Clark County Schools

Integrating Technology in the Curriculum For Elementary, Middle, and High School

August 2005
Revised

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Clark County
Integrated Technology Curriculum

The curriculum for integrating technology in all classrooms in Clark County is based upon the national technology standards for students developed by the ISTE (International Society of Technology Educators) NETS (National Educational Technology Standards) Committee. This committee was comprised of educators and representatives from Apple Computer, Inc., Milken Exchange on Education Technology, National Aeronautics and Space Administration (NASA), and the U.S. Department of Education.

The Technology Foundation Categories for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by the student. These categories provide a framework for linking standards indicators within the Profiles for Technology Literate Students. Teachers can use these categories and standards as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

Clark County is working successfully with teachers, students, family, and other technology staff to integrate the Technology Foundation Standards into the Kentucky Core Content to increase student achievement. The goal is to integrate technology across educational setting which will enable students to become:

- **Capable information technology users**
- **Information seekers, analyzers, and evaluators**
- **Problem-solvers and decision makers**
- **Creative and effective users of productivity tools**
- **Communicators, collaborators, publishers, and producers**
- **Informed, responsible, and contributing citizens**

Technology Foundation Categories for Students

1. **Basic operations and concepts**
   - Students demonstrate a sound understanding of the nature and operation of technology systems.
   - Students are proficient in the use of technology.

2. **Social, ethical, and human issues**
   - 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 lifelong learning, collaboration, personal pursuit, and productivity.

3. **Technology productivity tools**
   - Students use technology tools to enhance learning, increase productivity, and promote creativity.
   - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

4. **Technology communications tools**
   - 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.

5. **Technology research tools**
   - Students use technology to locate, evaluate, and collect information from a variety of sources.
   - Students use technology tools to process data and report results.
   - Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

6. **Technology problem-solving and decision-making tools**
   - 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.

Technology Foundation Standards

STANDARDS:

Grades Pre K-2

Prior to completion of Grade 2, students will:

1. Use input devices (mouse, keyboard, remote control) and output devices (monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies. (1)
2. Use a variety of media and technology resources for directed and independent learning activities. (1, 3)
3. Communicate about technology using developmentally appropriate and accurate terminology. (1)
4. Use developmentally appropriate multimedia resources (interactive books, educational software, elementary multimedia encyclopedias, and adaptive software) to support learning. (1)
5. Work cooperatively and collaboratively with peers, teachers, family, and others when using technology in the classroom. (2)
6. Demonstrate positive social and ethical behaviors when using technology. (2)
7. Practice responsible use of technology systems and software. (2)
8. Create developmentally appropriate multimedia products (hyper studio, PowerPoint, etc.) with support from teachers, family members, or peers. (3)
9. Use technology resources (logical thinking programs, writing tools, digital cameras, presentation graphics, and student email) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)
10. Gather information and communicate with others using telecommunications (email, distance learning, phone, chat, and instant messaging), with support from teachers, family, or peers. (4)

Categories
Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:
1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Kindergarten Technology Skills

Application and Operation of Computers

Application

- ❑ Identify ways in which computers are utilized in the community (banks, offices, homes, schools) (2)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)

Operation

- ❑ Demonstrates correct use of a computer (clean hands, keep food and drinks away, press keys gently, keep pencils, crayons and magnets away) (1)
- ❑ Identify the various physical components of a computer system (monitor, keyboard, disk drives, mouse, printer, headset outlet) (1)
- ❑ Manipulate cursor on screen using a pointing device (1)
- ❑ Use the scroll bar to move up and down a page (1)
- ❑ Open and quit an application (1)
- ❑ Close a file with assistance (1)

Keyboarding

- ❑ Select keys on the computer keyboard which represent desired letters, numbers and other commonly used keys (return/enter, space bar, delete/backspace) (1, 3, 6)

Word Processing

- ❑ Use keyboard to type first name (1, 3, 4)
- ❑ Use keyboard to type words/sentences/stories using spelling rules (1, 3, 4, 6)

Graphics

- ❑ Create images using a free-form drawing tool (5)
- ❑ Create images using geometric shapes (5)
- ❑ Modify images (area color fills, area pattern fills) (5, 6)

Categories
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1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communicatio n tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Electronic Communications

- ❑ Begin to access the Internet through the Clark County Schools' website (4, 5)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
  Demonstrate positive social and ethical behaviors when using technology. (2)

First Grade Technology Skills

Application and Operation of Computers

Application

- ❑ Identify occupations in the community that involve the use of computers (1, 2)
- ❑ Identify the effects of technology tools which communicate information in the community (school's website) (1,2)
- ❑ Use appropriate terminology to describe the technologies being used (identify computer components and familiar software and operations) (1)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)

Operation

- ❑ Start up and shut down computer (1)
- ❑ Demonstrate care for technology equipment (1)
- ❑ Store and handle disks appropriately (1)
- ❑ Insert and remove floppies and CD's (1)
- ❑ Act in a responsible manner when close to hardware (1)
- ❑ Demonstrate correct use of a computer (1)
- ❑ Demonstrate proper posture at the keyboard, sitting with "h" key at body center (1)
- ❑ Use appropriate terminology to describe the components of a computer system (disk drives A & C, disk, software, hardware, cursor) (1)
- ❑ Locate controls on equipment (switches and buttons) (1)
- ❑ Navigate the computer desktop (using the mouse, pull down menus and arrow keys)
- ❑ Open and quit an application (1)
- ❑ Save a file on a data disk (1)
- ❑ Open existing file with assistance (1)
- ❑ Print a file with assistance (1)
- ❑ Enter User ID when prompted (1)
- ❑ Respond to messages displayed on the monitor with assistance (1)
- ❑

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2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Keyboarding

- ❑ Become familiar with the placement of keys on the keyboard (shift key, arrow keys, period) (1,3)

Word Processing

- ❑ Begin to use the vocabulary of word processing software (insert, delete, I-beam, cursor/pointer) (1, 3, 6)

- ❑ Use keyboard to enter characters and text as prompted on the computer screen (1, 3, 6)
- ❑ Use keyboard to type first and last name (1, 3, 6)
- ❑ Use keyboard to type text (1, 3, 4, 6)
- ❑ Delete or replace letter(s) or word(s) (1, 3, 6)

Graphics

- ❑ Use a simple paint program to illustrate an idea (1, 3, 4, 5, 6)

Accessing Information

- ❑ Begin to access information with assistance from a variety of sources (electronic books, electronic dictionaries, pictorial database, internet) (1, 2, 3, 4, 5, 6)
- ❑ Use picture icons or initial letters to locate pictures and words in an electronic dictionary (1, 3, 5, 6)

Electronic Communications

- ❑ Access the Internet through Clark County Schools' website (1, 4, 5)
- ❑ Recognize "hypertext links" in an Internet document (identify the cursor changes to a "hand", underlined and different color text) (1, 3, 5, 6)
- ❑ Follow "hypertext links" with assistance (1, 2, 3, 5, 6)
- ❑ Use the "back" button to return to previous screen with assistance (1, 3, 5, 6)
- ❑ Use "forward" button with assistance (1, 3, 5, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)

Second Grade Technology Skills

Application and Operation of Computers

Application

- Understand that the Internet is a network of computers world wide (1, 3, 4, 5)
- Understand and apply Internet etiquette (netiquette) and safety concerning information exchange (1, 2, 4, 5)
- Identify how information technology is used in everyday life (Internet, video cameras, barcode scanners, email, satellite, airplanes, etc.) (1, 2)
- Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)
- Keep passwords private (1, 2)

Operation

- Follow classroom routines and instructions for using and handling hardware (1)
- Load and save personal files (1, 3, 5, 6)
- Copy and paste information within and between applications (1, 3, 4, 5, 6)
- Print with teacher approval (1, 2, 3, 5, 6)

Keyboarding

- Use right and left hands on appropriate sides of the keyboard (1)
- Preliminary use of a "touch typing" program (1, 3)

Word Processing

- Type text from a written or printed source (handwritten stories) (1, 3, 5, 6)
- Use the space bar correctly between words (1, 3, 6)
- Use shift key and the caps lock key correctly (1, 3, 6)
- Manipulate text (make title larger than body text, center title) (1, 3, 6)
- Edit previously saved document (add or delete words/phrases, replace initial letters in proper nouns with capitals upon rereading) (1, 3, 6)
- Copy a selected sentence or picture and paste it into a word processor (1, 3, 6)
- Position image in word processor and type in title (1, 3, 6)

Graphics

- Modify images using area color and pattern fills (1, 3, 6)
- Copy, delete, resize and move text and graphic boxes (1, 3, 6)
- Manipulate shapes on screen to create new patterns (1, 3, 6)
- Insert graphics from clip art

Categories

Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Databases

- ❑ Browse an existing database file (1, 3)
- ❑ Use simple database terminology (fields, records, database, data, sort, find) (1)
- ❑ Search a file for records containing information in a single field (1, 3, 5, 6)

Spreadsheets

- ❑ Browse an existing spreadsheet file (1, 3)
- ❑ Use a pre-made spreadsheet to analyze data and make graphs from classroom data pre-entered by a teacher (1, 3, 5, 6)
- ❑ Begin to use spreadsheet terminology (cell, format, column, row, spreadsheet, data, graphics) (1)

Authoring/Presentation Tools

- ❑ Browse text, pictures and sound from a prepared presentation (PowerPoint Presentation) (1, 3)
- ❑ Use a teacher-prepared template to create a multimedia presentation (1, 3, 6)

Accessing Information

- ❑ Access information from a variety of sources (electronic books, electronic dictionaries) (1, 2, 3, 4, 5, 6)
- ❑ Use web page links to navigate the Internet (1, 2, 3, 4, 5, 6)
- ❑ Choose a familiar electronic dictionary for locating spelling (1, 3, 5, 6)
- ❑ Choose a familiar draw or paint program to match words and pictures by moving text and graphics on screen (1, 3, 6)
- ❑ Choose a familiar paint program to create an illustration (1, 3)

Electronic Communications

- ❑ Apply elements of design in a communication (make title larger than body text, center title…letter writing) (1, 3, 4, 6)
- ❑ Participate in whole-class projects to exchange electronic information (email message to a partner class) (1, 2, 3, 4, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)

Technology Foundation Standards

STANDARDS:

Grades 3-5

Prior to completion of Grade 5, students will:

1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)

2. Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (1, 2)

3. Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

4. Use productivity tools (software, word, and excel) and peripherals (printers, digital cameras, and scanners) to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum. (3)

5. Use technology tools (multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products to share within classrooms, schools, and community. (3, 4)

6. Use telecommunications (email, distance learning, and web broadcasts) efficiently to access information, communicate with others in support of direct and independent learning, and pursue personal interests. (4)

7. Use telecommunications (email, distance learning, instant messaging, and web broadcasting) and online resources (e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products to share within classrooms, schools, and community. (4, 5)

8. Use technology resources (calculators, data collection probes, Internet, videos, educational software) for problem solving, self-directed learning, and extended learning activities. (5, 6)

Categories

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1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

9. Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)

10. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources (CD ROMs, Internet). (6)

Third Grade Computer Skills

Application and Operation of Computers

Application

- ❑ Demonstrate an awareness of the function of information technology (explain that computers store large amounts of data that can be retrieved quickly and easily) (1)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)
- ❑ Keep passwords private (1, 2)

Operation

- ❑ Respond to computer messages displayed on the monitor (login, trouble-shooting) (1, 3, 4, 5, 6)
- ❑ Demonstrate responsibility and an awareness of appropriate conduct when using information technology (Internet etiquette, netiquette) (1, 2)
- ❑ Report a communication that is disturbing (harassing e-mail or messages) (1, 2)
- ❑ Persevere when faced with difficulties (1, 6)

Keyboarding

- ❑ Identify the functions of appropriate keys on the computer keyboard (capital letter and punctuation, space bar, deleting text, control, option, command) (1, 3, 4, 5)
- ❑ Begin to use correct fingering to type (keys by touch) (1)
- ❑ Using proper technique at the keyboard (sit up straight, feet flat, not resting wrists on the keyboard, not looking at keys) (1)

Categories

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1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Word Processing

- ❑ Begin to use the vocabulary of word processing software (insert, delete, I-beam, pointer) (1, 3)
- ❑ Locate and enter punctuation marks (1, 3)
- ❑ Use the space bar correctly before and after punctuation (1, 3, 6)
- ❑ Use the return key correctly (1, 3)
- ❑ Compose and layout poems and a single paragraph of text (1, 3, 6)
- ❑ Revise a story by adding and inserting ideas (1, 3, 6)
- ❑ Edit known spelling and punctuation errors by deleting and replacing and/or using spellchecker (1, 3, 6)
- ❑ Select a familiar word processor to write text (1, 3)

Graphics

- ❑ Select and move an image (drop and drag) (1, 3, 6)
- ❑ Reshape pictures and text blocks (1, 3, 6)
- ❑ Explore sliding, flipping and turning of geometric shapes (1, 3, 6)
- ❑ Use simple vocabulary of graphics software (1, 3)
- ❑ Crop or select part of a digitized image (1, 3, 6)

Databases

- ❑ Sort records in alphabetic or numeric order using a single field (1, 3, 5, 6)
- ❑ Add/edit a record in an existing file (1, 3, 6)
- ❑ Analyze data in a database and answer specific questions (1, 3, 5, 6)

Spreadsheets

- ❑ Enter text and numbers by moving from cell to cell to design a spreadsheet with titles and data (1, 3)
- ❑ Format cells for size (1, 3)

Authoring/Presentation Tools

- ❑ Use a software program to author and present a story including sound and graphic elements (1, 3, 6)
- ❑ Be familiar with simple authoring/presentation terminology (page/card, button, background, graphic, icon) (1)

Accessing Information

- ❑ Use simple strategies to retrieve relevant information (save a simple encyclopedia article containing desired information internet database) (1, 2, 3, 5, 6)
- ❑ Copy and paste information into a word processing document (1, 3, 6)

Electronic Communications

- ❑ Understand the expected behaviors required when using telecommunications (Internet etiquette, netiquette) (1, 2, 4, 6)
- ❑ Move around the desktop and select hyperlinks (1, 3, 4, 6)
- ❑ Move back and forward through web sites by using buttons on the tool bar (1, 2, 3, 6)
- ❑ Become familiar with Clark County Schools' website (1, 2, 3, 4, 5, 6)
- ❑ Use simple search strategies to locate relevant information (use a series of menus in a children's website to locate information about a topic) (1, 2, 3, 4, 5, 6)
- ❑ Access existing bookmarks (1, 2, 3, 4, 5, 6)
- ❑ Identify, from familiar resources, appropriate sources for locating specific information (a familiar website for locating pictures on a specific topic) (1, 2, 3, 4, 5, 6)

- ❑ Understand basic Internet terminology (World Wide Web, links, sites, bookmarks) (1, 4, 5)

Multimedia

- ❑ Browse text, pictures and sound on a CD ROM (1, 3)
- ❑ Create a simple interactive hypermedia presentation (1, 3, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)
- ❑ Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (Barcode scanners, computers, video cameras, e-mail) (2)
- ❑ Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

Fourth Grade Technology Skills

Application and Operation of Computers

Application
- ❑ Demonstrate an awareness of the advantages of using information technology (1)
- ❑ Explain that using electronic communication is faster and more efficient than using conventional methods (1)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)
- ❑ Keep passwords private (1, 2)

Operation
- ❑ Open and close an existing file (1, 3, 4, 5, 6)
- ❑ Use filenames and folders that ensure easy location and retrieval of information (1, 3, 4, 5)
- ❑ Refrain from accessing the files of others (1, 2)
- ❑ Use virus scan to check disks and hard drive (1, 6)

Keyboarding
- ❑ Recognize the home row on the keyboard (1)
- ❑ Locate function keys and other special keys specific to the keyboard being used (1, 3, 4, 6)
- ❑ Maintain a steady pace while typing (1)

Word Processing
- ❑ Compose at the keyboard (1, 3, 4, 6)
- ❑ Delete letters, words, or phrases correctly (mouse vs. delete key) (1, 3, 4, 6)
- ❑ Insert letters, words, or phrases correctly (1, 3, 4, 6)
- ❑ Format the page to improve readability with spacing (indent): using centering, line spacing; variation in text size, text style and font (1, 3, 4, 6)
- ❑ Use portrait and landscape layouts (1, 3, 6)
- ❑ Revise a story by reworking some sentences, adding description (1, 3, 6)
- ❑ Edit for spelling and punctuation (1, 3, 4, 6)

Graphics
- ❑ Add text to an image (1, 3, 6)
- ❑ Select and flip images, horizontally and vertically (1, 3, 6)
- ❑ Select, rotate and resize images (1, 3, 6)
- ❑ Choose a draw program to explore creating designs (1, 3, 6)

Categories

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2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Desk Top Publishing

- ❑ Investigate more complicated tasks (newsletters, cards, brochures) (1, 3)
- ❑ Learn and apply desk top publishing guidelines (no more than 5 fonts and/or sizes per page, placement of graphics) (1, 3, 6)
- ❑ Create a one-page newsletter for sharing information with families (1, 3, 6)
- ❑ Create a poster or flyer (1, 3, 6)

Databases

- ❑ Search a simple database to locate specific information (1, 3, 5, 6)
- ❑ Sort records in alphabetic or numeric order using multiple fields (1, 3, 5, 6)
- ❑ Compose questions to be solved using the database information (1, 3, 5, 6)
- ❑ Use a database template to classify and compare research information (1, 3, 5, 6)

Spreadsheets

- ❑ Copy and paste text and numbers (1, 3)
- ❑ Format cells for a specific purpose (1, 3, 6)
- ❑ Insert or delete rows or columns (1, 3, 6)

Authoring/Presentation Tools

- ❑ Be familiar with more advanced authoring/presentation terminology (hypertext, links, slide show, linear, script, layout) (1, 3, 6)
- ❑ Create an interactive presentation to share learning from a project with peers (1,6)
- ❑ Create an electronic presentation/slide show with assistance (1, 3, 6)

Accessing Information

- ❑ Gather information from text, graphics, audio and video clips in an electronic encyclopedia/Internet (1, 3, 4, 5, 6)
- ❑ Use two keywords to search an electronic encyclopedia (1, 3, 5, 6)
- ❑ Select, copy and paste key points from an electronic encyclopedia into a document (1, 3, 5, 6)
- ❑ Choose an information CD-ROM to conduct research for a project (1, 3, 5, 6)

Electronic Communications

- ❑ Recognize the importance of the status bar when making a connection to a site (1, 3, 4, 6)
- ❑ Use bookmarks to access and save selected sites (1, 3, 4, 5, 6)
- ❑ Display some consistency within a communication in the placement and size of key elements (graphics, title, body text, buttons) (1, 3, 4)

Multimedia

- ❑ Convert non-electronic information to electronic (using microphone, scanner, digital and video cameras, if available) (1, 3, 5, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)
- ❑ Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (2)
- ❑ Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

Fifth Grade Technology Skills

Application and Operation of Computers

Application

- ❑ Recognize and describe information technology tools for performing a variety of tasks (identify a hard drive, floppy disk or server as a storage device) (1)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)
- ❑ Keep passwords private (1, 2)

Operation

- ❑ Start up, set up and shut down peripherals (printers, scanners) (1, 6)
- ❑ Save an existing file with a different name (1, 3, 6)
- ❑ Open and use multiple applications with assistance (1, 3, 4, 5, 6)
- ❑ Convert files by opening and saving as different types (1, 3, 6)
- ❑ Access on-screen support links for on-line help (1, 3, 4, 5, 6)
- ❑ Make backups of work files (1, 3, 6)
- ❑ Attempt to problem-solve (1, 4, 5, 6)

Keyboarding

- ❑ Begin using the correct fingering on the home row (1)
- ❑ Refine the use of keyboard skills (increase speed of use, use of 2 hands) (1)
- ❑ Be self-directed in practicing and applying keyboarding skills (1)

Word Processing

- ❑ Revise by cutting and pasting sections of text (1, 3, 6)
- ❑ Revise by copying and pasting sections of text (1, 3, 6)
- ❑ Format the page to improve readability using justification (1, 3, 6)
- ❑ Format the page to improve readability using various margin settings (1, 3, 6)
- ❑ Format the page to improve readability using variation in text color (1, 3, 6)
- ❑ Compose and layout poems and multi-paragraph texts (1, 3, 6)
- ❑ Spell check words that appear to need correction (1, 3, 6)
- ❑ Create an outline for a story (1, 3, 6)

Graphics

- ❑ Select, duplicate and delete images (1, 3, 6)
- ❑ Create a picture book for younger children (1, 3, 6)

Categories

Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Databases

- ❑ Search a file for records using multiple fields and then restore the full record set (1, 3, 5, 6)
- ❑ Identify the type of data in a field (text, numeric, date, time) (1, 3, 5, 6)
- ❑ Analyze the data in a database and interpret and apply the information (1, 3, 5, 6)
- ❑ Create a simple database to collect information in order to classify characteristics (1, 3, 5, 6)

Spreadsheets

- ❑ Use a template that includes formulas (1, 3, 5, 6)
- ❑ Create graphs in several formats (1, 3, 5, 6)
- ❑ Create a simple spreadsheet to simulate and explore a situation (1, 3, 5, 6)
- ❑ Use a spreadsheet to display a chart, table or graph (1, 3, 5, 6)

Authoring/Presentation Tools

- ❑ Integrate media from outside sources into a presentation (1, 3, 4, 6)
- ❑ Create an interactive hypermedia presentation, such as a web page, to share learning within and beyond the school (1, 3, 4, 6)

Accessing Information

- ❑ Access pre-selected Internet sites using URLs (1, 3, 4, 5, 6)
- ❑ Access an article from an electronic encyclopedia and one from the Internet on the same topic (1, 3, 4, 5, 6)

Electronic Communications

- ❑ Search for information with an appropriate search engine using "key words" (1, 3, 4, 5, 6)
- ❑ Recognize "hits" received from a web search and evaluate them for appropriateness (1, 4, 5, 6)
- ❑ Recognize the significance of error messages (1, 4, 5, 6)
- ❑ Use a children's search engine to locate information using pre-selected keywords and hypertext menus (1, 5, 6)
- ❑ Maintain consistency of style in the key elements of a communication (button style and placement, title and body text styles, graphic borders) (1, 4, 6)
- ❑ Use some basic conventions of "netiquette" in telecommunications exchanges (use upper/lower case appropriately, space text, sign the message) (1, 4, 6)

Multimedia

- ❑ Copy text and pictures from a CD ROM to other software (1, 3, 5, 6)
- ❑ Gather information by navigating a multimedia presentation or stack, using outlines, menus and hypertext links (1, 3, 5, 6)
- ❑ Choose a multimedia database to access pictures on a topic (1, 3, 5, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)
- ❑ Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (2)
- ❑ Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

Technology Foundation Standards

STANDARDS:
Grades 6-8

Prior to completion of Grade 8, students will:

1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (1)
2. Demonstrate knowledge of available information technologies and their applications in the workplace and society. (2)
3. Exhibit legal and ethical behaviors when using information and technology, and recognize consequences of misuse. (2)
4. Use content-specific software, simulations, and tools (graphing calculators, exploratory environments, Web tools) to support learning and research. (3, 5)
5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)
6. Design, develop, publish, and present products (Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to share within classrooms, schools, and throughout the community. (4, 5, 6)
7. Collaborate with others using technology tools to investigate curriculum-related questions and information, then develop solutions or products to share within classrooms, schools, and throughout the community. (4, 5)
8. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)
9. Demonstrate a practical understanding of problem solving concepts underlying hardware, software, and connectivity. (1, 6)
10. Research and evaluate the accuracy, relevance, and bias of electronic information sources concerning real-world problems. (2, 5, 6)

Categories
Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:
1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Sixth Grade Technology Skills

Application and Operation of Computers

Application

- Comply with the Acceptable Use Policy (AUP) of Clark County Schools (2)
- Describe different types of software (word processors, databases, etc.) (1, 3, 4, 5)
- Recognize that information technology has many diverse components and applications (1)
- Keep passwords private (2)

Operation

- Save an existing file on a different disk or a server (1)
- Organize files and create folders/directories (1)
- Apply basic trouble-shooting principles (using "HELP" feature, school helpdesk) (1, 6)
- Respond to messages displayed on the monitor (1)
- Import and export text and graphics with assistance (1, 2, 3)
- Use information technology in compliance with legal requirements (2)
- Refrain from plagiarism (2)
- Document the source of information obtained electronically (text, graphics, sound, video, etc.) (2, 3, 5)

Keyboarding

- Compose original pieces of work (paragraphs, projects, etc.) (3, 4, 5)

Word Processing

- Use spell check/thesaurus/grammar check tools to locate errors and extend vocabulary (3, 4, 5, 6)
- Use search, find and replace options (4, 5, 6)
- Insert graphics, clip art and charts (1, 3, 4)
- Use the vocabulary of word processing software (font, dialog box, Tab) (1, 3)

Graphics

- Cut, paste a graphic image (clip art, another student's work) (1, 3)
- Modify a graphic image (rotate, re-color, flipping, etc.) (1,3)
- Use basic vocabulary of graphics software (pencil, text box, fill, brush, airbrush, etc.) (1, 3, 4, 5)

Categories

Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Databases

- ❑ Modify the layout of an existing database by rearranging fields and titles to communicate the information effectively (1, 3, 4, 5)
- ❑ Add a field to an existing file (1, 3)
- ❑ Design and create a simple database for a particular purpose (share the results of an investigation with peers) (1, 3)
- ❑ Use database terminology (layout, format, browse) (1, 3, 4, 5)
- ❑ Identify real-world applications of databases (1, 3, 4, 5, 6)

Spreadsheets

- ❑ Design a spreadsheet with titles, input area, output area (1, 3, 4)
- ❑ Apply spreadsheet terminology (cells, format, column, row, spreadsheet, data, graphs) (1, 3, 4)
- ❑ Arrange and analyze data in an appropriate form to show patterns and relationships from a secondary source (1, 3, 5, 6)
- ❑ Use a spreadsheet to investigate comparisons of numerical data using graphs (1, 3, 4)
- ❑ Use a spreadsheet to calculate and display a comparison of two different scenarios (1, 3, 4, 5, 6)

Authoring/Presentation Tools

- ❑ Use a presentation tool as an integral part of a curricular assignment (3, 4)
- ❑ Identify the appropriate use of authoring/presentation tools for effective communication of ideas to an audience (2, 3, 4, 5, 6)
- ❑ Classify ideas by copying and pasting into a chart, creating headings for each group (1, 3, 4, 5)

Accessing Information

- ❑ Compare information from different articles or sources, both of which deal with the same topic (1, 2, 3, 4, 5)
- ❑ Select and use an electronic source that appears most appropriate for a specific task. (1, 2, 3, 4, 5)
- ❑ Select a number of keywords from classroom brainstorming to use in an Internet search (4, 5)

Electronic Communications

- ❑ Demonstrate understanding of Internet terminology (URL, search engine, status bar, hypertext) (4, 5, 6)
- ❑ Compose, address, and send e-mail (4, 5)
- ❑ Use CC (carbon copy) when using e-mail (3, 4, 5)
- ❑ Recognize the need to validate information obtained from the Internet (fact, opinion, possibility of bias) (2, 4, 5, 6)
- ❑ Use e-mail to gather information from specific sources (3, 4, 5)

- ❑ Demonstrate clarity in telecommunications exchanges (state the key idea or question, only provide necessary information) (4, 5)
- ❑ Maintain consistency of style within a (1, 3, 4, 5)
- ❑ Create text "chunks" of appropriate length and size (1, 3, 4)

Multimedia

- ❑ Use an interactive hypermedia program to share information through text, pictures, sound and video (3, 4, 5, 6)

Social, Ethical and Human Issues

- ❑ Work cooperatively and collaboratively with others when using technology. (2)
- ❑ Demonstrate positive social and ethical behaviors when using technology. (2)
- ❑ Practice responsible use of technology systems and software. (2)
- ❑ Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (2)
- ❑ Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (2)

Seventh Grade Technology Skills

Application and Operation of Computers

Application

- ❑ Demonstrate an understanding that information can be transmitted by a variety of media (1, 4)
- ❑ Demonstrate a responsible and ethical attitude to the use of information technologies (1, 2)
- ❑ Comply with the Acceptable Use Policy (AUP) of Clark County Schools (1, 2)
- ❑ Keep passwords private (2)

Operation

- ❑ Open and use multiple applications (1, 3)
- ❑ Import files into an application (1, 3)
- ❑ Adjust settings and preferences (1, 3)
- ❑ Use function keys and keyboard shortcuts (1, 3)
- ❑ Select an appropriate type of software to perform a task, based on an awareness of its capabilities (1, 3, 6)

Keyboarding

- ❑ Refine the use of keyboard skills (increase speed of use, use of correct fingering for most of the keys, accuracy) (1, 3)
- ❑ Use proper positioning techniques (work area, posture, health and safety) (1, 3, 4)

Word Processing

- ❑ Use tabs, columns, and formatting characters (1, 3)
- ❑ Insert graphic elements (digitized elements) (1, 3)
- ❑ Compose and layout a newspaper column (1, 3)
- ❑ Use point form format and bullets (1, 3)
- ❑ Mark sections that will require revision by changing the style (using boldface, italics, color, underline, etc.) (1, 3)

Graphics

- ❑ Refine the use and understanding of graphics software tools (1, 3, 4, 6)

Databases

- ❑ Create a field that will calculate using data in other numeric fields (total, average, percent, summation) (1, 3)
- ❑ Create a sequence of the steps in a process that can then be revised and reordered (1, 3, 4, 6)
- ❑ Collect and analyze information collaboratively using an on-line database (1, 3, 4, 6)

Categories

Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Spreadsheets

- ❑ Create, enter and edit formulas (1, 3)
- ❑ Refine the use of spreadsheet terminology (cells, format, column, row, spreadsheet, graphs, replicate, new terms with respect to formula) (1, 3)

Authoring/Presentation Tools

- ❑ Choose a draw program to combine previously made diagrams and captions in a slide show presentation (PowerPoint, Hyper Studio) (1, 3, 4)

Accessing Information

- ❑ Use electronic conference to pose questions (with assistance) (1, 3, 4)
- ❑ Gather and compare information (1, 3, 4, 6)

Electronic Communications

- ❑ Recognize strategies for searching through keyword choices (5, 6)
- ❑ Select a comprehensive Web search using refined search strategies (4, 5, 6)
- ❑ Try different search engines to locate information on the same topic (4, 5)
- ❑ Create a clear, balanced and consistent layout for pages and screens in a communication (3, 6)
- ❑ Use representational icons within a navigation bar or menu (1, 3)
- ❑ Use a footer to place an address and page number consistently on all pages (1, 3)

Multimedia

- ❑ Use an interactive hypermedia program to present information through text, pictures, sound and video (4, 5)
- ❑ Scan images using a scanner (3, 4)

Eighth Grade Technology Skills

Application and Operation of Computers

Application

- ❑ Demonstrates an understanding that the various aspects of information technology work together as part of an integrated whole (explain how computers can be connected using a network, which makes the sharing of files and software applications possible) (1, 6)
- ❑ Demonstrates a responsible and ethical attitude to the use of information technology (use electronic networks in an ethical manner) (2)

Operation

- ❑ Identify file formats and their associated applications (1, 3)
- ❑ Save existing file in other formats (1, 3)
- ❑ Insert or merge data from one application into another (1, 3, 4)
- ❑ Select an appropriate type of software to perform a task, based on an awareness of its capabilities (choose a mind-mapping program to explore and interpret relationships between characters in a story; choose a spreadsheet program to graph statistical data) (1, 3, 6)

Keyboarding

- ❑ Utilize key combinations to format and edit (centering, underline, bold, italic) (1, 3)
- ❑ Practice and use proper keyboarding technique in order to increase typing speed (1, 3)

Word Processing

- ❑ Use a header/footer and footnotes (1, 3)
- ❑ Refine the use of the vocabulary of word processing software (header, footer, footnote, bullet, tab) (1, 3)
- ❑ Cut and paste paragraphs to reorder them (1, 3)
- ❑ Use preview feature to determine stylistic integrity (1, 3)

Graphics

- ❑ Import and modify a graphic image (1, 3)

Categories

Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Databases

- ❑ Copy information from a database to another application (1, 4, 5)
- ❑ Import and export database records to/from other sources (1, 4, 5)
- ❑ Modify the layout of a database to create an effective screen display (appropriateness and arrangement of fields, text format, use of color and graphics) (1, 3, 4)
- ❑ Design and create a database for a particular purpose (3, 4, 6)

Spreadsheets

- ❑ Create an original spreadsheet to explore and analyze the results of "what if" situations (3, 6)
- ❑ Create a database to summarize information, sort fields and display results in an appropriate layout (3, 6)
- ❑ Use spreadsheet for a real-life application (3, 6)

Authoring/Presentation Tools

- ❑ Design and create complete presentations using hypertext options (for linking to graphics, text, sound and video (3, 4, 6)

Accessing Information

- ❑ Pose questions to on-line experts (4, 6)
- ❑ Search an on-line database to gather information (5, 6)

Electronic Communications

- ❑ Combine selected key words to conduct a Boolean search (2, 5)
- ❑ Understand how hypertext markup language (HTML) is used to compose a Web page (4, 6)
- ❑ Create a web page to publish writing advocating a point of view to students in other parts of the world (2, 3, 4, 6)

Multimedia

- ❑ Merge sound and animation in a multimedia presentation (3, 4)
- ❑ Incorporate digital images into a multimedia presentation (3, 4)

Technology Foundation Standards

STANDARDS:

Grades 9-12

Prior to completion of Grade 12, students will:

1. Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs. (2)
2. Make informed choices among technology systems, resources, and services. (1, 2)
3. Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole. (2)
4. Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information. (2)
5. Use technology tools and resources for managing and communicating personal/professional information (finances, schedules, addresses, purchases, correspondence). (3, 4)
6. Evaluate technology-based options, including distance and distributed education, for lifelong learning. (5)
7. Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity. (4, 5, 6)
8. Select and apply technology tools for research, information analysis, problem solving, and decision-making in content learning. (4, 5)
9. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations. (3, 5, 6)
10. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. (4, 5, 6)

Categories
Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked. The categories are:
1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Ninth through Twelfth Grade Technology Skills

Application and Operation of Computers

- ❑ Practice ethical use of technology resources in the classroom for assignments and projects. (2) (Plagiarism, cheating, copying & pasting)
- ❑ Identify issues related to complex technology environments. (1, 3, 6)
- ❑ Practice and redefine knowledge and skills in keyboarding/desktop publishing, multi-media in completing class assignments. (1, 3, 4, 6)
- ❑ Use electronic journals to publish thoughts and ideas (3)
- ❑ Use the scanner, scanned photos or the digital camera to communicate to a selected audience. (3, 4, 6)
- ❑ Use of multi-media to present information to analyze design, ideas, thoughts, and concepts. (PowerPoint) (4, 5, 6)
- ❑ Use of multi-media to represent ideas or communicate to a selected audience. (PowerPoint, video, digital storytelling, Hyper studio) (4, 6)
- ❑ Research electronic sources to collect pertinent information related to a subject. (5)
- ❑ Analyze electronic text for meaning, concepts and understanding. (5, 6)
- ❑ Use electronic display tools to share information to a selected audience. (LCD projector, Tvator, scan converter) (3, 4)
- ❑ Create web pages for shared learning, presentation and distribution of information. (HTML, FrontPage) (3, 4, 5)
- ❑ Use of diverse Internet or electronic resources to gather information, including online databases (existing or student produced). (3, 4, 6)
- ❑ Data collection using spreadsheets and databases. (3, 4)
- ❑ Use of spreadsheet/database formulas and fields to analyze data and information for application to learning. (1, 3, 4, 5, 6)
- ❑ Use of software to create applications for visual organizers and development of presentations (Inspiration, PowerPoint, Hyper studio) (1, 2, 3, 4, 5, 6)
- ❑ Use of peripherals, such as graphing calculators and probes, to gather and plot data. (3, 4, 6)
- ❑ Identify use and importance of emerging and existing technology in the workplace. (3, 6)
- ❑ Use of teleconferencing and email in learning and career development. (KTLN, Net Meeting, web mail) (1, 3, 4, 5, 6)
- ❑ Analyze electronic text for bias and accuracy. (2, 3)

Categories
Numbers in parentheses following each skill refer to the category to which the skill is linked. The categories are:
1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communication tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

- ❑ Use Outlook (or comparable software) to make schedules, calendars, and keep an address book. (1, 3)
- ❑ Use e-mail to correspond with others effectively. (1, 3)
- ❑ Comply with the AUP of Clark County Schools. (2)

Best Practices and Exemplary Units for Integrating Technology

(These links can be found on the Clark County web page)

English/Language Arts
- Awesome Authors- PreK-2
- Brrrr, It's Alive- PreK-2
- Wall of Fame- 3-5
- You Were There! - 3-5

Foreign Language
- Abuelita y Yo: Just Grandma and Me- PreK-2
- Les Voyageurs: The Explorers- 3-5

Science
- Classifying Animals- PreK-2
- Home Sweet Home- PreK-2
- Who's Who in fingerprinting- 3-5
- World Wide Weather- 3-5

Social Studies
- Celebrating Our Nation's Diversity- PreK-2
- Navigating by Landmarks- 3-5
- Postc@rds from the Net- PreK-2
- You Want to Sell Me What?
- The Many Forms of Advertising- 3-5

Mathematics
- A Number of Days- PreK-2
- Beanie Babies Basics- PreK-2
- Million Dollar Project- 3-5
- What's My Structure? - 3-5

Resources

Rosedale Heights Public Schools, 300 Rosedale Heights Drive, Thornhill, Ontario, L4J 6Y8, Tele: (905) 882-1864 Fax: (905) 882-6932

International Society of Technology Educators (ISTE), National Educational Technology Standards for Students (NETS)

North Carolina Department of Public Instruction, Computer/Technology Skills Curriculum

Hastings and Prince Edwards School District, Ontario Canada

Fayette County School District, Lexington, KY. K12 Technology Standards

Jefferson County School District, Louisville, KY. K12 Technology Standards

Jessamine County School District, Nicholasville, KY. K12 Technology Standards