

Blue Mountain Union Technology Curriculum

Created 12/04 by Kate Davie & John Munson, and reviewed by the Technology
Committee

based on the

**Grade Expectations for Vermont's Framework of
Standards and Learning Opportunities**

**Summer 2004
Information Technology**

Includes examples of technology integration units
created by John Munson in collaboration with Blue
Mountain teachers

PreK-K

IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	◆ Navigating with a mouse, recognizing and using keys (e.g., letters, numbers, and space bar).
Use of Operating System and Standard Features of Applications	none
Organization and Navigation	none
Working with Files	none

Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

PreK-K

IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	none
Acceptable Use	◆ Describing and practicing responsible use of technology (e.g., don't bang on the keyboard).
Working with Content/ Information	none

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology.

Students practice responsible use of technology systems, information, and software.

Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

PreK-K

IT3 Productivity Tools

Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	none
Databases	none
Spreadsheets	none
Paint/Draw	none
Visual Organizer	none

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

PreK-K

IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by... Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	none
World Wide Web	none
Email	none

Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences. Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

PreK-K

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...

Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	none
Searching and Search Engines	none
Browser	none
Problem Solving and Decision Making	none

Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

Students use technology to locate, evaluate, and collect information from a variety of sources

Students use technology to process data and report results.

Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks

Students use technology resources for solving problems and making informed decisions.

Students employ technology in the development of strategies for solving problems in the real world.

Grades 1-2 IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	<ul style="list-style-type: none"> ◆ <u>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).</u> ◆ <u>Using removable media (e.g., floppy disk, CD, DVD).</u>
Use of Operating System and Standard Features of Applications	<ul style="list-style-type: none"> ◆ <u>Launching a program from the desktop using a shortcut or alias.</u> ◆ <u>Minimizing applications.</u> ◆ <u>Logging in and out of a computer.</u> ◆ <u>Creating, opening, saving, and printing a document.</u>
Organization and Navigation	none
Working with Files	<ul style="list-style-type: none"> ◆ <u>Cutting, copying, and pasting within a document.</u>

Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

Grades 1-2 IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	none
Acceptable Use	<ul style="list-style-type: none"> ◆ <u>Describing and practicing responsible use of technology (e.g., taking turns using technology equipment).</u>
Working with Content/ Information	none

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology. Students practice responsible use of technology systems, information, and software. Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

Grades 1-2 IT3 Productivity Tools

Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	◆ <u>Entering, selecting, deleting text</u> . ◆ <u>Manipulating styles</u> (e.g. bold face, italicize and underline).
Databases	none
Spreadsheets	none
Paint/Draw	◆ Illustrating a simple concept using a paint application.
Visual Organizer	◆ Entering information into a teacher created template (e.g. concept map).

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

Grades 1-2 IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by... Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	◆ <u>Identifying components of multi-media presentations</u> (e.g., title,
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	transitions, sound effects, animation, text and graphics).
World Wide Web	none
Email	none

Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.

Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Grades 1-2

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...

Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	none
Searching and Search Engines	none
Browser	none
Problem Solving and Decision Making	none

Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

Students use technology to locate, evaluate, and collect information from a variety of sources

Students use technology to process data and report results.

Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks

Students use technology resources for solving problems and making informed decisions.

Students employ technology in the development of strategies for solving problems in the real world.

Grades 3-4

IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	<ul style="list-style-type: none"> ◆ Recognizing and using keys: shift, return/enter, punctuation, delete/backspace, <u>control/command, tab, escape keys</u>). ◆ Using removable media (e.g., CD, DVD, flash drive). ◆ Using effective keyboarding. <ul style="list-style-type: none"> ◆ <u>Posture</u> (i.e. back straight, body leaning slightly forward, etc.) ◆ <u>Techniques</u> (e.g. eyes on monitor or copy, not on keyboard, etc.) ◆ <u>And attitude</u> (e.g. willingness to change habits, persistence and diligence) ◆ Using tools to capture images (e.g. scanner, digital camera.)
Use of Operating System and Standard Features of Applications	<ul style="list-style-type: none"> ◆ Launching a program from the desktop. ◆ <u>Navigating between open windows</u> ◆ Logging in and out of a <u>network</u>. ◆ <u>Opening documents from and saving documents to multiple locations</u> (e.g.,: c drive, network drive, removable media). ◆ <u>Locating files and folders using the Find command</u>.
Organization and Navigation	<ul style="list-style-type: none"> ◆ <u>Creating, naming, and renaming folders</u>. ◆ <u>Creating folders within folders (nested folders)</u>.
Working with Files	<ul style="list-style-type: none"> ◆ Cutting, copying, and pasting within a document and across documents.

Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

Grades 3-4

IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	◆ <u>Documenting sources of information obtained through electronic resources</u> (e.g., identifying author and URL).
Acceptable Use	◆ <u>Describing basic issues related to the responsible and safe use of technology</u> (e.g., appropriate use of email, respect for others' electronic property, maintaining confidentiality). ◆ <u>Describing personal consequences of inappropriate use.</u>
Working with Content/ Information	none

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology.

Students practice responsible use of technology systems, information, and software.

Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

Grades 3-4

IT3 Productivity Tools

Students use technology/productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	◆ Combining text with pictures on a single page (e.g., inserting clipart). ◆ <u>Adding non-textual elements</u> (e.g., arrows, lines, shapes, etc.). ◆ Manipulating styles (e.g., fonts,
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	<p>style, size, color of text, alignment).</p> <ul style="list-style-type: none"> ◆ <u>Using spell check.</u>
Databases	<ul style="list-style-type: none"> ◆ <u>Entering data into and manipulating an existing database by browsing, sorting and searching/finding/querying.</u>
Spreadsheets	<ul style="list-style-type: none"> ◆ <u>Entering data into a spreadsheet template.</u> ◆ <u>Explaining the relationship between data and visual representation (graph).</u> ◆ <u>Creating a graphical representation of numerical data (e.g., bar line, and pie).</u>
Paint/Draw	<ul style="list-style-type: none"> ◆ Illustrating a simple concept using a paint application showing evidence of the following <ul style="list-style-type: none"> ◆ <u>paint brush</u> ◆ <u>line</u> ◆ <u>rectangle</u> ◆ <u>oval</u> ◆ <u>flood fill</u> ◆ <u>line thickness</u> ◆ <u>brush shapes</u> ◆ <u>colors</u>
Visual Organizer	<ul style="list-style-type: none"> ◆ <u>Illustrating a simple concept (e.g., concept map, web, bubble, etc.).</u>
Calculators	<ul style="list-style-type: none"> ◆ <u>Using grade appropriate calculator and applications/functions (e.g., basic operations).</u>

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

Grades 3-4

IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by...
 Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	<ul style="list-style-type: none"> ◆ <u>Creating a slide presentation including title slide, graphics, text, voice, sound related to topic and documentation of sources.</u>
World Wide Web	<ul style="list-style-type: none"> ◆ Describing a web page, home page and website.
Email	<ul style="list-style-type: none"> ◆ <u>Sending an email message to another local user.</u> ◆ <u>Sending an email message to a remote user (i.e., using address with @).</u> ◆ <u>Differentiating between an email and web address.</u>

Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
 Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Grades 3-4

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...
 Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	<ul style="list-style-type: none"> ◆ <u>Accessing information from a workstation, LAN or Internet-based electronic encyclopedia.</u> ◆ <u>Using multiple resources including</u>
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	<ul style="list-style-type: none"> ◆ <u>Library catalog</u> ◆ <u>Electronic resources</u> ◆ <u>Internet web pages</u>
Searching and Search Engines	<ul style="list-style-type: none"> ◆ <u>Preparing a search off-line using a teacher-prepared form/strategy.</u> ◆ <u>Using a search engine predetermined by the teacher, implementing the search strategy developed and locating pertinent information.</u>
Browser	<ul style="list-style-type: none"> ◆ <u>Navigating to various web sites by typing a URL into a browser or using a list of links identified by the teacher.</u> ◆ <u>Navigating using forward, back, home, and refresh.</u> ◆ <u>Using hyperlinks to navigate the world wide web.</u>
Problem Solving and Decision Making	<ul style="list-style-type: none"> ◆ <u>Identifying decisions made (e.g. representing data, formatting, criteria for search, visual organizer).</u> Example: What key words did you use in your internet search?

Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

Students use technology to locate, evaluate, and collect information from a variety of sources
 Students use technology to process data and report results.
 Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks
 Students use technology resources for solving problems and making informed decisions.
 Students employ technology in the development of strategies for solving problems in the real world.

Grades 5-6

IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	<ul style="list-style-type: none"> ◆ Right clicking [Windows] or clicking, holding, and dragging [Mac/Windows] <u>presents a contextual menu</u> (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: <ul style="list-style-type: none"> ◆ 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 <u>images and other information</u> (e.g., temperature, light, sound, etc.) <u>and import them into a computer.</u>
Use of Operating System and Standard Features of Applications	<ul style="list-style-type: none"> ◆ Launching a program by <u>locating it on the internal, external, or network drive.</u> ◆ Navigating between open windows <u>and applications.</u> ◆ Opening documents from and saving documents to <u>nested folders.</u> ◆ Locating files and folders using the Find command ◆ <u>Identifying and saving documents in multiple formats</u> (e.g., .doc, .jpg, .pdf, .rtf).
Organization and Navigation	<ul style="list-style-type: none"> ◆ Creating, naming, and renaming folders. ◆ Creating folders within folders (nested folders).

	<ul style="list-style-type: none"> ◆ <u>Copying and moving files and folders.</u> ◆ <u>Using shortcuts/alias.</u>
Working with Files	<ul style="list-style-type: none"> ◆ Cutting, copying, and pasting within a document, across documents, <u>and across applications.</u>

Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

Grades 5-6

IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	<ul style="list-style-type: none"> ◆ Documenting sources of information obtained through electronic resources <u>using acceptable formats.</u> ◆ <u>Demonstrating an understanding of copyright and fair use guidelines for educational purposes .</u>
Acceptable Use	<ul style="list-style-type: none"> ◆ <u>Exhibiting safe, legal and ethical behaviors</u> when using technology. ◆ Describing personal and <u>interpersonal</u> consequences of inappropriate use.
Working with Content/ Information	<ul style="list-style-type: none"> ◆ <u>Articulating and providing examples of relevant, reliable and unreliable Internet resources.</u>

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology.
 Students practice responsible use of technology systems, information, and software.
 Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

Grades 5-6 IT3 Productivity Tools

Students use technology/ productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	<ul style="list-style-type: none"> ◆ <u>Embedding an original piece of art, applying text wrap and resizing</u> ◆ Adding non-textual elements (e.g., arrows, lines, shapes, etc.). ◆ Manipulating styles and <u>formats</u> (e.g. header, footer, borders, page breaks, lists). ◆ Using spell check, and <u>thesaurus</u>. ◆ <u>Creating a table</u>.
Databases	<ul style="list-style-type: none"> ◆ <u>Identifying components of database including field/category, record, file.</u> ◆ <u>Identifying single and multiple record formats</u> ◆ Entering data into an existing database. ◆ <u>Creating, entering and manipulating a database using ascending and descending sorting, and searching/finding/querying, using a single criterion.</u>
Spreadsheets	<ul style="list-style-type: none"> ◆ <u>Creating a spreadsheet from a blank page, including simple formulas and simple functions (SUM and AVG).</u> ◆ Creating a graphical representation of multiple series of numerical data. ◆ <u>Manipulating format</u> (e.g., resizing rows and columns, font, colors, hiding grid).
Paint/Draw	<ul style="list-style-type: none"> ◆ <u>Creating original illustrations using paint and draw applications.</u>

	<ul style="list-style-type: none"> ◆ <u>Comparing and contrasting the uses of a paint and a draw application.</u> ◆ <u>Modifying a digital image using flip, rotate, resize, crop .</u> ◆ <u>Saving graphic images in multiple formats (e.g., .jpg, tif, gif).</u>
Visual Organizer	<ul style="list-style-type: none"> ◆ <u>Illustrating a concept with topic and sub-topics, selecting different shapes and colors to differentiate various levels or processes (e.g., concept map, web, bubble, flow.)</u>
Calculators	<ul style="list-style-type: none"> ◆ <u>Using grade appropriate calculator and applications/functions (e.g., basic operations, fraction-decimal conversion, percentage).</u>

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

Grades 5-6

IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by... Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	<ul style="list-style-type: none"> ◆ <u>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.</u>
World Wide Web	<ul style="list-style-type: none"> ◆ <u>Describing the components of a web address (e.g. ~, /, .edu, .com, .gov, etc.).</u> ◆ <u>Creating a web page including text, graphics, tables and internal and external links.</u>

Email	<ul style="list-style-type: none"> ◆ <u>Sending and receiving an email attachment .</u> ◆ <u>Including the text of the original message in their reply (using quote).</u> ◆ <u>Forwarding mail.</u> ◆ <u>Using cc: to copy a message to another individual.</u>
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Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.

Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Grades 5-6

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...

Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	<ul style="list-style-type: none"> ◆ <u>Locating information that is accurate, relevant and appropriate, using a variety of electronic resources including digital encyclopedias, specialized CDs and the Internet.</u>
Searching and Search Engines	<ul style="list-style-type: none"> ◆ Preparing a search off-line without using a teacher- prepared form/strategy. ◆ <u>Implementing a search strategy using Boolean logic (e.g., and, or, not).</u>
Browser	<ul style="list-style-type: none"> ◆ <u>Bookmarking sites relevant to their research and organizing sites into categories.</u>
Problem Solving and Decision Making	<ul style="list-style-type: none"> ◆ Identifying and <u>justifying</u> decisions made, (e.g. representing data, formatting, setting up formula, selecting criteria for search, visual organizer).

	<p>Example: What key words did you make and why? Are there other words that might have worked better?</p> <ul style="list-style-type: none"> ◆ <u>Selecting the appropriate tools and technology resources to address a variety of tasks and problems</u> (e.g., spread sheet vs. data base, word processing vs. presentation program). ◆ <u>Applying technology skills to learning unfamiliar technologies</u> (e.g., digital cameras, scanners, probes). <p>Example: What are the first steps you would take to figure out how to use a new technology?</p> <ul style="list-style-type: none"> ◆ <u>Using electronic Help to solve a problem.</u>
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Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

- Students use technology to locate, evaluate, and collect information from a variety of sources
- Students use technology to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks
- Students use technology resources for solving problems and making informed decisions.
- Students employ technology in the development of strategies for solving problems in the real world.

Grades 7-8

IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	<ul style="list-style-type: none"> ◆ Using effective keyboarding: <ul style="list-style-type: none"> ◆ 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) <u>and key with speed and accuracy</u> (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.
Use of Operating System and Standard Features of Applications	<ul style="list-style-type: none"> ◆ 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 <u>multiple criteria within</u> the Find command. ◆ Saving documents in multiple formats (e.g., .doc, .jpg, .pdf, .rtf, source and txt). ◆ <u>Compressing and decompressing files.</u>
Organization and Navigation	<ul style="list-style-type: none"> ◆ Creating, naming, and renaming folders. ◆ Creating folders within folders (nested folders) <u>in a purposeful structure.</u> ◆ Copying and moving files and folders. ◆ <u>Creating shortcuts/alias.</u>
Working with Files	<ul style="list-style-type: none"> ◆ Cutting, copying, and pasting within a document, across documents, and across

	<p>applications.</p> <ul style="list-style-type: none"> ◆ <u>Creating a duplicate/backup document in another location.</u>
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Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

Grades 7-8

IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	<ul style="list-style-type: none"> ◆ Documenting sources of information obtained through electronic resources using acceptable formats. ◆ <u>Applying</u> copyright and fair use guidelines <u>in student work.</u> ◆ <u>Explaining the accuracy and relevancy of the content.</u>
Acceptable Use	<ul style="list-style-type: none"> ◆ Exhibiting safe, legal and ethical behaviors when using technology. ◆ Describing societal consequences of inappropriate use.
Working with Content/ Information	<ul style="list-style-type: none"> ◆ <u>Comparing and contrasting</u> information found on the internet for relevancy, accuracy, and reliability.

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology. Students practice responsible use of technology systems, information, and software. Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

Grades 7-8

IT3 Productivity Tools

Students use technology/productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	<ul style="list-style-type: none"> ◆ 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 <u>grammar check</u>. ◆ Creating a table.
Databases	<ul style="list-style-type: none"> ◆ <u>Generating a report</u>. ◆ Creating and manipulating a database, by entering, sorting, searching/finding/querying and <u>using multiple criteria</u>.
Spreadsheets	<ul style="list-style-type: none"> ◆ Creating a spreadsheet from a blank page, including formulas and functions (<u>MIN, MAX, MEDIAN, MODE, ROUND</u>), formatting cells (e.g. numeric, monetary, percent, values). ◆ Creating a graphical representation <u>appropriate to the numerical data</u> (e.g., scatter plot, x-y) . ◆ Manipulating format (e.g., resizing rows and columns, font, colors, hiding grid).
Paint/Draw	<ul style="list-style-type: none"> ◆ <u>Importing/Inserting objects from other sources</u>. ◆ <u>Selecting and using</u> a draw or paint application appropriate for the task. ◆ Modifying a digital image using flip, rotate, resize, crop, <u>select, copy and paste</u>. ◆ Selecting and Saving images in the appropriate format (e.g., .jpg, tif, gif).
Visual Organizer	<ul style="list-style-type: none"> ◆ Illustrating a <u>variety of</u>

	<p><u>relationships, ideas and topics</u> (e.g. cause and effect, Venn diagram, organizational charts, flow chart).</p> <ul style="list-style-type: none"> ◆ <u>Importing an Illustration.</u> ◆ Linking an element to appropriate files and URLs.
Calculators	<ul style="list-style-type: none"> ◆ Using a <u>graphing</u> calculator and grade appropriate applications/functions (e.g., graphing, statistics, tables).

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

Grades 7-8

IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by... Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	<ul style="list-style-type: none"> ◆ Creating a linear <u>and</u> non-linear presentation including title slide, graphics, text, voice, sound related to topic, scanned or digital photo, animation, bibliography and table of contents, <u>video clip</u>.
World Wide Web	<ul style="list-style-type: none"> ◆ Creating a web page including text, graphics, tables and <u>relative and absolute links</u>.
Email	<ul style="list-style-type: none"> ◆ <u>Adding an entry into address book and using to send a message.</u> ◆ <u>Attaching a file to an email message and noting in the body the file format.</u> ◆ <u>Creating a mailing list.</u>

	<ul style="list-style-type: none"> ◆ Combining and compressing multiple files and sending as an attachment. ◆ <u>Creating a signature.</u>
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Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.

Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Grades 7-8

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...

Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	<ul style="list-style-type: none"> ◆ Locating information that is accurate, relevant, appropriate and <u>identifying possible bias</u> (opinion vs. fact) using a variety of electronic resources.
Searching and Search Engines	<ul style="list-style-type: none"> ◆ <u>Comparing and contrasting: directories, search engines, and meta-search engines.</u> ◆ Implementing a search strategy using Boolean logic (e.g., and, or, not, near).
Browser	<ul style="list-style-type: none"> ◆ <u>Exporting and importing</u> bookmarks/favorites and organizing sites into categories.
Problem Solving and Decision Making	<ul style="list-style-type: none"> ◆ 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? ◆ <u>Selecting and justifying</u> the appropriate tools and technology resources to address a variety of tasks and problems (e.g., spread

	<p>sheet vs. data base, word processing vs. presentation program).</p> <ul style="list-style-type: none"> ◆ 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 <u>or to learn something new.</u> ◆ <u>Identifying and using a defensible troubleshooting.</u> ◆ <u>Creating and using simulations or models e.g. spreadsheet to design “what if” scenarios.</u> Example: What would be the possible effects on the environment of extending moose-hunting season another week?
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Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

Students use technology to locate, evaluate, and collect information from a variety of sources

Students use technology to process data and report results.

Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks

Students use technology resources for solving problems and making informed decisions.

Students employ technology in the development of strategies for solving problems in the real world.

Grades 9-12

IT1 Basic Operations and Concepts

Students demonstrate proficiency in the effective use of technology by...

Use of Hardware	<ul style="list-style-type: none"> ◆ Using digital tools to capture images and other information (e.g., temperature, light, sound, etc.) and import them into a computer
Use of Operating System and Standard Features of Applications	<ul style="list-style-type: none"> ◆ Saving documents in multiple formats (e.g., .doc, .jpg, .pdf, .html, .gif). ◆ Compressing and decompressing files. ◆ Using electronic Help to solve a problem <u>or to learn something new.</u>
Organization and Navigation	<ul style="list-style-type: none"> ◆ Copying and moving files and folders.
Working with Files	<ul style="list-style-type: none"> ◆ Creating a duplicate/backup document in another location.

Vermont Standards 1.18, 1.19, 1.20

NETS-S

Students demonstrate a sound understanding of the nature and operation of technology systems.

Students are proficient in the use of technology.

Grades 9-12

IT2 Social, Ethical and Human Issues

Students demonstrate responsible use of technology systems, information, and software by...

Intellectual Property	<ul style="list-style-type: none"> ◆ Documenting sources of information obtained through electronic resources using acceptable formats. ◆ <u>Comparing and contrasting</u> copyright and fair use guidelines for educational <u>and other purposes.</u> ◆ Explaining the accuracy and relevancy of the content
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Acceptable Use	<ul style="list-style-type: none"> ◆ <u>Defining, defending and demonstrating safe, legal and ethical behaviors among peers and community regarding the use of technology and information.</u>
Working with Content/ Information	<ul style="list-style-type: none"> ◆ Comparing and contrasting information found on the internet for relevancy, accuracy, and reliability.

Vermont Standards 5.14

NETS-S

Students understand the ethical, cultural, and societal issues related to technology. Students practice responsible use of technology systems, information, and software. Students develop positive attitudes toward technology uses that support life-long learning, collaboration, personal pursuits, and productivity.

Grades 9-12

IT3 Productivity Tools

Students use technology/productivity tools to enhance learning, increase productivity, and promote creativity by...

Word Processing	<ul style="list-style-type: none"> ◆ <u>Applying</u> 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. ◆ <u>Merging from external data source.</u>
Databases	<ul style="list-style-type: none"> ◆ Generating a report. ◆ Creating and manipulating a data base, by entering, sorting, searching/finding/querying and using multiple criteria.
Spreadsheets	<ul style="list-style-type: none"> ◆ Creating a spreadsheet from a blank page, including formulas and functions (MIN, MAX, ROUND),

	<p>formatting cells(e.g., numeric, monetary, percent, values).</p> <ul style="list-style-type: none"> ◆ <u>Documenting spreadsheets with named cells and comments</u> ◆ 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). ◆ <u>Referencing formulas from other worksheets.</u>
Paint/Draw	<ul style="list-style-type: none"> ◆ 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 <u>converting</u> images in the appropriate format (e.g., .jpg, .tif, .gif).
Visual Organizer	<ul style="list-style-type: none"> ◆ <u>Choosing and creating effective</u> 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).
Calculators	<ul style="list-style-type: none"> ◆ Using a graphing calculator and grade appropriate applications/functions (e.g., graphing, statistics, tables, equations, matrix).

Vermont Standards 1.19, 1.20, 1.21, 1.25

NETS-S

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publication, and producing other creative works.

Grades 9-12

IT4 Communications

Students demonstrate the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences by...
 Students use telecommunication to collaborate, publish, and interact with peers, experts and other audiences by...

Multi-media	<ul style="list-style-type: none"> ◆ 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.
World Wide Web	<ul style="list-style-type: none"> ◆ Creating a web page including text, graphics, tables and relative and absolute links, <u>sound elements</u>, <u>graph imported from a spreadsheet</u>, <u>original digital pictures</u>. ◆ <u>Optimizing graphics for web pages for loading over slow Internet connections</u>.
Email	none

Vermont Standards 1.11, 1.17, 1.19, 5.15

NETS-S

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
 Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Grades 9-12

IT5 Research, Problem Solving and Decision Making

Students demonstrate use of technology for research by...
 Using technology, students demonstrate processing data, solving problems, reporting results, and making decisions by...

Digital Resources	<ul style="list-style-type: none"> ◆ Locating information from <u>specialized online databases (e.g. post-secondary resources, virtual libraries, periodical databases, and</u>
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	<u>others</u>).
Searching and Search Engines	<ul style="list-style-type: none"> ◆ <u>Selecting an appropriate tool for locating information on the Internet.</u> ◆ Implementing a search strategy using full Boolean logic <u>with parentheses</u> (e.g. behavior and cats or felines).
Browser	none
Problem Solving and Decision Making	<ul style="list-style-type: none"> ◆ 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 <u>successfully</u> using a defensible troubleshooting process. ◆ Creating and using simulations or models, e.g., spreadsheet to design “what if” scenarios.

Vermont Standards 1.12, 1.13, 2.2, 2.3, 5.14

NETS-S

Students use technology to locate, evaluate, and collect information from a variety of sources
 Students use technology to process data and report results.
 Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks
 Students use technology resources for solving problems and making informed decisions.
 Students employ technology in the development of strategies for solving problems in the real world.