



ARCHDIOCESE OF DENVER

OFFICE OF CATHOLIC SCHOOLS

---

# TECHNOLOGY STRATEGIC PLAN



**DECEMBER 2007**

**TABLE OF CONTENTS**

**INTRODUCTION** ..... 1

**STUDENT COMPETENCIES** ..... 3

**FACULTY COMPETENCIES**..... 9

**ADMINISTRATOR COMPETENCIES** ..... 11

**INTEGRATION OF TECHNOLOGY INTO CURRICULUM** ..... 13

**CURRICULUM INTEGRATION BENCHMARKS**

    Communication Skills..... 14

    Problem Solving..... 17

    Information Retrieval..... 18

    Appropriate Use ..... 20

    Task Specific Performance ..... 21

    Other ..... 22

**CURRENT INVENTORY/NEEDS ASSESSMENT** ..... 23

**BUDGET**..... 31

**EVALUATION PROCESS**..... 33

**APPENDIX**

**WEB SITES** ..... 39

## INTRODUCTION

Information technology has become the new literacy and must be seen both as a distinct discipline and as a method of learning and communicating just as reading begins as a distinct skill and then becomes transparent to other learning.

“Students must be technologically fluent, they must know how to learn, and they must be able to use technology to communicate, collaborate and support critical thinking and creative problem solving.” (*Toward an Effective Use of Technology in Education, A Summary of Research.* Ross, John D., Tammy M. McGraw, Krista J. Burdette. AEL, 2003. p.5)

The Catholic schools in the Archdiocese of Denver envision that Catholic values and moral decision-making will shape and extend the ethical and responsible use of technology. They envision the development of a single, unified, on-line school community with applications and infrastructure to support the highest quality education for students. This on-line community would have the following characteristics:

- ❖ PreK-12 teacher communication/networking system (similar to First Class)
- ❖ System-wide, web-based data management, including a web-based data bank
  - For data collection, analysis, and aggregation (similar to File Maker Pro) and other routine reports, for example
- ❖ System-wide use of student information management systems that include
  - On-line student permanent records
  - Electronic grading program, including electronic report cards
  - Scheduling
  - Student data, i.e. attendance, lunch count, etc.
  - Student I.D. card for accounting (such as a debit card to be used for school lunches or fees)
  - School calendar
  - Parent remote access to school information, i.e. student grades, assignments, class projects, school newsletters, etc.
  - Communication among all groups of stake holders
  - Library automation system
  - On-line permission slips
- ❖ On-line professional development opportunities for faculty and staff
- ❖ On-line programs for student remediation, enrichment, and attention to special needs
- ❖ Interactive assessment tools
- ❖ Remote teacher access to classroom records, school files, etc.
- ❖ Teacher access to all student files (The English teacher can find grades for a student in other classes; the after-school tutor can refer to the work done earlier that day/week in Math class.)
- ❖ Use of electronic textbooks and movement toward a paperless culture
- ❖ Personal development ideas for students to explore alternate learning styles

To give support to and revise the direction of this vision, instructors in information technology from schools throughout the Archdiocese gathered to revise and update the Technology Strategic Plan. The following is a guideline for schools. Each subject area curriculum guideline includes specific student goals related to technology, so those are not included here.

Student competencies include specific skills associated with the use of information technology.

Teacher competencies include moving from using a computer for drill, practice, and as an extension of the traditional teaching techniques toward using computer assisted learning to change the way students learn in the classroom.

Administrator competencies are also addressed.

The principal's leadership is critical to the effective implementation of these goals. Principals must model a willingness to change and grow in this unfamiliar and often overwhelming and confusing territory. All schools should plan to meet the minimum professional development standards articulated here. Some assistance and direction will be provided from the Office of Catholic Schools.

Each school will need to make specific budgeting plans for acquisition, maintenance, replacement, and ongoing costs articulated within these guidelines. Hardware, software, wiring, wireless access to internet, and technical support are line items that need to be addressed in the school budget.

Finally, each school should assess their current reality in relation to these guidelines, articulate a plan to move forward in each area, and evaluate progress on a yearly basis. The goal for this edition of the Archdiocesan Technology Strategic Plan is that all schools would have achieved these minimum recommendations by September 2010.

Thanks to the members of the committee for their work in updating these goals.

Trudy Acosta	St. John the Baptist
Ron Friedrich	St. Louis, Englewood
Genia Hohman	Notre Dame
Anthony Moreno	Christ the King
Tuyet Nguyen	St. Therese
Johanna O'Connell	Nativity of Our Lord
Rosemary Samuelson	Sacred Heart of Jesus
Sr. Elizabeth Youngs	Office of Catholic Schools

**STUDENT COMPETENCIES****Student Technology Benchmarks**

- A. Basic Operations and Concepts
- B. Social, Ethical and Human issues
- C. Technology Productivity Tools
- D. Technology Communication Tools
- E. Technology Research Tools
- F. Technology problem-solving and decision-making tools

**PRE-KINDERGARTEN – 2<sup>ND</sup> GRADE**

By the completion of Grade 2, the student will be able to:

1. Turn devices (computer, tape player, DVD player, etc.) on and off (A)
2. Use input devices (mouse, keyboard, remote control) and output devices (printer) (A)
3. Start and close applications (A)
4. Minimize and maximize applications (A)
5. Select options from a menu bar (A)
6. Create documents (A, C)
7. Open and close documents (A)
8. Save and print with assistance. (A)
9. Identify and name basic computer components (A)
10. Communicate about technology using developmentally appropriate terminology (A)
11. Use appropriate multimedia resources to support learning (A, C, E, F)
12. Handle a CD properly, insert and remove from drive (A)
13. Place fingers on home row keys in proper position (by 2nd grade) (A)
14. Distinguish left and right hand side of the keyboard (A)
15. Use various function keys appropriately including Return, Space Bar, Shift, Arrow Keys, etc. (A, C)
16. Use ergonomically correct hand and body position (A)
17. Use tools to express creativity and illustrate original compositions including drawing and painting programs, clip art, etc. (A, C)
18. Use software for drill and practice of basic skills
19. Practice responsible use of technology systems and hardware, including adherence to the school's acceptable use policy (B)

*\* Letters in parenthesis reference the benchmarks on page 3*

**PRE-KINDERGARTEN – 2<sup>ND</sup> GRADE (CONTINUED)**

20. Work collaboratively and collectively with peers, and others when using technology in the classroom (B, C, F)
21. Demonstrate a positive attitude toward technology uses that support life-long learning (B)
22. Demonstrate positive social and ethical behaviors when using technology (B)
23. Explain that only the creator of electronic work can make changes to his/her work (B)
24. Create developmentally appropriate multi-media products with support from teachers, student partners, or family members (C)

**GRADES 3-5**

By the completion of Grade 5, the student will be able to:

1. Define and use terminology related to computers and other appropriate technology
2. Use correct finger placement on home row and all keys (A)
3. Demonstrate touch keyboarding skills at acceptable speed and accuracy levels
4. Use technology tools for individual and collaborative writing, communication, and publishing activities (A, C, D)
5. Discuss and prevent the potential hazards to computer hardware and software, i.e., spilling food on keyboard, scratching CDs and disks, viruses, static charge, magnets, etc. (A)
6. Create a word processing document (C)
7. Use tools to create, edit, check, format, style, and publish a document (A, C)
8. Create a multimedia presentation (A, C)
9. Discuss common uses of technology in daily life and the advantages and disadvantages of these uses in daily life (A, B)
10. Interpret and communicate information contained in spreadsheets and databases (A, C, F)
11. Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use (A, B)
12. Cite sources of information (A, B, E)
13. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and the bias of electronic information sources (A, B, E, F)
14. Practice responsible use of technology systems and hardware, including adherence to the school's acceptable use policy (B)
15. Demonstrate respect for and knowledge of copyright laws (B)
16. List some of the consequences for plagiarism and violation of copyright laws and the school's acceptable use policy (B)
17. Compare the advantages and disadvantages of the use of technology (B, F)
18. Use technology tools for individual writing and collaborative writing, communication and publishing activities to share inside and outside the classroom (C, D, E)

*\* Letters in parenthesis reference the benchmarks on page 3*

**GRADES 3-5 (CONTINUED)**

19. Use productivity tools such as software, and peripherals such as printers scanners, etc. to facilitate learning (C)
20. Use on-line resources to enhance learning and productivity (C)
21. Use on-line resources for research (E)
22. Create and use bookmarks (A)
23. Describe and demonstrate the appropriate etiquette and use of electronic communication such as e-mail, instant messaging, chat rooms, etc. (D)
24. Use software for drill and practice to enhance the understanding and development of basic academic skills (C)
25. Demonstrate a strong ethical position regarding appropriate internet use, text messaging, video chats, etc. (B)

**GRADES 6-8**

By the completion of Grade 8, the student will be able to:

1. Use an expanded computer vocabulary and appropriate terminology (A)
2. Identify file extensions and their applications (.doc, .jpg, etc.) (A)
3. Exhibit proficiency with keyboarding (A)
4. Save data to removable storage media such as a floppy diskette, CD, memory stick, etc.
5. Use a digital camera and transfer the images to a computer (A)
6. Create or edit a web page (C)
7. Convert a picture file to a multimedia file (A)
8. Select the appropriate hardware, software or peripheral device such as wireless cards, optical disk-to-disk drives, etc., to accomplish a given task (F)
9. Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society (A)
10. Demonstrate a strong ethical position regarding appropriate internet use (B)
11. Discuss the consequences of inappropriate use or misuse of technology (B)
12. Apply standard MLA formatting directives of the school to a formal paper, essay, or other assignment (A, C)
13. Exhibit legal and ethical behaviors when using information technology and discuss consequences of misuses including computer fraud (e.g. hacking, intentional virus setting, piracy, invasion of privacy, identity theft, etc.) (B)
14. List some of the consequences for plagiarism and violation of copyright laws and the school's acceptable use policy (B)

*\* Letters in parenthesis reference the benchmarks on page 3*

**GRADES 6-8 (CONTINUED)**

15. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real world problems (B, E, F)  
Demonstrate knowledge of the effect that changes in information technologies have on society and the work place (B)
16. Discuss that the advances in technology influence the course of history (B)
17. Explain how technology may impact the environment both negatively and positively (B)
18. Site examples of the ways that science and technology affect each other (B)
19. Describe some specific jobs in the technology industry
20. Conduct an online search using the search engine(s) designated for the student's instructional level
21. Use the major features of a web browser: enter a URL, access bookmarked sites, follow hyperlinks, and use navigational tools
22. Describe and demonstrate the appropriate etiquette and use of electronic communication such as e-mail, instant messaging, chat rooms, etc. (D)
23. Use software for drill and practice to enhance the understanding and development of basic academic skills (C)
24. Demonstrate a strong ethical position regarding appropriate internet use, text messaging, video chats, etc. (B)

**HIGH SCHOOL – GRADES 9-12**

Through the Computer/Technology Standards in grades nine through twelve, technology skills that were started in the lower grades continue to be integrated across the curriculum. The goal is that students in these grades achieve a higher level of mastery in the application of technology in their learning. The following standards identify essential skills for the student's appropriate use of existing and emerging technology tools for communication, productivity, management, research, problem-solving, and decision making.

**I. By the end of twelfth grade, the student will be able to:**

1. Demonstrate proficiency in keyboarding skills to enter and manipulate text and data
2. Demonstrate basic word processing competencies of text entry, formatting, editing, saving, printing, and retrieving documents
3. Proofread and edit documents for accuracy and content, and for correct grammar, spelling, and punctuation
4. Develop business writing skills
5. Demonstrate individual responsibility around the ethical use of computers
6. Use and adapt to a variety of word processing software packages

*\* Letters in parenthesis reference the benchmarks on page 3*

**HIGH SCHOOL – GRADES 9-12 (CONTINUED)**

7. Insert, modify, enhance, and edit graphic images
8. Add special effects
9. Create a portfolio
10. Demonstrate proficiency in use of spreadsheet software
11. Demonstrate understanding of common spreadsheet terms, the purposes, functions, and common features of spreadsheet software
12. Demonstrate competencies in using database software
13. Demonstrate understanding of the terminology, purposes, functions, and common features of database software
14. Demonstrate the ability to use integration application packages
15. Demonstrate the ability to use slide presentation software
16. Use authentic internet resources for research
17. Create and apply styles Demonstrate ability to use PowerPoint Presentation Software
18. Use authentic Internet resources for research

**II. The student will demonstrate a basic understanding of fundamental computer operations and concepts.**

1. Successfully operate a multimedia computer system with related peripheral devices
2. Use terminology related to computers and technology appropriately in written and oral communication
3. Describe how imaging devices may be used with computer systems
4. Describe how computers may be connected to form a telecommunication network
5. Analyze and solve simple hardware and software problems
6. Identify new and emerging technologies

**III. The student will use application software to accomplish a variety of learning tasks.**

1. Use advanced features of word processing, desktop publishing, graphics programs, and utilities in learning activities
2. Use spreadsheets for analyzing, organizing, and displaying numeric data graphically
3. Design and manipulate databases and generate customized reports
4. Use features of applications that integrate word processing, database, spreadsheet, telecommunication, and graphics
5. Identify, select, and integrate video and digital images in varying formats for creating multi-media presentations, publications and/or other products
6. Select, evaluate, and use appropriate technology for research and data collection
7. Apply specific-purpose electronic devices (such as a graphing calculator, PDA, I-pods, or multi-function keyboards) in appropriate content areas

**HIGH SCHOOL – GRADES 9-12 (CONTINUED)****IV. The student will develop skills in the use of telecommunications networks. Use local, wide area, and worldwide network communication systems to access, analyze, interpret, and synthesize information.**

1. Compare and contrast the use of local area networks, wide area networks, and worldwide networks
2. Access and use telecommunications tools and resources for information sharing, remote information access and retrieval, and multi-media/hypermedia publishing
3. Demonstrate an understanding of the concepts of broadcast instruction, audio/video conferencing, and other distance learning applications
4. Explain legal, personal safety, network etiquette, and ethical behaviors regarding the use of technology and information
5. Apply specific-purpose electronic devices (such as a graphing calculator, or multi-function keyboards) in appropriate content areas

**V. The student will demonstrate skill in the selection and use of appropriate technologies to gather, process and analyze data and to report information related to an investigation.**

1. Design and use a wide range of effective search strategies to acquire information
2. Use a wide variety of electronic media and databases to search for and retrieve information
3. Evaluate the usefulness, appropriateness, currency, and reliability of acquired information
4. Select appropriate technology for communicating information for an intended purpose and audience
5. Utilize a variety of media and resources in collaboration with peers, experts, and others to design a learning activity and/or presentation
6. Appropriately cite electronic resources in gathering information
7. Apply Copyright and Fair Use Guidelines in reporting information

**FACULTY COMPETENCIES****I. TECHNOLOGY OPERATIONS AND CONCEPTS**

The teacher will:

1. Connect, disconnect, and reconnect a computer to a keyboard, mouse, and printer
2. Connect a computer to the network using the Ethernet connection
3. Log on to the local network and access a file server
4. Create and name folders and subfolders
5. Locate, open, and relocate saved documents, files, and folders
6. Delete and undelete documents, files, and folders
7. Manage, organize, and customize a desktop
8. Locate and open an application from the icon on the desktop
9. Navigate using icons, windows, and menus
10. Create word processing documents and spreadsheets
11. Name, save, retrieve, and edit a document
12. Import graphics and clip art to documents
13. Use printing options
14. Define system, memory, and storage as they apply to software and hardware
15. Create a slide presentation
16. Provide and maintain a back-up system for data
17. Perform standard printer upkeep (i.e. change cartridge, etc.)
18. Access CD reference resources
19. Participate in continuing education regarding technology
20. Create and use a template
21. Identify error messages
22. Identify, access, and use virus protection software
23. Use data bases
24. Connect audio/video input/output devices for large screen display
25. Design and create a data base
26. Trouble shoot computer systems to identify problems
27. Interpret error and/or system message
28. Install and uninstall software

**II. PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES**

The teacher will:

1. Demonstrate awareness of the hierarchy of technology skills being taught at various levels
2. Evaluate web sites and software for educational value and use in classroom activities

**III. TEACHING, LEARNING, AND THE CURRICULUM**

The teacher will:

1. Incorporate the use of technology in all curriculum areas
2. Use technology to support and address the diverse learning needs of students
3. Apply technology to develop students' higher level thinking skills and creativity
4. Model and teach appropriate citation of electronic resources

**IV. ASSESSMENT AND EVALUATION**

The teacher will:

1. Include technology components in assessing student learning
2. Use technology resources to collect data and analyze data, and interpret results and communicate findings, such as analyzing items in a test to assess achievement
3. Locate and use programs that branch and teach as they assess student learning

**V. PRODUCTIVITY AND PROFESSIONAL PRACTICE**

The teacher will:

1. Compose, save, and print a document
2. Use an electronic grade book
3. Use reporting software, i.e. attendance, class lists, etc.
4. Generate grades and progress reports electronically
5. Send and receive information in files via electronic mail
6. Set up and provide an electronic newsletter for communication to parents

**VI. SOCIAL, ETHICAL, LEGAL, AND HUMAN SERVICES**

The teachers will:

1. Teach students to evaluate web sites from a Catholic perspective
2. Monitor student use of the internet
3. Promote safe and healthy use of technology resources
4. Teach and model the ethical and responsible use of the internet
5. Demonstrate and model respect for intellectual property
6. Be aware of and abide by the Archdiocesan acceptable use policy

**ADMINISTRATOR COMPETENCIES****I. LEADERSHIP AND VISION**

Principals and other local administrators will:

1. Support and implement the Archdiocesan Technology Strategic Plan
2. Develop a TSP for his/her school that is aligned with the Archdiocesan plan
3. Promote highly effective practices in technology integration among faculty and other staff

**II. LEARNING AND TEACHING**

Principals and other local administrators will:

1. Assist teachers in using technology to access, analyze, and interpret student performance data and in using results to appropriately design, assess, and modify student instruction
2. Collaboratively design, implement, support, and participate in professional development for all instructional staff to effectively integrate technology for the improvement of student learning

**III. PRODUCTIVITY AND PROFESSIONAL PRACTICE**

Principals and other local administrators will:

1. Demonstrate facility with Teacher Technology Competencies (see Faculty Competencies beginning on page 9)
2. Demonstrate use of the basic operations of computer literacy including e-mail communication to faculty, staff, and parents
3. Use current technology-based management systems including those that access and maintain personnel and student records.
4. Use technology such as FirstClass to report to and communicate with the Office of Catholic Schools
5. Use a variety of media and formats, including telecommunications, slide presentations, desktop publishing, and the school website, to communicate, interact, and collaborate with peers, experts, and other stakeholders

**IV. SUPPORT, MANAGEMENT AND OPERATIONS**

Principals and other local administrators will:

1. Provide school-wide staff development for sharing work and resources across commonly used formats and platforms
2. Allocate discretionary funds and other resources to advance implementation of the technology plan
3. Advocate for adequate, timely, and high-quality technology support services

**V. ASSESSMENT AND EVALUATION**

Principals and other local administrators will:

1. Promote and model the use of technology to access, analyze, and interpret school wide data to focus efforts for improving student learning and productivity
2. Implement evaluation procedures for teachers that assess individual growth towards established technology standards and guide professional development planning
3. Assess the performance of instructional staff based on effective use of technology for student learning

**VI. SOCIAL, LEGAL, AND ETHICAL ISSUES**

Principals and other local administrators will:

1. Secure and allocate technology resources to enable teachers to better meet the needs of all learners
2. Adhere to and enforce among staff and students the Archdiocesan acceptable use policy and other policies and procedures related to security, copyright, and technology use
3. Participate in the development of facility plans that support and focus on health and environmentally safe practices related to the use of technology

**INTEGRATION OF TECHNOLOGY INTO CURRICULUM**

The list of concepts and skills in the following pages can assist in identifying where technology related skills/concepts are integrated and taught in the curriculum. Using this chart we have identified at which grade level these concepts should be introduced and integrated. Please note that this is a guide to assist with integrating technology into the curriculum.

Level 1 – Kindergarten - Grade 2

Level 2 – Grades 3-5

Level 3 – Grades 6-8

Level 4 – High School

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**COMMUNICATION SKILLS**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Uses word processing to facilitate the writing process			3-4	1-4	2-4	2-4	2-4		1-4
Creates presentation using computer programs (e.g. Hyperstudio, Persuasion, Powerpoint, Claris Works)				3-4	3-4	3-4	3-4		2-4
Integrates software programs for creating projects(e.g., Kidspiration)				3-4	3-4	3-4		3-4	2-4
Creates publications using desktop programs				2-4					2-4
Creates web pages using a web authoring program									3-4
Uses projection equipment for large group display/presentation	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Produces projects using sound sources/tape recorder / microphone	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Produces projects using camcorder	3-4	3-4		3-4					3-4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**COMMUNICATION SKILLS (CONT.)**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Produces projects using DVD	3-4	3-4		4	4	4			3-4
Produces projects using video editing equipment				4	4				
Produces projects using cameras	3-4			3-4					3-4
Produces multimedia projects	2-4		2-4	2-4	2-4	2-4			2-4
Converts images to digital format for use in publication or multimedia presentations by using a digital camera									2-4
Exchanges information with outside sources using e-mail			3-4	3-4	3-4	3-4			3-4
Exchanges information with outside sources using telephone, voice mail, text messaging, and IM	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4
Exchanges information with outside sources using fax machine									4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**COMMUNICATION SKILLS (CONT.)**

<b>Subject</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
<b>The learner:</b>									
Exchanges information with outside sources using distance technologies									3-4
Exchanges information with outside sources using web sites/pages, electronic bulletin boards, blogs									3-4
Creates compositions utilizing MIDI devices or other computer software									4
Creates compositions utilizing computer drawing, paint, graphics, programs, animation	3-4			3-4	3-4	3-4	3-4		3-4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**PROBLEM SOLVING**

<b>Subject</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
<b>The learner:</b>									
Uses calculator to support mathematical principles and mathematical operations								2-4	2-4
Uses calculator to support mathematical principles with graphical representation of data								3-4	3-4
Uses technology to record, manipulate and analyze data in a spreadsheet					2-4			2-4	2-4
Uses technology to record, manipulate, and analyze data in a database					2-4			2-4	2-4
Uses technology to record, manipulate and analyze data with task specific software (e.g. accounting, statistics)								4	4
Can interpret technical manuals for operating or troubleshooting hardware and software									4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**INFORMATION RETRIEVAL**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Uses various strategies to search for Information via CD-ROM, DVD	2-4		2-4	2-4	2-4	2-4	2-4	2-4	2-4
Uses various strategies to search for Information via automated card catalogs				2-4					2-4
Uses various strategies to search for Information via video, television, film	3-4		3-4	3-4	3-4	3-4	3-4		3-4
Uses various strategies to search for and use Information via handheld devices - spelling assistants, personal digital assistants	2-4		2-4	2-4	2-4	2-4	2-4	2-4	2-4
Use various strategies to evaluate the Validity and/or the quality of websites				3-4		3-4			3-4
Uses various strategies to search for Information via Internet	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4
Gathers data using peripheral or Sensory devices such as scientific probes					3-4				4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5      **Level 4** – High School

**INFORMATION RETRIEVAL (CONT.)**

<b>Subject</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
<b>The learner:</b>									
Gathers data using peripheral or sensory devices such as microscopes					2-4				
Gathers data using peripheral or sensory devices such as Global Positioning Systems (GPS)					3-4				3-4
Gathers data using peripheral or sensory devices such as scientific calculator					3-4			3-4	
Gathers data using peripheral or sensory devices such as timing devices					3-4			3-4	3-4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**APPROPRIATE USE**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Determines if use of technology is an effective strategy for a given situation					3-4	3-4		3-4	3-4
Selects the most efficient technology to complete a task					3-4	3-4		3-4	3-4
Is aware of/uses ethical and legal technology standards in copyrights	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4
Is aware of/uses ethical and legal technology standards regarding right to privacy and intellectual property									2-4
Is aware of/uses appropriate etiquette for blogs, social network sites, etc.	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	1-4
Demonstrates responsibility and follows acceptable use policy regarding protecting passwords, data and file sharing log-ins, etc.	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**TASK SPECIFIC PERFORMANCE**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Demonstrates ability to operate computer	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Demonstrates ability to operate printers	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	1-4
Uses technology to perform tasks via a copy machine									2-4
Uses technology to perform tasks by keyboarding/data entry	2-4		3-4	1-4	1-4	2-4	2-4	1-4	1-4
Uses technology to perform tasks such as Robotics					4				4
Uses technology to perform tasks with lasers					4				4
Uses technology to contribute to a larger project: stage lighting board	4								4
Uses technology to contribute to a larger project: music mixing board	4								4
Uses technology to contribute to a larger project: sound systems	4								4

**Key:**  
**Level 1** – Kindergarten - Grade 2      **Level 3** – Grades 6-8  
**Level 2** – Grades 3-5                      **Level 4** – High School

**OTHER**

<b>Subject</b>									
<b>The learner:</b>	<b>The Arts</b>	<b>Health/ P.E.</b>	<b>World Languages</b>	<b>Language Arts</b>	<b>Sciences</b>	<b>Social Studies, Geography, History</b>	<b>Religion</b>	<b>Mathematics</b>	<b>Computer Instruction</b>
Understands technology related vocabulary	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Adapts to changes in technology	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Demonstrates awareness of a variety of technologies available	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	1-4
Demonstrates awareness of technology related career opportunities					3-4			3-4	3-4
Demonstrates awareness of sociological implications of technological advancements						3-4	3-4		3-4

## INVENTORY GOALS: SEPTEMBER 2010

Schools should maintain a current inventory of hardware, including make, model, serial number, location, and software, and network wiring and capacity. The minimum goal for September 2010 in schools in the Archdiocese of Denver follows.

This list is a three-year plan. A percentage of the school's total number of computers (recommend 25% to 35%) will need to be replaced each year in order to keep up with the demands for computer skills. Old computers that can no longer be used on the network should be rotated out of the mix and replaced with computers from the computer lab. Any new computers would be placed in the computer lab, and the older computers from the lab would be rotated out to classrooms, etc.

## HARDWARE

Schools should have:

- one computer lab with a computer per student (based on maximum class size) This might be based in a classroom, the media center, or be a portable lab.

Minimum PC Specifications:

Pentium IV  
 CD R/W – DVD burner on some PCs  
 512 Mb  
 650 MHz  
 20 GB Hard drive

Minimum Mac Specifications

G3 or OS 10

- portable lab. The portable lab will consist of a self contained cart with a wireless router and battery recharging capabilities, laptops (enough for one per student based on the maximum class size), a printer, and an LCD projector
- multiple computers in the library/media center
- one computer with internet access for each teacher

Minimum Specifications for Teacher PC:

Pentium IV  
 CD R/W – DVD burner on some PCs  
 512 Mb  
 650 MHz  
 20 GB hard drive  
 Memory stick

- multiple LCD projectors available for classrooms (Ideally, one per classroom.)
- one television available for classrooms
- one interactive board in computer lab or media center
- sufficient access to VCR, DVD player, and other multimedia audio visual equipment if not one per classroom
- several computers for students in each classroom

**HARDWARE (CONT.)**

- one scanner in the computer lab or media center
- one color printer in the computer lab, in the library/media center, or other central location
- sufficient availability to networked printers for students and teachers
- digital cameras
- digital camcorders
- headphones for language lab for middle and high school
- headphones for PreK-8 students for most computer use
- local area network configuration including hubs for internet access to allow for at least two Ethernet drops per room and/or wireless access to the internet
- appropriate server(s), firewall protection, virus protection, internet filer, and server back-up onto a media that can be stored off site.

Minimum Server Specifications:

Pentium V

4 GB

3.06 GHz

300 GB Hard Drive

CD/DVD Burner

Tape backup system (built in)

Uninterrupted Power Source (UPS)

- E-mail account for each teacher
- interactive web site
- sufficient server or web-based storage space for students to store their work
- web-based school information service
- one or more Global Positioning System (GPS) device(s)

**SOFTWARE**

Schools should have:

- records management software package with student database, grades, honor roll, transcripts, letters, etc.
- library management software (could be part of the standardized records management system)
- research subscriptions
- software licenses for operating systems and software packages
- standardized software by grade:
  - Elementary School (K-4)
    - Keyboard skills
    - Reading
    - Word Processing
    - Multi-media presentation software
    - Drawing tools

**SOFTWARE (CONT.)**

- Elementary School (K-4) (Cont.)
  - Math
  - Graphic organizer
- Middle School (5-8)
  - Drawing tools
  - Language lab
  - Multimedia presentation software
  - Word Processing
  - Spreadsheet
  - Photo editing
  - Graphic organizer
- High School
  - Drawing tools
  - Language lab
  - Multimedia presentation software
  - Office Suite
  - Photo / video / sound editing

**NETWORK**

Schools should:

- acquire and budget for internet access services (annual)
- acquire and budget for web page domain name fee (annual)
- provide for off site storage of server backup media (i.e. tape, zip disk, etc.). A daily routine of back-up and storage of data should be established.

*NOTE: Servers need to have a safe, secure environment that is cooled to maintain the integrity of the server. Cooling may need to be added to the storage room.*

**STANDARDIZATION THROUGHOUT THE ARCHDIOCESE**

The Office of Catholic Schools should move toward standardization of software used in schools in order to take advantage of the buying power of the total Archdiocese for hardware, software, toner, printer ink, support services, etc.

NETWORK ENVIRONMENT	HARDWARE		OUTPUT DEVICES			
	SERVER	WORKSTATION	PRINTER	PROJECTOR	BACKUP DEVICES	EXTERNAL DEVICES
WINDOWS NETWORK	Pentium V, 4GB, 3.06 GHz, 300 GB, CD Burner, DVD Burner, Redundancy Disk Devices, External Disks, UPS	Pentium IV, 128 MB, 650 MHz, CD ROM, CD R/W Burner, 20 GB DVD burners on some machines  Dummy workstation computers	<ul style="list-style-type: none"> <li>Laser printer</li> <li>Color printer</li> </ul>	LCD projectors	Tapes, Zip Drives, External Hard Drives	CD Burner, DVD Burner, External Hard Drives, Memory sticks
MAC NETWORK	G4 or above	G3 or above (OS10)	Same as Above		Same as Above	Same as Above
QUANTITY	<ul style="list-style-type: none"> <li>One server per 250 users.</li> <li>One stand alone server to control the network</li> <li>Additional as needed for users.</li> </ul>	<ul style="list-style-type: none"> <li>One per faculty member</li> <li>In lab: 1 per student</li> <li>Media center: several student computers</li> <li>Classroom: several for students</li> </ul>	<ul style="list-style-type: none"> <li>Sufficient access to networked computers for students and teachers</li> </ul>	<ul style="list-style-type: none"> <li>1 for lab/library (mounted)</li> <li>Sufficient for classroom use</li> </ul>	At least 1 per system	As needed

NETWORK ENVIRONMENT	INPUT DEVICES			SOFTWARE		
	MULTI-MEDIA DEVICES	SCANNERS	AUDIO DEVICES	SERVER	STAFF WORKSTATION	STUDENT WORKSTATION
WINDOWS NETWORK	Digital camera(s), Camcorder(s), Digital video camera(s)		Speakers, Headphones, and Microphones	Windows 2004, File server, Mail server	Windows XP, Grading system software, Office 2007 software, Publishing software	Windows XP, Office 2007 software, Publishing software, Presentation software, Drawing and Painting software
MAC NETWORK	Same as Above		Same as Above	OS X	Mac OS X, Grading system software, Office software, Publishing software	Mac OS X, Office software, Publishing software, Presentation software, Drawing and Painting software
QUANTITY	As needed	<ul style="list-style-type: none"> <li>• 1 in library</li> <li>• 1 in lab or as needed</li> </ul>	As needed		Site license or as needed per machine	Site license or as needed per machine

<b>NETWORK ENVIRONMENT</b>	<b>CONNECTIVITY</b>	<b>PARTS AND ACCESSORIES</b>
<b>WINDOWS NETWORK</b>	T1, Routers, Switches, Hubs, High Speed Broad Band access, Access points for wireless internet access, Internet Service Provider, Domain Name Service, Web Host Service – Optional	UPS, Ink Cartridges, Power Strips/Surge Protectors, Network Cables, Batteries
<b>MAC NETWORK</b>	T1, Routers, Switches, Hubs, High Speed Broad Band access, Access points for wireless internet access, Internet Service Provider, Domain Name Service, Web Host Service – Optional	UPS, Ink Cartridges, Power Strips/Surge Protectors, Network Cables, batteries
<b>QUANTITY</b>	As needed	As needed

**INVENTORY FORM - QUESTIONNAIRE**

**SCHOOL NAME:** \_\_\_\_\_

Full Time Certified Tech. Teacher?	
Part Time Tech. Teacher?	
Number of Students	
Grades Taught	
Number of Classrooms	
Number of Instructional Employees	
Administrators / Internet	
Office Staff / Internet	
Do you have a Technology Committee? Who is on it?	
Instructors Internet Access in Classroom?	
Instructors Internet Access in Central Location?	
Computer lab / number of computers	
Internet Access in Lab?	
Internet Access in Classrooms (for student use)?	
Computers in classrooms (for student use)?	
Platform / Operating system	
Do you have a network?	
Network Printers	
Stand Alone Printers	
Kind of Wiring	
Internet Connection	

**INVENTORY FORM – COMPUTERS/PERIPHERALS/PRINTERS/MULTI-MEDIA**

**A. Computers and Peripherals**

Type	Number
<b>Apple</b>	
Mac Classic	
Mac LC Series	
Mac Performa	
Other	
<b>Power Mac</b>	
G3	
G4	
G5	
iMac	
eMac	
iBook	
Intel iMac	
<b>Powerbook</b>	
<b>Dummy workstations</b>	

Type	Number
<b>PC</b>	
486	
Pentium II	
Pentium III	
Pentium IV	
Pentium V	
<b>Other Brand/Capacity</b>	
<b>Laptop/Capacity</b>	

**B. Printers**

Type	Number
Ink Jet	
Color Inkjet	
Laser	
Copier/Printer	
GPS	

**C. Interactive Boards**

Type	Number

**D. Multi-Media**

Item	Number
Television	
VCR	
Overhead Projector	
Camcorder	
Digital Camera	
Scanner	
TV Converters	
LCD Projector	
DVD Player	
CD / DVD Burner	
Web Cam	
CD Player	
Tape Recorder/Player	
Cable in the Classroom	
Other:	

**BUDGET RECOMMENDATIONS**

Recommendations for technology budget to be implemented by fall 2010 would include a line item for technology expenses in every school budget. This budget will be reviewed and adjusted annually.

To supplement the technology line item Schools/Parishes are encouraged to seek funding through:

1. Federal funds such as Title moneys
2. E-rate
3. Corporate donations
4. Fundraising
5. Possible per student fee
6. Grants, etc.

Recommendations for expenses should include moneys for:

1. Wiring
  - a. Initial expense of wiring a lab
  - b. Installation of at least one Ethernet drop in every classroom
  - c. Internet access and internet service provider
  - d. Maintenance and updating
  - e. Wireless technology
2. Equipment – (as per hardware requirements)
  - a. One per student in lab; several for students in each classroom.
  - b. Network configuration and server(s)
  - c. Peripherals such as printers including ink/toner, scanners, digital cameras, camcorders, video cameras, projectors, televisions, VCRs, DVD players/burners, etc.
3. Maintenance, upgrade (including additional memory) and/or replacement of outdated and obsolete equipment in relationship to the school's use. Significant updating/replacing should be done every year to at least 25% of equipment on a 4-year cycle.
4. Software - Site licenses
  - a. Utility software including network software, firewall protection software, virus protection, filtering software, etc.
  - b. Integrated software program – i.e. Appleworks or Microsoft Office
  - c. Microsoft Office for every teacher
  - d. Keyboarding program
  - e. Multi-media presentation software – i.e. PowerPoint, Hyper Studio, Kid-Pix
  - f. Electronic program grade keeping and generating report cards

4. Software - Site licenses (Cont.)
  - g. School office record management software including student academic and health records, attendance, grades, budget, library, lunch count, alumni records, etc.
  - h. Upgrades for software as needed
  
5. Ongoing staff development to support teacher competencies
  - a) In house training for teachers and staff
    - i) Network use
    - ii) Software use
    - iii) Peripheral use
    - iv) Internet use
  - b) Off site training for specific programs i.e. Photoshop, Power School, MS Office. Technology in Education (TIE) Conference or other general technology training opportunities.
  - c) On-line staff development opportunities

## OUTLINE FOR EVALUATION PROCESS

### **1. Determine the current reality.**

Each school has a unique profile with regard to the areas addressed in this plan. In the following section some forms have been provided to assist schools in recording that profile.

Administrators, information technology/computer teachers, and/or technology committee members should use these forms or similar ones to gather specific information about current student, faculty, and administrator competencies, hardware inventory, software inventory, network and internet capability, and budget. Subject area technology objectives should be evaluated in the yearly Curriculum In-depth Study. Mark the difference in each area between the current reality and the goal in the Archdiocesan Technology Strategic Plan.

### **2. Make a plan to reach the goal.**

Empower the school technology committee, planning team, information technology/computer teacher, and/or classroom teachers to design a plan with specific action steps to reach the goals. Work with the parish finance council and other appropriate persons/groups to ensure that funding is identified for staff development, hardware/software purchase, maintenance, and other on-going costs.

### **3. Establish a time line for implementing the plan. Assess progress at the appropriate time.**

Evaluate in the areas of:

- ❖ Integration of computers, internet access, innovative teaching strategies into all areas of the curriculum
- ❖ Student competencies
- ❖ Teacher competencies
- ❖ Administrator competencies
- ❖ Hardware acquisition, maintenance, systematic replacement
- ❖ Software appropriateness and availability
- ❖ Wiring capability and maintenance
- ❖ Budgetary items and financing

**SAMPLE EVALUATION FORM: FACULTY COMPETENCIES**

➤ Please mark the date when you have achieved the corresponding (*Beginner, In Process, or Skilled*) level of competency.

**Teacher Name:** \_\_\_\_\_

	BEGINNER	IN PROCESS	SKILLED
<b>I. TECHNOLOGY OPERATIONS AND CONCEPTS</b>			
<b>A. Basic Skills</b>			
1. Connect, disconnect, and reconnect a computer to a keyboard, mouse, and printer			
2. Connect a computer to the network using the Ethernet connection			
3. Log on to the local network and access a file server			
4. Create and name folders, and subfolders			
5. Locate, open, and relocate saved documents, files, and folders			
6. Delete and undelete documents, files, and folders			
7. Manage, organize, and customize a desktop			
8. Locate and open an application from the icon on the desktop			
9. Navigate using icons, windows, and menus			
10. Create word processing documents and spreadsheets			
11. Name, save, retrieve, and edit a document			

	BEGINNER	IN PROCESS	SKILLED
<b>I. TECHNOLOGY OPERATIONS AND CONCEPTS (CONT.)</b>			
<b>A. Basic Skills (Cont.)</b>			
12. Import graphics and clip art to documents			
13. Use printing options			
14. Define system, memory, and storage as they apply to software and hardware			
15. Create a slide presentation			
16. Provide and maintain a back-up system for data			
17. Perform standard printer upkeep (i.e. change cartridge, etc.)			
18. Access CD reference resources			
19. Participate in continuing education regarding technology			
<b>B. Intermediate Skills</b>			
1. Create and use a template			
2. Identify error messages			
3. Identify, access, and use virus protection software			
4. Use data bases			
5. Connect audio/video input/output devices for large screen display			

	BEGINNER	IN PROCESS	SKILLED
<b>I. TECHNOLOGY OPERATIONS AND CONCEPTS (CONT.)</b>			
<b>C. Advanced Skills</b>			
1. Design and create a data base			
2. Trouble shoot computer systems to identify problems			
3. Interpret error and/or system message			
4. Install and uninstall software			
<b>II. PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES</b>			
1. Demonstrate awareness of the hierarchy of technology skills being taught at various levels			
2. Evaluate web sites and software for educational value and use in classroom activities			
<b>III. TEACHING, LEARNING, AND THE CURRICULUM</b>			
1. Incorporate the use of technology in all curriculum areas			
2. Use technology to support and address the diverse learning needs of students			
3. Apply technology to develop students' higher level thinking skills and creativity			
4. Model and teach appropriate citation of electronic resources			

	BEGINNER	IN PROCESS	SKILLED
<b>IV. ASSESSMENT AND EVALUATION</b>			
1. Include technology components in assessing student learning			
2. Use technology resources to collect and analyze data, interpret results, and communicate findings, such as analyzing items in a test to assess achievement			
3. Locate and use programs that branch and teach or they assess student learning			
<b>V. PRODUCTIVITY AND PROFESSIONAL PRACTICE</b>			
1. Compose, save and print a document			
2. Use an electronic grade book			
3. Use reporting software i.e. attendance, class lists			
4. Generate grades and progress reports electronically			
5. Send and receive information in files via electronic mail			
6. Set up and provide an electronic newsletter for communication to parents			
<b>VI. SOCIAL, ETHICAL, LEGAL, AND HUMAN SERVICES</b>			
1. Teach students to evaluate web sites from a Catholic perspective			
2. Monitor student use of the internet			
3. Promote safe and healthy use of technology resources			

	<b>BEGINNER</b>	<b>IN PROCESS</b>	<b>SKILLED</b>
<b>VI. SOCIAL, ETHICAL, LEGAL, AND HUMAN SERVICES (CONT.)</b>			
<b>4.</b> Teach and model the ethical and responsible use of the internet			
<b>5.</b> Demonstrate and model respect for intellectual property			
<b>6.</b> Be aware of and abide by the Archdiocesan acceptable use policy			

## WEB RESOURCES

Topic/Website Name		Internet Address/Description
1800's pioneers		<a href="http://lbrary.thinkquest.org/6400/wagon.html">http://lbrary.thinkquest.org/6400/wagon.html</a>  Developed by students and teachers in Texas to help other learn about western expansion and 1800's pioneers. Includes information about trails, transportation and supplies.  <a href="http://www.americanwest.com/pages/asexpans.htm">http://www.americanwest.com/pages/asexpans.htm</a>  Maps of trails and key dates of expansion and other historical information
Acts of kindness		<a href="http://www.actsofkindness.org/classroom">www.actsofkindness.org/classroom</a>
Adobe Acrobat Forms Reader		<a href="http://www.adobe.com/acrobat">www.adobe.com/acrobat</a>
African Issues/African Studies		<a href="http://www.nypl.org/research/sc/sc.html">www.nypl.org/research/sc/sc.html</a>  <a href="http://www.sas.upenn.edu/African_Studies">www.sas.upenn.edu/African_Studies</a>
Amazon Book Store		<a href="http://www.amazon.com">www.amazon.com</a>
American Catholic		<a href="http://www.americancatholic.org">www.americancatholic.org</a>
American Math Society		<a href="http://e-math.ams.org">http://e-math.ams.org</a>
Ancestry Search		<a href="http://www.ancestry.com">www.ancestry.com</a>
Annenburg Site		<a href="http://www.learner.org">www.learner.org</a>
Apple Computer (Educational Info)		<a href="http://www.apple.com/education">www.apple.com/education</a>
Apple Learning Interchange		<a href="http://edcommunity.apple.com/ali/">http://edcommunity.apple.com/ali/</a>

## WEB RESOURCES (CONT.)

Topic/Website Name	Internet Address/Description
Archdiocesan Schools	<a href="http://www.allsoulsschool.com">www.allsoulsschool.com</a> <a href="http://www.christthekingdenver.com">www.christthekingdenver.com</a> <a href="http://www.escuelaguadalupe.org">www.escuelaguadalupe.org</a> <a href="http://www.goodshepherddenver.com">www.goodshepherddenver.com</a> <a href="http://www.htcatholic.org">www.htcatholic.org</a> <a href="http://www.mpbdenver.org">www.mpbdenver.org</a> <a href="http://www.nativitybroomfield.org/sch_index.htm">www.nativitybroomfield.org/sch_index.htm</a> <a href="http://www.notredamedenver.org">www.notredamedenver.org</a> <a href="http://www.fatimalakewood.com">www.fatimalakewood.com</a> <a href="http://www.ololschool.org">www.ololschool.org</a> <a href="http://www.shjboulder.org">www.shjboulder.org</a> <a href="http://www.saintbernadetteschool.com">www.saintbernadetteschool.com</a> <a href="http://www.stclareparish.com">www.stclareparish.com</a> <a href="http://www.stjschool.com">www.stjschool.com</a> <a href="http://www.johnthebaptist.org">www.johnthebaptist.org</a> <a href="http://www.saintjohns.net">www.saintjohns.net</a> <a href="http://www.stjosephchurchfc.org">www.stjosephchurchfc.org</a> <a href="http://www.stlouiscatholicsschool.org">www.stlouiscatholicsschool.org</a> <a href="http://www.stlouisschool-co.com/school.htm">www.stlouisschool-co.com/school.htm</a> <a href="http://www.stmarygreeley.org/stmarysschool.html">www.stmarygreeley.org/stmarysschool.html</a> <a href="http://www.stmarylittletonschool.org">www.stmarylittletonschool.org</a> <a href="http://www.smanet.org">www.smanet.org</a> <a href="http://www.stppscatholic.com">www.stppscatholic.com</a> <a href="http://www.stpiusxschool.net">www.stpiusxschool.net</a> <a href="http://www.stthereseschool.com">www.stthereseschool.com</a> <a href="http://www.stthomasmore.org">www.stthomasmore.org</a> <a href="http://www.machebeuf.org">www.machebeuf.org</a> <a href="http://www.holyfamilyhs.org">www.holyfamilyhs.org</a> <a href="http://www.arrupejesuit.com">www.arrupejesuit.com</a> <a href="http://www.mullenhighschool.com">www.mullenhighschool.com</a> <a href="http://www.regisjesuit.com">www.regisjesuit.com</a>
Archeology	<a href="http://www.archaeologic.com">www.archaeologic.com</a> <a href="http://www.archnet.asu.edu">www.archnet.asu.edu</a> <a href="http://www.julen.net/ancient">www.julen.net/ancient</a> <a href="http://www.loc.gov">www.loc.gov</a> (Government Site) <a href="http://www.ibiblio.org/expo/deadsea.scrolls.exhibit/intro.html">www.ibiblio.org/expo/deadsea.scrolls.exhibit/intro.html</a> (Dead Sea Scrolls Exhibit)

WEB RESOURCES (CONT.)		
Topic/Website Name		Internet Address/Description
Art Ed Net (Getty Museum)		<a href="http://www.getty.edu/artsednet">www.getty.edu/artsednet</a>
Asian Issues/News/Resources		<a href="http://www.sois.uwm.edu/jeong/ceal">www.sois.uwm.edu/jeong/ceal</a> <a href="http://www.aasianst.org/links.htm">www.aasianst.org/links.htm</a> (Asian Studies) <a href="http://www.asianweek.com">www.asianweek.com</a> <a href="http://www.korea.net">www.korea.net</a> <a href="http://www.sscnet.ucla.edu/aasc">www.sscnet.ucla.edu/aasc</a>
Ask Dr. Math		<a href="http://forum.swarthmore.edu/dr.math">http://forum.swarthmore.edu/dr.math</a>
Ask Dr. Science		<a href="http://www.ducksbreath.com">www.ducksbreath.com</a>
Bible (NAB)		<a href="http://www.usccb.org/nab/bible/index.htm">www.usccb.org/nab/bible/index.htm</a>
Bobcat		<a href="http://www.ezlink.com/~edu">www.ezlink.com/~edu</a>
Canada's K-12 Master Site		<a href="http://www.schoolnet.ca">www.schoolnet.ca</a>
Catholic Church - Related Sites		<a href="http://www.vatican.va">www.vatican.va</a> <a href="http://www.newadvent.org">www.newadvent.org</a> <a href="http://www.catholiceducation.org">www.catholiceducation.org</a> <a href="http://www.usccb.org">www.usccb.org</a> <a href="http://www.ewtn.org">www.ewtn.org</a> <a href="http://www.catholicnewsagency.com">www.catholicnewsagency.com</a> <a href="http://www.catholic.org">www.catholic.org</a>
CERN		<a href="http://www.cern.ch">www.cern.ch</a>
Classroom Connect		<a href="http://www.corporate.classroom.com">www.corporate.classroom.com</a>
Copyright Assistance & Information		<a href="http://www.copyright.gov">www.copyright.gov</a>
Conestoga Wagons		<a href="http://www.factmonster.com/ce6/history/A0813191.html">www.factmonster.com/ce6/history/A0813191.html</a> Detailed encyclopedia page about Conestoga wagons

## WEB RESOURCES (CONT.)

Topic/Website Name	Internet Address/Description
<b>Curriculum Corporation</b>	<a href="http://www.curriculum.edu.au/index.php">www.curriculum.edu.au/index.php</a>
<b>Discovery School</b>	www.discoveryschool.com
<b>Earthquake Information</b>	wwwneic.cr.usgs.gov <a href="http://quake.wr.usgs.gov/">http://quake.wr.usgs.gov\</a>
<b>Earth Science Animations</b>	<a href="http://www.ourworld.compuserve.com/homepages/CVisco/blank.htm">www.ourworld.compuserve.com/homepages/CVisco/blank.htm</a> Great Earth Science animations <a href="http://www.geography.cst.cmich.edu/Franc1M/Animations/animation_list_posted.htm">www.geography.cst.cmich.edu/Franc1M/Animations/animation_list_posted.htm</a> Alphabetized Earth Science Animations. <a href="http://www.wwnorton.com/nrl/geo/earth/animation_list.htm">www.wwnorton.com/nrl/geo/earth/animation_list.htm</a>
<b>Educator's Reference Desk</b>	<a href="http://www.eduref.org">www.eduref.org</a>
<b>Educational Resources, Inc.</b>	www.edresources.com
<b>Education Resources Information Center (ERIC)</b>	www.eric.ed.gov
<b>Education World</b>	<a href="http://www.educationworld.com">www.educationworld.com</a>
<b>Education Place</b>	<a href="http://www.eduplace.com/tales">www.eduplace.com/tales</a> To practice parts of speech
<b>Enchanted Learning Software</b>	www.EnchantedLearning.com
<b>Educational Software</b>	www.educational-software-directory.net/organizations.html
<b>E-Library</b>	<a href="http://www.my-ecoach.com/elibrary">www.my-ecoach.com/elibrary</a>
<b>Exploratorium</b>	<a href="http://www.exploratorium.edu">www.exploratorium.edu</a> <a href="http://www.exploratorium.edu/ronh/age">www.exploratorium.edu/ronh/age</a> to find your age on other planets

WEB RESOURCES (CONT.)		
Topic/Website Name		Internet Address/Description
<b>Exploratorium (Cont.)</b>		<a href="http://www.exploratorium.edu/ronh/weight">www.exploratorium.edu/ronh/weight</a> To find your weight on other planets
<b>Fed World (USA Government)</b>		<a href="http://www.fedworld.gov">www.fedworld.gov</a>
<b>Foundations (Indexes, Gov't Grants)</b>		<a href="http://www.foundations.org">www.foundations.org</a> <a href="http://www.cof.org">www.cof.org</a> <a href="http://fdncenter.org">http://fdncenter.org</a> <a href="http://www.ed.gov/pubs/KnowabtGrants">www.ed.gov/pubs/KnowabtGrants</a>
<b>George Lucas Educational Foundation</b>		<a href="http://www.edutopia.org">www.edutopia.org</a>
<b>GLOBE (Environmental Issues)</b>		<a href="http://www.globe.gov">www.globe.gov</a>
<b>Grammar</b>		<a href="http://www.eduplace.com/kids/hme/k_5/quizzes">www.eduplace.com/kids/hme/k_5/quizzes</a>
<b>Incompetech</b>		<a href="http://incompetech.com/graphpaper/">http://incompetech.com/graphpaper/</a> Great online graph paper generator
<b>Interactive sites:</b>		<a href="http://www.colonialwilliamsurg.com">www.colonialwilliamsurg.com</a> go to "Explore and Learn" section <a href="http://www.ancientegypt.co.uk">www.ancientegypt.co.uk</a> wonderful interactive site from The British Museum
<b>Internet Public Library</b>		<a href="http://ipl.sils.umich.edu/">ipl.sils.umich.edu/</a>
<b>K. Schrock's Guide for Educators</b>		<a href="http://school.discovery.com/schrockguide">http://school.discovery.com/schrockguide</a>
<b>Kids Health</b>		<a href="http://kidshealth.org">http://kidshealth.org</a>
<b>Kimbell Art Museum</b>		<a href="http://www.kimbellart.org">www.kimbellart.org</a>
<b>Learning and Teaching in Scotland</b>		<a href="http://www.ltscotland.org.uk/index.asp">www.ltscotland.org.uk/index.asp</a>

## WEB RESOURCES (CONT.)

Topic/Website Name	Internet Address/Description
<b>Lessons plans, games and ideas</b>	<p><a href="http://www.kidzonline.com">www.kidzonline.com</a> K-12 streaming video and lesson plans includes Tech training</p> <p><a href="http://www.lessonplanz.com">www.lessonplanz.com</a> searchable directory of free online plans and resources for all grades and subjects.</p> <p><a href="http://www.lessonplanspage.com">www.lessonplanspage.com</a> 2,000 free lesson searchable for subject or topic including Science experiments and math worksheets.</p> <p><a href="http://www.teachnet.com/lesson/">www.teachnet.com/lesson/</a> Lesson plans grouped by subject and grade level</p> <p><a href="http://www.lessonplansearch.com">www.lessonplansearch.com</a></p> <p><a href="http://www.col-ed.org">www.col-ed.org</a> compiled by Columbia Education Center</p> <p><a href="http://artsedge.kennedy-center.org">http://artsedge.kennedy-center.org</a></p> <p><a href="http://www.pbs.org/teachersource">http://www.pbs.org/teachersource</a> multimedia resources and professional development K-12</p> <p><a href="http://www.edhelper.com">www.edhelper.com</a> online worksheets and exercises categorized by subject and theme</p> <p><a href="http://www.ecewebguide.com">www.ecewebguide.com</a> Early Childhood Educator: classroom management, resource section and mailing list.</p> <p><a href="http://www.theideabox.com">www.theideabox.com</a> early childhood teacher ideas grouped by activity, season, music, recipes, games and crafts.</p> <p><a href="http://www.inspiringteachers.com">www.inspiringteachers.com</a></p> <p><a href="http://www.middleweb.com">www.middleweb.com</a> material, links, strategies, professional development and classroom assessment.</p> <p><a href="http://www.schooexpress.com">www.schooexpress.com</a> "What's Free" section with units, worksheets and activities.</p> <p><a href="http://www.sitesforteachers.com">www.sitesforteachers.com</a> Web portal with over 1,000 links to a variety of teacher sites.</p> <p><a href="http://www.proteacher.net">www.proteacher.net</a> Online sharing of ideas, discussion and posting boards.</p>

## WEB RESOURCES (CONT.)

Topic/Website Name	Internet Address/Description
<b>Lessons plans, games and ideas (Cont.)</b>	<p><a href="http://school.discovery.com">http://school.discovery.com</a> puzzles, games and activities to make teaching and learning more fun from the Discovery Channel.</p> <p><a href="http://www.teacherfirst.com">www.teacherfirst.com</a> K-12 lessons and web resources arranged by subject area and grade level.</p> <p><a href="http://www.marcopolo-education.org/teacher/teacher_index.aspx">www.marcopolo-education.org/teacher/teacher_index.aspx</a></p> <p><a href="http://www.learner.org/teacherslab/">www.learner.org/teacherslab/</a> a place for teacher to explore new ideas in learning.</p> <p><a href="http://learnweb.harvard.edu/alps/bigideas/q1.cfm">http://learnweb.harvard.edu/alps/bigideas/q1.cfm</a> The Anneberg Teachers' Lab</p> <p><a href="http://64.119.44.148/help/quick-start">http://64.119.44.148/help/quick-start</a> GEM: The gateway to 21<sup>st</sup> Century Skills</p> <p><a href="http://www.education-world.com/help/guide.shtml">/www.education-world.com/help/guide.shtml</a> lesson plans, internet sites, technology integration etc. This link leads to a site guide to explore the larger site.</p> <p><a href="http://www.marcopolo-education.org/teacher/teacher_index.aspx">www.marcopolo-education.org/teacher/teacher_index.aspx</a> Marco Polo and Tinkfinity Panel-reviewed links to top sites in many disciplines. Search interface and select content and grade level; also New Resources page.</p>
<b>Lexington School District One</b>	<p><a href="http://www.lexington1.net/technology/?page=instruct/powerpoint.htm">http://www.lexington1.net/technology/?page=instruct/powerpoint.htm</a></p> <p>Great resource for instructional PowerPoint presentations – especially math ones</p>
<b>Literary Links</b>	<p><a href="http://www.poets.org/links/index.cfm">www.poets.org/links/index.cfm</a></p> <p><a href="http://www.dundee.ac.uk/english/linksliterary.htm">www.dundee.ac.uk/english/linksliterary.htm</a></p> <p><a href="http://www.pw.org/links_pages">www.pw.org/links_pages</a></p>

## WEB RESOURCES (CONT.)

Topic/Website Name	Internet Address/Description
<b>Magazines</b>	<a href="http://www.pathfinder.com">www.pathfinder.com</a>
<b>Marco Polo</b>	<a href="http://www.marcopolo-education.org">www.marcopolo-education.org</a> (Internet Content for the Classroom)
<b>Martindale's Links</b>	<a href="http://www.martindalecenter.com">www.martindalecenter.com</a>
<b>Math</b>	<a href="http://enc.org">http://enc.org</a> <a href="http://coolmath.com">http://coolmath.com</a> <a href="http://superkids.com/aweb/tools/math">superkids.com/aweb/tools/math</a> For math worksheets  www.schoolhousetech.com Great website for designing specific math worksheets - free trial for first 20 uses.
<b>McRel</b>	<a href="http://www.mcrel.org">www.mcrel.org</a>
<b>Microsoft Education Community</b>	<a href="http://www.microsoft.com/education/schools.msp">www.microsoft.com/education/schools.msp</a>
<b>NASA for kids</b>	<a href="http://kids.msfc.nasa.gov">kids.msfc.nasa.gov</a>
<b>National Spelling Bee</b>	<a href="http://www.spellingbee.com">www.spellingbee.com</a>
<b>National Weather Service</b>	<a href="http://www.nws.noaa.gov">www.nws.noaa.gov</a>
<b>Ontario Science Center</b>	www.osc.on.ca
<b>Oregon Trail Web sites:</b>	<a href="http://www.over-land.com/trore.html">http://www.over-land.com/trore.html</a> Everything from general information about the trail to books and true accounts of travelers.  <a href="http://www.isu.edu/~trinmich/Oregontrail.html">http://www.isu.edu/~trinmich/Oregontrail.html</a> Developed by teachers Mike Trinklein and Steve Boettcher who created the Oregon Trail, PBS documentary film.

## WEB RESOURCES (CONT.)

Topic/Website Name		Internet Address/Description
<b>Physics Education Technology</b> University of Colorado at Boulder		<a href="http://www.phet.colorado.edu/new/simulations/index.php?cat=Top_Simulations">www.phet.colorado.edu/new/simulations/index.php?cat=Top_Simulations</a> Teaching with Simulations and a Simulation Resource
<b>Photos and graphics:</b>		<a href="http://pics.tech4learning.com">http://pics.tech4learning.com</a> <a href="http://openphoto.net">http://openphoto.net</a>
<b>Planet Reports</b>		<a href="http://www.nasm.si.edu/etp">www.nasm.si.edu/etp</a>
<b>Poetry</b>		<a href="http://www.usd.edu/engl/poetry.html">www.usd.edu/engl/poetry.html</a> <a href="http://www.poets.org">www.poets.org</a>
<b>PuzzleMaker</b>		<a href="http://www.puzzlemaker.discoveryeducation.com/">www.puzzlemaker.discoveryeducation.com/</a> With this site you can make word searches, crosswords and tons of other types of puzzles.
<b>Quotations</b>		<a href="http://www.cyber-nation.com">www.cyber-nation.com</a>
<b>Reading</b>		<a href="http://www.rif.org">www.rif.org</a> nation's largest non profit children's literacy org. Includes programs and how you can help promote reading.
<b>Santa Fe Trail</b>		<a href="http://www/nps.gov/safe/">http://www/nps.gov/safe/</a> official Nation Park Service site for the Santa Fe trail-lots of historical information, pictures and maps. <a href="http://www.ku.edu/heritage/research/sft/">http://www.ku.edu/heritage/research/sft/</a> Interactive Santa Fe Frail including history and links to other sites.
<b>Science Animations</b>		<a href="http://science.nhmccd.edu/BioL/animatio.htm">http://science.nhmccd.edu/BioL/animatio.htm</a> Animation Resource Sites (Bookmark or Add to Favorites Sites Like This)
<b>Science Links</b>		<a href="http://www.fisheredu.com">www.fisheredu.com</a>
<b>Search Engines</b>		<a href="http://www.searchenginewatch.com">www.searchenginewatch.com</a> <a href="http://www.google.com">www.google.com</a> <a href="http://www.yahoo.com">www.yahoo.com</a> <a href="http://www.askjeeves.com">www.askjeeves.com</a> <a href="http://www.excite.com">www.excite.com</a>

WEB RESOURCES (CONT.)		
Topic/Website Name		Internet Address/Description
Shareware		<a href="http://www.shareware.com">www.shareware.com</a>
Subjects		<a href="http://www.thejournal.com">www.thejournal.com</a>
Teachers Guide		<a href="http://www.theteachersguide.com">www.theteachersguide.com</a>
Teacher Organizations		<a href="http://www.ncea.org">www.ncea.org</a> National Catholic Educational Association <a href="http://www.nea.org">www.nea.org</a> National Education Association <a href="http://www.aft.org">www.aft.org</a> American Federation of Teachers <a href="http://www.nbpts.org">www.nbpts.org</a> National Board for Professional Teaching Standards with performance-based assessments.
Teaching with On Line Lessons		<a href="http://www.resources.schoolscience.co.uk/abpi/cancer/index.html">www.resources.schoolscience.co.uk/abpi/cancer/index.html</a> <a href="http://www.resources.schoolscience.co.uk/abpi/cancer/index.html">www.resources.schoolscience.co.uk/abpi/cancer/index.html</a> Cell Division and Cancer
Test Prep		<a href="http://www.testprep.com">www.testprep.com</a>
Think Quest Library		<a href="http://www.thinkquest.org/library">www.thinkquest.org/library</a>
Universities		<a href="http://www.univ.cc">www.univ.cc</a> <a href="http://www.unesco.org/iau">www.unesco.org/iau</a>
U.S. Department of Education		<a href="http://www.ed.gov">www.ed.gov</a> <a href="http://dww.ed.gov/">http://dww.ed.gov/</a> The U.S. Department of Education has launched a new Web site to provide teachers, administrators and other educators with recommendations on effective teaching practices and examples of possible ways to implement those practices to help promote excellence in American education and improve student achievement. The first in the series focuses on English language learners. The new "Doing What Works" site, offers a user-friendly interface to quickly locate teaching practices that have been found effective by the department's research arm, the Institute of Education Sciences, and similar organizations. In addition, it cites examples of possible ways, although not necessarily the only ways, this research may be used to help students reach their academic potential.

**WEB RESOURCES (CONT.)**

<b>Topic/Website Name</b>		<b>Internet Address/Description</b>
<b>Variables (Web legal issues)</b>		<a href="http://www.ggtech.com">www.ggtech.com</a>
<b>Veterans Day</b>		<a href="http://www1.va.gov/opa/vetsday/">www1.va.gov/opa/vetsday/</a>
<b>Virtual Abacus</b>		<a href="http://www.ee.ryerson.ca/~elf/abacus">www.ee.ryerson.ca/~elf/abacus</a>
<b>Virus Database</b>		<a href="http://ciac.llnl.gov/ciac/CIACVirusDatabase.html">http://ciac.llnl.gov/ciac/CIACVirusDatabase.html</a>
<b>Web Gallery of Art</b>		<a href="http://www.wga.hu/">www.wga.hu/</a>