Information Technology
Grades 11-12

		Students will know and be able to:	Standards
Basic Operations, Concepts, and Productivity Tools	**Basic Operations**	Identify the platform, version, properties, function, and interoperability of computer devices including a wide range of devices that compute and/or manage digital media.	1.1 (I)
		Use online help and other support to learn about features of hardware and software, as well as to assess and resolve problems.	1.2 (I)
		Explain effective backup and recovery strategies.	1.4 (I)
		Explain criteria for evaluating hardware and software appropriate for a given task (e.g., features, versions, capacity).	1.5 (I)
		Demonstrate keyboarding techniques, including the use of keyboard shortcuts, to complete assignments efficiently and accurately. (For students with disabilities, demonstrate alternative input techniques as appropriate.)	1.6 (I)
		Identitfy and access the capabilities and limitations of emerging technologies.	1.7
	Word Processing	Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, and styles) to improve the appearance of documents and materials.	1.8 (I)
		Use editing features appropriately (e.g., track changes, insert comments, search and replace).	1.9 (I)
		Identify the use of word processing and desktop publishing skills in various careers.	1.10 (I)
	Database	Explain the importance of designing the structure of a database to meet its intended goals	1.11
		Duplicate the structure of a database without data.	1.12

		Students will know and be able to:	Standards
		Save database files in various formats.	1.13
		Manipulate non-alphanumeric digital data (e.g., geospatial data from MassGIS, images, audio) within a database.	1.14
		Define the term "metadata," and explain how metadata describes the structure and workings of an organization's use of information.	1.15
		Use database features to create mailing labels, form letters, and perform mail merges.	1.16
		Identify the use of database skills in various careers.	1.17
	Spreadsheet	Define and use functions of a spreadsheet application (e.g., sort, filter, find).	1.18
		Enter formulas and functions; use auto-fill feature in a spreadsheet application.	1.19
		Explain and use advanced formatting features of a spreadsheet application (e.g., reposition columns and rows, add and name worksheets).	1.20
		Differentiate between formulas with absolute and relative cell references.	1.21
		Use multiple sheets within a workbook, and create links among worksheets to solve problems.	1.22
		Import and export data between spreadsheets and other applications.	1.23
		Create and use pivot tables.	1.24
		Explain how various formatting options are used to convey information in charts or graphs.	1.25
		Identify the use of spreadsheet skills in various careers.	1.26
	Internet, Networking, and Online Communication	Use search engines and online directories. Explain the differences among various search engines and how they rank results.	1.27 (I)

		Students will know and be able to:	Standards
		Explain and demonstrate effective search strategies for locating and retrieving electronic information (e.g., using syntax and Boolean logic operators).	1.28 (I)
		Describe good practices for password protection and authentication.	1.29 (I)
		Identify career options in network technologies	1.31 (I)
	Multimedia and Software Applications	Identify technology tools (e.g., authoring tools and other software resources) that can be used to create a multimedia product.	1.32 (I)
		Use a variety of applications to plan, create, and edit multimedia products (e.g., slide presentations, videos, animations, simulations, podcasts).	1.33 (I)
		Link Information residing different applications (e.g., linking a chart in a word-processing document to the spreadsheet where it was created).	1.34 (I)
		Identify career options in multimedia and software development.	1.35 (I)
	Web Authoring	Distinguish between effective and ineffective web site designs.	1.36
		Explain terminology related to web page authoring (e.g., HTML, URL, links, browsers, plug-ins, web servers).	1.37 (I)
		Use HTML or Web-authoring tools to create, edit and publish well organized Web sites with effective navigation.	1.38 (I)
		Explain basic practices that contribute to a web site's accessibility to people with disabilities (e.g., using alternative text, captioning, consistent structure).	1.39 (I)
		Explain how to test and debug Web files for quality assurance.	1.40 (I)
		Identify career options in web design, development and management.	1.41
Digital Citizenship, Ethics, Society, and Safety	**Ethics**	Demonstrate compliance with the school's Acceptable Use Policy.	2.1 (I)
		Explain issues related to the responsible use of technology, including privacy and security.	2.2 (I)

		Students will know and be able to:	**Standards**
		Explain laws restricting the use of copyrighted materials.	2.3 (I)
		Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.	2.4 (I)
		Write correct in-text citations and reference lists for text and images gathered from electronic sources.	2.5 (I)
		Give examples of the appropriate and responsible use of communication tools such as chats, instant messaging, blogs, and wikis.	2.6 (I)
		Discuss misuse of technology for personal and commercial reasons (e.g., software piracy, unauthorized file sharing/downloading, virus spreading, and hacking); explain possible consequences.	2.7 (I)
	Society	Design and implement a personal learning plan that includes the use of technology to support lifelong learning goals.	2.8
		Evaluate the authenticity, accuracy, appropriateness, and bias of electronic resources, including web sites.	2.9 (I)
		Analyze the values and points of view that are presented in media messages	2.10
		Describe devices, applications, and operating system features that offer accessibility for people with disabilities.	2.11
	Health and Safety	Evaluate school and work environments in terms of ergonomic practices.	2.12 (I)
		Describe and use safe and appropriate practices when participating in online communities, such as discussion groups, blogs, and social networking sites.	2.13
		Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities).	2.14 (I)
		Explain ways individuals can protect their technology systems and information from unethical users.	2.15
Fluency in Research, Critical Thinking,	**Research**	Devise and demonstrate strategies for efficiently collecting and organizing information from electronic sources.	3.1

		Students will know and be able to:	Standards
Problem Solving, Decision Making, Communication, Collaboration, Creativity and Innovation		Compare, evaluate, and select appropriate electronic resources to locate specific information.	3.2 (I)
		Select the most appropriate search engines and directories for specific research tasks.	3.3 (I)
		Search for information within an electronic source (e.g., using the find command)	3.4 (I)
	Problem Solving	Explain and demonstrate how specialized technology tools can be used for problem solving, decision making, and creativity in all areas (e.g., simulation software, environmental probes, computer-aided design, geographic information systems, dynamic geometric information software, graphing calculators, art and music composition software).	3.5 (I)
	Communication	Use a variety of media to present information for specific purposes (e.g., reports, research papers, presentations, newsletters, web sites, podcasts, blogs), citing sources.	3.6 (I)
		Demonstrate how the use of various techniques and effects (e.g., editing, music, color, rhetorical devices) can be used to convey meaning in media.	3.7 (I)
		Use online communication tools such as bulletin boards, discussion forums, listservs, and web conferencing to collaborate with peers, community members, and field experts as appropriate.	3.8
		Plan and implement a collaborative project with students in other classrooms and schools using telecommunications tools (e.g., email, discussion forums, groupware, interactive web sites, video conferencing).	3.9
		Provide opportunity for at least one online credit or non-credit course or tutorial; discuss the benefits and disadvantages of this method of learning.	3.10