Unit 1
Technology Curriculum 6th-8th
2018

Content Area:	Technology	Grade(s)	6th-8th
Unit Overview:	1st Marking Period		
	2014 New Jersey Core Curriculum Content 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 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.

Standard(s) 8.1 Educational Technology

- **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.3** 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.A.5** Create a database query, sort and create a report and describe the process, and explain the report results.

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

- **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 - smart phone for mobility needs).
- **8.2.8.A.2** Examine a system, consider how each part relates to other parts, and discuss a part to redesign to improve the system.
- **8.2.8.A.3** Investigate a malfunction in any part of a system and identify its impacts.
- **8.2.8.A.4** Redesign an existing product that impacts the environment to lessen its impact(s) on the environment.
  8.2.8.A.5 Describe how resources such as material, energy, information, time, tools, people, and capital contribute to a technological product or system.

Essential Question(s)	Enduring Understandings
• How do I choose which technological tools to use and when it is appropriate to use them? • How can I transfer what I know to new technological situations/experiences? • In a world of constant change, what skills should we learn? • What things should you do to stay safe online? • At what age is Typing Faster than Handwriting?	• Understand and use technology systems. • Select and use applications effectively and productively. • 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 - smart phone for mobility needs). • The characteristics and scope of technology. • The core concepts of technology. The relationships among technologies and the connections between technology and other fields of study.

disciplinary Connections		
Common Core Literacy	**Common Core Math**	**Career Ready Practices**
CCSS.ELA-Literacy.CCRA.R.7	CCSS.MATH.PRACTICE.MP1	CRP1
CCSS.ELA-Literacy.CCRA.W.6	CCSS.MATH.PRACTICE.MP2	CRP4
CCSS.ELA-Literacy.RI.1.5	CCSS.MATH.PRACTICE.MP3	CRP6
CCSS.ELA-Literacy.RI.1.10	CCSS.MATH.PRACTICE.MP5	CRP8
CCSS.ELA-Literacy.RF.1.4.A	CCSS.MATH.PRACTICE.MP6	CRP11
CCSS.ELA-Literacy.W.1.6	CCSS.MATH.PRACTICE.MP7	
CCSS.ELA-Literacy.SL.1.1		
CCSS.ELA-Literacy.SL.1.1.C		
CCSS.ELA-Literacy.SL.1.2		

Learning Plan Suggested	**Suggested Activities**				
Time Frame	**Topic**	**Skills**	**Computational Thinking**	**Core Materials**	**Suggested Formative/Summative Classroom Assessments Rubric**
Week 1	Introduction	Problem-solving strategies Input, output.	What is the responsibility of every	Classroom Rules. Class syllabus	

	Hardware Software	Keyboarding Digital citizenship Problem solving Hardware Digital devices Understanding of 'technology' Select appropriate software to create a variety of documents .	digital learner for using technology? What would misuse of technology look like? How can digital learners use technology to solve trouble shooting issues? Digital learners can create a brochure or a video tutorial on how to use	Videos: Computer Hardware Video https://www.commoncraft.com/video/computer-hardware Computer Software Video https://www.commoncraft.com/video/computer-software Khan Academy: https://www.khanacademy.org/computing/computer-science/informationtheory/moderninfotheory Planning and Recording Your Video Tutorials https://digitalskillsinstitute.com/blog/recording-video-tutorials/	
Week 2	Log-in				http://www.schrockguide.net/assessment-and-rubrics.html **Multimedia and Apps Rubrics** http://www.schrockguide.net/assessment-and-rubrics.html **New Jersey Project and Assessment Examples** http://www.nj.gov/education/aps/cccs/tech/assessment/ **Links on Exit/Admit Slips** Readingrockets: Exit Slips http://www.readingrockets.org/strategies/exit_slips AdLit.org: Exit Slips http://www.adlit.org/strategies/19805 Writing Across the Curriculum: Entry/Exit Slips http://writing2.richmond.edu/wac/entrexit.html Exit Slips: Effective Bell-Ringer Activities http://www.teachhub.com/news/article/cat/14/item/377 Admit Slips and Exit Slips http://literacy.kent.edu/eureka/strategies/admit_slips09.pdf

Week 3	Understanding wikis and ethical responsible posting of info. Digital Tools in the Classroom.	Blogging Wiki's are web sites that allow anyone to collectively contribute content to a web site. Web sites like wikimmunity.org allow users to enter info related to various topics by creating an article or adding to a previously created article.	How do digital learners use technology to pursue their education goals? Digital learners will understand the importance of ethics and personal responsibility when posting information on the internet. Pages can be enhanced by uploading pictures of the attraction or business. Accuracy of information as well as not using copyrighted material without permission are important points to remember.	Anticipatory Set: Have students log onto web site, www.wikimmunity.org wikimmunity.org	
Week 4 **Week 5**	Digital Citizenship	Social media Ethical Use of Digital Resources Digital Footprint	Digital learners need to recognize that everyone's online information can be helpful or harmful to their reputation and image. consider their own digital footprints and what they want those footprints to be like in the future.	Digital citizenship sites and videos. Ethics and Consequences Exploration http://platform.learning.com/Interface/UserContent/f938864b-87b8-4b87-b96c-aa0d0d7d0d1d/Ethics_and_Consequences_Exploration.pdf	

			How should digital learners behave in their virtual neighborhood? Why is cyber bullying just as damaging as physical bullying? What are the possible consequences of using digital media and communication devices? Digital learners can create a video or mutimedia presentation.	Digital Footprint (6-8) https://www.commonsensemedia.org/educators/lesson/trillion-dollar-footprint-6-8	
Week 6 Week 7	Digital Tools for Organization	Digital learners must Identify three types of software they can use for organization purposes. Essential Learning Skills: creating a column chart, changing alignment in a spreadsheet file, chart formats including labels, x and y axis', gridlines, titles, legends, moving charts on the spreadsheet, creating a footer, setting up landscape format,	Digital learners must make a connection with digital tools made for organization. How are kitchens organized? How is the classroom organized? How are libraries organized? The instructor can ask digital learners how they use organization in their daily lives? (In games they play? In school? In their bedrooms at home? When	Digital Tools for organization. http://dailytekk.com/2012/02/27/over-100-incredible-infographic-tools-and-resources/?reading=continu Microsoft Excel Vocabulary https://quizlet.com/2292030/bms-excel-vocab-flash-cards/	

		and printing directions.	they're doing homework?) Digital learners can choose and create their own spreadsheet to organize or solve a current problem. Examples: A Budget Spreadsheet.		
Week 8 Week 9	Video marketing Screenshots, Screencasts, Videos	Screencasting Videos. Create a multimedia presentation including sound and images.	Digital learners must understand that Video is critical to helping people connect with, remember, and care about a brand, however, behind the video there is a script that has to be made.	Fifteen Minutes of Recording. http://screencast-o-matic.com/home Video Marketing http://www.conductor.com/blog/2015/01/power-of-video-marketing/	
Week 10	Writing with Comics	Writing with comics/cartoons Writing a Twitter novel Writing a serialized novel.	How do I communicate with less text and more media? How can color, images, and layout aid communication with a variety of audiences, for a variety of tasks? Digital learners will create a comic about recycling computer hardware.	Comic creator,	

Week 11 **Week 12**	Code.org Build problem solving skills through the use of computational widgets	In a society that relies more and more heavily on technology, digital learners will be expected to be familiar with a wide variety of programs and techniques. This project will expose them to animation programing, which may, in turn, inspire students to a future career or area of study.	Digital assistants are a class of problems that highlight the differences between what is easy for a computer to do and what is easy for a human, digital learners must investigate a malfunction in any part of their digital assistant and identify its impacts. Digital learners must create a flowchart to design the logic for their digital assistant.	Digital Assistant Project. https://studio.code.org/s/cspunit3/stage/21/puzzle/2	

Supportive Strategies

1. Special Education

- Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen magnification on Chromebook, or spoken text features).
- Graphic Organizers.
- Modifications on IEP.
- Provide written and oral directions, utilizing visuals and exemplars. (For example, teacher models on StarBoard how to login to Code.org and provides Step-by-Step instruction handout to student).
- Reduction in workload.
- Repetition and Reinforcement of classroom material.
- Strategic Grouping for all group work

2. ESL

• Employ assistive technology as needed (For example, online translation or Language text settings on Chromebook). • For collaborative assignments, appropriate roles will be assigned. (For example, time-keeper, activity starter) • Make content culturally relevant. • Partner English Learners with Strong English Speakers. • Provide written and oral directions for all lessons, utilizing visuals and exemplars. • Repeat classroom procedure and routines as much as possible to reinforce language learning. • Visual Aids
3. Student at risk of failure
•Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen magnification on devices, or spoken text features). • Flexible acceptance of missing/lost/incomplete assignment. • Strategic Grouping for all group work
4. Gifted and Talented
•Higher level learners will be provided with more intellectually demanding learning activities. (For example, students who complete lessons on Code.org can continue to the next levels at their own pace). • Higher Order Questioning. • Utilize different reading levels appropriate for students.
DOE Resources and Sample Activities 8.1.A, 8.2.A (Assessment)
Create a collaborative database with classmates who each enter their data for a survey completed on a relevant content area topic that addresses a problem and increases community awareness. Critically analyze the data by querying, sorting, and developing a graphical display. Use the analysis to validate any conclusions or hypothesis to persevere in solving the problems. Write an explanatory text to support the development of a public service document conveying ideas and concepts. http://www.state.nj.us/education/cccs/2014/tech/cad/CADS81A.pdf
Using the Internet, investigate how the current smart phone has changed from its predecessor. Consider the reasons for the change. Analyze the impact the innovation has on status, social class and standard of living. Develop an organized informative/ explanatory text to convey your ideas, concepts and information with a supported examination of the topic and analysis. http://www.state.nj.us/education/cccs/2014/tech/cad/CADS82A.pdf

Unit Vocabulary		
Internet devices Networking Hardware Software Synchronize Photo Sharing Cloud Documents Collaboration	Database Web page citation information Validity website URL Public domain bias Online resources Intellectual property Derivative work	Digital footprint Acronyms Link Emoticons Tag Profile page Texting

Cloud communication data Storage digital environment Computer Language Communication Software Electronic file storage Keyboard gallery Live preview Ribbon interface Contextual menu Application Button groups review Dialog box Office button command Spreadsheet Software controls Browser dialog box	Mp3 Copyright Citing sources Photo permission Fair use plagiarism Creative commons Web browser Bold Italic Page number Cut Copy Paste Word processing Instant message buttons	Instant messaging Post Privacy settings Synchronize photo sharing Platform file server Connectivity Ethical use peripheral File -sharing Online safety Contact list password Internet safety Emoticon Photo sharing Communication Digital Citizenship

Unit 2
Technology Curriculum 6th-8th
2018

Content Area:	Technology	Grade(s)	6th-8th
Unit Overview:	2nd Marking Period		
	2014 New Jersey Core Curriculum Content 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.
B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

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.
B. Technology and Society: Knowledge and understanding of human, cultural and societal values are fundamental when designing technological systems and products in the global society.
C. Design: The design process is a systematic approach to solving problems.

Standard(s) 8.1 Educational Technology

- **8.1.8.B.1** Synthesize and publish information about a local or global issue or event (ex. telecollaborative project, blog, school web).
- **8.1.8.C.1** Collaborate to develop and publish work that provides perspectives on a global problem for discussions with learners from other countries.

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

- **8.2.8.B.1** Evaluate the history and impact of sustainability on the development of a designed product or system over time and present results to peers.
- **8.2.8.B.2** Identify the desired and undesired consequences from the use of a product or system.
- **8.2.8.B.3** Research and analyze the ethical issues of a product or system on the environment and report findings for review by peers and /or experts.
- **8.2.8.B.4** Research examples of how humans can devise technologies to reduce the negative consequences of other technologies and present your findings.
- **8.2.8.B.5** Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries and societies.
- **8.2.8.B.6** Compare and contrast the different types of intellectual property including copyrights, patents and trademarks.
- **8.2.8.B.7** Analyze the historical impact of waste and demonstrate how a product is upcycled, reused or remanufactured into a new product.
- **8.2.8.C.1** Explain how different teams/groups can contribute to the overall design of a product.
- **8.2.8.C.2** Explain the need for optimization in a design process.
- **8.2.8.C.3** Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer.

- **8.2.8.C.4** Identify the steps in the design process that would be used to solve a designated problem.
- **8.2.8.C.5** Explain the interdependence of a subsystem that operates as part of a system.
- **8.2.8.C.5.a** Create a technical sketch of a product with materials and measurements labeled.
- **8.2.8.C.6** Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate and test options to repair the product, presenting the better solution.
- **8.2.8. C.7** Collaborate with peers and experts in the field to research and develop a product using the design process, data analysis and trends, and maintain a design log with annotated sketches to record the developmental cycle.
- **8.2.8.C.8** Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers.

Essential Question(s)	Enduring Understandings
• How do I choose which technological tools to use and when it is appropriate to use them? • How can I transfer what I know to new technological situations/experiences? • In a world of constant change, what skills should we learn? • What things should you do to stay safe online? • Should technologies that produce negative impact continue to be used? • At what age is Typing Faster than Handwriting? • Is it always beneficial to use the most economical materials for production of a technological product? • A system has interrelated components designed to collectively achieve a desired goal.	• Apply existing knowledge to generate new ideas, products, or processes. • Create original works as a means of personal or group expression. • Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. • Communicate information and ideas to multiple audiences using a variety of media and formats. • Develop cultural understanding and global awareness by engaging with learners of other cultures. • Contribute to project teams to produce original works or solve problems. • The cultural, social, economic and political effects of technology. • The effects of technology on the environment. • The role of society in the development and use of technology. • The influence of technology on history. • The attributes of design. • The application of engineering design. • The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. • All technological uses require resources that include tools/machines, materials, information, energy, time, and people.

disciplinary Connections

Common Core Literacy	mon Core Math	Career Ready Practices
CCSS.ELA-Literacy.CCRA.R.7	CCSS.MATH.PR	CRP1

	ACTICE. MP1	
CCSS.ELA-Literacy.CCRA.W.6	CCSS.MATH.PRACTICE.MP2	CRP4
CCSS.ELA-Literacy.RI.1.5	CCSS.MATH.PRACTICE.MP3	CRP6
CCSS.ELA-Literacy.RI.1.10	CCSS.MATH.PRACTICE.MP5	CRP8
CCSS.ELA-Literacy.RF.1.4.A	CCSS.MATH.PRACTICE.MP6	CRP11
CCSS.ELA-Literacy.W.1.6	CCSS.MATH.PRACTICE.MP7	
CCSS.ELA-Literacy.SL.1.1		
CCSS.ELA-Literacy.SL.1.1.C		
CCSS.ELA-Literacy.SL.1.2		

Suggested	**Suggested Activities Learning Plan**				
Time Frame	**Topic**	**Skills**	**Computational Thinking**	**Core Instructional Materials**	**Assessment Strategies and Tools Assessments and Rubric**
Week 13 **Week 14**	Desktop Publishing Tri- fold Brochure Flyer Newsletter	Digital learners will be able to alter font type, size and colour for emphasis and effect. Additionally, digital learners will know	How can adding color, images, and detailed layout aid communication with a variety of audiences, for a variety of tasks? For example: Be Healthy Mentally & emotionally healthy, Make a positive contribution	Free Desktop Publishing Templates http://www.stocklayouts.com/Templates/Free-Templates/Free-Sample-Desktop-Publishing-Template-Design.aspx#series1 Create a newsletter instructions. https://d3jc3ahdjad7x7.cloudfront.net/X8UeP0tAQt	**Common Core State Standards Rubrics** http://www.schrockguide.net/assessment-and-rubrics.html Multimedia and Apps Rubrics http://www.schrockguide.net/assessment-and-rubrics.html New Jersey Project and Assessment Examples

		how to use features such as: Word Art, Border Art and Text box in Publisher. Lastly, digital learners will demonstrate how to insert a picture and how to crop if it is too big. Instructor will discuss the importance of re-sizing pictures, can make them blurred as the pixel become too big. Recap features from previous lesson used in Word. Ask digital learners what Publisher is? Explain what a Desktop Publishing program is, as well as it's purpose to create things using text and graphics.	support the community and environment, Achieve economic wellbeing make the correct decisions/choices as their main topic for their magazine. Show digital learners a variety of Newspapers and magazines. Look at one as an example, and discuss the different font styles, colour, size, look at the layout, how are the graphics put on? do they over lap? Give digital learners time to look at their own to get an idea.	Pm6Jysql08XvuzykzG0JD7rw0gSkpQPRyA9XZc.pdf Microsoft Publisher	http://www.nj.gov/education/aps/cccs/tech/assessment/ **Links on Exit/Admit Slips** Readingrockets: Exit Slips http://www.readingrockets.org/strategies/exit_slips AdLit.org: Exit Slips http://www.adlit.org/strategies/19805 Writing Across the Curriculum: Entry/Exit Slips http://writing2.richmond.edu/wac/entrexit.html Exit Slips: Effective Bell-Ringer Activities http://www.teachhub.com/news/article/cat/14/item/377 Admit Slips and Exit Slips http://literacy.kent.edu/eureka/strategies/admit_slips09.pdf Exit Tickets for Formative Assessments

Week 15 **Week 16**	Spreadsheets	Digital learners will create a spreadsheet that calculates the AVG, MIN, and MAX.	Digital learners will identify the desired and undesired consequences from the use of a product or system by gathering famous energy drink calorie count. How do I make data interesting and still allow viewers to draw their own conclusions?	Simple Formulas https://d3jc3ahdjad7x7.cloudfront.net/ibstVPoOUfYhWaAzXGs4RdxpFvgcR6sZfDctJTEcvIkhaIqD.pdf Excel Energy Drink Spreadsheet https://d3jc3ahdjad7x7.cloudfront.net/hxFlKFcnwltVk8FgvelaZn60gBBjNKBJepOibgADVzFwmDIj.pdf	
Week 17 **Week 18**	Internet Research	Digital note-taking Plagiarism Digital learners will work cooperatively to develop a verbal and visual presentatio, as well as exhibit their creativity. Multimedia presentation tools.	Digital learners need to learn how to get most out of internet research by utilizing shortcuts and tools. How do I gather information from digital sources, assess credibility, and integrate it while avoiding plagiarism? Digital learners will also identify and improve a product or develop an innovative new product resulting from the demands, values, and interests of individuals, businesses, industries and societies.	How to develop and market new consumer products. http://study.com/academy/lesson/how-to-develop-and-market-new-consumer-products.html Powerpoint Google Slides Prezi	
Week 19 **Week 20**	Cyberbullying and digital harassment, conflict, consequences and	Digital learners will research examples of how humans	In a small group activity, digital learners will discuss scenarios involving online cyberbullying and digital harassment	How to create posters in Publisher instructions https://support.office.com/en-us/article/Create-and-print-a-banner-poster-or-	

	citizenship.	can devise technologies to reduce the negative consequences of other technologies and present your findings.	conflicts,consequences and citizenship. Digital learners will create Internet Safety Posters to reduce the negative consequences of cyberbullying with solutions. Finally, students will share there information with the rest of the classes.	other-large-publication-2caaed73-e3fa-4c2c-bba1-7e15b67b9e82#bm2 Teaching Digital Citizenship https://www.youtube.com/watch?list=PLvzOwE5lWqhRhUa0Zet5__9yfLX8NRvb3&v=oCkTmZ0bF5Q http://www.digizen.org/ Cyberbullying and digital harassment, conflict, consequences and citizenship. http://www.rcmp-grc.gc.ca/cycp-cpcj/bull-inti/docs/cyberbull-cyberintimidoh2b-11-12-eng.pdf https://staysafeonline.org/teach-online-safety/middle-and-high-school/	

Supportive Strategies

1. Special Education

- Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen. magnification on Chromebook, or spoken text features).
- Graphic Organizers.
- Modifications on IEP.
- Provide written and oral directions, utilizing visuals and exemplars. (For example, teacher models on StarBoard how to login to Code.org and provides Step-by-Step instruction handout to student).
- Reduction in workload.
- Repetition and Reinforcement of classroom material.
- Strategic Grouping for all group work.

2. ESL

• Employ assistive technology as needed (For example, online translation or Language text settings on Chromebook).
• For collaborative assignments, appropriate roles will be assigned. (For example, time-keeper, activity starter)
• Make content culturally relevant.
• Partner English Learners with Strong English Speakers.
• Provide written and oral directions for all lessons, utilizing visuals and exemplars.
• Repeat classroom procedure and routines as much as possible to reinforce language learning.

• Visual Aids
3. Student at risk of failure
•Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen magnification on devices, or spoken text features). • Flexible acceptance of missing/lost/incomplete assignment. • Strategic Grouping for all group work
4. Gifted and Talented
•Higher level learners will be provided with more intellectually demanding learning activities. (For example, students who complete lessons on Code.org can continue to the next levels at their own pace). • Higher Order Questioning. • Utilize different reading levels appropriate for students.
DOE Resources and Sample Activities 8.1.B, 8.2.B (Assessment) **DOE Resources and Sample Activities 8.1.C, 8.2.C (Assessment)**
Collaborate with peers to investigate and analyze the power struggle among European countries to determine the impact on people living in Europe and the Americas during the Colonial period. Use Internet resources to produce and publish writing that clearly and effectively presents the relationship and how the struggle has impacted individuals then and today. Post the findings in an online forum to discuss with learners from other countries. If you were offered the ability to address world leaders, what would you tell them? Write an opinion piece expressing your point of view about a global issue. Include reasons and information to support your view. Post the opinion piece in an online discussion forum with learners in the U.S. and other countries to explore alternative opinions and multiple perspectives. Write a reflective opinion piece using the online discussion as a resource. http://www.state.nj.us/education/cccs/2014/tech/cad/CADS81B.pdf http://www.state.nj.us/education/cccs/2014/tech/cad/CADS81C.pdf
Examine recycling of tires to identify the impact of its ecological footprint during the tires' life cycle. Analyze and present alternative methods to reduce waste during one stage of the product life cycle, minimizing human impact on the environment. Use technology including the Internet to collaborate, produce, and publish research to increase awareness in the community demonstrating the impact of upcycling to individuals and society. (See Evolving Technology Lesson Plan). Use a design process to devise a technological product or system that addresses a global problem (e.g. pollution, water, food, etc.). Research and use available data to write an informative text describing specific events (historical, scientific or technical) causing the problem. Identify the impacts both locally and globally.

Propose and evaluate a solution to improve the situation, prioritizing a range of constraints and trade-offs. (See Problem Solving lesson plan)

http://www.state.nj.us/education/cccs/2014/tech/cad/CADS82B.pdf
http://www.state.nj.us/education/cccs/2014/tech/cad/CADS82C.pdf

Unit Vocabulary		
Borders	Document	Research
Aesthetics	Alignment	citation
Page layout	Visual contrast	critical thinking
Spacing margins	Tabs tab	validity
graphic	Word processing	password
design color	Images	fair use sourcing
documents	Flyer	privacy
landscape	Picture	credibility
orientation	Icon	restricted access
URL	Picture size	Reviewing
hyperlink	Font	Processing
keyword	Design	Track Changes
search phrase	Insert	Comment
search information	Tab	Collaborate
validity	Ribbon	Collaborative
website	Toolbar	primary source
truncation	text wrap	article
web page	serifs	bibliography
database	justification	MLA
Internet search engine	underline	format portrait orientation
problem solving	print documents	copyright
decision making	ribbon	proofread
perspective	toolbar	bullets
diverse perspectives	paste	semi -colon
multiple processes	text manipulation	review tab
solutions	save copy	Spelling EN dash
finding solutions	basic operations	typo
alternative solutions	cut	ribbon
word processing	bold	toolbar
plagiarism	italic	conjunction
citation	indents	documents
	columns	punctuation
	flyer	verb
	Picture	comma
	table of contents	splice
	username	sentence fragment
	credentials	comma grammar Autocorrect

Unit 4
Technology Curriculum 6th-8th
2018

Content Area:	Technology	Grade(s)	6th-8th
Unit Overview:	4th Marking Period		
	2014 New Jersey Core Curriculum Content 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.
F: Critical thinking, problem solving, and decision making: *Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.*

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.*

Standard(s) 8.1 Educational Technology

- **8.1.8.F.1** Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision.

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

- **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.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).

Essential Question(s)	Enduring Understandings
• How do I choose which technological tools to use and when it is appropriate to use them? • How can I transfer what I know to new technological situations/experiences? • In a world of constant change, what skills should we learn? • What things should you do to stay safe online? • At what age is Typing Faster than Handwriting?	• Identify and define authentic problems and significant questions for investigation. • Plan and manage activities to develop a solution or complete a project. • Collect and analyze data to identify solutions and/or make informed decisions. • Use multiple processes and diverse perspectives to explore alternative solutions. • Computational thinking and computer programming as tools used in design and engineering.

• How can technology help communication with visual learners? • How can I use technology to draw conclusions?	

Interdisciplinary Connections		
Common Core Literacy	**Common Core Math**	**Career Ready Practices**
CCSS.ELA-Literacy.CCRA.R.7	CCSS.MATH.PRACTICE.MP1	CRP1
CCSS.ELA-Literacy.CCRA.W.6	CCSS.MATH.PRACTICE.MP2	CRP4
CCSS.ELA-Literacy.RI.1.5	CCSS.MATH.PRACTICE.MP3	CRP6
CCSS.ELA-Literacy.RI.1.10	CCSS.MATH.PRACTICE.MP5	CRP8
CCSS.ELA-Literacy.RF.1.4.A	CCSS.MATH.PRACTICE.MP6	CRP11
CCSS.ELA-Literacy.W.1.6	CCSS.MATH.PRACTICE.MP7	
.CCSS.ELA-Literacy.SL.1.1		
CCSS.ELA-Literacy.SL.1.1c		
.CCSS.ELA-Literacy.SL.1.2		

Suggested	**Suggested Activities Learning Plan**				
Time Frame	**Topic**	**Skills**	**Computational Thinking** (CT) is a way of solving problems, designing systems, and understanding human behavior by drawing on the	**Core Materials**	**Assessment Strategies and Tools Assessments and Rubric**

			concepts fundamental to computer science.		
Week 29 **Week 30**	Coding Programming II	Familiarity with problem solving, digital citizenship, keyboarding, programming	What makes a language? Does anyone speak a second (or third) language? Do you speak a different language than your parents/grandparents? Digital learners will convert arithmetic expressions to and from code. Additionally, they will name and describe a function in terms of its name, domain, and range. Finally, they will complete the write a poem challenge.	Learning.com Quiz, Lesson and Journals Learning.com Questions, Questions Journal Resources: http://www.kidscience challenge.com/ HTML Resources: https://code.org/ HTML Activities: www.Scratch.com https://www.khanacademy.org/computing/computerprogramming http://www.codeconquest.com/programming-projects/ideas-for-programming-projects/	**Common Core State Standards Rubrics** http://www.schrockguide.net/assessment-and-rubrics.html Multimedia and Apps Rubrics http://www.schrockguide.net/assessment-and-rubrics.html New Jersey Project and Assessment Examples http://www.nj.gov/education/aps/cccs/tech/assessment/ **Links on Exit/Admit Slips** Readingrockets: Exit Slips http://www.readingrockets.org/strategies/exit_slips AdLit.org: Exit Slips http://www.adlit.org/strategies/19805 Writing Across the Curriculum: Entry/Exit Slips http://writing2.richmond.edu/wac/entrexit.html Exit Slips: Effective Bell-Ringer Activities http://www.teachhub.com/news/article/cat/14/item/377 Admit Slips and Exit Slips

Week 31 **Week 32**	Dream Vacation	Google Slides Familiarity with problem solving, keyboarding, digital citizenship, Internet searches	How do I gather information from digital sources, assess credibility, and integrate it while avoiding plagiarism? Digital learners main task is to create their Dream Vacation. As a result, digital learners will get to decide where they are going to go, what they will do and who they will bring. The only limiting factor is that they must do everything that they plan to do on their trip, they must include a link to the place where they found the information(citations). Their presentation should be broken down into sections that will be listed below and make sure that they only include the information that they need on each slide and avoid writing TOO much information. Digital learners will also have to use different tools to help animate and effectively use all the features that Google Slides and PowToon have to offer. The slide-show should be 8-10 slides	Instructions https://docs.google.com/document/d/1l9De2RSENA8DwhfQ1YdlhdOpaxiNmR1-sbxilmO_S2A/edit#heading=h.uazhnitne94x	http://literacy.kent.edu/eureka/strategies/admit_slips09.pdf

Week 33 **Week 34**	Design and Modeling Module	Design 3D Models Sketch Multimedia Presentation Tools	In this lesson, Digital learners will learn how to transfer a simple hand sketch to communicate some aspect of a problem by creating a three-dimensional (3D) model on a computer. Creating the image on a computer has many advantages. For example, one of the problems with hand sketching is that as you change the sketch, you must keep erasing. Erasing or deleting aspects of a drawing on a computer is often done with the click of a mouse button. Another major advantage of using computer modeling is that it allows a crude initial sketch to be transferred into a finished looking drawing with a few simple commands. Many crude sketches can be turned into 3D models that can be converted to a working drawing with dimensions and annotations. Finally, Finally digital learners will see that once they have created a 3D model of an object, the computer can show them the model from virtually a limitless number of viewpoints, greatly enhancing their visualization of the object as well as being a wonderful tool for multimedia presentations.	Sample Activity http://www.williamsoncentral.org/webpages/mmack/files/Activity4_4Reverse_Engineering[1].doc http://www.williamsoncentral.org/webpages/mmack/files/Lesson%204.doc Video http://www.williamsoncentral.org/webpages/mmack/files/inventor%20for%20web.wmv	

	What will I be doing when in ten years from now? A Photo Story presentation!				
Week 35 **Week 36**		Problem Solving Technology Foundations	Digital learners will use the Internet to acquire relevant images on career of choice to depict what duties the career entails. Next, they will Use Photo Story software to visually present a story about duties of a career of choice. Digital learners will have to investigate career opportunities within the pathways and explore careers of personal interest as well as resources of things they can do now.	Computer with Internet access Microphone /Headphone head set for narration and listening of audio Photo Story websites. https://elearningindustry.com/18-free-digital-storytelling-tools-for-teachers-and-students Story Board outline to plan out story.	

				http://www.storyboardthat.com/home-page?utm_expid=58652488-12.9cWXBobVQt2PJSLLr6ADMQ.1&utm_referrer=https%3A%2F%2Fwww.google.com%2F	

Supportive Strategies
1. Special Education
• Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen magnification on Chromebook, or spoken text features). • Graphic Organizers. • Modifications on IEP. • Provide written and oral directions, utilizing visuals and exemplars. (For example, teacher models on StarBoard how to login to Code.org and provides Step-by-Step instruction handout to student). • Reduction in workload. • Repetition and Reinforcement of classroom material. • Strategic Grouping for all group work
2. ESL
• Employ assistive technology as needed (For example, online translation or Language text settings on Chromebook). • For collaborative assignments, appropriate roles will be assigned. (For example, time-keeper, activity starter) • Make content culturally relevant. • Partner English Learners with Strong English Speakers. • Provide written and oral directions for all lessons, utilizing visuals and exemplars. • Repeat classroom procedure and routines as much as possible to reinforce language learning. • Visual Aids
3. Student at risk of failure
•Employ assistive technology as needed (For example, use of Dyslexic font, high contrast or screen magnification on devices, or spoken text features). • Flexible acceptance of missing/lost/incomplete assignment. • Strategic Grouping for all group work
4. Gifted and Talented

•Higher level learners will be provided with more intellectually demanding learning activities. (For example, students who complete lessons on Code.org can continue to the next levels at their own pace). • Higher Order Questioning. • Utilize different reading levels appropriate for students.
DOE Resources and Sample Activities 8.1.F, 8.2.E (Assessment)
Develop a personal budget and explain how your income affects your spending decisions. Broaden your budgetary perspective by using digital tools to examine, collect and analyze data about your town or county's local budget. Next, look at the perspectives of stakeholders in the town's budget (obtaining information and discussing their priorities). Identify how the town's income affects spending decisions in their budget. Interact with others to produce and publish an explanation of the budget while identifying the relationships and needs among the various stakeholders and this budget. http://www.state.nj.us/education/cccs/2014/tech/cad/CADS81F.pdf Research both negative and positive ways that computers have impacted improving and maintaining human health. Prepare for a debate, supporting the chosen claim. Use fact-based evidence as support for the claim when presenting the information. http://www.state.nj.us/education/cccs/2014/tech/cad/CADS82E.pdf

Unit Vocabulary		
Processes	Filter page	Evaluating
Solutions	Orientation	Desktop
Alternative solutions	Merge	Publishing Software
Word processing	Data table	Technical Writing
Software	Report	Writing Instructions
Formatting	Operator	Dramatic Performance
Evaluating	Query	Script Writing
Dependent	Data analysis	Audio/Video
Variable	Sort	Product trends
Constant	Database	Creativity
Problem predicting	Page layout	Innovation
Patterns	Data table	Portfolio
Find and justify	Field record	Consumer pitch
Solutions	Historical places	Advertising
Algebraic thinking	Database	Marketing
Relationships	Software	Persuade
Independent variable	Measurement	Invent
Decision making	Google Docs	Project based
Evaluation	Ethics	Assessment
Evaluate	Rock cycle earth	Creative writing
Expression	Science	Research
Function	Watersheds	Writing process
Value	Rotate	Read for understanding
	Scale	Compare and contrast

	Translate Design Purpose Statement	Graphic organizer Online shared documents