Unit 4
Technology Curriculum 4th -6th
2018

Content Area:	Technology	Grade(s)	3rd -5th
Unit Overview:	3rd trimester/ 4th Marking Period		
	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.

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

- **8.1.2.F.1** Apply digital tools to collect, organize, and analyze data that support a scientific finding.

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

- **8.2.5.E.1** Identify how computer programming impacts our everyday lives.
- **8.2.5.E.2** Demonstrate an understanding of how a computer takes input of data, processes and stores the data through a series of commands, and outputs information.
- **8.2.5.E.3** Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output.
- **8.2.2.E.4** Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).

Essential Question(s)	Enduring Understandings
What is the impact of technology on research and communication? What are the benefits and limitations of using technology? How can people use this technology in different situations? How can people use this software to create original, innovative works, ideas, and solutions?	Technology is a tool that can be used for collecting, organizing, creating, and presenting information. 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.

Interdisciplinary Connections		
Student Learning Standards Literacy	**Student Learning Standards Math**	**Career Ready Practices**
SLS.ELA-Literacy.CCRA.R.7	SLS.MATH.PRACTICE.MP 1	CRP1
SLS.ELA-Literacy.CCRA.W. 6	SLS.MATH.PRACTICE.MP 2	CRP4
SLS.ELA-Literacy.RI.1.5	SLS.MATH.PRACTICE.MP 3	CRP6
SLS.ELA-Literacy.RI.1.10	SLS.MATH.PRACTICE.MP 5	CRP8
SLS.ELA-Literacy.RF.1.4.A	SLS.MATH.PRACTICE.MP 6	CRP11
SLS.ELA-Literacy.W.1.6	SLS.MATH.PRACTICE.MP 7	
SLS.ELA-Literacy.SL.1.1		
SLS.ELA-Literacy.SL.1.1.C		
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 29 Week 30	Animal Adaptation Multimedia Project	Multimedia Tools	Digital learners will compare and contrast features of children's search sites and explain why it is best	CyberSmart - "Choosing a Search Site" http://cybersmartcurriculum.org/researchinfo/lessons/4-5/choosing_a_search_site/ Notes Packet	**Assessments and Rubric** **Student Learning Standards State Standards Rubrics** http://www.schrockguide.net/assessment-and-rubrics.html

			to utilize two or more sites when searching for information. Students will research a specific animal and the adaptations that help it survive. Students will take notes on the animal using a packet to assist them in gathering the information needed. Students will create a multimedia presentation which will describe the adaptations and how each adaptation helps it survive in its environment.	http://moodle.northport.k12.ny.us/mod/resource/view.php?id=3722 Time Line http://moodle.northport.k12.ny.us/mod/page/view.php?id=8264 Multimedia Presentation Notes http://moodle.northport.k12.ny.us/mod/resource/view.php?id=9561 Sample Project http://moodle.northport.k12.ny.us/mod/resource/view.php?id=10924 Powerpoint Instructions http://moodle.northport.k12.ny.us/mod/resource/view.php?id=698640	**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 31 **Week 32**	Plagiarism	Plagiarism Tools Word Processor	Digital learners will explore how to correctly site images and other information further the definition plagiarism and practice	Noodle Tools http://www.noodletools.com/ www.cybersmartcurriculum.org Choosing a Search Site http://www.squirrelnet.com/search/Google_SafeSearch.asp	

			using resources from the Internet appropriately. Digital learners will read a paragraph on cybersmart curriculum and minimize it on their computer. Then, digital learners will write the information found in the paragraph in their own words using a word processor. Allow time for digital learners to compare the differences between the online paragraph and their own paragraph. Finally, digital learners will copy and paste their paragraph in a plagiarizing finder engine site and publish their cited final work on the	Plagiarismfinder.com	

			class webpage or blog.		
Week 33 **Week 34**	Build A Rollercoaster	Engineering Mapping Software	Digital learners will take on the role of engineers who need to design a roller coaster. They will learn about the history of roller coasters, the different types, and the many things that affect roller coaster success. Finally they will use a variety of Internet resources to guide them as they design their own roller coaster and test it for success.	Amusement Park Phisics http://www.learner.org/interactives/parkphysics/ Type of rollercoasters http://science.howstuffworks.com/engineering/structural/roller-coaster8.htm Design a Rollercoaster http://www.learner.org/interactives/parkphysics/coaster/ Safety and Inspection Sheet http://www.learner.org/interactives/parkphysics/coaster/result.php3 Rollercoaster Simulator http://www.funderstanding.com/educators/coaster/	
Week 35 **Week 36**	Together we can make this world a better place! Video Project	Create a video and beats. Learn how to make a song.	In this lesson, Digital Learners will type in a word procesing program, a descriptive paragraph/poem about a person they would like to meet and how	Kids Go Global Site http://www.kidsgoglobal.net/the-issues/ Storyboard Ideas http://storyboardsecrets.com/blog/storyboard-portfolio-sample-story-ideas-comics/ Techno Kids	

			together they can solve a global issue such as: The Global Water Crisis or the Consumption of plastic goods. After, they can make a video with images.	http://www.technokids.com/Store/Elementary-School/TechnoDrama/digital-storytelling-in-the-classroom.aspx Video Making Sites https://animoto.com/ Smilebox http://www.smilebox.com/lp/slideshows-var1.html?partner=msnee&campaign=search_us_slideshow~video_maker~nofree&utm_source=bing&utm_medium=cpc&utm_campaign=search_us_slideshow&url=smilebox.com&utm_term=video%20making&utm_content=Video%20Maker&gclid=CNmP7I7yms8CFYhKNwodamEFig&gclsrc=ds Wevideo.com https://www.wevideo.com/	

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.F, 8.2.E
Investigate how a potato, much like a battery, can generate electrical current. Use online tools to collect data on voltage produced from potatoes, lemons and oranges. Use digital tools to organize the data logically and format with assigned fields/headings. Develop illustrations, photos or videos of the work to aid comprehension. Individually record observations in a shared file creating a group sampling from the class including number and type of "batteries" and amount of voltage they can produce. Interpret the results to suggest which item works best and what they could power. . Clearly identify needs or wants that include specified criteria for success and constraints, i.e. materials, time, or cost. Discuss how computer programming impacts our daily lives. The New York Times states that 8-18 year olds are online more than 7.5 hours a day. Identify the impacts of excessive time spent online and develop criteria to categorize their impacts such as costs, time, and/or the social, cultural or health impacts on people's lives. Create a graphic organizer to identify the issues and their possible constraints/ solutions in response to questions raised in discussions. Can you make better use of time spent online? Extension: Create an online resource about this to share with others.

Unit Vocabulary		
Template Layout Space Design Color palette Digital book CyberSmart	Graphics Drag and Drop Drawing Software Graphics Software Drawing area Tool box	Data Tables Record Datasheet Form Communities Compare and Contrast Grammar salutation Author writing Letter

Time Line Multimedia Plagiarism Citations Engineer Edit Cut Render Global Issues	Fill color shape tool Slide show presentation Background text Design element Spelling Check Formatting Word Processing Software Hyperlink	Body Signature Tag Order Filter Ascending order Sort database