

CNMI PSS Technology Benchmark Maps

Revised: April 13, 2013

Standards

Standard 1: Students demonstrate developmentally appropriate technology operations and concepts.

Standard 2: Students demonstrate use of basic applications and tools.

Standard 3: Students demonstrate use of research tools.

Standard 4: Students demonstrate the ability to use telecommunications.

Standard 5: Students demonstrate the use of technology in problem solving and decision making skills.

Standard 6: Students demonstrate knowledge of social, ethical, and human issues.

K-2 Benchmark Maps

1st Quarter

2.1.1 Use input devices and output devices (e.g., mouse, keyboard, monitor/multi-gesture touch screen, trackpads, webcam/camera).

- Identify basic parts of the computer (e.g. hard drive, mouse, etc.)

2.1.2 Use technology equipment (e.g., digital recorders, DVD/VCRs, computers, printers, cameras, student response systems, scanner, projection devices, speakers) properly

2.1.3 Use developmentally appropriate multimedia resources (e.g., interactive books/ebooks, educational software, web-based applications such as brainpop, safari montage, iXL) and a variety of media for directed activities to support learning

2.3.2 Access information from developmentally appropriate student search engines on the Internet

2nd Quarter

2.1.4 Communicate about technology using developmentally appropriate terminology

2.2.1 Use basic applications for drawing, painting, and word processing

2.2.2 Use developmentally appropriate programs and applications and be able to open, close, print, edit, and save within the programs

2.4.1 Use the Internet according to the guidelines outlined in the CNMI Public School System Internet Policy and the individual school's policy

3rd Quarter

2.3.1 Use features (e.g., spell-check, dictionary, thesaurus) of word processing programs as research tools

2.5.1 Use developmentally appropriate software programs (e.g., SOLO, logical thinking programs/web-based programs iXL, FlashMath, puzzles, writing tools) for problem solving and decision-making

2.6.1 Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom

2.6.2 Use positive social and ethical behaviors when using technology

4th Quarter

2.4.2 Gather information and communicate with others using various forms of telecommunications (e.g., video conference, e-mail, web page, educational social networking)

2.6.3 Use technology systems and software responsibly

2.6.4 Discuss basic issues related to responsible use of age appropriate technology and information and describe consequences of inappropriate use

All benchmarks are flexible

Those in bullets and parenthesis are add-ons or examples

3-6 Benchmark Maps

1st Quarter

5.1.1 Use and manage a computer operating system

5.1.2 Use developmentally appropriate multimedia resources and a variety of media for directed and independent activities (eg. digital photos, videos, music, ebooks, etc)

5.2.5 Use basic CD recording and rewriting software to record information on a CD-ROM

- Share media and record information using a software program on cloud, online/websites, storage devices (USB flash drive, SD card, CD-ROM/DVD-ROM, shared database folders)

5.3.2 Describe copyright laws and compliance of copyright laws as they apply to research information

5.3.3 Use a variety of sources (e.g. DVD, internet) to access information

5.4.1 Use telecommunications to access remote information and communicate with others in support of direct and independent learning (e.g. email, chat, skype, text)

5.5.1 Use technology resources (e.g., calculators, videos, educational software, internet) for problem solving

2nd Quarter

5.1.3 Communicate knowledge of technology using developmentally appropriate terminology

5.2.1 Use word processing software to compose, edit, and incorporate graphics into projects (e.g. Google docs, Skydrive, OpenOffice, Wordpad, MS Office)

5.2.3 Use drawing, painting, and photo-manipulation programs

5.5.3 Evaluate electronic information sources in terms of appropriateness and relevance (eg. Wikipedia is not valid source of information as it can be edited by anyone).

3rd Quarter

5.5.2 Decide in which situations technology is useful, and select the appropriate tool(s) and technology resources to address a variety of tasks and problems

5.6.1 Discuss basic issues related to responsible use of age appropriate technology and information and describe consequences of inappropriate use

5.6.2 Discuss common uses of technology in daily life and the advantages and disadvantages technology may provide [1]*

4th Quarter

5.2.2 Use appropriate software to make and interpret graphs (eg. Google forms, spreadsheet, excel)

5.2.4 Use desktop publishing programs

5.2.6 Use graphic organizing software

5.3.1 Use database software to perform tasks including, but not limited to, sorting, searching, and using library online skills (e.g. Google spreadsheet, excel, access, inventory)

7-8 Benchmark Maps

1st Semester

- 8.1.1 Apply strategies for identifying and solving routine hardware, software, and network problems
- 8.1.2 Configure and manage an operating system, and use computer operations (e.g., use trash bin, create folders) for desktop management
- 8.1.3 Use developmentally appropriate multimedia resources and a variety of media for directed and independent activities to support learning
- 8.1.4 Communicate knowledge of technology using developmentally appropriate terminology
- 8.2.3 Use content specific tools, software, and simulation tools (e.g., environmental probes, Elmo/microscopes, graphing calculators, web tools) to support learning
- 8.3.2 Access information from the Internet, CDs, and other forms of media
- 8.3.3 Use search skills to find information in the library or on the Internet
- 8.3.4 Use proper criteria to cite bibliographic references
- 8.3.6 Select appropriate resources for locating information on the Internet, CDs, videotapes, cable television, and other forms of media
- 8.4.1 Use telecommunications to collaborate with peers, teachers, experts, and others
- 8.4.2 Use telecommunications to develop solutions or products for audiences inside and outside the classroom
- 8.5.1 Explain concepts underlying hardware, software, connectivity, and practical applications to learning and problem solving
- 8.5.2 Use appropriate tools and technology resources to accomplish a variety of tasks and solve problems
- 8.5.3 Research and evaluate electronic information sources in terms of accuracy, relevance, appropriateness, comprehensiveness, and bias concerning real-world problems

2nd Semester

- 8.2.1 Use word processing, database, and spreadsheet software applications in meaningful ways across the curriculum
- 8.2.2 Use presentation hardware and software
- 8.3.1 Use a photocopier independently to reproduce original work, for research, and for communication to others
- 8.3.5 Evaluate resources to determine if they are appropriate for a given activity
- 8.6.1 Discuss the importance of following legal and ethical guidelines when using information and technology, and the consequences of misuse
- 8.6.2 Provide examples of current changes in information technologies and the effect those changes has in school, in the workplace, and in society
- ***8.2.4 Use photo manipulation software

All benchmarks are flexible

Those in bullets and parenthesis are add-ons or examples

9-12 Benchmark Maps

1st Semester

- 12.1.1 Describe the basic capabilities and limitations of technology's hardware and software
- 12.1.2 Accomplishes similar computer-based tasks across platforms, using Macintosh, Windows, and /or Linux operating systems
- 12.1.4 Make informed choices among technology systems, resources, and services [6]*
- *** 12.1.5 Apply strategies for identifying and solving routine hardware, software, and network problems
- 12.2.3 Use desktop publishing software and supporting hardware
- 12.3.1 Use strategies to locate electronic information
- 12.3.2 Use advanced Internet search strategies
- 12.4.1 Use online information resources to meet needs for collaboration, research, publications, communications, and productivity [5]*
- 12.6.1 Use technology and information in a way that provides a model of legal and ethical behavior for peers, family, and the community
- 12.6.2 Evaluate the advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole

2nd Semester

- 12.1.3 Use developmentally appropriate multimedia resources and a variety of media for directed and independent activities to support learning
- 12.2.1 Use spreadsheet software to perform a variety of tasks including, but not limited to, interpreting and creating charts, editing existing data for predictions, forecasting, and problem solving
- 12.2.2 Create databases, graphics, and spreadsheets, and integrate them into word processing documents to manage information and create reports
- 12.5.1 Use simulations to understand real-world situations
- *** 12.2.3. Use multimedia presentation software to create a variety of student products to disseminate information. (e.g. powerpoint, prezi, video, iMovie, educreation, edcanvas, showme)
- *** 12.2.4 Use photo manipulation programs

All benchmarks are flexible

Those in bullets and parenthesis are add-ons or examples

K-12 Definitions

.com - A website extension that identifies the site as a commercial site

.edu - A website extension that identifies the site as an educational institution, usually a college or university

.org - A website extension that identifies the site as a non-profit, non-governmental organization

Alias – A file that points to another item, such as a program, document, folder, or disk. When an alias is opened, the original item that the alias points to is opened. This helps in the organizing and accessing of files. Alias is purely a Mac term. The equivalent term for Windows-based computers is a shortcut.

Application - A software program that lets you complete a task, such as writing a paper, creating a poster, designing an image, or viewing a Web page.

Backup - To save a second copy of data files, in case the first one doesn't work

Benchmark – a translation of a standard into what the student should know and be able to do at developmentally appropriate levels (i.e., grades K-2, 3-5, 6-8, and 9-12)

Browser – The software application that allows you to view Internet pages.

Buffer - The buffer is a section of the computer where data is stored before being used. This buffering allows time for an application to fix differences in bit rates among other things. It creates a space of time for compensation.

Byte - A unit of space. It is also used to represent a series of seven or eight ASCII code digits representing a character.

C++ - A popular programming language

Cache - A memory section of the hard drive that holds information while the CPU is working on it

Cc - Carbon copy or Confidential Copy—send a copy of an email to another person

CD-ROM (Compact Disc-Read-Only Memory) – a storage media that is able to store up to 660MB of information (e.g., text, graphics, audio, and full-motion video)

Cells - The intersection of a row and a column in Excel—where data can be inserted

Chevron - Double arrows at end of tool bar that allow you to show buttons on two rows

Clip Art - Graphics, pictures, sometimes called click-art

Clipboard - A windows program that saves information you copy, to be pasted into a program later

Columns - The vertical arrangement of cells identified by a letter in Excel

Computer - is a programmable machine designed to automatically carry out a sequence of arithmetic or logical operations.

Computer virus - A destructive computer program that invades by means of a normal program and damages

Configure – to set the details or structure of a system (e.g., operating system)

Content Standard – a description of what students should know and be able to do within a particular discipline or content domain

Copyright - a form of protection provided to the authors of “original works of authorship” including literary, dramatic, musical, artistic, and certain other intellectual works, both published and unpublished

CPU - Central Processing Unit. The CPU is the hardware that most people consider the "brain" of the computer.

Curriculum Framework – serves as a bridge between standards and the classroom and provides curriculum content, organization, and presentation

Curriculum Standard – activities used in classroom instruction to teach the benchmarked standard

Cursor - visually distinct mark on a display indicating where newly typed text will be inserted. The cursor moves as text is typed and, in most modern editors, can be moved around within a document by the user to change the insertion point.

Data - Anything that is recorded or used for processing. The stuff that transfers between computers needed a name -- data seemed good.

Database - One or more large structured sets of persistent data, usually associated with software to update and query the data.

Desktop - The windows-generated look of the computer before programs are opened with icons, taskbar, and clouds

Desktop Publishing – the use of a computer to produce documents for publication

Dialog Box - A box that contains a message, often requesting more information or allowing you to select among options

Digital - Your CD player is digital. It is a series of small samples of data playing together very quickly (30,000 times a second). Digital recording of information means representing the bits of data through ones and zeros. Playing the bits back to again create what was recorded is called digital processing

Dingbats - Picture fonts

Disk - Either hard or floppy. Used to store data

Doc - The three-letter extension that tells a user that a document was saved in Word

Domain - A group of computers whose hostnames share a common suffix, the "domain name". The last component of this is the top-level domain.

Download - To save a file onto your computer from another source, like the Internet. People often download files, such as free-ware, share-ware, for installations, and sounds, movie clips, text files, or news streams onto their computer for viewing or listening.

Drag - To select with the left mouse button and move to a new location

drag- To select with the left mouse button and move to a new location

Drill down - Moving from a general level to a detailed level

Drop down arrow - The black arrow next to a tool that provides selections within a tool

Drop down Menu - A menu that has multiple commands that show when you select it

E-Mail (Electronic Mail) – correspondence across a network by way of an on-line message-handling computer program

Environmental Probe – computer peripheral that senses environmental data and communicates reading directly into the computer for recording and storage (e.g., pH sensor, humidity sensor)

Ethernet - a system for connecting a number of computer systems to form a LAN, with protocols to control the passing of information and to avoid simultaneous transmission by two or more systems

Excel - A spreadsheet application developed by Microsoft. To create spreadsheets, graphs, and do basic sorting

Explorer - A program in Windows that displays all files, folders and programs available on a computer

Export - To save data or pictures in a form other programs can read

Extension - The three-letter extension that tells a user that a document was saved in Word

FAQ - An acronym for Frequently Asked Questions

Favorites - Where often-used websites are saved on an internet browser

Fill - Background color of a picture, text box or diagram

Firewall - a part of a computer system or network that is designed to block unauthorized access while permitting outward communication

Flash drive- Memory stick-portable place to save files

Floppy Drive - A location on the computer that holds a removable disk

Folder - A icon on the desktop that can hold multiple programs

Font - A set of letters, numbers that are of a given look and appearance.

Footer - Information that appears at the foot of every page—usually the name, page number and document title

Format - To change the look of text on a page to communicate better—bold, italics, color, font, size

Formula - always starts with “=” signs and describes what the calculations for that cell will be, i.e., add, subtract, etc.

GIF - An image format, an acronym for Graphical Interchange Format

gigabyte - (GB) It's about a billion bytes. Actually it's 2 to the 30th power or 1,073,741,824.

Graphic Applications Software – one of a number of types of computer software that enables the user to create or manipulate illustrations, graphs, drafting products, and a variety of other images

Graphic organizer - A diagram that organizes information on a topic for the user

Graphic organizing software - Visual representation of the material a student is learning (e.g charts

Graphics – the digital version of an image, a photograph, or a picture displayed on a monitor screen

Graphing Calculator – a hand-held calculator that, in addition to performing calculations and functional operations, can graph functions and relations

Hard drive - A device for storing information in a fixed location within your computer. The equivalent of a filing cabinet in an office, the hard drive is used for storing programs and documents that are not being used.

Header - Information that appears at the head of every page in a document—usually the author’s name, the document title and the page number

Hits - The number of matches made by a search engine like Google in a search.

Homepage - The page on the Internet which most often gives users access to the rest of the Web site. A site is a collection of pages.

Hour glass - The picture showing that the computer is “thinking” before it performs your command

Hover - To “float” the cursor over a command until some information shows

HTML - The coding language used to create internet documents. An acronym for HyperText Markup Language

Hyperlink - A link on a webpage to another webpage on the internet

Hypertext This is a markup language that allows for non-linear transfers of data. The method allows your computer to provide the computational power rather than attaching to a mainframe and waiting for it to do the work for you.

Icon - Symbols or illustrations on the desktop or computer screen that indicate program files, documents, or other functions.

Indent - To use the tab key to start writing or typing a short distance in from the margin

Input device - A peripheral used to transfer data from the outside world into a computer system. Some input devices are operated directly by the user, e.g. keyboard, mouse, touch screen, joystick, digitising tablet, microphone;

Internet - A world-wide network of computer networks in which users at any one computer can, if they have permission, get information from any other computer.

Intranet - a local or restricted communications network, especially a private network created using World Wide Web software

ISP (Internet Service Provider) - A group that provides access to the internet. An acronym for Internet Service Provider

Java - A program that recreates information so it can be read by most computers

JPEG (Joint Photographic Experts Group) - An image format allowing for compression when stored. An acronym for **Jump drive** - Memory stick—portable place to save files

KB (Kilobyte) - a thousand bytes

LAN (Local Area Network) - A computer network limited to the immediate area, usually the same building.

Link - To connect one page on the internet to another

Login - To attach to a computer. It has also come to represent your User ID command.

Macro - A series of actions that occur following one key stroke

Master-slave - The relationship between a dominant drive and the secondary one

Maximize - To enlarge the window of a program so that it fills the screen

Megabyte - (MB) About a million bytes of space. Actually it's 2 raised to the 20th power or 1,048,576 bytes of space.

Menu Bar - The word commands at the top of a program that activate drop-down menus

Minimize - To downsize an open program onto the taskbar

Mouse-over - To “float” the cursor over a command until some information shows

MPEG - A format for viewing digital video files. An acronym for Motion Picture Experts Group

Multimedia – the combination of audio, video, animation, and graphics used to disseminate information under computer control

Netiquette - Proper manners on the internet

Network - This a system that sends and receives data.

Numbered outline - An indented list using numbers/ letters to organize information

Operating System – software that controls a computer and its peripherals

Output devices - equipment connected to a computer and used to transfer data out of the computer in the form of text, images, sounds or other media to a display screen, printer, loudspeaker or storage device.

Overwrite- Destroy (data) or the data in (a file) by entering new data in its place.

Photo-manipulation – the ability to alter a scanned photo image

Platform – computer hardware and the operating system that runs on it (e.g., a Macintosh computer or Windows-based PC)

Pointer - An icon, usually a small arrow, that moves on the screen in response to movement of a pointing device, typically a mouse..

Presentation Hardware/Software – computer hardware/software designed to support presentations involving multimedia (e.g., PowerPoint)

Printer - A peripheral device for producing text and images on paper.

Processor - the central processing unit

RAM - Random Access Memory. Readable and writeable memory that acts as a storage area while the computer is on, and is erased every time the computer is turned off. This memory stores data and helps execute programs while in use.

Recycle Bin (Trash-bin)- Where all deleted files are stored on the computer desktop

ROM - Read Only Memory. Readable memory that cannot be corrupted by accidental erasure. ROM retains its data when the computer is turned off.

Router - a device that forwards data packets to the appropriate parts of a computer network

Search Engine – software that allows retrieval of information from electronic databases (library catalogs, CD-ROMs, the Web) by locating user-defined characteristics of data such as word patterns, dates, or file formats

Shortcut – A file that points to another item, such as a program, document, folder, or disk. Key strokes that enact the same commands

available in the menus of a program. They are quicker and more direct and usually involve two or three keys depressed simultaneously. An example is the save shortcut: CTRL + s on a PC or s on a Mac.

Software- This is a program, the actual code the computer reads. All other stuff is hardware. A floppy disc is hardware.

Spyware- is a type of malware (malicious software) installed on computers that collects information about users without their knowledge.

Standard – a description of what students should know and be able to do at the highest level of generality (e.g. concept)

Switch - is a computer networking device that connects network segments

Taskbar - The gray bar at the bottom of the desktop showing what programs are open

Telecommunications – includes all types of electronic communication services, including satellite, fiber-optic, computer-based transmission, telephone, and radio

Terabyte- (TB) It's about a trillion bytes. Actually it's 2 to the 40th power or 1,009,511,627,776 bytes.

Toolbar - A collection of icons that make choices available, especially in picture editing

Trademark - is a word, name, symbol, or device which is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others

Transition - The way one slide goes into another

Upload - To transfer programs or data over a digital communications link from a smaller or peripheral "client" system to a larger or central "host" one.

URL - A standard address on the world wide web. An acronym for Uniform Resources Locator

USB - A port where you put the flash drive—in the front of the CPU

Virus - A program designed to damage files, usually delivered via the internet to unsuspecting users

Note: Definitions compiled here are suggested and recommended technology terminology a student should know by the 8th grade. It is upon a teacher's discretion to teach the terminology that is age and grade appropriate for their class.