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.			Grade Level: P
Strand **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Understand and use technology systems.	System Click Cursor Double click Enter key	http://www.crazy4computers.net/computer-mouse-skills.html http://www.abcya.com/computer_vocabulary.htm http://askatechteacher.com/2016/06/16/9-best-in-class-digital-storytelling-tools/	8.1.P.A.1 Use an input device to select an item and navigate the screen. 8.1.P.A.2 Navigate the basic functions of a browser.
Select and use applications effectively and productively.	Applications Mouse Space bar Open/Close Keyboard Printer Internet Camera Program Log in/Log out Quit		8.1.P.A.3 Use digital devices to create stories with pictures, numbers, letters and words. 8.1.P.A.4 Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer). 8.1.P.A.5 Demonstrate the ability to access and use resources on a computing device.

	Speaker		

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.			Grade Level: P
Strand **B. Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	Drag Scroll Products Processes expression	https://elearningindustry.com/18-free-digital-storytelling-tools-for-teachers-and-students	8.1.P.B.1 Create a story about a picture taken by the student on a digital camera or mobile device.

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.			Grade Level: P
Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original work or solve problems.	Digital Media Formats Global awareness Cultures	https://www.nwea.org/blog/2016/take-three-55-digital-tools-and-apps-for-formative-assessment-success/ http://www.sheppardsoftware.com/preschool/preschool.htm	8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.

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.			Grade Level: P
Strand **E. Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Plan strategies to guide inquiry.	Inquiry Menu Menu bar	http://www.jumpstart.com/parents/activities/grade-based-activities/preschool-activities	8.1.P.E.1 Use the Internet to explore and investigate questions with a teacher's support.

*Preschool does not have a standard for Strands D or F and does not have any standards for 8.2

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.			Grade Level: K-2
Strand **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Understand and use technology systems.	Digital device Monitor Icon Mouse/Mouse pad Backspace Return/enter keys	http://www.crazy4computers.net/computer-mouse-skills.html http://www.abcya.com/computer_vocabulary.htm https://www.scholastic.com/teachers/articles/teaching-content/grades-k-1-virtual-field-trips/	8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
Select and use applications effectively and productively.	Folder Save/Save as Desktop Word Processing Document Font Spell check Style Tab key Select Highlight		8.1.2.A.2 Create a document using a word processing application. 8.1.2.A.3 Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each. 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).

	Data Applications Navigation Virtual environments Spreadsheet Database Clip art Align (position text)		8.1.2.A.5 Enter information into a spreadsheet and sort the information. 8.1.2.A.6 Identify the structure and components of a database. 8.1.2.A.7 Enter information into a database or spreadsheet and filter the information.

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to	Grade Level: K-2

solve problems individually and collaborate and to create and communicate knowledge.	

Strand **B. Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	Generate products, processes Clip art Text wrap Graphics expression	http://askatechteacher.com/2016/06/16/9-best-in-class-digital-storytelling-tools/ https://elearningindustry.com/18-free-digital-storytelling-tools-for-teachers-and-students	8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

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.	Grade Level: K-2

Strand 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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original work or solve problems.	Online collaborative tools Social media Audiences	Blogger Skype Wikispaces Google Drive https://elearningindustry.com/the-5-best-free-collaboration-tools-for-teachers https://www.commonsense.org/education/top-picks/best-student-collaboration-tools	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.

8.1 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	Grade Level: K-2

communicate knowledge.			
Strand **D. Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Advocate and practice safe, legal, and responsible use of information and technology.	Advocate Ownership Nonprint	https://www.iste.org/explore/articleDetail?articleid=242	8.1.2.D.1 Develop an understanding of ownership of print and nonprint information.

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.	Grade Level: K-2
Strand **E. Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*	

Learning Standard	New Vocabulary	Resources	Student Evidence
Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.	Inquiry Tasks Launcher Cite sources Field Web browser		8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.

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.			Grade Level: K-2
Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence

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.	Authentic problems Significant questions Geographic mapping tools Informed decisions Diverse perspectives Alternative solutions	Mapfab Google Maps Google Earth https://elearningindustry.com/the-5-best-free-map-creation-tools-for-teachers	8.1.2.F.1 Use geographic mapping tools to plan and solve problems.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: K-2
Strand **A. The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*	

Learning Standard	New Vocabulary	Resources	Student Evidence
The characteristics and scope of technology.	Scope		8.2.2.A.1 Define products produced as a result of technology or of nature. 8.2.2.A.2 Describe how designed products and systems are useful at school, home and work.
The core concepts of technology.	Core concepts Export Import		8.2.2.A.3 Identify a system and the components that work together to accomplish its purpose. 8.2.2.A.4 Choose a product to make and plan the tools and materials needed.
The relationships among technologies and the connections between technology and other fields of study.			8.2.2.A.5 Collaborate to design a solution to a problem affecting the community.

8.2 Technology Education, Engineering, Design, Computational Thinking-Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking, and	Grade Level: K-2

the designed world as they relate to the individual, global society, and the environment.	

Strand **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.*

Learning Standard	New Vocabulary	Resources	Student Evidence
The cultural, social, economic, and political effects of technology.			8.2.2.B.1 Identify how technology impacts or improves life.
The effects of technology on the environment.	Reusing Local and global		8.2.2.B.2 Demonstrate how reusing a product affects the local and global environment.
The role of society in the development and use of technology.			8.2.2.B.3 Identify products or systems that are designed to meet human needs.
The influence of technology on history.			8.2.2.B.4 Identify how the ways people live and work has changed because of technology.

8.2 Technology Education, Engineering, Design, 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.			Grade Level: K-2
Strand **C. Design:** *The design process is a systematic approach to solving problems.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
The attributes of design.	attributes		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.
The application of engineering design.	Engineering design		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.
The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	Innovation		8.2.2.C.6 Investigate a product that has stopped working and brainstorm ideas to correct the problem.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: K-2

Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Apply the design process.			8.2.2.D.1 Collaborate and apply a design process to solve a simple problem from everyday experiences.
Use and maintain technological products and systems.	Sketching		8.2.2.D.2 Discover how a product works by taking it apart, sketching how parts fit, and putting it back together. 8.2.2.D.3 Identify the strengths and weaknesses in a product or system. 8.2.2.D.4 Identify the resources needed to create technological products or systems.
Assess the impact of products and systems.		http://lessonplanspage.com/sciencemd6simplemachinesfullunit46.htm/	8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work.

8.2 Technology Education, Engineering, Design, 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.			Grade Level: K-2
Strand **E. Computational Thinking: Programming:** *Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Computational thinking and computer programming as tools used in design and engineering.	Computational thinking Commands Algorithms Debug	https://code.org/learn https://www.tynker.com/	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 (sets of instructions) using a predefined set of commands (e.g., to move a student or

	Input Output Operating system		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.

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.			Grade Level: 3-5
Strand **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Understand and use technology systems.			8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Select and use applications effectively and productively.	Word processing Graph data Spreadsheet Report Database Analysis	Word Google docs http://www.techlearning.com/blogentry/9736 Excel Google sheets	8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/or pictures. 8.1.5.A.3 Use a graphic organizer to organize information about a problem or issue. 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data. 8.1.5.A.5 Create and use a database to answer basic questions. 8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data.

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.			Grade Level: 3-5
Strand **B. Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	First-person interviews Field Input Network Hyperlinks	https://elearningindustry.com/18-free-digital-storytelling-tools-for-teachers-and-students http://www.educatorstechnology.com/2012/06/list-of-best-free-digital-storytelling.html	8.1.5.B.1 Collaborate to produce a digital story about a significant local event or issue based on first-person interviews.

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.			Grade Level: 3-5
Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original work or solve problems.	Worldwide issue Project teams Email Shared folder		8.1.5.C.1 Engage in online discussions with learning 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.

8.1 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.			Grade Level: 3-5
Strand **D. Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Advocate and practice safe, legal, and responsible use of information and technology.	Copyrights Citations	https://www.teachingcopyright.org/ http://www.easybib.com/	8.1.5.D.1 Understand the need for and use of copyrights. 8.1.5.D.2 Analyze the resource citations in online materials for proper use.
Demonstrate personal responsibility for lifelong learning.	Cyber safety, security, ethics	https://staysafeonline.org/teach-online-safety/	8.1.5.D.3 Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.
Exhibit leadership for digital citizenship.	Digital citizenship		8.1.5.D.4 Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.

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.			Grade Level: 3-5
Strand **E. Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.	Synthesize Ethically Cite evidence Application	https://www.libraries.rutgers.edu/rul/staff/collection_dev/reports/eval_criteria_e-resources.shtml	8.1.5.E.1 Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.

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.			Grade Level: 3-5
Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
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.	Scientific findings Record Shared folder Slides Slide show		8.1.5.F.1 Apply digital tools to collect, organize, and analyze data that support a scientific finding.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 3-5

Strand **A. The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*

Learning Standard	New Vocabulary	Resources	Student Evidence
The characteristics and scope of technology.			8.2.5.A.1 Compare and contrast how products made in nature differ from products that are human made in how they are produced and used. 8.2.5.A.2 Investigate and present factors that influence the development and function of a product and a system.
The core concepts of technology.	Resources Criteria Constraints		8.2.5.A.3 Investigate and present factors that influence the development and function of products and systems, e.g., resources, criteria and constraints.

The relationships among technologies and the connections between technology and other fields of study.		https://pbs39.pbslearningmedia.org/resource/ate10.sci.engin.design.techovertime/technology-over-time/#.WROWzvkrLIU	8.2.5.A.4 Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences. 8.2.5.A.5 Identify how improvement in the understanding of materials science impacts technologies.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 3-5
Strand **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.*	

Learning Standard	New Vocabulary	Resources	Student Evidence
The cultural, social, economic, and political effects of technology.	Ethical		8.2.5.B.1 Examine ethical considerations in the development and production of a product through its life cycle.
The effects of technology on the environment.	Recycling Simplification		8.2.5.B.2 Examine systems used for recycling and recommend simplification of the systems and share with product developers. 8.2.5.B.3 Investigate ways that various technologies are being developed and used to reduce improper use of resources.
The role of society in the development and use of technology.	Intellectual property law	http://www.schrockguide.net/intellectual-property.html	8.2.5.B.4 Research technologies that have changed due to society's changing needs and wants. 8.2.5.B.5 Explain the purpose of intellectual property law.
The influence of technology on history.			8.2.5.B.6 Compare and discuss how technologies have influenced history in the past century.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 3-5

Strand **C. Design:** *The design process is a systematic approach to solving problems.*

Learning Standard	New Vocabulary	Resources	Student Evidence

The attributes of design.	Design modifications		8.2.5.C.1 Collaborate with peers to illustrate components of a designed system.. 8.2.5.C.2 Explain how specifications and limitations can be used to direct a product's development.. 8.2.5.C.3 Research how design modifications have lead to new products.
The application of engineering design.	subsystem		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. 8.2.5.C.5 Explain the functions of a system and subsystems.
The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	Malfunctioning tool Troubleshoot Innovation		8.2.5.C.6 Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool. 8.2.5.C.7 Work with peers to redesign an existing product for a different purpose.

8.2 Technology Education, Engineering, Design, 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.			Grade Level: 3-5
Strand **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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Apply the design process.	Trade-offs		8.2.5.D.1 Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered. 8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions.

Use and maintain technological products and systems.	Capital		8.2.5.D.3.Follow step by step directions to assemble a product or solve a problem. 8.2.5.D.4 Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. 8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems.
Assess the impact of products and systems.			8.2.5.D.6 Explain the positive and negative effect of products and systems on humans, other species and the environment, and when the product or system should be used. 8.2.5.D.7 Explain the impact that resources such as energy and materials used in a process to produce products or system have on the environment.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 3-5

Strand **E. Computational Thinking: Programming:** *Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Computational thinking and computer programming as tools used in design and engineering.	Visual programming Loop Memory	https://code.org/learn https://www.tynker.com/	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.. 8.2.5.E.4 Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).

	Storage Coding		

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.			Grade Level: 6-8
Strand **A. Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems and operations.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Understand and use technology systems.			8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

Select and use applications effectively and productively.	Learning plan Usability Simulation Query	Microsoft Office Google Suite	8.1.8.A.2 Create a document (e.g., newsletter, reports, personalized learning plan, business letters, flyers) using one or more digital applications to be critiqued by professionals for usability. 8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory. 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results. 8.1.8.A.5 Create a database query, sort and create a report and describe the process, and explain the report results.

8.1 Educational Technology: All students will use digital tools to	Grade Level: 6-8

access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	

Strand **B. Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	Telecollaborative project Blog School web		8.1.8.B.1 Synthesize and publish information about a local or global issue or event (ex. Telecollaborative project, blog, school web).

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to	Grade Level: 6-8

solve problems individually and collaborate and to create and communicate knowledge.			
Strand 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.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original work or solve problems.		http://www.globalschoolnet.org/ https://www.edutopia.org/technology-global-classroom	8.1.8.C.1 Collaborate to develop and publish work that provides perspectives on a global problem for discussions with learners from other countries..

8.1 Educational Technology: All students will use digital tools to	Grade Level: 6-8

access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	

Strand **D. Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Advocate and practice safe, legal, and responsible use of information and technology.	Cyber ethics	http://www.21things4students.net/21/cybersafety/ https://www.stopbullying.gov/cyberbullying/prevention/	8.1.8.D.1 Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.
Demonstrate personal responsibility for lifelong learning.	Creative Commons Intellectual Property	http://www.easybib.com/	8.1.8.D.2 Demonstrate the application of appropriate citations to digital content. 8.1.8.D.3 Demonstrate an understanding of fair use and Creative Commons to intellectual property.
Exhibit leadership for digital citizenship.		https://www.commonsensemedia.org/educators/lesson/identifying-high-quality-sites-6-8	8.1.5.D.4 Assess the credibility and accuracy of digital content. 8.1.5.D.5 Understand appropriate uses for social media and the negative consequences of misuse.

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.			Grade Level: 6-8
Strand **E. Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks. Process data and report results.	Filters Synthesize	http://www.washingtonpost.com/wp-srv/metro/data/datapost.html https://www.data.gov/	8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.

8.1 Educational Technology: All students will use digital tools to	Grade Level: 6-8

access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	

Strand **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.*

Learning Standard	New Vocabulary	Resources	Student Evidence
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.			8.1.8.F.1 Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision.

8.2 Technology Education, Engineering, Design, Computational Thinking-Programming: All students will develop an	Grade Level: 6-8

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.	

Strand **A. The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*

Learning Standard	New Vocabulary	Resources	Student Evidence
The characteristics and scope of technology.	Smart phone Mobility needs		8.2.8.A.1 Research a product that was designed for a specific demand and identify how the product has changed to meet new demands (i.e. telephone for communication- smart phone for mobility needs).
The core concepts of technology.	malfunction		8.2.8.A.2 Examine a system, consider how each part related to other parts, and discuss a part to redesign to improve the system. 8.2.8.A.3 Investigate a malfunction in any part of a system and identify its impacts.
The relationships among technologies and the connections between technology and other fields of study.			8.2.8.A.4 Redesign an existing product that impacts the environment to lessen its impact(s) on the environment. 8.2.8.A.5 Describe how resources such as material, energy, information, time, tools, people, and capital contribute to a technological product or system.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 6-8

Strand **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.*

Learning Standard	New Vocabulary	Resources	Student Evidence

The cultural, social, economic, and political effects of technology.	Sustainability		8.2.8.B.1 Evaluate the history and impact of sustainability on the development of a designed product or system over time and present results to peers. 8.2.8.B.2 Identify the desired and undesired consequences from the use of a product or system.
The effects of technology on the environment.			8.2.8.B.3 Research and analyze the ethical issues of a product or system on the environment and report findings for review by peers and/or experts. 8.2.8.B.4 Research examples of how humans can devise technologies to reduce the negative consequences of other technologies and present your findings.
The role of society in the development and use of technology.		https://www.uspto.gov/trademarks-getting-started/trademark-basics/trademark-patent-or-copyright	8.2.8.B.5 Identify new technologies resulting from demands, values, and interests of individuals, businesses, industries, and societies. 8.2.8.B.6 Compare and contrast the different types of intellectual property including copyrights, patents, and trademarks.
The influence of technology on history.	Upcycled Reused Remanufactured		8.2.8.B.7 Analyze the historical impact of waste and demonstrate how a product is upcycled, reused, or remanufactured into a new product.

8.2 Technology Education, Engineering, Design, 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.			Grade Level: 6-8
Strand **C. Design:** *The design process is a systematic approach to solving problems.*			
Learning Standard	New Vocabulary	Resources	Student Evidence
The attributes of design.	Optimization		8.2.8.C.1 Explain how different teams/groups can contribute to the overall design of a product. 8.2.8.C.2 Explain the need for optimization in a design process. 8.2.8.C.3 Evaluate the function, value, and aesthetics of a technological product or system, from the perspective

			of the user and the producer.
The application of engineering design.	Interdependence Subsystem Technical sketch		8.2.8.C.4 Identify the steps in the design process that would be used to solve a designated problem. 8.2.8.C.5 Explain the interdependence of a subsystem that operates as part of a system. 8.2.8.C.5.a Create a technical sketch of a product with materials and measurements labeled.
The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	Design log Annotated sketches		8.2.8.C.6 Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate, and test options to repair the product, presenting the better solution. 8.2.8.C.7 Collaborate with peers and experts in the field to research and develop a product using the design process, data analysis and trends, and maintain a design log with annotated sketches to record the developmental cycle. 8.2.8.C.8 Develop a proposal for a chosen solution that include models (physical, graphical, or mathematical) to communicate the solution to peers.

8.2 Technology Education, Engineering, Design, 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.	Grade Level: 6-8

Strand **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.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Apply the design process.	Trade-offs Prototype STEM	https://www.entrepreneur.com/article/80678 http://www.stem-by-design.com/	8.2.8.D.1 Design and create a product that addresses a real world problem using a design process under specific constraints. 8.2.8.D.2 Identify the design constraints and trade-offs involved in designing a prototype (e.g., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation, design portfolio or engineering notebook. 8.2.8.D.3 Build a prototype that meets a STEM-based design challenge using science, engineering, and math principles that validate a solution.

Use and maintain technological products and systems.			8.2.8.D.4 Research and publish the steps for using and maintaining a product or system and incorporate diagrams or images throughout to enhance user comprehension.
Assess the impact of products and systems.			8.2.8.D.5 Explain the impact of resource selection and the production process in the development of a common or technological product or system. 8.2.8.D.6 Identify and explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment.

8.2 Technology Education, Engineering, Design, Computational Thinking-Programming: All students will develop an understanding of the nature and impact of technology,	Grade Level: 6-8

engineering, technological design, computational thinking, and the designed world as they relate to the individual, global society, and the environment.	

Strand **E. Computational Thinking: Programming:** *Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.*

Learning Standard	New Vocabulary	Resources	Student Evidence
Computational thinking and computer programming as tools used in design and engineering.	Computational thinking Hardware Software RAM ROM Boolean logic	http://www.flashcardmachine.com/computer-vocabulary4.html	8.2.8.E.1 Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used. 8.2.8.E.2 Demonstrate an understanding of the relationship between hardware and software. 8.2.8.E.3 Develop an algorithm to solve an assigned problem using a specified set of commands and use peer review to critique the solution. 8.2.8.E.4 Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).

Assessments	Teacher observation, oral presentations, student projects, rubrics, class projects, class discussion, performance assessment, formative assessment, research project, exit ticket
21st Century Skills and Career Integration	Projects/Activities related to earnings, profits, careers; Identify career goals and develop a plan and timetable for achieving it, including education/training requirements, costs, and possible debt; analyze different forms of

	currency and how currency is used to exchange goods and services; Construct a simple personal savings and spending plant based on various sources of income; Develop a system for keeping and using financial records; Analyze how changes in taxes, inflation, and personal circumstances can affect a personal budget.
Interdisciplinary Integration	ELA: online annotations, class webpage, email exchange, multimedia presentations, class blog, podcast, webquest, virtual field trip, online mind maps/graphic organizers Math: virtual manipulatives, create spreadsheets with formulas, simulations Science: create spreadsheets to record and analyze data, webquests, videos, simulations Social Studies: google earth and mapping sites, videos, webquests, simulations
Core Instruction and Supplemental Materials	Internet sources
Modifications and Accommodations	ELL: translation websites, scribing, speech to text, audio books Special Education: small group instruction; modified assessments G&T: leveled readers: enrichment activities; small group instruction