Unit 1
Technology Curriculum 4th -6th
2018

Content Area:	Technology	Grade(s)	4th -6th
Unit Overview:	Trimester 1/ marking period 1/2		
	2018 New Jersey Student Learning Standards Technology		

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.

Standard(s) 8.1 Educational Technology

- **8.1.5.A.1** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- **8.1.5.A.2** Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
- **8.1.5.A.3** Use a graphic organizer to organize information about problem or issue.
- **8.1.5.A.4** Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
- **8.1.5.A.5** Create and use a database to answer basic questions.
- **8.1.5.A.6** Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data.

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

- **8.2.5.A.1** Compare and contrast how products made in nature differ from products that are human made in how they are produced and used.
- **8.2.5.A.2** Investigate and present factors that influence the development and function of a product and a system.
- **8.2.5.A.3** Investigate and present factors that influence the development and function of products and systems, e.g., resources, criteria and constraints.
- **8.2.5.A.4** Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences.
- **8.2.5.A.5** Identify how improvement in the understanding of materials science impacts technologies.

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?	● Effective use of Internet sources and information for everyday tasks. ● Effective use of technology competencies to reach a global audience.

• What things should you do to stay safe online? • At what age is Typing Faster than Handwriting? • Why are correct keyboarding skills important in relation to productivity and accuracy? • How can I improve my keyboarding skills?	• Taking responsible measures when handling technology equipment and when using software and applications. • Being safe online is essential. • Digital tools help create and share ideas. • Lifelong learners use technology effectively. Students develop an awareness of the part technology plays in supporting their educational goals.

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

Learning Plan	**Suggested Activities**				
Suggested Time Frame	**Topic**	**Skills**	**Computational Thinking**	**Core Instructional Materials**	**Benchmarks**
Week 1 **Week 2**	Introduction Asking Questions and Defining Problems Integrating Technology with Student Self Centered Learning	Hardware Software Devices and Compatibility Desktop Google Office Toolbars and Menus Software Computer Navigation Technology Devices Troubleshooting Edit	Digital learners will understand the vital concept of personalized learning: A guide for engaging students with technology to gather, organize and evaluate information from a variety of sources to answer questions and learn useful technology skills	Learning.com Lesson Discussion Computer Basics: Games, Flash cards, and Concentration http://www.quia.com/jg/65620.html Inside a Computer http://www.kids-online.net/learn/c_n_l.html Taking care of your computer http://www.schooltube.com/video/e7c3d170fedf99a14d4a/Extreme-T	**Student Learning Standards 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/

			for college, work and life. Digital learners may select appropriate digital tool to complete task to problem solve a computer conflict or troubleshooting issue.(For example: Choose Google slides or another Presentation app, Wiki, StoryBird.com). to present their solution to class. Digital learners must prepare a plan of action to research a problem. Conduct the research needed to isolate the problem. Use a structured approach to identify a problem. Identify the severity of a problem based on its initial symptoms. Ex.no sound, computer screen won't turn on. etc.	urtle-Taking-Care-of-Your-Computer-PSA Demo Builder http://www.demo-builder.com/ How to an animated presentation in 5 easy steps. https://www.powtoon.com/blog/how-to-create-an-animated-presentation-in-5-easy-steps/ Three Easy Methods to Create eLearning Videos https://elearningindustry.com/3-easy-methods-create-elearning-videos Google Slides Video Tutorial https://www.youtube.com/watch?v=qg916OPTmWs Google Slides Cheat Sheet http://www.shakeuplearning.com/blog/google-slides-cheat-sheet-free-download/	**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 **Week 4**	Digital Citizenship	Digital learners will demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics	How do task, purpose, and audience influence how speakers craft and deliver a message?	http://newtech.coe.uh.edu/ Internet safety video http://bit.ly/1SUYvha	

		when using technologies and social media. Communication Touch Typing ***Aditional Activities** What are digital learners digital rights and responsibilities? Help digital learners understand this includes many of the privileges they enjoy in the physical world as well as the obligations to play fair, be polite, and respect the rights of others. Create a pamphlet explaining appropriate and responsible use of computers, including copyright and cyberbullying.	Digital Learners can develop their own scenarios related to online safety and role-play them for the class. After each scenario, the class discusses whether the students in the scenario practiced being safe online. Digital Learners can create posters to hang in their classrooms or in the computer lab to remind other students to practice online safety. Students can use mobile devices to record videos of oral book reports. Have students use mobile devices to type a list of their spelling words and practice using them in sentences.	Learning.com Practicing Online Safety Journal Resources: **Worksheet** http://platform.learning.com/content/Partner/LCOM/Journals/Are_These_Students_Practicing_Online_Safety.pdf **Guide** http://platform.learning.com/content/Partner/LCOM/Journals/Journal_Entry_Scoring_Guide.pdf Read from I am a Good Citizen: Building Character and/or I Heard the Willow Weep. Online Communication Resources: Brainpop Online Safety Quiz http://www.brainpop.com/technology/computersandinternet/onlinesafety/quiz/ https://beinternetawesome.withgoogle.com/interland FBI Internet Safety Tips - http://www.fbi.gov/kids/k5th/safety2.htm	

Week 5 **Week 6**	Keyboarding and Posture	Keyboarding Speed and Accuracy Touch Typing Try and Error Health Awareness Finger Placement Home Row Key	Digital learners will understand the vital role keyboarding skills apply in their lives and other classes. They will be able to identify techniques and methods as the most effective for improving their own keyboarding skills. As well as the correct keyboarding skills important in relation to productivity and accuracy. Finally, Digital learners will create their own personal goal and plan to improve their keyboarding skills on google docs.	keyboard Program, Hardware keyboarding key assessments. https://www.typing.com/ Learning.com Keyboarding Lessons, Games and Test Typing Practice Sites: https://www.abcya.com/third_grade_computers.htm Review Correct Keyboarding Sitting Position http://keyboarding.ccsd.edu/help-for-students/typing-position Personal Plan http://www.mindofwinner.com/create-personal-development-plan/	
Week 7	Online Research Effective use of digital tools assists in gathering and managing information.	Biography Research. Spreadsheet Table Graph Using language symbols, and text.	Conduct short research projects that build knowledge about a topic. Digital learners can use a graphic organizer to organize information about a problem or issue. (Venn Diagram) Cube creator is another planning tool that digital learners can use to organize their research to outline the lives they' researched before writing	Cube Creator http://www.readwritethink.org/files/resources/interactives/cube_creator/ Biography research, Wonderopolis.org for inquiry research. Newsela.com for current events. Google slides Google drawings Google docs	

			their own biographies.		
Week 8	Digital Tools in the Classroom	Blogging Survey Templates Tools Collaboration	How Can Bloggers Learn What Their Readers Want? Have digital learners create a survey for which digital tool they think they'll use most. SurveyMonkey is an online tool that will allow digital learners to easily design surveys, collect responses, and analyze results. Finally, Digital learners will realize that by using these tools they will be captivating an audience where you can get immediate results from your students and then you can discuss the results of the survey with the class, if you so desire.	Survey Monkey Tutorial https://www.surveymonkey.com/blog/2013/08/21/video-tutorials-grovo/ Create a Survey https://www.surveymonkey.com/survey-thanks/?sm=T7mpxg3rJTfXT8OSJFBpz_2BtrTSQMPnDIRJZ8SM4y_2BHHBAVZ8uITGLbV1ZPs07fFZ Sample Survey https://www.surveymonkey.com/r/SZW37YD Google Forms	
Week 9 **Week 10**	Problem Solving Investigate factors that influence the development and function of technology products and systems.	Investigate how the cell phone was developed and its impact on society and other technologies. Digital learners can investigate and share with classmates how other inventions and innovations came to be and develop a list of technologies	Discuss student technology goals in terms of blended learning, how technology supports education and life. What are digital learners' goals and where can they find answers when the're stuck? Digital learners will create a	www.edheads.org Google Docs Table Graph Video recording NewTech http://newtech.coe.uh.edu/ Flow Chart http://newtech.coe.uh.edu/tool-name.cfm?toolid=174&toolname=Flowchart	

		intended to make life easier (e.g., human assistive devices, such as crutches, wheelchairs, prosthetics).	graph data using a spreadsheet and produce a report that analyzes the results. (For example: Take survey information of a previous class, enter information into a spreadsheet, graph the information and analyze the data).	Museum Box http://newtech.coe.uh.edu/tool-name.cfm?toolid=182&toolname=Museum%20Box	
Week 11	Technology products and systems impact every aspect of the world in which we live.	Collaborate with others. Create and format documents with the purpose of enhancing text and including graphics (For example: Writing / ELA piece, presentation, or Google Doc). Presentations	Digital learners will identify products that require special care when disposed. Summarize the benefits to recycling products over disposing of them in a landfill. Design an electronic brochure to inform your class and school of what recycling they can do (e.g., paper, garbage, leaves, electronics, etc.), how and where to do it and the impact of recycling on the environment. Urge use of green products, reuse and proper disposal of recyclables.	My Brochure Maker https://www.mycreativeshop.com/template-designs-library.aspx Brochure Online Creator https://www.jukeboxprint.com/editor/brochure_creator.php Digital learners can use Word processor Search Engines Spreadsheets Google Docs to gather information for a multimedia presentation. Google docs Google slides Google drawings	
Week 12	Hour of Code	Problem solving Coding Programming	Digital learners will be introduced to the	Scratch Animate your name	

		Technology Education, Engineering, Design, and Computational Thinking Programming Algorithms Critical Thinking Problem Solving	hour of code and programming. Designed to demystify code and show that anyone can learn to be a maker, a creator, and an innovator.	https://scratch.mit.edu/scratchr2/static/pdfs/help/AnimateYourNameGuide.pdf My Robot Friend https://csedweek.org/unplugged/thinkersmith Coding links, memberships in onsite program (i.e., Code.org) **studio.code.org.**	

Supportive Strategies

Google VR can be used to enhance any of the above lessons.

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 technology device) .
• 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)

Produce and publish a clear and coherent written community announcement informing readers about a local or global issue. Gather and synthesize relevant information from multiple print and digital resources, use search terms effectively, assess the credibility and accuracy of each source. Quote or paraphrase the data and conclusions of others while avoiding plagiarism and following standard format for citations. Develop this announcement in a style appropriate to the task and the community served.

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.

Discuss the definition and purpose of intellectual property law. Make a list of circumstances of when this law would come into play. Look at examples to determine if text has been plagiarized or not. Write an informational text explaining when it is acceptable to use other people's work and how to give them credit for their work.

Collaborate in a discussion examining a fuel source (i.e. gas, electric, wind, solar, fire). Investigate what influences its development and use. Identify the resources needed to produce the fuel and explain how availability of resources affects people both here and in areas around the world. Write an informational text examining how the fuel is produced and limited both here and abroad.

Unit Vocabulary		
Sequencing	Patterns	Maximize
Loops	Abstraction	Controls
Conditionals	Algorithms	Checkbox
Functions	Decomposition	Windows
Variables	Structure file	Minimize
Button	Scroll bar	Desktop
Blog	Dialog box	Help zoom
Resize	Text box	Recycle bin
Dropdown menu	Radio	Delete folder
Symbols	Close	Trash
Toolbar	Select	Desktop file
Icon	Backspace	Cross -platform
	Remove	Network

Properties URL web browser Online safety World Wide Web Hyperlinks Website Author Credibility Search engine File extension Bookmark Save Hardware Software Cyber ethics	Text Cut Posture Paste Mouse Toolbar Desktop Text word Processing Button File menu Open Internet domain Web page Home page Cyber safety	WAN LAN Compatibility hardware Internet safety Command Troubleshoot function Cyber bullying Navigation Operating system Menu Document Engineering Devices Compatibility Cyber security