

## Grades 9-12

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H-1 Independently demonstrate basic operation, troubleshooting, file management, and file transfer skills in varied operating systems, network configurations, and web-based servers.

H-2 Demonstrate proficiency in the use of a word processing program to produce comprehensive documents including tables and graphs.

H-3 Use spreadsheets to analyze and communicate data using advanced formulas, various number formats, and graphs or charts.

H-4 Identify, download, import, transfer and convert graphic, sound, and video files. Integrate different graphic formats where appropriate (e.g., PICT, TIFF, JPEG) into various applications.

H-5 Create a content-rich digital presentation (movie, multimedia presentation, brochure, web page) appropriate to the target audience. (Examples of software: iMovie, PowerPoint, Dreamweaver, Word, InDesign, Flash.)

H-6 Access, evaluate and cite information from electronic sources and the Internet for the purpose of academic research.

H-7 Use online tools (e.g. Tunitin.com, Survey Monkey.com) to access and submit files and to interpret results as they apply to projects.

H-8 Demonstrate understanding of the Westford Acceptable Use Policy through the practice of legal and ethical use of information and communication technologies.

H-9 Use appropriate specialized technology tools for problem-solving, decision-making, and creativity (e.g., simulation software, environmental probes, computer-aided design, geographic information systems, dynamic geometric software, graphing calculators, art and music composition software).

H-10 Use database applications to analyze and report data relevant to a hypothesis or research

H-11 Independently use e-mail and online resources to submit and transfer files for academic purposes.

## About the Instructional Technology Benchmarks

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These benchmarks outline the abilities that students need to use the basic information and communication technology tools that are required to succeed as workers and citizens in the increasingly global society of the 21st century. To meet these benchmarks requires that students use the tools not just to acquire information, but to think critically and solve problems while engaging with the real world content of the curriculum subjects. In the Westford Public Schools, these experiences are delivered through the consultative model in which Instructional Technology Specialists and subject teachers collaboratively plan, teach, and assess research projects that arise from significant curriculum content. The depth of the curriculum projects implied by these benchmarks generally require multiple technology sessions that are flexibly scheduled to be contiguous in time and occur when appropriate in terms of the classroom curriculum.

These Instructional Technology Benchmarks are based on the Instructional Technology Standards of the Massachusetts Department of Education. The Massachusetts standards are in turn based on the National Educational Technology Standards of the International Society for Technology in Education in collaboration with the US Department of Education.

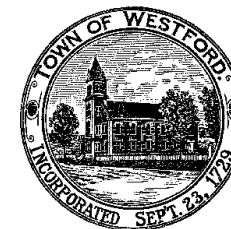
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*Shaping the future, one child at a time.*



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## INSTRUCTIONAL TECHNOLOGY BENCHMARKS

for  
**Grades K-12**

**June 6, 2006**

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## Grades K-2

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P-1 Demonstrate basic skills for using hardware and software (e.g. using the mouse and keyboard, opening and closing documents, navigating through windows, and using correct terminology).

P-2 Perform a writing task that includes simple formatting on a word processor (delete with Delete/Backspace, capitalize with Shift , indent with Tab, new lines/paragraphs with Enter/Return key, proper spacing after words and punctuation.)

P-3 Participate in a project that includes using a simple spreadsheet.

P-4 Participate in a project that includes the use of an appropriate painting/drawing (e.g. KidPix) application.

P-5 Participate in a project that includes the creation of a class slide presentation.

P-6 Participate in a project that includes gathering information from one or more electronic sources (e.g., Internet, CD-ROM, online periodical databases, online catalogs).

P-7 Participate in a project that includes using and evaluating teacher-selected Web sites. (May optionally include sending class email messages.)

P-8 Follow classroom and WPS rules for safe and responsible computer use.

P-9 Participate in a project that uses an interactive graphic organizer (e.g. Kidspiration) to organize information.

P-10 Explore developmentally appropriate simulations, math software and other content-specific tools designed to enhance understanding.

## Grades 3 to 5

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E-1 Identify components of a computer system and their function; use appropriate terminology in speaking about computers

E-2 Complete a writing project in Language Arts or another subject with a word processor using basic editing and formatting functions, saving and opening of files and printing.

E-3 Complete a project in science, social studies or another area that uses graphing (charting) tools to manipulate and analyze data.

E-4 Complete a curriculum project that includes capturing an image from the Web and inserting it into a word processing or presentation document with proper citation.

E-5 Complete a project that uses presentation or hypermedia software to create a slide show to represent learning in a curriculum area

E-6 Complete a curriculum-based project that synthesizes information from multiple electronic sources

E-7 Complete a curriculum-based project that uses a Web browser to navigate a web site and employs bookmarks.

E-8 Use a variety of specialized tools for problem-solving in areas of the elementary curriculum.

E-9 Complete a project that requires the organization of data in a curriculum area using an interactive graphic organizer.

E-10 Complete a curriculum project that requires the use of basic database functions (simple searching and sorting)

E-11 Complete a research project that includes communication of results with others using appropriate electronic tools.

## Grades 6 to 8

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M-1 Demonstrate the ability to organize files with folders on a local and remote hard drive, print documents using proper settings and save work to the desired location.

M-2 Utilize word processor editing and formatting features (e.g., cut and paste, spell & grammar checking, center, line spacing, margins, font settings, automatic page numbering) to create document that clearly communicates content and learning.

M-3 Construct, populate, and manipulate spreadsheets which include formulas & charts to communicate data in a meaningful way.

M-4 Utilize a draw/painting program to edit and create images that illustrate content learning.

M-5 Create multimedia presentation that synthesizes and communicates content learning (Examples: Powerpoint, iMovie, Timeliner, Sound Studio, Mapmaker, web page)

M-6 Conduct efficient research with online and other electronic resources to find relevant information for investigating a question or solving a problem in a curriculum area.

M-7 Create a project that conveys the mastery of the navigation features of a browser (navigation buttons, URLs, hyperlinks, bookmarks, search engines) and other online skills such as website evaluation and citing of sources

M-8 Identify and understand the district's Acceptable Use Policy and relevant safety and legal issues.

M-9 Use interactive software to organize and represent content learning (Examples: Timeliner, Inspiration)

M-10 Construct, populate, and manipulate a database to perform a variety of searches and sorts relevant to a curriculum assignment

M-11 Capture images for use in presentations, documents or web pages. e.g. image capture, digital camera, scanner, etc.

M-12 Transport files to and from school utilizing available technology.