Unit 2
Technology Curriculum 4ᵗʰ -6ᵗʰ
2016

Content Area:	Technology		Grade(s)	4ᵗʰ -6ᵗʰ
Unit Overview:	1st trimester/2nd			
	2014 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.
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

- **8.1.5.B.1** Collaborative to produce a digital story about a significant local event or issue based on first-person interviews.
- **8.1.5.C.1** Engage in online discussions with learners of other cultures to investigate a worldwide issue from multiple perspectives and sources, evaluate findings and present possible solutions, using digital tools and online resources for all steps.

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

o **8.2.5.B.1** Examine ethical considerations in the development and production of a product through its life cycle.
o **8.2.5.B.2** Examine systems used for recycling and recommend simplification of the systems and share with product developers.
o **8.2.5.B.3** Investigate ways that various technologies are being developed and used to reduce improper use of resources.
o **8.2.5.B.4** Research technologies that have changed due to society's changing needs and wants.
o **8.2.5.B.5** Explain the purpose of intellectual property law.
o **8.2.5.B.6** Compare and discuss how technologies have influenced history in the past century.
o **8.2.5.C.1** Collaborate with peers to illustrate components of a designed system.
o **8.2.5.C.2** Explain how specifications and limitations can be used to direct a product's development.
o **8.2.5.C.3** Research how design modifications have led to new products.
o **8.2.5.C.4** Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.
o **8.2.5.C.5** Explain the functions of a system and subsystems.
o **8.2.5.C.6** Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool.

Essential Question(s)	Enduring Understandings

How do I apply existing knowledge to generate new ideas, products, or processes?	
How do I create original works as a means of personal or group expression?	The cultural, social, economic and political effects of technology.
How do I interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.	The effects of technology on the environment.
	The role of society in the development and use of technology.
How can learners communicate information and ideas to multiple audiences using a variety of media and formats?	The influence of technology on history.
	The attributes of design.
How can I develop cultural understanding and global awareness by engaging with learners of other cultures?	The application of engineering design.
How can I contribute to project teams to produce original works or solve problems?	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

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	Suggested Formative/Summative Classroom Assessments

Week 13	Graphic Organizer I	Digital learners will create a basic timeline template with a title box, text boxes, arrows and date timeline.	Digital learners will demonstrate how they can enhance communication with Graphic Organizers. They will Investigate ways that various technologies are being developed and used to reduce improper use of resources by creating the evolution of technology devices timeline. Finally, digital learners will compare and discuss how technologies have influenced history in the past century.	Graphic Organizer Lessons from Read, Write, Think http://www.readwriteth ink.org/lessons/index.a sp?grade=1&strand=2 &engagement=12&dis play.x Download Timeline: https://app.box.com/sh ared/ggg4atbqmq Word processing program.	**Assessments and Rubric Student Learning Standards State Standards Rubrics** http://www.schrockguide. net/assessment-and-rubric s.html **Multimedia and Apps Rubrics** http://www.schrockguide. net/assessment-and-rubric s.html **New Jersey Project and Assessment Examples** http://www.nj.gov/educati on/aps/cccs/tech/assessme nt/ **Links on Exit/Admit Slips** Readingrockets: Exit Slips http://www.readingrocket s.org/strategies/exit_slips
Week 14	Graphic Organizer II	Working with graphic organizers tools.	Digital learners will collectively construct an illustrated a timeline of a historic event and people they have studied.	**Sites:** http://www.bringinghis toryhome.org/ **Templates:** https://www.template.n et/business/timeline-te mplates/blank-timeline -template/ https://ditchthattextboo k.com/ Google docs Google drawings Google slides	AdLit.org: Exit Slips http://www.adlit.org/strat egies/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/eu reka/strategies/admit_slip s09.pdf
Week 15	Spreadsheets I	Cells Borders Data Graph Insert Columns Edit Add Rows Autosum	Digital learners will realize that information can be organized neatly and effectively by means of a spreadsheet. Digital learners can create a list of items they will need for a party.	Excel and sheets tutorial video https://www.youtube.c om/watch?v=lwhSRbk UZeE&feature=youtu. be https://www.youtube.c om/watch?v=a8vbY2D qhlQ Vocabulary	http://www.ncsu.edu/midl ink/ho.html

				http://www.primaryresources.co.uk/ict/pdfs/15post-spread.pdf Party Budget Templates http://www.primaryresources.co.uk/ict/ict2.htm	
Week 16	Spreadsheets II	Digital learners will use the sum function to calculate total expenses from a column of values (clothing expenses).	Real world Problem Digital learners will use a simple formula to calculate money left over (allowance - total clothing expenses).Additionally, they can Create and Format a Clothes Shopping Budget with a Chart.	MS Excell Template https://app.box.com/s/uomn2x4foq0fzhxq2wgn63y3t1h4e416	
Week 17	Greeting Cards	Digital learners will be able to alter font type, size and colour for emphasis and effect. Examine ethical considerations in the development and production of a greeting cards through it's life cycle.	Digital learners will apply their experience of materials and processes, including drawing, developing their control of tools and techniques to help them develop a product. Digital learners will create their own greeting card.	History of Greeting cards video. https://www.youtube.com/watch?v=QPwnhrurxuM Microsoft Publisher Google docs Google drawings Greeting card Templates. http://www.dltk-cards.com/custom.htm	

Week 18	Google Earth	Latitude and longitude. Digital learners will become familiar with google earth's tools for moving around the world and how to get to and from any locations.	Digital learners will understand that they can utilize technology to visit the world. Instructor can post directions to one of the digital learners' favorite destinations,such as: a famous theme park, or museum etc.	Google Earth video https://www.youtube.com/watch?v=NT7YpblBsF0 Virtual tour Google Earth sites. http://www.educationworld.com/a_tech/tech/tech071.shtml Google Earth's virtual field trips. http://www.theteachersguide.com/virtualtours.html#Museums Google Earth Book Google Earth App.	
Week 19	Internet Research	Digital note-taking Plagiarism Short-Cuts Ex. Control-L Control-C	Digital learners need to learn how to get the most out of internet research by utilizing shortcuts and tools. Digital learners will research their favorite planet. Subsequently, they will take notes on the planet's location, distance from the sun, gravity, and other characteristics.	Favorite Planet Template https://www.superteacherworksheets.com/space/planet-report.pdf?up=1466611200 Research Topics http://www.kathimitchell.com/studtopi.html www.newsela.com	
Week 20	Digital Storytelling	How to make a digital magazines DTP Keyboarding Skills Speaking and Listening Skills Enhance communication skills through asking	There are many predictions that computer based education will accelerate dramatically in the next decade. What do digital learners think? How can they connect ideas so they make sense to readers?	Microsoft Publisher Google drawings Google slides Family interview form. (Modify according to digital learners needs). http://www.scholastic.com/teachers/sites/default/files/asset/file/july05_about_my_family.pdf	

| | | questions, expressing opinions, constructing narratives, and writing for an audience | In this lesson, digital learners can create original stories that include text, drawings, photos, animation, audio, and video. They use technology tools, such as digital cameras and computers, to bring their stories to life. Story ideas can come from personal and family experiences, connections to other cultures, and real or imaginary people, places, or events. | http://digitalstorytelling.coe.uh.edu/

http://www.edutopia.org/use-digital-storytelling-classroom

http://www.infotoday.com/MMSchools/jan02/banaszewski.htm | |
| | | Digital learners will Collaborative to produce a digital story about a significant local event or issue based on first-person interviews. | | | |

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
DOE Resources and Sample Activities 8.1.C, 8.2.C

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

Graphics	Storage device	Bold
Bullets	Flash drive	Center
Audience	Write optical drive	Copy
Word processing	USB	Cut
Draft	Graphics	Desktop
Writing process	Bullets	Document
Insert	Audience	Drag
Save	Word keyboarding	Dropdown
Scan	Accuracy keyboard speed	Edit File
Scanner	Keyboarding	Font
Screen	File management	Format
Screenshot	Color	Highlight
Script	Symbols	Insert
Scroll	Font style	Italic
Scroll bar	Format	Left align
Search engine	Font size	Paste
Security	Word processing	Right align
Server	Text wrap	Spell check
Pictures	Revise	Table tools
Numbered	Move text	Underline
List organize	Programming	Undo
Spacing	Languages	View
Font	Virtual environments	Window
Alignment	Online help	Word
Move	Feature	Wrap zoom
Pictures	Property	Website
Page	Open	Hyperlinks
Break	Source	Latitude
Font	Software	Longitude
		Coordinates