

Vermont Technology Grade Expectations by Grade Cluster

IT1 Basic Understanding	IT2 Social Ethical Human	IT3 Productivity Tools	IT4 Communication	IT 5-6 Research and Problem Solving
ITPK-K:1	ITPreK-K:2	ITPreK-K:3	ITPreK-K:4	ITPreK-K:6
<p>Students demonstrate proficiency in the effective use of technology by ...</p> <p>Use of Hardware < Navigating with a mouse, recognizing and using keys (e.g., letters, numbers, and space bar).</p> <p>Use of Operating System and Standard Features of Applications No ITPK-K:1 at this level</p> <p>Organization and Navigation No ITPK-K:1 at this level</p> <p>Working with Files No ITPK-K:1 at this level</p>	<p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property No ITPK-K:2 at this level</p> <p>Acceptable Use < Describing and practicing responsible use of technology (e.g., don't bang on the keyboard).</p> <p>Working with Content/Information No ITPK-K:2 at this level</p>	<p>Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing No ITPK-K:3 at this level</p> <p>Databases No ITPK-K:3 at this level</p> <p>Spreadsheets No ITPK-K:3 at this level</p> <p>Paint/Draw No ITPK-K:3 at this level</p> <p>Visual Organizer No ITPK-K:3 at this level</p> <p>Calculators No ITPK-K:3 at this level</p>	<p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media No ITPK-K:4 at this level</p> <p>World Wide Web No ITPK-K:4 at this level</p> <p>Email No ITPK-K:4 at this level</p>	<p>Students demonstrate use of technology for research by...</p> <p>Digital Resources No ITPK-K:6 at this level</p> <p>Searching & Search Engines No ITPK-K:6 at this level</p> <p>Browser No ITPK-K:6 at this level</p> <p>Problem Solving and Decision Making No ITPK-K:6 at this level</p>

IT1-2:1	IT1-2:2	IT1-2:3	IT1-2:4	IT1-2:6
<p>Students demonstrate proficiency in the effective use of technology by...</p> <p>Use of Hardware ‹ Differentiating between right and left mouse click [Windows] or click, hold, and drag [Mac/Windows], recognizing and using keys letters, numbers, and space bar, shift, return/enter, punctuation, delete/backspace keys). ‹ Using removable media (e.g., floppy disk, CD, DVD).</p> <p>Use of Operating System and Standard Features of Applications ‹ Launching a program from the desktop using a shortcut or alias. ‹ Minimizing applications. ‹ Logging in and out of a computer. ‹ Creating, opening, saving, and printing a document.</p> <p>Organization and Navigation No IT1-2:1 at this level</p> <p>Working with Files ‹ Cutting, copying, and pasting within a document.</p>	<p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property No IT1-2:2 at this level Acceptable Use</p> <p>‹ Describing and practicing responsible use of technology (e.g., taking turns using technology equipment).</p> <p>Working with Content/Information No IT1-2:2 at this level</p>	<p>Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing ‹ Entering, selecting, deleting text . ‹ Manipulating styles (e.g., bold face, italicize and underline).</p> <p>Databases No IT1-2:3 at this level</p> <p>Spreadsheets No IT1-2:3 at this level</p> <p>Paint/Draw ‹ Illustrating a simple concept using a paint application.</p> <p>Visual Organizer ‹ Entering information into a teacher created template (e.g. concept map).</p> <p>Calculators No IT1-2:3 at this level</p>	<p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media ‹ Identifying components of multi-media presentations (e.g., title, transitions, sound effects, animation, text and graphics).</p> <p>World Wide Web No IT1-2:4 at this level</p> <p>Email No IT1-2:4 at this level</p>	<p>Students demonstrate use of technology for research by...</p> <p>Digital Resources No IT1-2:6 at this level</p> <p>Searching & Search Engines No IT1-2:6 at this level</p> <p>Browser No IT1-2:6 at this level</p> <p>Problem Solving and Decision Making No IT1-2:6 at this level</p>

IT3-4:1	IT3-4:2	IT3-4:3	IT3-4:4	IT3-4:6
<p>Students demonstrate proficiency in the effective use of technology by...</p> <p>Use of Hardware ‹ Recognizing and using keys: shift, return/enter, punctuation, delete/backspace, control/ command, tab, escape keys). ‹ Using removable media (e.g., CD, DVD, flash drive). ‹ Using effective keyboarding: ‹ posture (i.e., back straight, body leaning slightly forward, etc. ‹ techniques (e.g., eyes on monitor or copy-not the keyboard, etc) ‹ and attitudes (e.g., willingness to change habits, persistence and diligence) ‹ Using digital tools to capture images (e.g., scanner, digital camera).</p> <p>Use of Operating System and Standard Features of Applications ‹ Launching a program from the desktop. ‹ Navigating between open windows. ‹ Logging in and out of a network. ‹ Opening documents from and saving documents to multiple locations (e.g.,: c drive, network drive, removable media). ‹ Locating files and folders using the Find command.</p> <p>Organization and Navigation ‹ Creating, naming, and renaming folders. ‹ Creating folders within folders (nested folders).</p> <p>Working with Files ‹ Cutting, copying, and pasting within a document and across documents.</p>	<p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property ‹ Documenting sources of information obtained through electronic resources (e.g., identifying author and URL).</p> <p>Acceptable Use ‹ Describing basic issues related to the responsible and safe use of technology (e.g., appropriate use of email, respect for others' electronic property, maintaining confidentiality). ‹ Describing personal consequences of inappropriate use.</p> <p>Working with Content/Information No IT3-4:2 at this level</p>	<p>Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing ‹ Combining text with pictures on a single page (e.g., inserting clipart). ‹ Adding non-textual elements (e.g., arrows, lines, shapes, etc.). ‹ Manipulating styles (e.g., fonts, style, size, color of text, alignment). ‹ Using spell check.</p> <p>Databases ‹ Entering data into and manipulating an existing database by browsing, sorting and searching/finding/querying.</p> <p>Spreadsheets ‹ Entering data into a spreadsheet template. ‹ Explaining the relationship between data and visual representation (graph). ‹ Creating a graphical representation of numerical data (e.g., bar line, and pie).</p> <p>Paint/Draw ‹ Illustrating a simple concept using a paint application showing evidence of the following: ‹ paint brush ‹ line ‹ rectangle ‹ oval ‹ flood fill ‹ line thickness ‹ brush shapes ‹ colors</p> <p>Visual Organizer ‹ Illustrating a simple concept (e.g., concept map, web, bubble, etc.).</p> <p>Calculators ‹ Using grade appropriate calculator and applications/ functions (e.g., basic operations).</p>	<p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media ‹ Creating a slide presentation including title slide, graphics, text, voice, sound related to topic and documentation of sources.</p> <p>World Wide Web ‹ Describing a web page, home page and website.</p> <p>Email ‹ Sending an email message to another local user. ‹ Sending an email message to a remote user (i.e., using address with @). ‹ Differentiating between an email and web address.</p>	<p>Students demonstrate use of technology for research by...</p> <p>Digital Resources ‹ Accessing information from a workstation, LAN or Internetbased electronic encyclopedia. ‹ Using multiple resources including: ‹ Library catalog ‹ Electronic resources ‹ Internet web pages</p> <p>Searching & Search Engines ‹ Preparing a search off-line using a teacher-prepared form/strategy . ‹ Using a search engine predetermined by the teacher, implementing the search strategy developed and locating pertinent information.</p> <p>Browser ‹ Navigating to various websites by typing a URL into a browser or using a list of links identified by the teacher. ‹ Navigating using forward, back, home, and refresh. ‹ Using hyperlinks to navigate the world wide web.</p> <p>Problem Solving and Decision Making ‹ Identifying decisions made (e.g. representing data, formatting, criteria for search, visual organizer). Example: What key words did you use in your internet search?</p>

<p>IT5-6:1</p> <p>Students demonstrate proficiency in the effective use of technology by...</p> <p>Use of Hardware ‹ Right clicking [Windows] or clicking, holding, and dragging [Mac/Windows] presents a contextual menu (e.g., right clicking on an image offers a menu of choices about what you want to do with the image), control/command, escape keys. ‹ Using effective keyboarding: ‹ posture (i.e., back straight, body leaning slightly forward, etc.) ‹ techniques (e.g., eyes on monitor or copy-not the keyboard, etc.) ‹ attitudes (e.g., willingness to change habits, persistence and diligence) ‹ Using digital tools to capture images and other information (e.g., temperature, light, sound, etc.) and import them into a computer.</p> <p>Use of Operating System and Standard Features of Applications ‹ Launching a program by locating it on the internal, external, or network drive. ‹ Navigating between open windows and applications. ‹ Opening documents from and saving documents to nested folders. ‹ Locating files and folders using the Find command. ‹ Identifying and saving documents in multiple formats (e.g., .doc, .jpg, .pdf, .rtf).</p> <p>Organization and Navigation ‹ Creating, naming, and renaming folders. ‹ Creating folders within folders (nested folders). ‹ Copying and moving files and folders. ‹ Using shortcuts/alias.</p> <p>Working with Files</p>	<p>IT5-6:2</p> <p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property ‹ Documenting sources of information obtained through electronic resources using acceptable formats. ‹ Demonstrating an understanding of copyright and fair use guidelines for educational purposes.</p> <p>Acceptable Use ‹ Exhibiting safe, legal and ethical behaviors when using technology. ‹ Describing personal and interpersonal consequences of inappropriate use.</p> <p>Working with Content/Information ‹ Articulating and providing examples of relevant, reliable and unreliable Internet resources.</p>	<p>IT5-6:3</p> <p>Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing ‹ Embedding an original piece of art, applying text wrap and resizing. ‹ Adding non-textual elements (e.g., arrows, lines, shapes, etc.). ‹ Manipulating styles and formats (e.g. header, footer, borders, page breaks, lists). ‹ Using spell check, and thesaurus. ‹ Creating a table.</p> <p>Databases ‹ Identifying components of database including field/category, record, file. ‹ Identifying single and multiple record formats. ‹ Entering data into an existing database. ‹ Creating, entering and manipulating a database using ascending and descending sorting, and searching/finding/querying, using a single criterion.</p> <p>Spreadsheets ‹ Creating a spreadsheet from a blank page, including simple formulas and simple functions (SUM and AVG). ‹ Creating a graphical representation of multiple series of numerical data. ‹ Manipulating format (e.g., resizing rows and columns, font, colors, hiding grid).</p> <p>Paint/Draw ‹ Creating original illustrations using paint and draw applications. ‹ Comparing and contrasting the uses of a paint and a draw application. ‹ Modifying a digital image using flip, rotate, resize, crop. ‹ Saving graphic images in multiple formats (e.g., .jpg, tif, gif).</p> <p>Visual Organizer ‹ Illustrating a concept with topic and sub-topics, selecting different shapes and colors to differentiate various</p>	<p>IT5-6:4</p> <p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media ‹ Creating a linear or non-linear presentation including title slide, graphics, text, voice, sound related to topic, scanned or digital photo, animation, bibliography and table of contents.</p> <p>World Wide Web ‹ Describing the components of a web address (e.g. ~, /, .edu, .com, .gov, etc.). ‹ Creating a web page including text, graphics, tables and internal and external links.</p> <p>Email ‹ Sending and receiving an email attachment. ‹ Including the text of the original message in their reply (using quote). ‹ Forwarding mail. ‹ Using cc: to copy a message to another individual.</p>	<p>IT5-6:6</p> <p>Students demonstrate use of technology for research by...</p> <p>Digital Resources ‹ Locating information that is accurate, relevant and appropriate, using a variety of electronic resources including digital encyclopedias, specialized CDs and the Internet.</p> <p>Searching & Search Engines ‹ Preparing a search off-line without using a teacherprepared form/strategy. ‹ Implementing a search strategy using Boolean logic (e.g., and, or, not).</p> <p>Browser ‹ Bookmarking sites relevant to their research and organizing sites into categories.</p> <p>Problem Solving and Decision Making ‹ Identifying and justifying decisions made, (e.g. representing data, formatting, setting up formula, selecting criteria for search, visual organizer). Example: What key words did you make and why? Are there other words that might have worked better? ‹ Selecting the appropriate tools and technology resources to address a variety of tasks and problems (e.g., spreadsheet vs. data base, word processing vs. presentation program). ‹ Applying technology skills to learning unfamiliar technologies (e.g., digital cameras, scanners, probes). Example: What are the first steps you would take to figure out how to use a new technology? ‹ Using electronic Help to solve a problem.</p>
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<p>⟨ Cutting, copying, and pasting within a document, across documents, and across applications.</p>		<p>levels or processes (e.g., concept map, web, bubble, flow).</p> <p>Calculators</p> <p>⟨ Using grade appropriate calculator and applications/functions (e.g., basic operations, fraction-decimal conversion, percentage).</p>		
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IT7-8:1	IT7-8:2	IT7-8:3	IT7-8:4	IT7-8:6
<p>Students demonstrate proficiency in the effective use of technology by...</p> <p>Use of Hardware ‹ Using effective keyboarding: ‹ posture (i.e., back straight, body leaning slightly forward, etc.) ‹ techniques (e.g., eyes on monitor or copy-not the keyboard, etc.) ‹ attitudes (e.g., willingness to change habits, persistence and diligence) and key with speed and accuracy (e.g., 30 words/min with 90% accuracy) ‹ Using digital tools to capture images and other information (e.g., temperature, light, sound, etc.) and import them into a computer.</p> <p>Use of Operating System and Standard Features of Applications ‹ Launching a program by locating it on the internal, external, and network drive. ‹ Opening documents from and saving documents to nested folders. ‹ Locating files and folders using multiple criteria within the Find command. ‹ Saving documents in multiple formats (e.g., .doc, .jpg, .pdf, .rtf, source and txt). ‹ Compressing and decompressing files.</p> <p>Organization and Navigation ‹ Creating, naming, and renaming folders. ‹ Creating folders within folders (nested folders) in a purposeful structure. ‹ Copying and moving files and folders. ‹ Creating shortcuts/alias.</p> <p>Working with Files ‹ Cutting, copying, and pasting within a document, across documents, and across applications. ‹ Creating a duplicate/backup document in another location.</p>	<p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property ‹ Documenting sources of information obtained through electronic resources using acceptable formats. ‹ Applying copyright and fair use guidelines in student work. ‹ Explaining the accuracy and relevancy of the content.</p> <p>Acceptable Use ‹ Exhibiting safe, legal and ethical behaviors when using technology. ‹ Describing societal consequences of inappropriate use.</p> <p>Working with Content/Information ‹ Comparing and contrasting information found on the internet for relevancy, accuracy, and reliability.</p>	<p>Students use technology/productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing ‹ Manipulating styles and formats (e.g., headers, footers, borders, page breaks, tabs and margins, multiple columns, text boxes) linking text blocks, span multiple columns, masthead). ‹ Using spell check, thesaurus and grammar check. ‹ Creating a table.</p> <p>Databases ‹ Generating a report. ‹ Creating and manipulating a database, by entering, sorting, searching/finding/querying and using multiple criteria.</p> <p>Spreadsheets ‹ Creating a spreadsheet from a blank page, including formulas and functions (MIN, MAX, MEDIAN, MODE, ROUND), formatting cells (e.g. numeric, monetary, percent, values). ‹ Creating a graphical representation appropriate to the numerical data (e.g., scatter plot, x-y) ‹ Manipulating format (e.g., resizing rows and columns, font, colors, hiding grid).</p> <p>Paint/Draw ‹ Importing/Inserting objects from other sources. ‹ Selecting and using a draw or paint application appropriate for the task. ‹ Modifying a digital image using flip, rotate, resize, crop, select, copy and paste. ‹ Selecting and saving images in the appropriate format (e.g., jpg, tif, gif).</p> <p>Visual Organizer ‹ Illustrating a variety of relationships, ideas and topics (e.g. cause and effect, Venn diagram, organizational charts, flow chart). ‹ Importing an illustration. ‹ Linking an element to appropriate files and URL(s).</p>	<p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media ‹ Creating a linear and non-linear presentation including title slide, graphics, text, voice, sound related to topic, scanned or digital photo, animation, bibliography and table of contents, video clip.</p> <p>World Wide Web ‹ Creating a web page including text, graphics, tables and relative and absolute links.</p> <p>Email ‹ Adding an entry into address book and using to send a message. ‹ Attaching a file to an email message and noting in the body the file format. ‹ Creating a mailing list. ‹ Combining and compressing multiple files and sending as an attachment. ‹ Creating a signature.</p>	<p>Students demonstrate use of technology for research by...</p> <p>Digital Resources ‹ Locating information that is accurate, relevant, appropriate and identifying possible bias (opinion vs. fact) using a variety of electronic resources.</p> <p>Searching & Search Engines ‹ Comparing and contrasting: directories, search engines, and meta-search engines. ‹ Implementing a search strategy using Boolean logic (e.g., and, or, not, near).</p> <p>Browser ‹ Exporting and importing bookmarks/ favorites and organizing sites into categories.</p> <p>Problem Solving and Decision Making ‹ Justifying decisions made, (e.g., representing data, formatting, setting up formula, selecting criteria for search). Example: How did the bar graph represent the data better than a pie chart? ‹ Selecting and justifying the appropriate tools and technology resources to address a variety of tasks and problems (e.g., spread sheet vs. data base, word processing vs. presentation program). ‹ Applying technology skills to learning unfamiliar technologies (e.g., digital cameras, scanners, probes). Example: What are the first steps you would take to figure out how to use a new technology? ‹ Using electronic Help to solve a problem or to learn something new. ‹ Identifying and using a defensible troubleshooting process. ‹ Creating and using simulations or models, e.g., spreadsheet to design "what if" scenarios. Example: What would be the possible effects on the environment of extending the moose-hunting season another week?</p>

		Calculators < Using a graphing calculator and grade appropriate applications/ functions (e.g., graphing, statistics, tables).		
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IT9-12:1	IT9-12:2	IT9-12:3	IT9-12:4	IT9-12:6
<p>Students demonstrate proficiency in the effective use of technology by...</p> <p>Use of Hardware No IT9-12:1 at this level ‹ Using digital tools to capture images and other information (e.g., temperature, light, sound, etc.) and import them into a computer.</p> <p>Use of Operating System and Standard Features of Applications ‹ Saving documents in multiple formats (e.g., .doc, .jpg, .pdf, html, gif). ‹ Compressing and decompressing files. ‹ Using electronic Help to solve a problem or to learn something new.</p> <p>Organization and Navigation ‹ Copying and moving files and folders.</p> <p>Working with Files ‹ Creating a duplicate/backup document in another location.</p>	<p>Students demonstrate responsible use of technology systems, information, and software by...</p> <p>Intellectual Property ‹ Documenting sources of information obtained through electronic resources using acceptable formats. ‹ Comparing and contrasting copyright and fair use guidelines for education and other purposes. ‹ Explaining the accuracy and relevancy of the content.</p> <p>Acceptable Use ‹ Defining, defending and demonstrating safe, legal and ethical behaviors among peers and community regarding the use of technology and information.</p> <p>Working with Content/Information ‹ Comparing and contrasting information found on the internet for relevancy, accuracy, and reliability.</p>	<p>Students use technology/productivity tools to enhance learning, increase productivity, and promote creativity by...</p> <p>Word Processing ‹ Applying styles and formats (e.g., headers, footers, footnotes/endnotes, borders, page breaks, tabs and margins, multiple columns, text boxes, section breaks, pagination, linking text blocks, span multiple columns to create a complex document). ‹ Using spell check, thesaurus and grammar check. ‹ Merging from external data source.</p> <p>Databases ‹ Generating a report. ‹ Creating and manipulating a data base, by entering, sorting, searching/finding/querying and using multiple criteria.</p> <p>Spreads heets ‹ Creating a spreadsheet from a blank page, including formulas and functions (MIN, MAX, ROUND), formatting cells (e.g., numeric, monetary, percent, values). ‹ Documenting spreadsheets with named cells and comments. ‹ Creating a graphical representation appropriate to the numerical data (e.g., scatter plot, x-y). ‹ Manipulating format (e.g., resizing rows and columns, font, colors, hiding grid). ‹ Referencing formulas from other worksheets.</p> <p>Paint/Draw ‹ Selecting and using a draw or paint application appropriate for the task. ‹ Modifying a digital image using flip, rotate, resize, crop, select, copy, paste. ‹ Selecting, saving and converting images in the</p>	<p>Students demonstrate the use a variety of media and formats to communicate information and ideas effectively to multiple audiences by...</p> <p>Multi-Media ‹ Creating a linear and non-linear presentation including title slide, graphics, text, voice, sound related to topic, scanned or digital photo, animation, bibliography and table of contents, video clip.</p> <p>World Wide Web ‹ Creating a web page including text, graphics, tables and relative and absolute links, sound elements, graph imported from a spreadsheet, original digital pictures. ‹ Optimizing graphics for web pages for loading over slow Internet connections.</p> <p>Email No IT9-12:4 at this level</p>	<p>Students demonstrate use of technology for research by...</p> <p>Digital Resources ‹ Locating information from specialized online databases (e.g. post-secondary resources, virtual libraries, periodical databases, and others).</p> <p>Searching & Search Engines ‹ Selecting an appropriate tool for locating information on the Internet. ‹ Implementing a search strategy using full Boolean logic with parentheses, (e.g., behavior and cats or felines).</p> <p>Browser No IT9-12:6 at this level</p> <p>Problem Solving and Decision Making ‹ Justifying decisions made, e.g. representing data, formatting, setting up formula, selecting criteria for search. ‹ Justifying the appropriate tools and technology resources to address a variety of tasks and problems (e.g., spread sheet vs. data base, word processing vs. presentation program). ‹ Identifying and successfully using a defensible troubleshooting process. ‹ Creating and using simulations or models, e.g., spreadsheet to design “what if” scenarios.</p>

		<p>appropriate format (e.g., jpg, tif, gif).</p> <p>Visual Organizer</p> <ul style="list-style-type: none"> ⟨ Choosing and creating effective visual organizer to illustrate a variety of relationships, ideas and topics (e.g. cause and effect, Venn diagram, organizational charts, flow chart). ⟨ Importing an illustration . ⟨ Linking an element to appropriate files and URL(s). <p>Calculators</p> <ul style="list-style-type: none"> ⟨ Using a graphing calculator and grade appropriate applications/ functions (e.g., graphing, statistics, tables, equations, matrix). 		