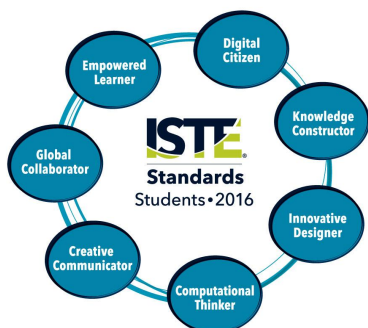




## Middle School Computer Curriculum

| ISTE Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Grade Expectations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Examples                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Empowered Learner</b><br><p>Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students:</p> <ol style="list-style-type: none"> <li>articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</li> <li>build networks and customize their learning environments in ways that support the learning</li> </ol> | <p>Examples of digital tools may include:<br/> online productivity software, graphics programs/websites, online coding websites</p> <p><a href="#">Google Apps</a><br/> Create and share your work online using word processing, presentations, spreadsheets, forms and drawings. Edit anytime, from anywhere. Pick who can access your documents. Share changes in real time. Files are stored securely online.</p> <p><a href="#">Google Apps Learning Center</a></p> <p><a href="#">The Apps Show, Presented by Google</a></p> <p><a href="#">How Stuff Works</a></p> | <p><i>By the end of Grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>describe strategies for solving routine hardware and software problems</li> <li>use advanced word processing features (i.e. tables, columns, graphics)</li> <li>create media-rich presentations by ethically using appropriate digital tools, software, apps and resources</li> <li>understand and use concepts of effective multimedia design</li> <li>use a variety of technology tools (e.g. spellchecker, thesaurus, dictionary, calculator) to maximize the accuracy of</li> </ul> | <p><i>Examples of possible activities:</i></p> <p>Integrate a variety of file types to create and illustrate a document or presentation.</p> <p>Complete online computer science course that teaches coding.</p> |

|                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>process</p> <p>c. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>d. understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.</p> | <p>Wondering what's inside your computer or how the latest computer technologies work? Browse their articles below on computer networking, security, hardware, software and more to get explanations and how-to tips.</p> <p>Teacher-created flipped videos using <a href="http://Screencast-o-matic.com">Screencast-o-matic.com</a><br/>A free web-based screen recorder designed to capture your screen activity, audio and webcam images in real-time then save, publish and share your video.</p> <p><a href="http://Pixlr Express">Pixlr Express</a> and <a href="http://Pixlr Editor">Pixlr Editor</a><br/>Free online image editors. Enables to fix, adjust, and filter images in a browser. Pixlr Editor is a robust browser photo editor that includes layers and effects.</p> <p><a href="http://Code.org">Code.org</a> Learn the basic concepts of Computer Science with drag and drop programming. This is a game-like, self-directed tutorial starring video lectures by Bill Gates, Mark Zuckerberg, Angry Birds and Plants vs. Zombies. Learn</p> | <p>technology-produced materials</p> <ul style="list-style-type: none"> <li>• know how to create spreadsheets and use various functions available in a database (e.g., filtering, sorting, charts)</li> <li>• Identify spreadsheet terms/concepts and use spreadsheet program to enter, calculate, display data and choose correct graph format for result</li> <li>• use basic features of graphics program to edit images, including resizing, cropping, enhancing and saving correctly</li> <li>• demonstrate file management skills</li> <li>• identify a variety of information storage devices (e.g., cloud-based, CDs, DVDs, flash drives, SD cards) and provide rationales for using a certain device for a specific purpose</li> <li>• Use web-based coding software to learn basic programming concepts: <ul style="list-style-type: none"> <li>○ Sequencing</li> <li>○ Loops</li> </ul> </li> </ul> |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <p>repeat-loops, conditionals, and basic algorithms.</p> <p><a href="#">Scratch</a> With Scratch, you can program your own interactive stories, games, and animations — and share your creations with others in the online community. Scratch helps young people learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21st century.</p> <p><a href="#">Khan Academy</a>-On Khan Academy, we offer a multi-hour, self-paced curriculum in JavaScript and lessons in HTML / CSS as well as SQL (language for databases) for students to learn various forms of programming. For Hour of Code, we've created special introductory curricula to get your students started!</p> <p><a href="#">Alice</a>- Using an innovative programming environment to support the creation of 3D animations, the Alice Project provides tools and materials for teaching and learning computational thinking, problem solving, and</p> | <ul style="list-style-type: none"> <li>○ Conditionals</li> <li>○ Functionals</li> <li>○ Functionals with parameters</li> <li>○ Variables</li> <li>● Use web-based coding software to demonstrate computational thinking: <ul style="list-style-type: none"> <li>○ Decomposition</li> <li>○ Patterns</li> <li>○ Abstraction</li> <li>○ Algorithms</li> </ul> </li> <li>● use accurate technology terminology</li> <li>● use technology to identify and explore various occupations or careers especially those related to science, technology, engineering, and mathematics</li> <li>● discuss possible uses of technology to support personal pursuits and lifelong learning</li> <li>● understand and discuss how assistive</li> </ul> |  |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | computer programming across a spectrum of ages and grade levels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | technologies can benefit all individuals <ul style="list-style-type: none"> <li>discuss security issues related to e-commerce.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>2. Digital Citizen</b><br><br>Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students: <ol style="list-style-type: none"> <li>cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.</li> <li>engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.</li> <li>demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual</li> </ol> | Examples of digital citizenship tools include:<br>online reference tools, digital literacy/citizenship websites,<br><br><a href="#">EasyBib Bibliography Creator (Google Doc Add-On)</a><br>A fully automatic bibliography maker that auto-fills. It's the easiest way to build a works cited page<br><br><a href="#">Copyright and Fair Use Guidelines for Students</a><br><br><a href="#">Copyright Information</a><br>Includes up to date copyright information as well as a variety of other web tools<br>.<br><a href="#">Common Sense Education</a><br>age-appropriate lessons that address digital literacy and citizenship topics<br><br><a href="#">NetSmartz Workshops</a><br>Through teaching lessons about Internet safety, the YAB members have those concepts reinforced in their own lives. It is just more one | <i>By the end of Grade 8 each student will:</i> <ul style="list-style-type: none"> <li>provide accurate citations when referencing information sources, discuss issues related to acceptable and responsible use of technology (e.g. privacy, security, copyright, plagiarism, viruses, file-sharing)</li> <li>discuss the consequences related to unethical use of information and communication technologies</li> <li>discuss possible societal impact of technology in the future and reflect on the importance of technology in the past</li> <li>create media-rich presentations on the appropriate and ethical use of digital tools and resources</li> <li>discuss the long term ramifications (digital footprint) of participating</li> </ul> | <i>Examples of possible activities:</i><br><br>Discuss implications of domain names and investigate sources for potential bias (e.g., .gov, .net, .com, .edu).<br><br>Explain how copyright law protects an author's original work.<br><br>Use digital bibliography tools to site and organize sources for research projects.<br><br>Cite all sources properly.<br><br>Understand passwords, privacy and anonymity<br><br>Identify the impact of unethical use of technology (e.g., hacking, plagiarism, pirating)<br><br>Explain the legal consequences of breaking acceptable use policies. |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>property.</p> <p>d. manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</p>                                                                                                                                                                                                                                                                                                                                                                             | <p>step that our community is taking towards helping every child stay safer online.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>in questionable online activities (e.g., posting photos of risqué poses or underage drinking, making threats to others)</p> <ul style="list-style-type: none"> <li>describe the potential risks and dangers associated with online communications.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Organize and manage files and folders between school, home and online</p>                                                                                                                                                                                                                                                                                                                                          |
| <p><b>3. Knowledge Constructor</b></p> <p>Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. Students:</p> <p>a. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.</p> <p>b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.</p> <p>c. curate information from</p> | <p><i>Examples of digital tools may include:</i><br/> <i>online library catalog, visualization/concept tools, shared documents, websites, online survey</i></p> <p><a href="#">Destiny Library Search</a></p> <p><a href="#">EasyBib Bibliography Creator (Google Doc Add-On)</a><br/> A fully automatic bibliography maker that auto-fills. It's the easiest way to build a works cited page.</p> <p><a href="#">Create-A-Graph</a><br/> NCES constantly uses graphs and charts in our publications and on the web. Sometimes, complicated information is difficult to understand and needs an illustration. Graphs or charts can help impress people by getting your point across quickly and visually.</p> | <p><i>By the end of grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>use a variety of digital resources to locate information,</li> <li>evaluate information from online information resources for accuracy and bias, understand that using information from a single Internet source might result in the reporting of erroneous facts and that multiple sources should always be researched</li> <li>identify types of web sites based on their domain names (e.g., edu, com, org, gov, net)</li> <li>employ data-collection technologies (e.g., probes, handheld devices, GPS units, geographic mapping systems) to gather, view,</li> </ul> | <p><i>Examples of possible activities:</i></p> <p>Locate information using the online library catalog, internet, and electronic databases.</p> <p>Utilize a search engine's advanced search options to locate text, images, audio, and video resources and bookmark their results.</p> <p>Use online resources, including databases, to search for information relevant to their topic and create a bibliography.</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</p> <p>d. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.</p>                                                                                                                                              | <p><a href="#">Timeline</a><br/>Timeline allows students to create a graphical representation of an event or process by displaying items sequentially along a line. Timelines can be organized by time of day, date, or event, and the tool allows users to create a label with short or long descriptive text. Adding an image for each label makes a timeline more visually appealing.</p>                                                                                                       | <p>and analyze the results for a content-related problem.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>4. Innovative Designer</b></p> <p>Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:</p> <p>a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.</p> <p>b. Select and use digital tools to plan and manage a design process that considers</p> | <p><i>Examples of digital tools may include: interactive whiteboards, drawing/painting websites/programs, Google Apps, visualization/concept maps, databases, multimedia slide shows, digital storytelling, blogs, wikis</i></p> <p><a href="#">Audacity</a><br/>Audacity is free, open source software for recording and editing sounds.</p> <p><a href="#">Blabberize</a><br/>Using a picture and microphone, build quick and easy animated activities and watch your pictures come to life.</p> | <p><i>By the end of Grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>• create an original project (e.g., presentation, web page, newsletter, information brochure, poster, video) using a variety of media (e.g., animations, graphs, charts, audio, graphics, video) to present content information to an audience,</li> <li>• apply common software features (e.g., spellchecker, thesaurus, formulas, charts, graphics, sounds) to enhance communication</li> </ul> | <p><i>Examples of possible activities:</i></p> <p>Create a web page, digital video or podcast..</p> <p>Enhance web pages, blogs and wikis by adding graphics, sound, music and videos.</p> <p>Create and save an audio file using an audio editing program, then export that file in an accepted format so they can import the file into a multimedia presentation.</p> |

|                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>design constraints and calculated risks.</p> <p>c. Develop, test and refine prototypes as part of a cyclical design process.</p> <p>d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p> | <p><a href="#">WeVideo</a>-cloud-based collaborative video creation platform.</p> <p><a href="#">Wordle</a><br/>Wordle is a toy for generating “word clouds” from text that you provide. The clouds give greater prominence to words that appear more frequently in the source text.</p> <p><a href="#">Tagxedo</a>-<br/>Tagxedo turns words - famous speeches, news articles, slogans and themes, even your love letters - into a visually stunning word cloud.</p> | <p>with an audience and to support creativity</p> <ul style="list-style-type: none"> <li>• illustrate a content-related concept using a model, simulation, or concept mapping software.</li> </ul> | <p>Create an interactive presentation on a topic to share with an audience.</p> <p>Create a PSA video on a topic of study, post it online, then get feedback from experts preselected by the teacher, i.e. a marketing professional, a health and safety official, etc..</p> <p>Post book reviews on local bookstore website for the community to read, review, and comment upon.</p> <p>On a wiki, contribute to a group project about a current event and its impact on society/environment/etc.</p> <p>Participate in an online activity with a class in another state to examine how weather impacts their lives.</p> <p>Demonstrate understanding of government by making predictions about the upcoming political or legislative vote and use digital tools to find and</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | represent trends that justify their predictions (i.e. word clouds of speeches, surveys, historical data)                                                                                                                                                                                                                                                                |
| <p><b>5. Computational Thinker</b></p> <p>Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. Students:</p> <ol style="list-style-type: none"> <li>formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</li> <li>collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.</li> <li>break problems into component parts, extract key information,</li> </ol> | <p>Examples of digital tools may include:</p> <p>online survey tools, collaboration tools such as Google Apps interactive online resources/databases, online news publications</p> <p><a href="#">Google Forms</a><br/>Create online forms and surveys, analyze data in Sheets</p> <p><a href="#">Tween Tribune</a><br/>Daily new site for kids</p> <p><a href="#">Google Earth</a><br/>Google Earth lets you fly anywhere on Earth to view satellite imagery, maps, terrain, 3D buildings, from galaxies in outer space to the canyons of the ocean. You can explore rich geographical content, save your toured places, and share with others.</p> <p><a href="#">Gizmos</a><br/>ExploreLearning currently has over 450 Gizmos with accompanying curricular materials, all with the aim of</p> | <p><i>By the end of grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>use databases or spreadsheets to make predictions, develop strategies, and evaluate decisions to assist with solving a problem</li> <li>evaluate available digital resources and select the most appropriate application to accomplish a specific task (e, g., word processor, table, outline, spreadsheet, presentation program, app)</li> <li>gather data, examine patterns, and apply information for decision making using available digital resources</li> </ul> | <p>Conduct a school-wide online poll to gain input about a school issue.</p> <p>Use online survey and spreadsheet tools to collaborate with community groups to compile data about a current issue and share the results back to the community.</p> <p>Import real time data from online sources and examine its meaning or implication using spreadsheet software.</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>and develop descriptive models to understand complex systems or facilitate problem-solving.</p> <p>d. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p>                                                                                                                                                                                                                       | <p>sharing the “Ah-Hah!” moment with teachers and students.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>6. Creative Communicator</b></p> <p>Students communicate and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. Students:</p> <p>a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.</p> <p>b. Create original works or responsibly repurpose or remix digital resources into new creations.</p> | <p><i>Examples of digital tools may include:</i><br/> <i>Google Docs, wikis, blogs, online forums, web-based collaborative work spaces, drawing/painting software/website, video/audio conferencing</i></p> <p><a href="#">Google Apps</a><br/> Create and share your work online using word processing, presentations, spreadsheets, forms and drawings. Edit anytime, from anywhere. Pick who can access your documents. Share changes in real time. Files are stored securely online.</p> <p><a href="#">Padlet</a>- <b>Padlet</b> is a virtual wall that allows people to express their thoughts on a common</p> | <p><i>By the end of Grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>• use digital resources (e.g., discussion groups, blogs, podcasts, videoconferences, Moodle, Google Classroom) to collaborate with peers, experts, and other audiences</li> <li>• use collaborative digital tools to explore common curriculum content with learners from other cultures</li> <li>• identify effective uses of technology to support communication with peers, family, or school personnel.</li> </ul> | <p><i>Examples of possible activities:</i></p> <p>Investigate and illustrate complex ideas or processes using collaborative concept mapping software.</p> <p>Create blogs, wikis or other collaborative forums to share ideas.</p> <p>Create and share a group digital project (e.g., newspaper, flyer, movie or slide presentation).</p> <p>Create and publish digital writing to a blog for peer review.</p> <p>Use interactive online tools</p> |

|                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualization, models or simulations.</p> <p>d. Publish or present content that customizes the message and medium for their intended audiences.</p> | <p>topic easily. It works like an online sheet of paper where people can put any content (e.g. images, videos, documents, text) anywhere on the page, together with anyone, from any device.</p> <p><a href="#">Kidblog</a> – Student blog-publishing website that gives students' writing a meaningful purpose and an authentic audience. Teachers moderate all content. Students are engaged in the process of pre-writing, drafting, revising, editing, publishing, and commenting</p> <p><a href="#">Audacity</a><br/>Audacity is free, open source software for recording and editing sounds.</p> <p><a href="#">Edmodo</a><br/>A private social platform for teachers and students to share ideas, files, events and assignments.</p> <p><a href="#">Weebly</a><br/>A drag and drop website and blog creation tool</p> <p><a href="#">Mindmeister</a><br/>Simultaneously work on mind maps with friends and</p> |  | <p>to comment, link, post and embed information (e.g., wikis, blogs).</p> <p>Comment on a writing project using online tools (e.g., a blog).</p> <p>Debate a topic using online tools (e.g., blogs, wikis).</p> <p>Participate in the Mystery Skype game with a classroom in an unknown location.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                | <p>colleagues and see changes as they happen.</p> <p><a href="#">Voki</a><br/>Voki is a free service that allows you to create personalized speaking avatars and use them on your blog, profile, and in email messages.</p> <p><a href="#">Mystery Skype</a> Mystery Skype is an educational game, invented by teachers, played by two classrooms on Skype. The aim of the game is to guess the location of the other classroom by asking each other questions.</p> <p>It's suitable for all age groups and can be used to teach subjects like geography, history, languages, mathematics and science.</p> |                                                                                                                                                                                                                                                    |                                                                                                                                                                          |
| <p><b>7. Global Collaborator</b><br/>Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. Students:</p> <p>a. use digital tools to connect with learners</p> | <p><i>Examples of digital tools may include:</i><br/><i>Google Docs, Google Earth, Google MyMaps, Google Sheets, Google Forms, wikis, blogs, online forums, web-based collaborative work spaces, video/audio conferencing</i></p>                                                                                                                                                                                                                                                                                                                                                                          | <p><i>By the end of Grade 8 each student will:</i></p> <ul style="list-style-type: none"> <li>• use digital resources (e.g., discussion groups, blogs, podcasts, videoconferences, Moodle, Google Classroom) to collaborate with peers,</li> </ul> | <p><i>Examples of possible activities:</i></p> <p>Solving real-world community problems, ie. design tools to help community members cope during heavy winter storms.</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <p>from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.</p> <p>b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.</p> <p>c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.</p> <p>d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.</p> | <p><a href="#">Google Apps</a><br/>Create and share your work online using word processing, presentations, spreadsheets, forms and drawings. Edit anytime, from anywhere. Pick who can access your documents. Share changes in real time. Files are stored securely online.</p> <p><a href="#">Google Forms</a><br/>Create online forms and surveys, analyze data in Sheets</p> <p><a href="#">Google Earth</a><br/>Google Earth lets you fly anywhere on Earth to view satellite imagery, maps, terrain, 3D buildings, from galaxies in outer space to the canyons of the ocean. You can explore rich geographical content, save your toured places, and share with others.</p> | <p>experts, and other audiences both locally and globally</p> <ul style="list-style-type: none"> <li>• use collaborative digital tools to explore common curriculum content with learners from other cultures both locally and globally</li> <li>• identify effective uses of technology to support communication with peers, family, school personnel and other members of the global community.</li> </ul> | <p>Analyze and compare immigration patterns of families</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|

# Embedded Technology in Common Core State Standards- Grades 6,7,8

|                                                                        | 6                                                                                                                                                                                                       | 7                                                                                                                                                            | 8                                                                                                                                                                                        |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reading- Informational Text: Integration of Knowledge and Ideas</b> | CCSS.ELA-LITERACY.RI.6.7<br>Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. |                                                                                                                                                              | CCSS.ELA-LITERACY.RI.8.7<br>Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea. |
|                                                                        |                                                                                                                                                                                                         | CCSS.ELA-LITERACY.CRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. |                                                                                                                                                                                          |
| <b>Writing- Production and Distribution of Writing</b>                 | CCSS.ELA-LITERACY.CCRA.W.6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.                                                          |                                                                                                                                                              |                                                                                                                                                                                          |
|                                                                        | CCSS.ELA-LITERACY.W.6.6                                                                                                                                                                                 | CCSS.ELA-LITERACY.W                                                                                                                                          | CCSS.ELA-LITERACY.W.8.6 Use                                                                                                                                                              |

|                                                         |                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.                      | .7.6 Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.                                | technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.                                                                                                                      |
| <b>Writing- Research to Build and Present Knowledge</b> |                                                                                                                                                                                                                                                            | CCSS.ELA-LITERACY.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.                                                     | CCSS.ELA-LITERACY.CCRA.W.8 Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.                                                                                                        |
|                                                         | CCSS.ELA-LITERACY.W.6.8 Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic | CCSS.ELA-LITERACY.W.7.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of | CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. |

|                                                                   |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   | information for sources.                                                                                                                                                                                                                                                                                      | others while avoiding plagiarism and following a standard format for citation.                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                 |
| <b>Writing-Text Types and Purposes</b>                            | CCSS.ELA-LITERACY.W.6.2.A Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. | CCSS.ELA-LITERACY.W.7.2.A Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. | CCSS.ELA-LITERACY.W.8.2.A Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. |
| <b>Speaking and Listening-Presentation of Knowledge and Ideas</b> | CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.                                                                                                                                                    | CCSS.ELA-LITERACY.SL.7.5 Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.                                                                                                                                                                                            | CCSS.ELA-LITERACY.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.                                                                                                                  |
| <b>Language- Vocabulary</b>                                       | CCSS.ELA-LITERACY.L.6.4.                                                                                                                                                                                                                                                                                      | CCSS.ELA-LITERACY.L.7.4.                                                                                                                                                                                                                                                                                                                            | CCSS.ELA-LITERACY.L.8.4.C                                                                                                                                                                                                                                                       |

|                                                                             |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acquisition and Use</b>                                                  | C Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.                                                                                                              | 7.4.C Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. | Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. |
| <b>Science &amp; Technical Subjects- Integration of Knowledge and Ideas</b> | CCSS.ELA-LITERACY.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).                                                                                                  |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
|                                                                             | CCSS.ELA-LITERACY.RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.                                                                                                                              |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
| <b>Writing in History/Social Studies, Science, and Technical Subjects</b>   | CCSS.ELA-LITERACY.WHST.6-8.2.A Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
|                                                                             | CCSS.ELA-LITERACY.WHST.6-8.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.                                                                                                                                 |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
|                                                                             | CCSS.ELA-LITERACY.WHST.6-8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |