# Unit 3
# Technology Curriculum PreK-3rd
# 2018

| Content Area: | Technology | Grade(s) | PreK-3rd |
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| Unit Overview: | 2nd Trimester | | |
| | 2018 New Jersey Student Learning Standards Technology | | |

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| 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. <br> **D. Digital Citizenship**: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. <br> **E: Research and Information Fluency:** Students apply digital tools to gather, evaluate, and use information. |
| 8**.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:** <br> 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. <br> **D. Abilities for a Technological World:** The designed world is the product of a design process that provides the means to convert resources into products and systems. <br> **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.D.1** Develop an understanding of ownership of print and non-print information. <br> **8.1.P.E.1** Use the Internet to explore and investigate questions with a teacher's support. <br> **8.1.2.E.1** Use digital tools and online resources to explore a problem or issue. |
| 8**.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:** |
| **8.2.2.D.1** Collaborate and apply a design process to solve a simple problem from everyday experiences. <br> **8.2.2.D.2** Discover how a product works by taking it apart, sketching how parts fit, and putting it back together. <br> **8.2.2.D.3** Identify the strengths and weaknesses in a product or system. <br> **8.2.2.D.4** Identify the resources needed to create technological products or systems <br> **8.2.2.D.5** Identify how using a tool (such as a bucket or wagon) aids in reducing work. <br> **8.2.2.E.1** List and demonstrate the steps to an everyday task. <br> **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. <br> **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). <br> **8.2.2.E.4** Debug an algorithm (i.e., correct an error). <br> **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 |
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| <ul><li>Why do I need to know how to use a word processing program?</li><li>How is a word processing program used?</li><li>How is a document opened?</li><li>How is placement of text determined?</li></ul> | <ul><li>Communicating ideas to varied audiences requires a</li><li>combination of media.</li><li>I can communicate not only with text, but audio, visual, movies, color, and illustrations.</li><li>Communicating ideas requires a combination of media</li></ul> |

- How does a combination of drawing and writing communicate information text can't?
- What grammar and spelling conventions should I follow when writing?
- How do images catch viewer attention where text can't?

| Interdisciplinary Connections | | |
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| **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.1.1c | | |
| SLS.ELA-Literacy.SL.1.2 | | |

| Learning Plan | Suggested Activities | | | | |
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| **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 21<br><br>Week 22 | Digital Storytelling | Pre-word processing<br>Editing<br>Digital storytelling<br>Cursor skills<br>Digital drawing<br>Pre-keyboarding<br>Digital citizenship | How can I use the computer to communicate with words and pictures?<br><br>Digital learners will write a story with images to celebrate technology skills accomplished during the school year. They will use all the basics (tools, toolbars, fills, drag-and-drop, backgrounds, clipart, text and everything else you covered throughout the year). | ABCYa Story Maker http://www.abcya.com/story_maker.htm<br><br>Alphabet Soup (http://www.alphabet-soup.net/)<br><br>http://www.zefrank.com/scribbler<br><br>Sketchpad — https://sketch.io/sketchpad/<br><br>Ipad | Assessments will be made through observations of students.<br><br>Assessments will be made through using checklists. |

| | | | Additionally, digital learners will collaborate with peers.. | Doodle Buddy http://apple.co/1pAVkga |
| | | | | ScreenChomp http://apple.co/1kX7eAH |
| | | | | Wixie https://www.wixie.com/sitelogin |
| Week 23 | A picture is worth 100 words. Communicate information, ideas effective use of digital tools to multiple audiences using a variety of media, formats. | Digital drawing Pre-keyboarding Pre-word processing Site words Cursor skills | Digital learners will demonstrate how to construct a sentence using pictures and class site words to convey a message.<br><br>Visual Mapping: Create an alphabet sing along book as a class using images. | Google slides Google drawings Story Maker http://www.abcya.com/story_maker.htm<br><br>Poster maker http://www.scholastic.com/kids/games/postermaker/<br><br>Sight word sites http://interactivesites.weebly.com/readingsight-words.html |
| Week 24 | **Digital Writing**<br><br>A Digital short story projects can be completed in five-ten minutes. They are a great tie-in to class inquiry about history, literacy, or vocabulary. They are well-suited to use as warm ups or exit tickets. Students write a few sentences and then draw a picture according to their grade-level writing conventions. | Online tools Pre-keyboarding | Digital learners use images and text to demonstrate understanding of words used in conversation. | Drawing program, site word list, keyboarding Program and lesson Sites. Google slides ABCYa Paint — http://www.abcya.com/abcya_pa Story Maker http://www.abcya.com/story_maker.htm<br><br>Scribbler http://www.zefrank.com/scribbler Sketchpad — https://sketch.io/sketchpad/ |

| | | | | Ipad<br>Doodle Buddy<br>http://apple.co/1pA<br>Vkga<br>ScreenChomp<br>http://apple.co/1kX<br>7eAH<br>Wixie<br>https://www.wixie.<br>com/sitelogin |
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| Week 25<br>Week 26 | A perfect product<br><br>Introduce students to the field of industrial design as a career.. | Manufactured products<br>Digital Tools in Drawing | Gather examples of manufactured products for discussion (stapler, lamp, chair...)<br>Ask digital learners to brainstorm a list of manufactured products they used today. Have them think about who made them. For example, inventors and engineers think of the idea and make it work. Industrial designers are concerned with the look, feel and usability of the objective. Only after industrial designers make an object safe, attractive and functional is it mass produced by factory workers and machines. Digital learners can redesigned object by using their drawing skills. | http://artpad.art.com/artpad/painter/<br>Paint<br>Story Maker<br>www.abcya.com<br>ABCYa Paint —<br>http://www.abcya.com/abcya_pa<br>Google Slides<br>Google Drawings |
| Week 27 | Safety on the Internet | Editing text<br>Pre-keyboarding<br>Digital citizenship | Digital learners will review previously learned Internet safety rules and learn techniques to help them remember. Digital learners can type sentences with images describing how to be safe while using the computer. | Google Docs<br>Google drawings<br>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.D, 8.2.D (Assessment)**
**DOE Resources and Sample Activities 8.1.E, 8.2.E (Assessment)**

Gather print or digital images from any available resource depicting unfair or bullying actions. Create a caption and describe solutions or ways they could help resolve the bullying or unfair action being depicted in the image. Identify and include the source and ownership of the image used and share.

Digital Show and Tell – Students locate or create a digital image based on the topic assigned. The students then will present the image to the class demonstrating the conventions of Standard English grammar when recounting information about their picture with appropriate facts and relevant descriptive details, making sure to speak audibly in coherent sentences. Students can input their sentences to develop a class album.

Collaborate in groups and dissemble given products. As groups dissemble the products, sketches should be drawn to show how the parts fit together to create the final product. When appropriate, students should use the appropriate tool to measure the pieces to add to their sketches. Groups should then use the sketches to put the products back together. Groups will then inform how their products work by looking at the parts of the project and how they work together.

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 will present their step by-step process to the class.

## Unit Vocabulary

| | | |
|---|---|---|
| Microsoft Word | Formatting | Flash drive |
| Word processing | Digital Video | Optical drive |
| Hardware | Communication | Storage file |
| Software | Drive | Delete |
| Operating system | Disk Storage | Digital Tools |
| Laptop | Save | Product |
| Desktop mouse | Copy | Design |
| USB drive | Download | Design Process |
| Headset | Network | Problem Solving |
| Icon | Cursor | Resources |
| Start menu | Toolbar | Research |
| Drive | Drag | Print |
| File | Drop | Command |
| Folder | Spacebar | |
| Minimize | Font | |
| Maximize | | |