Unit 4
Technology Curriculum PreK-3rd
2018

Content Area:	Technology	Grade(s)	PreK-3rd
Unit Overview:	2nd and 3rd trimester 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** Use geographic mapping tools to plan and solve problems.

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

- **8.2.2.E.1** List and demonstrate the steps to an everyday task.
- **8.2.2.E.2** Demonstrate an understanding of how a computer takes input through a series of written commands and then interprets and displays information as output.
- **8.2.2.E.3** Create algorithms (a sets of instructions) using a pre-defined set of commands (e.g., to move a student or a character through a maze).
- **8.2.2.E.4** Debug an algorithm (i.e., correct an error).
- **8.2.2.E.5** Use appropriate terms in conversation (e.g., basic vocabulary words: input, output, the operating system, debug, and algorithm).

Essential Question(s)	Enduring Understandings
• How can I use a variety of digital tools to share creatively? • How does following a logical progression of ideas help me succeed in a project? • Can knowledge of language conventions help me tell my story? • How does detail enhance the power of a story including characters, plot, and setting?	• 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.

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.1.4.A	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.1.1.C		
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 fundamental to computer science.	**Core Instructional Materials**	**Suggested Formative/Summative Classroom Assessments**
Week 29 **Week 30**	Greeting Cards	Drawing Digital writing Digital Citizenship Pre-keyboarding Screenshots.	Challenge digital learners to put their problem-solving skills into practice by using handouts, and multimedia sources to create a greeting card for a special family member.	Drawing programs. *Sketchpad (https://sketch.io/sketchpad/)* *SumoPaint (http://www.sumopaint.com/)* *Drawing Desk (http://apple.co/1DiadsI)* Google Docs or google drawings	Assessments will be made through observations of students. Assessments will be made through using checklists.
Week 31 **Week 32**	Recycling	Speaking and listening skills Practicing Mouse Control. Digital learners apply existing knowledge to generate new ideas, products, or processes to solve this issue.	Discuss items that cause pollution with digital learners. Have digital learners work in groups to make a chart on the board of things that they can recycle, (such as plastic bottles, glass, grocery bags, etc.)	Google Diagrams https://www.draw.io/ Google Drawings	
Week 33	Excel sheet: Where am I?	Basic Excel vocabulary Algorithm	Students will locate various shapes on the Excel worksheet and identify the corresponding cell name.	Algorithm https://www.khanacademy.org/computing/computer-science/algorithms/intro-to-algorithms/v/what-are-algorithms	

Week 34			Review elements of an Excel/sheets spreadsheet Discuss plotting data and creating charts and graphs and what they are used for and why they are useful.	Google sheets www.abcya.com Google drawings Algorithms in kahoot https://kahoot.com/welcomeback/	
Week 35 **Week 36**	All about me Multimedia Presentation	Digital tools Drawing Digital Storytelling Copy and Paste	Digital students will create four slides about their their personal information and demonstrate steps to teach the class something new they are good at. Finally their plans for each slide will include a picture and text that will be presented to the class.	Drawing Program, Multimedia Presentations Presentation Tools Sites http://cooltoolsforschools.wikispaces.com/Presentation+Tools PowToon https://www.powtoon.com/?edgetrackerid=14012230703292&utm_source=bing&utm_medium=cpc&utm_campaign=Presentation_-_AU_&_NZ&utm_creative=Multimedia Google slides	
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.F, 8.2.E (Assessment)

Provide a word problem about how road construction may result in traffic being rerouted around the school. Use addition and subtraction to solve the problem involving lengths given in the same units. Use an online mapping tool to look at the features of your community. Use the tool to draw and show the routes with and without construction and measure the distances for each. Show an equation representing each problem with a symbol for the unknown number. Calculate the differences for the routes.

Students will write an addition equation to describe a given situation. Then, students will collaboratively develop the steps to solve the equation, using whatever method they choose (10 frame, number line, manipulatives, etc). Finally, students wil present their step by-step process to the class.

Unit Vocabulary		
Mouse Drag and drop Double click Select Pointer Input device Keyboard Computer monitor Printer Processor End punctuation Lowercase Period Open Capitalization Printing Word processing Exit Question mark Spacing Close Save Exclamation Point effect	Recycle bin Delete Folder Trash Desktop File Scroll bar Maximize Dialog box Minimize Text box Button Resize Restore Windows Spinner Dropdown Menu Checkbox Output device Speaker Toolbar Label Click	Audio CD Function Network Jam Toner Paper Tray Preview Ink Copies Backspace Shift menu New print Save Text toolbar Erase Cursor Input Focus clipart Font Text elements