> <li>• Reading A-Z</li> </ul>
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	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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