Unit 2
Technology Curriculum PreK-2nd
2018

Content Area:	Technology	Grade(s)	PreK-3rd
Unit Overview:	1st trimester/2nd		
	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.
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.P.B.1** Create a story about a picture taken by the student on a digital camera or mobile device.
- **8.1.2.B.1** Illustrate and communicate original ideas and stories using multiple digital tools and resources.
- **8.1.P.C.1** Collaborate with peers by participating in interactive digital games or activities.
- **8.1.2.C.1** Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

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

- **8.2.2.B.1** Identify how technology impacts or improves life.
- **8.2.2.B.2** Demonstrate how reusing a product affects the local and global environment.
- **8.2.2.B.3** Identify products or systems that are designed to meet human needs.
- **8.2.2.B.4** Identify how the ways people live and work has changed because of technology.
- **8.2.2.C.1** Brainstorm ideas on how to solve a problem or build a product.
- **8.2.2.C.2** Create a drawing of a product or device that communicates its function to peers and discuss.
- **8.2.2.C.3** Explain why we need to make new products.
- **8.2.2.C.4** Identify designed products and brainstorm how to improve one used in the classroom
- **8.2.2.C.5** Describe how the parts of a common toy or tool interact and work as part of a system.
- **8.2.2.C.6** Investigate a product that has stopped working and brainstorm ideas to correct the problem

Essential Question(s)	Enduring Understandings
• How do I use digital tools to communicate and solve problems? • How does computer programming help me in other aspects of life?	• Computer programming is a tool used to help us solve problems, create, and design. • Digital tools help create and share ideas. • Lifelong learners use technology effectively.

• How does computer programming help us solve problems, create, and design? • Why do I need to use digital tools responsibly? • What are the roles of each computer hardware component? • What are the parts of the computer and how do they work? • How can I use the mouse to access and start programs and make things happen while working on the computer? • How does experimenting with different tools help me learn how the computer works? • What can I do with programs to show what I know? • How can I use the computer to communicate with words and pictures?	

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** (CT) is a way of solving problems, designing systems, and understanding human behavior by drawing on the concepts	**Core Instructional Materials**	**Suggested Formative/ Summative Classroom Assessments**

			fundamental to computer science.		
Week 13 Week 14	Technology Skills (Cursor Skills)	Digital Drawing and Math. Digital puzzles.	How can I use the mouse to access and start programs and make things happen while working on the computer? Expect digital learners to work independently as possible and problem solve on their own.	MultiMedia Lessons Paint http://www.primarygames.com/math.php http://www.mathplayground.com/ www.abcya.com www.sheppardsoftware.com https://quickdraw.withgoogle.com/ Google Drawings	Assessments will be made through observations of students. Assessments will be made through using checklists.
Week 15	Shapes I	Beginning Graphics Brushes and Lines Shapes and Fills Shapes Digital learners will know how to click, hold, drag and drop.	Introduction to graphic design, digital learners will discuss shapes around the classroom and how do they relate to real life objects? What are their attributes? Encourage children to find similarities and differences in other children's names.	Teaching and Paint www.abcya.com (Not a District-wide subscription) https://quickdraw.withgoogle.com/ Google Drawings	
Week 16	Digital writing Word processing Skills	Pre-keyboarding Digital drawing Log on procedure Drawing shapes Digital Citizenship	How do shapes relate to the real world? Shapes are everywhere in the environment and help digital learners understand objects, functions. Ex, wheels, car tires,etc. An important part of technology is authentically applying it to real life objects. Digital learners can solve a problem they	Real world shapes video. https://www.youtube.com/watch?v=3uYB5YpyPZw Shapes in the real world. http://www.watchknowlearn.org/Category.aspx?CategoryID=1011 Paint Google Drawings	

			are facing with an everyday household item. For example: they can add casters to a table they wished they could move but its to heavy.	https://quickdraw.withgoogle.com/
Week 17	Google Earth	Review Tools on Google Earth Dragging tools Grid lines Lats-longs	Digital learners can discuss the geography of the united states. As a result digital learners will work in groups of three to explore google earth.	Google Earth video https://www.youtube.com/watch?v=NT7YpblBsF0 Virtual tour instructions. Google earth bring the world to your classroom book Google Earth App.
Week 18	Beyond classrooms' walls I	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, a famous theme park, etc.	Virtual tour instructions. Google earth bring the world to your classroom book
Week 19	Beyond our classrooms' walls II	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 utilize models and simulations to explore complex systems and issues. Additionally, they will be given a mystery destination to visit. The objective is for learners to find their way back to school by reversing directions.	Google Earth sites. http://www.educationworld.com/a_tech/tech/tech071.shtml Virtual tour instructions. Google earth bring the world to your classroom book
Week 20	Digital Passport	Digital learners must evaluate and select information sources and digital tools based on task, such as: Screenshots, Copy, and Paste.	Digital learners will create a passport in which they will use a digital camera or a digital device to take pictures. Additionally, digital learners will write small facts regarding the	Digital Passport Worksheet http://dubon101.weebly.com/uploads/1/8/1/4/18149577/itinerarytemplatesforvirtualfieldtrips.pdf

			places they visited utilizing google earth.	http://dubon101.weebly.com/uploads/1/8/1/4/18149577/allaboutmepassportinenglishspanish.pdf	
Week 21	Computer Programming	The goal of coding is for digital learners to able to recognized aspects of themselves that can be represented through images and sounds.	Digital learners will use code to build programs and games. Computational Creations.	www.code.org www.kodable.com Scratch Daisy the Dinosaur App Coding Mice BrainPop.com BrainPop: Computer Programming.	

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 Dyslexie 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 sheet 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 Chromebook, 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)

Use a variety of digital tools and resources to produce, illustrate and publish a digital scrapbook. Collaborate with peers discussing the roles and responsibilities of family members. Include information about each member's responsibilities in th family and anything that makes the person special. With guidance and support from adults, images (hand drawn/ scanned, digital pictures or clip art) can be inserted.

Collect rock samples from the surrounding area. Classify the rocks by size, shape, etc. to observe the similarities and differences of the materials they are made of. Capture an image of a rock sample; develop a description to share online. Recall your experiences to collaborate with students in other classes, schools, or countries to compare rock classifications i different areas. (See Rock Hunter lesson link.)

In a classroom discussion, determine technology that is used to improve our lives. Students should examine the positive and negative impacts of technology i.e. environmental concerns. Students should then examine how advances in technology have changed their lives. Present facts and definitions to the class which conclude how technology impacts or improves life and actions taken to improve any negative impacts. (See Technology at Work lesson plan).

Participate in shared research investigating a broken toy or object to identify potential causes for the malfunction. Use technology to record your questions and observations. Gather information identifying the parts and their interactions with each other. Produce a shared writing project describing the problem, your observations and how the object could be fixed o improved.

Unit Vocabulary		
Menus Select video Technology Audio Symbol Video Technology Audio Symbol CD Function Recycle bin Delete folder Toolbar icon Keyboard Sounds	Resize Restore Dropdown menu Checkbox Symbols Online help Letters Maximize Dialog box Minimize text box Graphics software Drawing area Tool box Fill color Shape tool Tool	Print file Format Select software Software Save Function Computing Computer Keyboard Graphics Drag and drop Drawing Software Color Palette Software

Language Arts Science Classification Visual Mapping Software trash desktop file Structure file scroll bar	Box menu Mouseover Latitude Longitude Coordinates	