

K - 12 Tech Track for Integration

This document lists the technology skills and suggested activities and projects in a couple different ways. In all cases they are color coded by these categories:

Text-Based Content	Graphics	Audio	Video	Digital Literacy	Other
• Word processing • Presentation concepts • Layout and design concepts • Blog concepts and creation • Website design	• Image editing • Image creation • Graphic design concepts	• Recording • Editing • Music creation	• Image slideshows • Video recording • Video editing • Video production concepts	• Research skills • Digital citizenship • Collaboration • Keyboarding • File management • Digital workflow	These are generally more advanced skills that don't appear until later grades. Also, some of these activities require a combination of skills from the other five categories.

Skills, Activities and Projects and Tech Standards by Grade Levels

([Click to jump to Skills, Activities and Projects by Categories.](#))

For this first set of lists, I included these two items by grade level:

- **A table listing skills, activities and final products related to digital media and literacy and tools that can be used for them.** This is based on the tech standards and what we can use given our resources in the district. All activities increase in complexity throughout the table. A grade level could use anything from previous grades. In many cases classes or students will use items from higher grade levels.
- **The technology standards from the technology plan.** The standards come from the student standards from ISTE.

The standards should give teachers something to aim for in integration and as a measure in grading technology components in any project. Since the standards are very general, the table was created as an aid for finding adequate activities and projects to integrate into content area units.

K - 2

Skill, activity or final product	Computer Tools	iOS Apps
Make pictures for communication using technology	Paint	Doodle Buddy
Simple written communication using technology	Word	Write About This

Simple narrated slideshows	Photo Story	30 Hands
Basic research skills	Google	Google in Safari/Chrome

These standards will be introduced and integrated into lessons with the common core and state standards in kindergarten and first grade. After being introduced, each will be reinforced in following months until they are mastered by the end of second grade.

Creativity and Innovation

- use a variety of digital tools (e.g., word processors, drawing tools, simulations, presentation software, graphical organizers) to learn, create, and convey original ideas or illustrate concepts

Communication and Collaboration

- work together when using digital tools (e.g., word processor, drawing, presentation software) to convey ideas or illustrate simple concepts relating to a specified project
- use a variety of developmentally appropriate digital tools (e.g., word processors, paint programs) to communicate ideas to classmates, families, and others

Research and Information Literacy

- interact with Internet based resources
- use digital resources (e.g., dictionaries, encyclopedias, graphs, graphical organizers) to locate and interpret information relating to a specific curricular topic, with assistance from teachers, school library media specialists, parents, or student partners

Critical Thinking, Problem Solving, and Decision Making

- explain ways that technology can be used to solve problems (e.g., cell phones, traffic lights, GPS units)
- use digital resources (e.g., dictionaries, encyclopedias, search engines, web sites) to solve developmentally appropriate problems, with assistance from teachers, parents, school media specialists, or student partners

Digital Citizenship

- describe appropriate and inappropriate uses of technology (e.g., computers, Internet, e-mail, cell phones) and describe consequences of inappropriate uses
- know the Michigan Cyber Safety Initiative's three rules (Keep Safe, Keep Away, Keep Telling)
- identify personal information that should not be shared on the Internet (e.g. name, address, phone number)
- know to inform a trusted adult if he/she receives or views an online communication which makes him/her feel uncomfortable, or if someone whom he/she doesn't know is trying to communicate with him/her or asking for personal information

Technology Operations and Concepts

- discuss advantages and disadvantages of using technology
- be able to use basic menu commands to perform common operations (e.g., open, close, save, print)
- recognize and name the major hardware components in a computer system (e.g., computer, monitor, keyboard, mouse, printer)
- discuss the basic care for computer hardware and various media types (e.g., CDs, DVDs)
- use developmentally appropriate and accurate terminology when talking about technology
- understand that technology is a tool to help him/her complete a task, and is a source of

information, learning, and entertainment

- demonstrate the ability to navigate in virtual environments (e.g., electronic books, games, simulation software, web sites)

3 - 5

Skill, activity or final product	Computer Tools	iOS Apps
Collaboration with technology within class	Shared work on any tech project	Shared work on any tech project
Add text and edit images or create them	Picmonkey.com, Pixlr.com	Doodle Buddy, Sketchbook Express, Pixlr
Keyboarding skills	http://www.bbc.co.uk/schools/typin g/ http://www.typingweb.com/	N/A
Newsletters, document with pictures	Word, Publisher	Not ideal on iPad, but can be done with Pages, Doodle Buddy, Sketchbook Express
Simple comics	Make Beliefs Comix, Pixton, Storyboardthat.com, ABCya! Animation, Google Drawings	Make Beliefs Comix, Story Me
Basic presentations	PowerPoint	Keynote
Audio recordings with minimal editing	Audacity	Voice Record Pro, GarageBand
Presentations with Prezi or a tool other than PowerPoint	Prezi, Google Presentation, Haiku Deck, Screencast-o-matic.com	Prezi, Haiku Deck, Explain Everything, Educreations, Show Me
Picture slideshows with pan/zoom and music	Photo Story, Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
Intermediate search skills	Google Advanced Search	Google Advanced Search in Safari/Chrome
Collaboration with technology within school	Google Drive (Docs, Presentations, Spreadsheets)	Google Drive (Docs, Presentations, Spreadsheets)

These standards will be introduced and integrated into lessons with the common core and state standards in third and fourth grades. After being introduced, each will be reinforced in following months until they are mastered by the end of fifth grade.

Creativity and Innovation

- produce a media-rich digital project aligned to state curriculum standards (e.g., fable, folktale, mystery, tall tale, historical fiction)
- use a variety of technology tools and applications to demonstrate his/her creativity by creating or modifying works of art, music, movies, or presentations
- participate in discussions about technologies (past, present, and future) to understand

these technologies are the result of human creativity

Communication and Collaboration

- use digital communication tools (e.g., e-mail, wikis, blogs, IM, chat rooms, videoconferencing, Moodle, Blackboard) and online resources for group learning projects
- identify how different software applications may be used to share similar information, based on the intended audience (e.g., presentations for classmates, newsletters for parents)
- use a variety of media and formats to create and edit products (e.g., presentations, newsletters, brochures, web pages) to communicate information and ideas to various audiences

Research and Information Literacy

- identify search strategies for locating information with support from teachers or school library media specialists
- use digital tools to find, organize, analyze, synthesize, and evaluate information
- understand and discuss that web sites and digital resources may contain inaccurate or biased information
- 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

Critical Thinking, Problem Solving, and Decision Making

- use digital resources to access information that can assist in making informed decisions about everyday matters (e.g., which movie to see, which product to purchase)
- use information and communication technology tools (e.g., calculators, probes, videos, DVDs, educational software) to collect, organize, and evaluate information to assist with solving problems
- use digital resources to identify and investigate a state, national, or global issue (e.g., global warming, economy, environment)

Digital Citizenship

- discuss scenarios involving acceptable and unacceptable uses of technology (e.g., file-sharing, social networking, text messaging, cyber bullying, plagiarism)
- recognize issues involving ethical use of information (e.g., copyright adherence, source citation)
- describe precautions surrounding personal safety that should be taken when online
- identify the types of personal information that should not be given out on the Internet (name, address, phone number, picture, school name)

Technology Operations and Concepts

- use basic input and output devices (e.g., printers, scanners, digital cameras, video recorders, projectors)
- describe ways technology has changed life at school and at home
- understand and discuss how assistive technologies can benefit all individuals
- demonstrate proper care in the use of computer hardware, software, peripherals, and storage media
- know how to exchange files with other students using technology (e.g., network file sharing, flash drives)

6 - 8

Skill, activity or final product	Computer Tools	iOS Apps
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Discussion in online environment	Edmodo, Blackboard, Google Sites	Edmodo, Google Sites
Knowledge of file types (.doc, .jpg, .mp3, .xls, .png, .wav, .mp4, etc.)	N/A	N/A
Understanding of Creative Commons Licenses	N/A	N/A
Self-directed learning through online resources	Various	Various
Find, store, process and produce content on multiple devices in paperless environment	Various	Various
Picture slideshows with pan/zoom and narration and music	Photo Story, Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
Advanced comic creation	Pixton, Storyboardthat.com, Picmonkey.com	Story Me, Pic Collage
Intermediate image editing	GIMP, Pixlr.com, Picmonkey.com	Pixlr, Sketchbook Express
"Media rich" presentations using any combination of the above digital products	PowerPoint, Google Presentations, Prezi - likely a combination of resources to display content	Keynote, Google Drive, Prezi - likely a combination of resources to display content
Intermediate audio recording - use of music, more attention to detail.	Audacity, GarageBand on Mac	GarageBand
Video recording and editing	Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
Basic animation or programming	Scratch, GoAnimate, ABCya! Animation	Animation: Animation Creator Express, Animation Desk Lite, iMotion HD Programming: Python 3 Programming
Simple game design	Kahoot, Gamestar Mechanic	N/A
Introduction to blog creation	Blogger, Weebly	Blogger
Introduction to website design	Weebly, Google Sites	N/A
Advanced search skills	Google Advanced Search	Google Advanced Search in Safari/Chrome

These standards will be introduced and integrated into lessons with the common core and state standards in sixth and seventh grades. After being introduced, each will be reinforced in following months until they are mastered by the end of eighth grade.

Creativity and Innovation

- apply common software features (e.g., spellchecker, thesaurus, formulas, charts, graphics, sounds) to enhance communication with an audience and to support creativity
- create an original project (e.g., presentation, web page, newsletter, information brochure) using a variety of media (e.g., animations, graphs, charts, audio, graphics, video) to present content information to an audience
- illustrate a content-related concept using a model, simulation, or concept-mapping software

Communication and Collaboration

- use digital resources (e.g., discussion groups, blogs, podcasts, videoconferences, Moodle, Blackboard) to collaborate with peers, experts, and other audiences
- use collaborative digital tools to explore common curriculum content with learners from other cultures
- identify effective uses of technology to support communication with peers, family, or school personnel

Research and Information Literacy

- use a variety of digital resources to locate information
- 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
- identify types of web sites based on their domain names (e.g., edu, com, org, gov, net)
- employ data-collection technologies (e.g., probes, handheld devices, GPS units, geographic mapping systems) to gather, view, and analyze the results for a content-related problem

Critical Thinking, Problem Solving, and Decision Making

- use databases or spreadsheets to make predictions, develop strategies, and evaluate decisions to assist with solving a problem
- evaluate available digital resources and select the most appropriate application to accomplish a specific task (e.g., word processor, table, outline, spreadsheet, presentation program)
- gather data, examine patterns, and apply information for decision making using available digital resources
- describe strategies for solving routine hardware and software problems

Digital Citizenship

- 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)
- discuss the consequences related to unethical use of information and communication technologies
- discuss possible societal impact of technology in the future and reflect on the importance of technology in the past
- create media-rich presentations on the appropriate and ethical use of digital tools and resources
- discuss the long term ramifications (digital footprint) of participating in questionable online activities (e.g., posting photos of risqué poses or underage drinking, making threats to others)
- describe the potential risks and dangers associated with online communications

Technology Operations and Concepts

- identify file formats for a variety of applications (e.g., doc, xls, pdf, txt, jpg, mp3)
- use a variety of technology tools (e.g., dictionary, thesaurus, grammar-checker, calculator) to maximize the accuracy of technology-produced materials
- perform queries on existing databases
- know how to create and use various functions available in a database (e.g., filtering, sorting, charts)
- identify a variety of information storage devices (e.g., CDs, DVDs, flash drives, SD cards) and provide rationales for using a certain device for a specific purpose
- use accurate technology terminology
- explore career opportunities, especially those related to science, technology, engineering, and mathematics and identify their related technology skill requirements
- discuss possible uses of technology to support personal pursuits and lifelong learning
- understand and discuss how assistive technologies can benefit all individuals
- discuss security issues related to e-commerce

9 - 12

Skill, activity or final product	Computer Tools	iOS Apps
Collaboration with technology beyond the school	Google Drive (Docs, Presentations, Spreadsheets), Google Hangout, Skype	Google Drive (Docs, Presentations, Spreadsheets), Google Hangout, Face Time
Advanced image editing	GIMP, Pixlr.com (Editor option)	Sketchbook Express
Advanced audio recording - including full music production.	Audacity, GarageBand on Mac	GarageBand
Intermediate to advanced animation or programming	Animation: GIMP and Windows Live Movie Maker GoAnimate Programming: Code Academy, Code.org, various programming languages	Animation: Animation Creator Express, Animation Desk Lite, iMotion HD Programming: N/A
Advanced video production	WeVideo, Windows Live Movie Maker, Corel VideoStudio (in HS video studio)	iMovie, VideoFX Live, any number of other apps for effects and image editing
Interactive websites/blogs	Google Sites, Weebly, Blogger, WordPress - advanced features necessary, but the focus would be on content more than these tools	N/A

These standards will be introduced and integrated into lessons with the common core and state standards in ninth through eleventh grades. After being introduced, each will be reinforced in following months until they are mastered by the end of the twelfth grade.

Creativity and Innovation

- apply advanced software features (e.g. built-in thesaurus, templates, styles) to redesign the appearance of word processing documents, spreadsheets, and presentations
- create a web page (e.g., Dreamweaver, iGoogle, Kompozer)
- use a variety of media and formats to design, develop, publish, and present projects (e.g.,

newsletters, web sites, presentations, photo galleries)

Communication and Collaboration

- identify various collaboration technologies and describe their use (e.g., desktop conferencing, listserv, blog, wiki)
- use available technologies (e.g., desktop conferencing, e-mail, videoconferencing, instant messaging) to communicate with others on a class assignment or project
- collaborate in content-related projects that integrate a variety of media (e.g., print, audio, video, graphic, simulations, and models)
- plan and implement a collaborative project using telecommunications tools (e.g., ePals, discussion boards, online groups, interactive web sites, videoconferencing)
- describe the potential risks and dangers associated with online communications
- use technology tools for managing and communicating personal information (e.g., finances, contact information, schedules, purchases, correspondence)

Research and Information Literacy

- develop a plan to gather information using various research strategies (e.g., interviews, questionnaires, experiments, online surveys)
- identify, evaluate, and select appropriate online sources to answer content related questions
- demonstrate the ability to use library and online databases for accessing information (e.g., MEL, Proquest, Infotrac, United Streaming)
- distinguish between fact, opinion, point of view, and inference
- evaluate information found in selected online sources on the basis of accuracy and validity
- evaluate resources for stereotyping, prejudice, and misrepresentation
- understand that using information from a single internet source might result in the reporting of erroneous facts and that multiple sources must always be researched
- research examples of inappropriate use of technologies and participate in related classroom activities (e.g., debates, reports, mock trials, presentations)

Critical Thinking, Problem Solving, and Decision Making

- use digital resources (e.g., educational software, simulations, models) for problem solving and independent learning
- analyze the capabilities and limitations of digital resources and evaluate their potential to address personal, social, lifelong learning, and career needs
- devise a research question or hypothesis using information and communication technology resources, analyze the findings to make a decision based on the findings, and report the results

Digital Citizenship

- identify legal and ethical issues related to the use of information and communication technologies (e.g., properly selecting and citing resources)
- discuss possible long-range effects of unethical uses of technology (e.g., virus spreading, file pirating, hacking) on cultures and society
- discuss and demonstrate proper netiquette in online communications
- identify ways that individuals can protect their technology systems from unethical or unscrupulous users
- create appropriate citations for resources when presenting research findings
- discuss and adhere to fair use policies and copyright guidelines

Technology Operations and Concepts

- complete at least one online credit, or non-credit, course or online learning experience
- use an online tutorial and discuss the benefits and disadvantages of this method of

learning

- explore career opportunities, especially those related to science, technology, engineering, and mathematics and identify their related technology skill requirements
- describe uses of various existing or emerging technology resources (e.g., podcasting, webcasting, videoconferencing, online file sharing, global positioning software)
- identify an example of an assistive technology and describe its potential purpose and use
- participate in a virtual environment as a strategy to build 21st century learning skills
- assess and solve hardware and software problems by using online help or other user documentation
- explain the differences between freeware, shareware, open source, and commercial software
- participate in experiences associated with technology-related careers
- identify common graphic, audio, and video file formats (e.g., jpeg, gif, bmp, mpeg, wav, wmv, mp3, flv, avi, pdf)
- understand and discuss how assistive technologies can benefit all individuals
- demonstrate how to import/export text, graphics, or audio files
- proofread and edit a document using an application's spelling and grammar checking functions

Skills, Activities and Projects by Categories

([Click to jump to Skills, Activities and Projects by Grade Levels.](#))

These tables contain the same information as above, but they are listed by category across all grade levels. In this way teachers can better see the intended progression of skills and determine what a student should already have learned by a particular grade.

Text-Based Content

Skill, activity or final product	Computer Tools	iOS Apps
K - 2		
Simple written communication using technology	Word	Write About This
3 - 5		
Newsletters, document with pictures	Word, Publisher	Not ideal on iPad, but can be done with Pages, Doodle Buddy, Sketchbook Express
Basic presentations	PowerPoint	Keynote
Presentations with Prezi or a tool other than PowerPoint	Prezi, Google Presentation, Screencast-o-matic.com	Explain Everything, Educreations, Show Me
6 - 8		
Introduction to blog creation	Blogger, Weebly	Blogger
Introduction to website design	Weebly, Google Sites	N/A
9 - 12		

Interactive websites/blogs	Google Sites, Weebly, Blogger, WordPress - advanced features necessary, but the focus would be on content more than these tools	N/A
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Graphics

Skill, activity or final product	Computer Tools	iOS Apps
K - 2		
Make pictures for communication using technology	Paint	Doodle Buddy
3 - 5		
Add text and edit images or create them	Picmonkey.com, Pixlr.com	Doodle Buddy, Sketchbook Express, Pixlr
Simple comics	Make Beliefs Comix, Pixton, Storyboardthat.com, ABCya! Animation	Make Beliefs Comix, Story Me
6 - 8		
Advanced comic creation	Pixton, Storyboardthat.com, Picmonkey.com	Story Me, Pic Collage
Intermediate image editing	GIMP, Pixlr.com, Picmonkey.com	Pixlr, Sketchbook Express
9 - 12		
Advanced image editing	GIMP, Pixlr.com (Editor option)	Sketchbook Express

Audio

Skill, activity or final product	Computer Tools	iOS Apps
3 - 5		
Audio recordings with minimal editing	Audacity	Voice Record Pro, GarageBand
6 - 8		
Intermediate audio recording - use of music, more attention to detail.	Audacity, GarageBand on Mac	GarageBand
9 - 12		
Advanced audio recording - including full music production.	Audacity, GarageBand on Mac	GarageBand

Video

Skill, activity or final product	Computer Tools	iOS Apps
K - 2		
Simple narrated slideshows	Photo Story	30 Hands
3 - 5		
Picture slideshows with pan/zoom and music	Photo Story, Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
6 - 8		
Picture slideshows with pan/zoom and narration and music	Photo Story, Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
Video recording and editing	Windows Live Movie Maker, WeVideo	iMovie, Loopster, Splice
9 - 12		
Advanced video production	WeVideo, Windows Live Movie Maker, Corel VideoStudio (in HS video studio)	iMovie, VideoFX Live, any number of other apps for effects and image editing

Digital Literacy

Skill, activity or final product	Computer Tools	iOS Apps
K - 2		
Basic research skills	Google	Google in Safari/Chrome
3 - 5		
Keyboarding skills	(I'm still testing sites and looking for good free online options.)	N/A
Intermediate search skills	Google Advanced Search	Google Advanced Search in Safari/Chrome
Collaboration with technology within school	Google Drive (Docs, Presentations, Spreadsheets)	Google Drive (Docs, Presentations, Spreadsheets)
6 - 8		
Discussion in online environment	Edmodo, Blackboard, Google Sites	Edmodo, Google Sites
Knowledge of file types (.doc, .jpg,	N/A	N/A

.mp3, .xls, .png, .wav, .mp4, etc.)		
Understanding of Creative Commons Licenses	N/A	N/A
Self-directed learning through online resources	Various	Various
Find, store, process and produce content on multiple devices in paperless environment	Various	Various
Advanced search skills	Google Advanced Search	Google Advanced Search in Safari/Chrome
9 - 12		
Collaboration with technology beyond the school	Google Drive (Docs, Presentations, Spreadsheets), Google Hangout, Skype	Google Drive (Docs, Presentations, Spreadsheets), Google Hangout, Face Time

Other

Skill, activity or final product	Computer Tools	iOS Apps
6 - 8		
"Media rich" presentations using any combination of the above digital products	PowerPoint, Google Presentations, Prezi - likely a combination of resources to display content	Keynote, Google Drive, Prezi - likely a combination of resources to display content
Basic animation or programming	Scratch, GoAnimate, ABCya! Animation	Animation: Animation Creator Express, Animation Desk Lite, iMotion HD Programming: Python 3 Programming
Simple game design	Kahoot, Gamestar Mechanic	N/A
9 - 12		
Intermediate to advanced animation or programming	Animation: GIMP and Windows Live Movie Maker GoAnimate Programming: Code Academy, Code.org, various programming languages	Animation: Animation Creator Express, Animation Desk Lite, iMotion HD Programming: N/A