TOMS RIVER REGIONAL SCHOOLS
Share the Vision!

Content Area: Technology

Course Title: Technology I	Grade Level: 6

Unit Plan 1 Digital Citizenship and Cyber Safety	Pacing Guide 5-10 Days
Unit Plan 2 Careers in Technology	Pacing Guide 7 Days
Unit Plan 3 Product Evolution, Hardware and Software	Pacing Guide 5-10 Days
Unit Plan 4 Using Digital Tools to Problem Solve	Pacing Guide 5 -10 Days
Unit Plan 5 Programming	Pacing Guide 5-10 Days

Original Adoption: April 16, 2015
Revisions: Summer 2022
Board Approved: August 17, 2022

Unit 1 Overview
Content Area: Technology
Unit Title: Digital Citizenship and Cyber Safety
Target Course/Grade Level: 6
Pacing Guide: 5-10 days
Unit Summary: Students will develop technology-based projects to demonstrate an understanding of the proper use of online technology as well as the appropriate use of social media.
Primary Interdisciplinary Connections: W.6.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. L.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. RI.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
Companion Standards **Anchor Standards for Reading** **NJSLSA.R7.** Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words **NJSLSA.R8.** Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. **NJSLSA.R9.** Analyze and reflect on how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

NJSLSA.R10. Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.

Progress Indicators for Reading Science and Technical Subjects

RST.6-8.1. Cite specific textual evidence to support analysis of science and technical texts.

RST.6-8.2. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

RST.6-8.8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Anchor Standards for Writing

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.

NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

NJSLSA.W8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

NJSLSA.W10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Progress Indicators for Writing History, Science and Technical Subjects

WHST.6-8.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
A. Introduce a topic and organize ideas, concepts, and information using text structures (e.g. definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g. headings, graphics, and multimedia) when useful to aiding comprehension.
B. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
C. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
D. Use precise language and domain-specific vocabulary to inform about or explain the topic.
E. Establish and maintain a formal/academic style, approach, and form.
F. Provide a concluding statement or section that follows from and supports the information or explanation presented.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

WHST.6-8.7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration

WHST.6-8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

21st Century Themes:

Standard 9.3 Career Awareness, Exploration, and Preparation All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

CRP1. Act as a responsible and contributing citizen and employee
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9. Model integrity, ethical leadership, and effective management. CRP11. Use technology to enhance productivity.
Learning Targets
Technology Standards: **8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.** **D. Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*

CPI #	Cumulative Progress Indicator (CPI)
8.1.8.D.1	Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including the appropriate use of social media.
8.1.8.D.2	Demonstrate the application of appropriate citations to digital content.
8.1.8.D.3	Demonstrate an understanding of fair use and Creative Commons to intellectual property.
8.1.8.D.4	Assess the credibility and accuracy of digital content.
8.1.8.D.5	Understand appropriate uses for social media and the negative consequences of misuse.

Unit Essential Questions	Unit Enduring Understandings *Students will understand…*
Why is it important to be safe? Why is it important to protect licensed material? Does ownership matter? What does it mean to be online appropriate? What is the price of “free”? How do you evaluate the credibility of online resources? What is misuse?	The importance of Cyber Safety and appropriate online practices as well as an understanding of digital ownership. How and why to assess online credibility.

Unit Objectives *Students will know…*	Unit Objectives *Students will be able to…*
Creative Commons licensing standards Appropriate citation formats Basic Copyright Laws Where they leave their Digital Footprint	Appropriately cite sources Use Creative Commons Licensing Standards Understand basic copyright laws Understand appropriate uses for social media and the negative consequences of misuse Assess the credibility and accuracy of digital content

Evidence of Learning	
Formative Assessments: ● Pretest/Post test ● Observation ● Class Participation ● Think-Pair-Share Summative Assessments: ● Quiz ● Unit Projects	Alternative Assessments: ● Do-Now ● Exit Tickets ● Classroom Games ● Self-assessment ● Feedback from home form Suggested Benchmark: ● Quarterly Exam
Modifications	
English Language Learners: ● Provide clear and specific directions ● Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	Gifted and Talented: ● Extension activities ● Opportunities for Critical Thinking ● Problem Solving/Design Challenges ● Technology Integration ● Student Choice Activities ● Student Driven Activities ● Group Projects ● Tiered Activities
Special Education: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	504: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions
Students at Risk of School Failure: ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Tiered Activities ● Manipulatives ● Graphic Organizers	 ● Chunking Information ● Scaffolded Questioning ● Modified Assignments ● Preferential Seating ● Visual Cues/Modeling ● Technology Integration ● Assistive Technology

Cyber Safety Pre Test
Cyber Safety Post Test
Use image searches with advanced image tools that are labeled for non-commercial use.
Homework

Formative Assessments help students identify strengths and weaknesses while helping faculty recognize where students are struggling and address problems immediately. Some tools and strategies for formative assessment can be found here.

Instructional Materials, Equipment needed, Teacher Resources

When appropriate, provide students with examples of people in tech who are members of minority groups such as the LGBTQ community and people with disabilities.

CyberBullying Lesson: Students create a survey (MZ)

Citing Online and Social Media Sources-Newsome
Living in a Digital World Classroom Activities
Click Bait Activity - Newsome
Black Creators of TikTok

The research tool in a google docs
EasyBib Add-on in Google Docs
Creative Commons
Common Sense Media
Digital compass

Teacher Notes:

Unit 2 Overview
Content Area: Technology
Unit Title: Careers in Technology
Target Course/Grade Level: 6
Pacing Guide: 7 days
Unit Summary: Students will develop technology-based projects which expose them to the growth and development of careers in the field of technology.
Primary Interdisciplinary Connections: RI.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. W.6.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. W.6.8. Gather relevant information from multiple print and digital sources; assess the credibility of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.
Companion Standards **Anchor Standards for Reading** **NJSLSA.R4**. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. **NJSLSA.R5**. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other

and the whole.
NJSLSA.R6. Assess how point of view or purpose shapes the content and style of a text.
Progress Indicators for Reading Science and Technical Subjects

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

RST.6-8.5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

RST.6-8.6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

NJSLSA.R7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

NJSLSA.R9. Analyze and reflect on how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

NJSLSA.R10. Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.

Anchor Standards for Writing
NJSLSA.W10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others

Progress Indicators for Writing History, Science and Technical Subjects
WHST.6-8.10. Write routinely over extended time frames (time for research, reflection, metacognition/self-correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

21st Century Themes:
Standard 9.2 Personal Financial Literacy All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

Standard 9.3 Career Awareness, Exploration, and Preparation All students will apply knowledge about and engage in the process of career awareness,

exploration, and preparation in order to navigate the globally competitive work environment of the information age.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP10. Plan education and career paths aligned with personal goals.
CRP11. Use technology to enhance productivity.

Learning Targets

Technology Standards:

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

CPI #	Cumulative Progress Indicator (CPI)
8.2.8.E.1	Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.

Unit Essential Questions	Unit Enduring Understandings *Students will understand that…*
How has the use of technology affected careers of today? What impact has technology had on our society?	Technology is used on a daily basis in society Technology influences every aspect of life
Unit Objectives *Students will know…*	Unit Objectives *Students will be able to…*
How technology influences certain careers. How technology influences the development of old and new careers.	Identify careers they are interested in and the ways in which these careers are influenced by and utilize technology.

Instructional Materials, Equipment needed, Teacher Resources
Slide presentation for careers in technology. Research resources to include:
21 Influential Black People in Technology
39 LGBTQ+ STEM Innovators and Resources
Accessibility and STEM Innovators in the Disability Community
Climate Tech
Careers and Degrees in Climate Technology

Evidence of Learning	
Formative Assessments: ● Pretest/Post test ● Observation ● Class Participation ● Think-Pair-Share Summative Assessments: ● Quiz ● Unit Projects	Alternative Assessments: ● Do-Now ● Exit Tickets ● Classroom Games ● Self-assessment ● Feedback from home form Suggested Benchmark: ● Quarterly Exam
Modifications	
English Language Learners: ● Provide clear and specific directions ● Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	Gifted and Talented: ● Extension activities ● Opportunities for Critical Thinking ● Problem Solving/Design Challenges ● Technology Integration ● Student Choice Activities ● Student Driven Activities ● Group Projects ● Tiered Activities
Special Education: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	504: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions
Students at Risk of School Failure:	● Chunking Information

● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Tiered Activities ● Manipulatives ● Graphic Organizers	● Scaffolded Questioning ● Modified Assignments ● Preferential Seating ● Visual Cues/Modeling ● Technology Integration ● Assistive Technology

Unit 3 Overview
Content Area: Technology
Unit Title: Product Evolution, Hardware and Software
Target Course/Grade Level: 6
Pacing Guide: 5-10 days
Unit Summary: Using office projects, google apps, google docs and internet research students will develop an understanding of the history and progress of technology. They will create an understanding of how technology has evolved to become a driving force in the growth of our standard of living.
Primary Interdisciplinary Connections: RI.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. RI.6.2. Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments. SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. RI.6.7. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. W.6.8. Gather relevant information from multiple print and digital sources; assess the credibility of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.
Companion Standards **Anchor Standards for Reading** **NJSLSA.R1.** Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. **NJSLSA.R2.** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. **NJSLSA.R7.** Integrate and evaluate content presented in diverse media and formats,

including visually and quantitatively, as well as in words.

Progress Indicators for Reading Science and Technical Subjects

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

RST.6-8.8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Anchor Standards for Writing

NJSLSA.W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

NJSLSA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

NJSLA.W8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

Progress Indicators for Writing History, Science and Technical Subjects

WHST. 6-8.1.

- **A.** Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- **B.** Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of topic or text, using credible sources.
- **C.** Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- **D.** Establish and maintain a formal/academic style, approach, and form.
- **E.** Provide a conclusion statement or section that follows from and supports the argument presented.

21st Century Themes:

Standard 9.1 21st-Century Life & Career Skills All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 9.3 Career Awareness, Exploration, and Preparation All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

CRP2. Apply appropriate academic and technical skills.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.

Learning Targets

Technology Standards:

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:
All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking, and the designed world as they relate to the individual, global society, and the Environment.

CPI #	Cumulative Progress Indicator (CPI)
8.2.8.A.1	Research a product that was designed for a specific demand and identify how the product has changed to meet new demands (i.e. telephone for communication - smartphone for mobility needs)
8.2.8.E.1	Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.
8.2.8.E.2	Demonstrate an understanding of the relationship between hardware and software.
8.2.8.E.4	Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).
8.2.8.ETW.4	Compare the environmental effects of two alternative technologies devised to address climate change issues and use data to justify which choice is best

9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).

Unit Essential Questions How has technology grown over time? How does branding affect product development? How do products evolve? How has technology improved the standard of living?	Unit Enduring Understandings *Students will understand that…* Needs evolve over time and technology evolves to help meet those changing needs.
Unit Objectives *Students will know…* How demand affects product development.	Unit Objectives *Students will be able to…* Understand and discuss ways that technology has improved the standard of living.

Evidence of Learning	
Formative Assessments: ● Pretest/Post test ● Observation ● Class Participation ● Think-Pair-Share Summative Assessments: ● Quiz ● Unit Projects	Alternative Assessments: ● Do-Now ● Exit Tickets ● Classroom Games ● Self-assessment ● Feedback from home form Suggested Benchmark: ● Quarterly Exam
Modifications	
English Language Learners: ● Provide clear and specific directions ● Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	Gifted and Talented: ● Extension activities ● Opportunities for Critical Thinking ● Problem Solving/Design Challenges ● Technology Integration ● Student Choice Activities ● Student Driven Activities ● Group Projects ● Tiered Activities
Special Education: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	504: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions
Students at Risk of School Failure: ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Tiered Activities ● Manipulatives ● Graphic Organizers	 ● Chunking Information ● Scaffolded Questioning ● Modified Assignments ● Preferential Seating ● Visual Cues/Modeling ● Technology Integration ● Assistive Technology

Instructional Materials, Equipment needed, Teacher Resources
Google Sheets, Google Docs, Google Slides, etc.

Whenever possible, provide students with examples of people in tech who are members of minority groups such as the LGBTQ community and people with disabilities.

Suggested Project - Have students develop plans for a sustainable homestead or industrial greenhouse that uses technology to counteract problems stemming from climate change such as droughts and flooding.
Evolution of Manufacturing Activities
Colorbricks Assembly Line Activity

Teacher Notes:

Unit 4 Overview
Content Area: Technology
Unit Title: Using Digital Tools to Problem Solve
Target Course/Grade Level: 6
Pacing Guide: 5-10 days
Unit Summary: Students will use technology to derive solutions to real-world issues.
Primary Interdisciplinary Connections: RI.6.1. Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. SL.6.2. Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study. W.6.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. W.6.8. Gather relevant information from multiple print and digital sources; assess the credibility of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources. CCSS.MATH.CONTENT.6.SP.B.5 Summarize numerical data sets in relation to their context, such as by: CCSS.MATH.CONTENT.6.SP.B.5.A Reporting the number of observations. CCSS.MATH.CONTENT.6.SP.B.5.B Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. CCSS.MATH.CONTENT.6.SP.B.5.C Giving quantitative measures of center (median and/or mean) and variability (interquartile range

and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Companion Standards
Anchor Standards for Reading
Progress Indicators for Reading Science and Technical Subjects

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

RST.6-8.8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

RST.6-8.9. Compare and contrast the information gained from experiments, simulations, video, or
multimedia sources with that gained from reading a text on the same topic.

Anchor Standards for Writing
NJSLSA.W1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

NJSLSA.W7. Conduct short as well as more sustained research projects, utilizing an inquiry-based research process, based on focused questions, demonstrating understanding of the subject under investigation

WHST.6-8.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
A. Introduce a topic and organize ideas, concepts, and information using text structures (e.g. definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g. headings, graphics, and multimedia) when useful to aiding comprehension.
B. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
C. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
D. Use precise language and domain-specific vocabulary to inform about or explain the topic.
E. Establish and maintain a formal/academic style, approach, and form.
F. Provide a concluding statement or section that follows from and supports the information or explanation presented.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Learning Targets

Technology Standards:

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

A. The Nature of Technology: Creativity and Innovation *Technology systems impact every aspect of the world in which we live.*

CPI #	Cumulative Progress Indicator (CPI)
8.1.8.A.1	Demonstrate knowledge of a real-world problem using digital tools.
8.1.8.A.2	Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.
8.1.8.A.4	Graph and calculate data within a spreadsheet and present a summary of the results
8.1.8.D.2	Demonstrate the application of appropriate citations to digital content.
8.2.8.A.1	Research a product that was designed for a specific demand and identify how the product has changed to meet new demands (i.e. telephone for communication - smartphone for mobility needs).
9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as

	climate change and use critical thinking skills to predict which one(s) are likely to be effective.

Unit Essential Questions What societal needs can be me with advancements in technology? Why is tracking of information important and what tools do we have to do this?	Unit Enduring Understandings *Students will understand that…* Needs of society change over time and technology can be used to meet those needs.
Unit Objectives *Students will know…* How to use digital tools to gather, organize, and present information. Needs of a changing society. How technology can be used in innovative ways to meet the changing needs of society.	Unit Objectives *Students will be able to…* Determine the proper use of technological tools Analyze technological changes in society Use digital tools to gather, interpret, and communicate information.

Evidence of Learning	
Formative Assessments: ● Pretest/Post test ● Observation ● Class Participation ● Think-Pair-Share ● Use of Google Slides, Forms, Sheets	Alternative Assessments: ● Do-Now ● Exit Tickets ● Classroom Games ● Self-assessment ● Feedback from home form
Summative Assessments:	Suggested Benchmark:

• Quiz • Unit Projects	• Quarterly Exam
Modifications	
English Language Learners: ● Provide clear and specific directions ● Allow for alternate forms of responses- drawing or speaking instead of writing to demonstrate knowledge when you are not specifically assessing writing ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	Gifted and Talented: ● Extension activities ● Opportunities for Critical Thinking ● Problem Solving/Design Challenges ● Technology Integration ● Student Choice Activities ● Student Driven Activities ● Group Projects ● Tiered Activities
Special Education: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions	504: ● Utilize graphic organizers to help provide a purpose for reading and increase comprehension ● Assign peer tutor ● Provide clear and specific directions ● Provide class notes ahead of time to allow students to preview material and increase comprehension ● Provide extended time ● Simplify written and verbal instructions
Students at Risk of School Failure: ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Tiered Activities ● Manipulatives ● Graphic Organizers	● Chunking Information ● Scaffolded Questioning ● Modified Assignments ● Preferential Seating ● Visual Cues/Modeling ● Technology Integration ● Assistive Technology

Instructional Materials, Equipment needed, Teacher Resources
Google Sheets, Google Docs, Google Slides, etc.

Whenever possible, provide students with examples of people in tech who are members of minority groups such as the LGBTQ community and people with disabilities.
Suggested Project - Have students develop plans for a sustainable homestead or industrial

greenhouse that uses technology to counteract problems stemming from climate change such as droughts and flooding. NASA Climate Time Machine
Extension of the project above: What digital tools would be needed to make this system work?
Introduction to Conversion Formulas
Cooking with Formulas
Budgeting for a Summer Vacation Sheets/Excel Project - Newsome

Teacher Notes:

Unit 5 Overview
Content Area: Technology
Unit Title: Programming
Target Course/Grade Level: Technology 6
Pacing Guide: 5-10 days
Unit Summary: Students will participate in beginner level coding projects, including the hour of code, to develop/enhance an understanding of computational thinking.
Primary Interdisciplinary Connections: Common Core State Standards Connections: **Mathematics –** MP.2 Reason abstractly and quantitatively. (3-5-ETS1-1),(3-5-ETS1-3) MP.4 Model with mathematics. (3-5-ETS1-1),(3-5-ETS1-3) MP.5 Use appropriate tools strategically. (3-5-ETS1-1),(3-5-ETS1-3) **NGSS -** Crosscutting Concepts 1. Patterns. Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them. 2. Cause and effect: Mechanism and explanation. Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts. 3. Scale, proportion, and quantity. In considering phenomena, it is critical to recognize what is relevant at different measures of size, time, and energy and to recognize how changes in scale, proportion, or quantity affect a system's structure or performance. 4. Systems and system models. Defining the system under study—specifying its boundaries and making explicit a model of that system—provides tools for understanding and testing ideas that are applicable throughout science and engineering
Companion Standards **Anchor Standards for Reading** **NJSLSA.R7.** Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. **Progress Indicators for Reading Science and Technical Subjects**

RST.6-8.3. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Anchor Standards for Writing

NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Progress Indicators for Writing History, Science and Technical Subjects

WHST.6-8.5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

WHST.6-8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently

WHST.6-8.7. Conduct short research projects to answer a question (including a self-generated
question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

WHST.6-8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation

21st Century Themes:
CRP2. Apply appropriate academic and technical skills.
CRP6. Demonstrate creativity and innovation.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Learning Targets

Technology Standards:
8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

E. Computational Thinking: Programming: *Computational thinking builds and enhances problem-solving, allowing students to move beyond using knowledge to creating knowledge.*

CPI #	Cumulative Progress Indicator (CPI)
8.2.8.E.3	Develop an algorithm to solve an assigned problem using a specified set of commands and use peer review to critique the solution.
8.2.8.E.4	Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).

Unit Essential Questions How do computers do what they do? Does order matter? What do you do when things don't go the way you planned? How does computer science affect our daily lives?	Unit Enduring Understandings *Students will understand that…* Computers operate according to a particular programming language. How computers respond to programming languages.
Unit Objectives *Students will know…* Programming is a sequence of steps (an algorithm) How to write basic code Basic vocabulary words: input, output, the operating system, debug, and algorithm	Unit Objectives *Students will be able to…* Use computational thinking to problem solve using computer programming. Write code using a basic programming language.

Evidence of Learning	
Formative Assessments: ● Pretest/Post test ● Observation ● Class Participation ● Think-Pair-Share Summative Assessments: ● Quiz ● Unit Projects	Alternative Assessments: ● Do-Now ● Exit Tickets ● Classroom Games ● Self-assessment ● Feedback from home form Suggested Benchmark: ● Quarterly Exam
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Instructional Materials, Equipment needed, Teacher Resources

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Lesson Plan
Hour of Code
Computer Science Education Week
www.code.org
Programming Language Lesson Plan: Code Monkey Game
Active Imagination Lesson Plan: Everyone's Creative
Computer Coding Lesson Plan: Blockly Maze Game
Logo Programming Game Lesson Plan: Turtle Academy
Creative Programming Lesson Plan: 15 Blocks Game
Hour of Code Lesson Plan
CS Ed Week
Scratch
CS First
Blockly can show Javascript (shows directly in code.org)
Vidcode Javascript
Cospaces: RAM intensive shows Javascript

Teacher Notes: