

WATERVLIET CITY SCHOOL DISTRICT

TECHNOLOGY PLAN

2010-2013



*Originally Submitted to the BOE by
The District-wide Technology Committee
November 21, 2006*

*Resubmitted to the BOE by
The District-Wide Technology Committee
June 6, 2008*

*Revised and updated by
The District-Wide Technology Committee for the BOE
May, 18, 2010*

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Section I: District Wide Technology Committee

(2010)

- ***Kirsten DeMento, Director of Curriculum and Instruction (Committee Chairperson)***
- ***Dan Lindemann, District-wide Technology Coordinator***
- ***Mike Olson, NERIC Technology Support Person***
- ***Mike Ferracane, NERIC Technology Support Person***
- ***Donald Stevens, Elementary School Teacher***
- ***Michelle Brown, Elementary School Teacher***
- ***Allison Novotarski, High School Media Specialist***
- ***Rosemary Palmquist, Elementary Media Specialist***
- ***Peter Gaddy, High School Business Teacher***
- ***Matthew Saucier, High School Technology Teacher***
- ***Todd Giagni, Elementary Assistant Principal***
- ***Marissa Ebli, High School English Teacher***

(2008)

- ***Kirsten DeMento, Director of Curriculum and Instruction (Committee Chairperson)***
- ***Lori Caplan, High School Principal***
- ***Ben Robert , Elementary School Assistant Principal***
- ***Dan Lindemann, District-wide Technology Coordinator***
- ***Mike Olson, NERIC Technology Support Person***
- ***Kathy Terpening, Elementary School Teacher***
- ***Donald Stevens, Elementary School Teacher***
- ***Jim Gardner, High School Math Teacher***
- ***Allison Jones, High School Library Media Specialist***
- ***Gretchen Hodges, Parent***

(2006)

- ***Kirsten DeMento, Director of Curriculum and Instruction (Committee Chairperson)***
- ***Lori Caplan, High School Principal***
- ***Michael Teator, Elementary School Assistant Principal***
- ***Nick Fitzgerald, District-wide Technology Coordinator***
- ***Joe DeFazio, NERIC Technology Support Person***
- ***Kathy Terpening, Elementary School Teacher***
- ***Richard Fisher, High School Science Teacher***
- ***Rebecca Ekstrom, High School Librarian***
- ***Gretchen Hodges and Barbara Stroh, Parents***

Section II: Mission Statement

It is the Mission of the Watervliet City School District to provide the technology and training that will enable our entire school community to successfully function in the technology based society of the 21st Century.

The Technology Committee has reviewed the pending New York State Learning Technology Plan and has decided that now is the time to adopt the International Society for Technology in Education (ISTE) National Educational Technology Standards and Performance indicators for Students, Teachers and Administrators. (Please see the complete list with Profiles for Technology (ICT) Literate Students in appendix VIII.) These national technology standards set the stage for what skills are necessary to be successful in school, post secondary education, careers and life.

Section III: Goals

See attachment B – Technology Implementation Plan

Section IV: Staff Development

The Watervliet City School District supports on going staff development in the area of technology in a variety of ways. Professional development funds are available to faculty, administration, and staff members to attend conferences and /or workshops throughout the year. The district assumes responsibility for the fees associated with any approved professional development and costs for substitute teachers. The district also contributes time in the form of conference days for training in the area of technology.

Additional staff development, in the area of technology, is available to the district by a number of providers. These providers include the Capital Region Board of Cooperative Educational Services (BOCES), Northeast Regional Information Center (NERIC), and through staff development experts from Smart Technologies, as well as turn key trainers from within our district. We also offer staff a technology integrationist who works directly with faculty, administration, staff, and students to increase technology usage and improve technological competencies in the classroom.

The staff development portion of this plan includes the following goals:

- *Providing the necessary staff development to assist all faculty, administration and staff in acquiring the skills necessary to use computers as a resource for full implementation of the New York State Learning Standards.*
- *Offering a variety of computer/technology training to all faculty, administration and staff at the novice, intermediate, and advanced levels as appropriate to enhance their district roles.*
- *Sustaining the site-based support of the technology integrationists to assist in the development of lesson plans and units designed to address the New York State Learning Standards.*

Section V: Inventory

See Attachment– Hardware Inventory

Section VI: Technology Budget (2010-2013)

<u>Items</u>	<u>Costs:</u>
Replacement of routers and switches, PC workstations and additional hardware (Printers, Printer Cables) BOCES 3 year lease/purchase Plan: (Yearly, approximately 100 computer work stations, 10 laptops, & 5-10 Smart boards, Senteos, Elmos, Flip Video Cameras)	\$ 155,000/year
Phone System and Cabling: BOCES Maintenance Plan/Upgrades Fiber Optics (Installed in fall 2008)	\$ 15,000/year \$40,000/year
Additional Software/upgrades/renewals (Including software requisitioned by teachers and staff)	\$23,000/year
Professional Development Resources Includes NERIC Model Schools	\$ 17,000/year
	<hr/>
	Totals:
	\$ 250,000 approximately per year

Section VII: Plan Evaluation

The Watervliet City School District supports on going evaluation of its technology plan. The Watervliet City School District wide Technology Committee will periodically evaluate the extent to which the goals of this plan are achieved. Feedback from the faculty, administration, and staff in the form of surveys and discussions at faculty meetings / faculty forums will further inform the evaluation of this plan. In addition, the Building Level Action Teams will be instrumental in communicating building needs / concerns to the district committee.

As an on going function of the district wide technology committee, an annual evaluation of the plan will be drafted in narrative form and used to focus improvement efforts for the following year.

VIII: ISTE Standards for Students, Teachers and Administrators

**The ISTE
National Educational Technology Standards (NETSoS)
and Performance Indicators for Students**

1. Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Students:

- a. apply existing knowledge to generate new ideas, products, or processes.
- b. create original works as a means of personal or group expression.
- c. use models and simulations to explore complex systems and issues.
- d. identify trends and forecast possibilities.

2. Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

Students:

- a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- c. develop cultural understanding and global awareness by engaging with learners of other cultures.
- d. contribute to project teams to produce original works or solve problems.

3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information.

Students:

- a. plan strategies to guide inquiry.
- b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- d. process data and report results.

4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Students:

- a. identify and define authentic problems and significant questions for investigation.
- b. plan and manage activities to develop a solution or complete a project.
- c. collect and analyze data to identify solutions and/or make informed decisions.
- d. use multiple processes and diverse perspectives to explore alternative solutions.

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Students:

- a. advocate and practice safe, legal, and responsible use of information and technology.
- b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- c. demonstrate personal responsibility for lifelong learning.
- d. exhibit leadership for digital citizenship.

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

Students:

- a. understand and use technology systems.
- b. select and use applications effectively and productively.
- c. troubleshoot systems and applications.
- d. transfer current knowledge to learning of new technologies.

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The ISTE
National Educational Technology Standards (NETSoT) for Teachers 2008

Effective teachers model and apply the National Educational Technology Standards for Students (NETS.S) as they design, implement and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues and the community. All teachers would meet the following standards and performance indicators.

Teachers:

1. Facilitate and Inspire Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Teachers:

- a. promote, support, and model creative and innovative thinking and inventiveness.
- b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources.
- c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes.
- d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.

2. Design and Develop Digital-Age Learning Experiences and Assessments

Teachers design, develop, and evaluate authentic learning experiences and assessment incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S.

Teachers:

- a. design or adapt relevant learning experiences that incorporate digital

tools and resources to promote student learning and creativity.

- b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress.
- c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources.
- d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching.

3. Model Digital-Age Work and Learning

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

Teachers:

- a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations.
- b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation.
- c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats.
- d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning.

4. Promote and Model Digital Citizenship and Responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

Teachers:

- a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright,

intellectual property, and the appropriate documentation of sources.

b. address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources.

c. promote and model digital etiquette and responsible social interactions related to the use of technology and information.

d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools.

5. Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

Teachers:

a. participate in local and global learning communities to explore creative applications of technology to improve student learning.

b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others.

c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning.

d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.

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The ISTE
**National Educational Technology Standards (NETSoA)
and Performance Indicators for Administrators**

1. Visionary Leadership. Educational Administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization.

Educational Administrators:

- a. inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders
- b. engage in an ongoing process to develop, implement, and communicate technology-infused strategic plans aligned with a shared vision
- c. advocate on local, state, and national levels for policies, programs, and funding to support implementation of a technology-infused vision and strategic plan

2. Digital-Age Learning Culture. Educational Administrators create, promote, and sustain a dynamic, digital-age learning culture that provides a rigorous, relevant, and engaging education for all students.

Educational Administrators:

- a. ensure instructional innovation focused on continuous improvement of digital-age learning
- b. model and promote the frequent and effective use of technology for learning
- c. provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners
- d. ensure effective practice in the study of technology and its infusion across the curriculum
- e. promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital-age collaboration

3. Excellence in Professional Practice. Educational Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.

Educational Administrators:

- a. allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration
- b. facilitate and participate in learning communities that stimulate, nurture, and support administrators, faculty, and staff in the study and use of technology
- c. promote and model effective communication and collaboration among stakeholders using digital-age tools
- d. stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning

4. Systemic Improvement. Educational Administrators provide digital-age leadership and management to continuously improve the organization through the effective use of information and technology resources.

Educational Administrators:

- a. lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources
- b. collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning
- c. recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals
- d. establish and leverage strategic partnerships to support systemic improvement
- e. establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning

5. Digital Citizenship. Educational Administrators model and facilitate understanding of social, ethical, and legal issues and responsibilities related to an evolving digital culture.

Educational Administrators:

- a. ensure equitable access to appropriate digital tools and resources to meet the needs of all learners
- b. promote, model, and establish policies for safe, legal, and ethical use of digital information and technology
- c. promote and model responsible social interactions related to the use of technology and information
- d. model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools

PROFILES for Technology (ICT) Literate Students

A major component of the NETS Project is the development of a general set of profiles describing technology (ICT) literate students at key developmental points in their pre-college education. These profiles are based on ISTE's core belief that all students must have regular opportunities to use technology to develop skills that encourage personal productivity, creativity, critical thinking, and collaboration in the classroom and in daily life.

Coupled with the standards, the profiles provide a set of examples for preparing students to be lifelong learners and contributing members of a global society.

The profiles highlight a few important types of learning activities in which students might engage as the new NETS•S are implemented. These examples are provided in an effort to bring the standards to life and demonstrate the variety of activities possible. Space limitations and the realities of the constantly evolving learning and technology landscapes make it impossible to provide a comprehensive collection of examples in this document, and consequently, students and teachers should not feel constrained by this resource. Similarly, because this represents only a sampling of illuminating possibilities, the profiles cannot be considered a comprehensive curriculum, or even a minimally adequate one, for achieving mastery of the rich revised National Educational Technology Standards for Students. Educators are encouraged to stay connected to the ISTE NETS Refresh Project and contribute their best examples to expand this resource.

The profiles are divided into the following four grade ranges. Because grade-level designations vary in different countries, age ranges are also provided.

- Grades PK–2 (ages 4–8)
- Grades 3–5 (ages 8–11)
- Grades 6–8 (ages 11–14)
- Grades 9–12 (ages 14–18)

It's important to remember that the profiles are *indicators of achievement at certain stages* in primary, elementary, and secondary education, and that success in meeting the indicators is predicated on students having regular access to a variety of technology tools. Skills are introduced and reinforced over multiple grade levels before mastery is achieved. If access is an issue, profile indicators will need to be adapted to fit local needs.

The standards and profiles are based on input and feedback provided by instructional technology experts and educators from around the world, including classroom teachers, administrators, teacher educators, and curriculum specialists. Students were also given opportunities to provide input and feedback. In addition, these refreshed documents reflect information collected from professional literature.

Profile for Technology (ICT) Literate Students
Grades PK–2 (Ages 4–8)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during PK–Grade 2 (ages 4–8):

1. Illustrate and communicate original ideas and stories using digital tools and media-rich resources. (1, 2)
2. Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution. (1, 3, 4)
3. Engage in learning activities with learners from multiple cultures through e-mail and other electronic means. (2, 6)
4. In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area. (1, 2, 6)
5. Find and evaluate information related to a current or historical person or event using digital resources. (3)
6. Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals. (1, 3, 4)
7. Demonstrate the safe and cooperative use of technology. (5)
8. Independently apply digital tools and resources to address a variety of tasks and problems. (4, 6)
9. Communicate about technology using developmentally appropriate and accurate terminology. (6)
10. Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and Web sites. (6)

The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

Profile for Technology (ICT) Literate Students Grades 3–5 (Ages 8–11)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during Grades 3–5 (ages 8–11):

1. Produce a media-rich digital story about a significant local event based on first-person interviews. (1, 2, 3, 4)
2. Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1, 2, 6)
3. Recognize bias in digital resources while researching an environmental issue with guidance from the teacher. (3, 4)
4. Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (3, 4, 6)
5. Identify and investigate a global issue and generate possible solutions using digital tools and resources. (3, 4)
6. Conduct science experiments using digital instruments and measurement devices. (4, 6)
7. Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support. (4, 6)
8. Practice injury prevention by applying a variety of ergonomic strategies when using technology. (5)
9. Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5, 6)
10. Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems. (4, 6)

The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

Profile for Technology (ICT) Literate Students Grades 6–8 (Ages 11–14)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during Grades 6–8 (ages 11–14):

1. Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software. (1, 2)
2. Create original animations or videos documenting school, community, or local events. (1, 2, 6)
3. Gather data, examine patterns, and apply information for decision making using digital tools and resources. (1, 4)
4. Participate in a cooperative learning project in an online learning community. (2)
5. Evaluate digital resources to determine the credibility of the author and publisher and the timeliness and accuracy of the content. (3)
6. Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3, 4, 6)
7. Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3, 4, 6)
8. Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)
9. Integrate a variety of file types to create and illustrate a document or presentation. (1, 6)
10. Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4, 6)

The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

Profile for Technology (ICT) Literate Students Grades 9–12 (Ages 14–18)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during Grades 9–12 (ages 14–18):

1. Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content. (1, 4)
2. Create and publish an online art gallery with examples and commentary that demonstrate an understanding of different historical periods, cultures, and countries. (1, 2)
3. Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness. (3, 6)
4. Employ curriculum-specific simulations to practice critical-thinking processes. (1, 4)
5. Identify a complex global issue; develop a systematic plan of investigation, and present innovative sustainable solutions. (1, 2, 3, 4)
6. Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. (4, 5, 6)
7. Design a Web site that meets accessibility requirements. (1, 5)
8. Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources. (3, 5)
9. Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources. (1, 5)
10. Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity. (4, 6)

The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

Attachment B
Watervliet City School District
Technology Implementation Plan
2010-2013

Goal #1: Thorough Integration of Technology into the K-12 Curricular Areas

Objective #1: To Enhance Student, Teacher and Administrative Use of the Internet and Electronic Data Bases as Effective Research Tools

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ Turn-Key Training for teachers 	<ul style="list-style-type: none"> ➤ Neric Training, District Conference Day ➤ After-school and Summer Sessions ➤ Release Time 	<ul style="list-style-type: none"> ➤ District-wide Faculty, Staff and Students ➤ School Librarians 	2010-2013	<ul style="list-style-type: none"> ➤ Evidence in Curriculum Maps in Rubicon ➤ Technology-Based Lessons and Units ➤ Student Developed Multi-media Presentations 	District Technology Funds Professional Development Funds

Goal #2: Targeted Staff Development to Improve District-wide Technology Integration

Objective #1: Providing staff development to assist all faculty, staff and administration in acquiring the skills necessary to use computers and other technologies as a resource for full implementation of the New York State Learning Standards

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ Imbedded Staff Development ➤ Turn-key Training ➤ Model Schools Training ➤ Standardization of District-wide Software 	<ul style="list-style-type: none"> ➤ NERIC Training ➤ Shared Learning Objective ➤ District Conference Day ➤ After-school and Summer Sessions ➤ Release Time 	<ul style="list-style-type: none"> ➤ Director of Curriculum ➤ District-wide Faculty and Staff ➤ Technology Support Staff ➤ Technology Integrationists 	2010-13	<ul style="list-style-type: none"> ➤ Demonstrations at Faculty Meetings, BOE or Department Meetings ➤ Submission of Technology-Based Lesson Plans ➤ Classroom Observations of Technology-Infused Instruction ➤ Curriculum Maps 	District Technology Funds Professional Development Funds Teacher Stipends

Objective #2: To Offer Training at All Levels to District-wide Staff to analyze and utilize data to drive curriculum and other school decisions.

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ NERIC ➤ Vliet Data Team ➤ Turn-Key Training 	<ul style="list-style-type: none"> ➤ Individualized Training ➤ Small Group Training ➤ Extended Session Training ➤ District Conference Day ➤ How to use Data mentor, NYSTART, Etc. 	District-wide Faculty and Staff	2010-13	<ul style="list-style-type: none"> ➤ Use of Electronic Databases & student data to inform teaching and instructional goals ➤ Increased student performance 	District Technology Funds Professional Development Funds

Goal #3: Utilize National Education Technology Standards (ISTE) with Students

Objective #1: Teachers will introduce and integrate the ISTE Technology Standards/ Skills by Grade Level (K-12) through classroom curriculum and assessment.

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ Classroom instruction ➤ Infuse technology into lessons ➤ Use of Web Max (Video Streaming) 	<ul style="list-style-type: none"> ➤ Workshops on Upcoming Technology Curriculum ➤ Curriculum Review and Development Sessions 	<ul style="list-style-type: none"> ➤ Technology Integrationists ➤ Classroom Teachers ➤ Special Education Teachers ➤ School Librarians 	2010-13	District-wide Technology Skills Document in Curriculum Maps	District Technology Funds Professional Development Funds Teacher Stipends Facilitator Expenses

Goal #4: Improved Access To and Utilization of the High School and Elementary Libraries

Objective #1: To Provide Support to All Curricular Areas and to Address Teacher and Student Needs.

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ Connections to Local Libraries, Colleges and Universities ➤ Informal and Formal meetings with staff and students 	<ul style="list-style-type: none"> ➤ Training to Enhance Teacher/Student Use of the Internet & research data bases as an Effective Research Tool ➤ Utilizing Software for Research ➤ Inter library loans ➤ NERIC as a Resource 	<ul style="list-style-type: none"> ➤ Classroom Teachers ➤ Special Education Teachers ➤ School Librarians 	2010-13	<ul style="list-style-type: none"> ➤ Integrated Units Utilizing the Library as evidenced in curriculum maps ➤ Student Developed Multi-media Presentations ➤ Increase use of library by students and classes 	District Technology Funds Professional Development Funds

Goal #5: Expand and update computer facilities (Original Goal Met 2009)

Objective #1: To Continuously Update and replace computer equipment, software, and peripherals as needed

Strategy	Activity	Who	Time Frame	Performance Measure	Cost
<ul style="list-style-type: none"> ➤ Purchase/leasing other equipment as needed ➤ Grants 	<ul style="list-style-type: none"> ➤ Bring computers and software up to date ➤ Install new computers and equipment 	<ul style="list-style-type: none"> ➤ BOCES Remote Coordinator ➤ Technology Coordinator ➤ Technology Integrationists ➤ School Librarians 	On-going	<ul style="list-style-type: none"> ➤ Review of inventory ➤ Standardize platform ➤ Review of Maintenance issues 	District Technology Funds Donations Grants

Attachment C
Watervliet City School District

Section V: Inventory

Attachment D
Watervliet City School District

Computer Systems Disaster Recovery Plan



Proposed to the Board of Education
and Approved on: January 15, 2008

Introduction

The initial goal is to create a comprehensive disaster recovery plan to ensure that the district's administrative and instructional computer systems are backed up.

The creation of this plan was recommended by the Watervliet City School District Technology Committee.

This plan takes into account many other areas that will need to be addressed in case of a disaster.

COMPREHENSIVE DISASTER RECOVERY PLAN

1. General

- a. Definition - The purpose of this disaster recovery plan is to provide the necessary policies and procedures that would be followed in the event of a disaster which would provide a path to recovery to resume normal business operations in 48 hours.
- b. Advance Preparation and Emergency Response Planning Phase
 - i. Leadership - define a Disaster Recovery (DR) Team
 - (1) Membership
 - (a) Superintendent of Schools
 - (b) Business Manager
 - (c) Director of Curriculum and Instruction/CIO
 - (d) Director of Pupil Personnel and Transportation
 - (e) Supervisor of Buildings and Grounds
 - (f) Network Administrator (BOCES)
 - (g) Building Principals
 - (h) District Computer Coordinator
 - (i) Administrative Assistant (Assistant to the Chief Information Officer)
 - (j) Communications Specialist
 - (2) Duties
 - Superintendent of Schools directs the team, serves as Recovery Director, receiving all information, making major operational decisions, consulting with all team members as needed; assigning additional personnel to the DR Team as may be needed. Delegating tasks as appropriate.
 - Business Manager serves as liaison with Superintendent of Schools. Performs Superintendent's duties in Superintendent's absence, and/or delegates duties to DR Team. Maintains a current list of employees and ensures they receive appropriate information and duties. Serves as liaison with insurers and performs other duties as assigned by the Superintendent.
 - Director of Curriculum serves as liaison with Superintendent of Schools. Performs Superintendent's duties in Superintendent's absence, and/or delegates duties to DR Team. Work with data recovery specialists to ensure the safety of student data. Serves as liaison and performs other duties as assigned by the Superintendent.
 - Communications Specialist: Fields all inquiries from media, members and the public; prepares official statements, talking points, and communication strategies

and advises the DR Team on implementation. Disseminates information to the media and the membership. Performs interviews and releases information as the designated official spokesperson.

- Supervisor of Buildings and Grounds - Performs duties as delegated/requested by Superintendent and the business manager and Director of Curriculum and Instruction. Confers with emergency services personnel, utility companies, etc., as appropriate to gather information. In charge of recovery of buildings, grounds, equipment, furniture and fixtures. Communicates with staff.
 - Network Manager (BOCES) insures that all network infrastructure and telecommunications are operational and ensures that all data is restored. Provides information to the Communications Specialist for the media website. Ensures that all necessary servers are operational and verifies what data needs to be restored if any
 - Business Manager/School District Treasurer ensures the
 - security of fiscal assets
 - availability of cash for emergency purposes
 - continuity of payroll and vendor payments
 - Building Principals - responsible for assessing situations at their respective buildings and reporting this information to designated members and assisting the Supervisor of Buildings and grounds in recovery of buildings, grounds, equipment, furniture and fixtures.
 - Administrative Assistant (Assistant to the Chief Information Officer) Works with Director of Curriculum and Instruction and data recovery specialists to ensure the safety of student data.
 - District Computer Coordinator - performs recovery services as directed.
1. Emergency equipment - See Emergency Management Plan for inventory of available equipment.
 2. Technical Services Command Center locations
 - a. Superintendent's Office (1st floor WHS), if not available;
 - b. Watervliet Elementary School Special Education Office, if not available;
 - c. Other locations TBD
 3. Communications: inbound and outbound
 - a. Initial (inbound) alert: Superintendent will identify a person, with a phone/e-mail/desk location where news of a crisis and subsequent developments should be reported.
 - b. Outbound: Superintendent will identify the person responsible for calling fire,

- police, rescue, and related services; list the numbers to call.
- c. As deemed appropriate by the Superintendent, update advisories will be issued via web postings, email and/or broadcast media.
4. The communications notification chain is as follows:
 - a. Employees will be notified as indicated on the snow day phone call lists (attached).
 - b. The phone numbers and e-mail addresses of every employee, as well as an emergency contact person, with phone and e-mail, for each employee can be obtained from the Business Manager.
 5. Board of Education
 - a. The School Board should be notified as promptly as possible, so that they are informed and ready to convene and authorize action should such be deemed necessary.
 - b. The following options are offered in accordance with the New York State Education Department’s escalation of alerts in the event of potential terrorist action:
 - i. Green (low risk): routine activities;
 - ii. Blue (guarded risk): routine activities;
 - iii. Yellow (elevated risk): review planned activities; ensure all data is current and emergency equipment is functional;
 - iv. Orange (high risk): review as above; also check staff schedules and availability of DR Team and backups;
 - v. Red (severe risk): Convene and brief DR Team
 6. Rest and Recovery
 - a. The DR team must pay attention to the physical and emotional needs of those who are engaged in the emergency and recovery. People perform less efficiently after only a few hours without food and beverages, and after 8-10 hours of continuous stressful activity without a break and rest. Availability of refreshments, food, washrooms, and places to rest is very important and should be on the agenda at each meeting of the team during crisis recovery. A team member should be assigned to locate these kinds of facilities early in the recovery process.
 - b. The District’s Role in Community Recovery - The Superintendent may designate District employees to assist with the community’s recovery.
 - c. Business Recovery Phase - The DR team will work together to establish a plan for the return to “normal” school operations.
 - d. Computing facilities and data
 - i. Hardware: The Network Administrator (NA) will secure computer equipment for necessary operations and identify staff laptops and home computer equipment which can be brought on-line immediately, and secure staff consent to do so. In addition, if necessary, the NA will identify vendor(s) who are willing to provide temporary computers, servers, and networks.
 - ii. Software: extra copies will be stored offsite along with a list of all

- software licenses and vendor contacts.
 - iii. Data: Backup's are done on a daily basis by the District Network Administrator (BOCES). Backups are kept for three weeks before cycling of the tapes takes place. The Network Administrator is the primary contact for backup inquiries.
 - iv. Office space - A temporary headquarters will be designated by the Superintendent of Schools. Office equipment such as copiers, fax service, furniture, desk supplies should be acquired and placed as needed for the duration of the Disaster Recovery.
 - e. Telephone service - This is vital to communications; temporary lines may need to be established at the designated headquarters. These numbers should be publicized as needed. This responsibility lies with the Supervisor of Buildings and Grounds.
 - f. Mail and Package Delivery - US Postal Service, FedEx, UPS, and other delivery services should be notified about how to make deliveries during the emergency and recovery.
 - g. Bank Authorizations - The Business Manager, will facilitate the transfer and withdrawal of funds as may be needed to meet the needs of the disaster recovery process, periodic payrolls and accounts payable functions, while maintaining the integrity of public funds.
 - h. Payroll Service - Employees should be notified how they will receive payroll as soon as practicable to prevent panic.
 - i. Insurance Vendors - The Business Manager will maintain a copy of up to date policy numbers and contacts for the District's property and casualty, health, dental and vision, workers' compensation, and other insurance policies.
7. Implementation
 - a. Pre-Disaster reviews and updates
 - i. Insure that
 - (1) Board of Education policies, and administrative regulations and procedures are current and appropriate;
 - (2) Emergency funding can be secured;
 - (3) Emergency equipment is in place and functional;
 - (4) Backups for equipment, software, data, and office facilities have been arranged. Keys and combinations are secure, but available off-site, and locations are known to key persons.
8. Plan Distribution - To the DR team
9. Briefing and Training - The Superintendent or the Superintendent's designee will ensure that every team member and staffer knows his/her part in the Plan.
10. Practice Drill/Walk-through - A practice drill should be carried out once a year to insure plan is complete and to make additions or modifications as needed.
11. Reviewing, Evaluating, and Updating - A meeting of the DR team should occur once a

year to review, evaluate and update the plan.

12. Appendices

- a. Disaster Recovery Team Roster
 - i. Superintendent of Schools – Paul Padalino
 - ii. Business Manager/School District Treasurer – John Heid
 - iii. Director of Curriculum & Instruction/CIO- Kirsten DeMento
 - iv. Supervisor Buildings and Grounds – John Szkopiec
 - v. Network Administrator - TBA
 - vi. Building Principals -
 - (1) Lori Caplan, WHS;
 - (2) Terri O'Brien, WES;
1. Employee Roster - Provided and maintained by the School Business Manager
2. Board of Education roster
 - a. Mark Scully, President
 - b. Christine Chartrand, Vice-President
 - c. Jennifer Donovan , Member
 - d. Virginia Mullaney, Member
 - e. Frank McGrouty, Member
3. Telephone chain - See attached snow call chain
4. Suppliers for Building Maintenance and Repair - Vendor list maintained by the Supervisor of Buildings and Grounds
5. Suppliers for all Office Furniture, Equipment, Computing Systems, Software, Accounting and Payroll Services, Office Supplies, etc. Vendor list is maintained by the School Business Manager.

Technology Skills by Grade Levels	K-2	3-5	6-8	9-10	11-12
Description					
1. Basic Operations and Concepts					
1.1. Employ appropriate startup and shut down procedures, including standby, restart, and hibernate	AI	IR	R	M	M
1.2. Use correct keying technique	AI	IR	M	M	M
1.2.1. Use the home row and correct reaches	AI	IR	R	M	M
1.2.2. Use enter/return, space bar, shift, and tab keys with correct reaches	AI	IR	R	M	M
1.2.3. Use correct posture at the computer	AI	IR	R	M	M
1.2.3.1. <i>Sit up straight, square, and centered to the keyboard</i>	AI	RM	M	M	M
1.2.3.2. <i>Place feet flat on the floor</i>	AI	RM	M	M	M
1.2.3.3. <i>Use proper chair height</i>	AI	RM	M	M	M
1.2.3.4. <i>Use proper distance from the keyboard</i>	AI	RM	M	M	M
1.2.3.5. <i>Place hands slightly off of the keyboard with wrists flat</i>	AI	RM	M	M	M
1.2.3.6. <i>Keep elbows close to your sides</i>	AI	RM	M	M	M
1.2.3.7. <i>Keep fingers slightly curved</i>	AI	RM	M	M	M
1.2.4. Use the top row of the keyboard for number keying	A	IR	R	M	M
1.2.5. Use the numeric keypad for number keying	A	IR	R	M	M
1.2.6. Keep eyes on copy	A	IR	M	M	M
1.2.7. Key rhythmically	A	IR	R	M	M

1.3. Use mouse correctly	AI	R	M	M	M
1.3.1. Use the point and click feature	AI	R	M	M	M
1.3.2. Use the double click feature	AI	IR	RM	M	M
1.3.3. Use the drag and drop feature	AI	R	M	M	M
1.3.4. Use the right click feature	AI	IR	RM	M	M
1.3.5. Recognize mouse icons (i.e., I-beam, arrow, double-headed arrow, four-headed arrow, hour glass, pointing index finger)	A	IR	RM	M	M
1.3.6. Change mouse characteristics (i.e., buttons, motion, orientation, pointers)	A	IR	RM	M	M
1.4. Practice proper care with all computer components	AI	R	M	M	M
1.4.1. Exhibit good hygiene when operating the computer	AI	R	M	M	M
1.4.2. Keep food, liquid, and magnets away from computer components	AI	R	M	M	M
1.4.3. Use and properly care for storage media (i.e., CD-ROMs, USB flash drives)	AI	R	M	M	M
1.5. Use and identify operating system functions	AI	IR	M	M	M
1.5.1. Open and exit applications using various methods	AI	IR	M	M	M
1.5.2. Open, close, minimize, maximize, and restore windows	AI	IR	M	M	M
1.5.3. Perform tasks using menus, buttons, and keyboard shortcuts	AI	IR	R	M	M
1.5.4. Display and use toolbars	AI	IR	R	M	M
1.5.5. Identify and use vertical and horizontal scroll bars	AI	IR	M	M	M
1.5.6. Identify and refer to parts of the window	AI	R	M	M	M
1.5.7. Cascade and tile windows	AI	IR	R	M	M

1.5.8. Demonstrate effective file management skills	AI	IR	R	RM	M
1.5.8.1. Create and name files	AI	IR	RM	M	M
1.5.8.2. Open and close files	AI	IR	M	M	M
1.5.8.3. Use the Save and Save As commands appropriately	AI	IR	M	M	M
1.5.8.4. Find or search for files and folders	A	I	R	RM	M
1.5.8.5. Create and name folders	*	A	IR	RM	M
1.5.8.6. Sort folders by type, name, date, size, or program	*	*	AI	R	RM
1.5.8.7. Change folder views	*	*	AI	R	RM
1.6. Setup and prepare the workstation	A	AI	R	M	M
1.7. Explain computer processes (i.e., input, process, output, storage)	*	A	IR	R	M
1.8. Identify basic hardware devices					
1.8.1. Identify storage devices (i.e., hard drive, USB flash drive, CD drive, DVD drive)	A	AI	R	M	M
1.8.1.1. Compare and contrast types of storage devices	*	AI	R	M	M
1.8.2. Identify input devices (i.e., mouse, keyboard, stylus, handheld computers, scanner, digital camera, microphone, smart phones)	A	AI	R	M	M
1.8.3. Identify output devices (i.e., printer, monitor, speakers)	A	AI	R	M	M
1.8.4. Identify central processing unit	A	AI	R	M	M
1.8.5. Identify communication devices (i.e., modem)	*	A	I	R	M
1.9. Use basic hardware	A	AI	R	M	M
1.9.1. Use storage devices (i.e., hard drive, USB flash drive, CD drive, DVD drive)	A	AI	R	M	M

1.9.2. Use output devices (i.e., printer, monitor, speakers)	A	AI	R	M	M
1.9.3. Use communication devices (i.e., modem)	A	AI	R	M	M
1.10. Choose an appropriate device for a given task (i.e., input, output, storage)	*	AI	I	R	M
1.11. Multitask by opening and using two or more applications at once	*	AI	R	M	M
1.12. Identify different file extensions (i.e., .doc, .xls)	*	AI	RM	M	M
1.13. Recognize desktop icons and their functions	*	AI	R	M	M
1.14. Use the help and support features	*	AI	IR	M	M
1.15. Differentiate between system and application software programs	*	A	IR	R	M
1.15.1. Apply Control Panel options to setup/alter peripherals	*	A	IR	R	M
1.15.2. Identify the information available in the system properties dialog box	*	A	I	R	M
1.15.3. Cascade and tile windows	*	A	I	R	M
1.15.4. Edit desktop properties	*	A	I	R	M
1.15.5. Interpret notification area messages	*	*	I	R	M

Description	K-2	3-5	6-8	9-10	11-12
2. Social, Ethical, and Human Issues					
2.1. Work cooperatively with others as a team	AI	IR	R	RM	M
2.2. Demonstrate ethical behavior when using computers	AI	I	IR	R	RM
2.2.1. Define plagiarism	AI	IR	RM	M	RM
2.2.2. Define copyright	AI	IR	RM	M	RM
2.2.3. Obey copyright laws	A	R	RM	M	RM

2.2.4. Respect privacy of others	A	I	R	R	RM
2.2.5. Identify issues that are harmful to information technology (i.e., virus, cookies)	A	AI	I	IR	RM
2.2.6. Describe personal consequences of copyright violations	*	AI	R	RM	M
2.3. Follow district Acceptable Use Policy	AI	R	M	M	M
2.5. Protect personal information	A	AI	I	IR	RM

Description	K-2	3-5	6-8	9-10	11-12
3. Technology Productivity Tools					
Keyboarding *(See Section 1 - Basic Operations and Concepts for details on proper keying technique)	AI	R	M	M	M
3.1. Compose original documents at the keyboard	AI	IR	RM	M	M
3.2. Identify the insertion point	AI	R	M	M	M
3.8. Use keyboard shortcuts (i.e., Ctrl+Home, Ctrl+End, Page Up, Page Down)	AI	R	R	M	M
Word Processing	A	I	M	M	M
3.10. Open, modify, and save an existing document	A	IR	R	RM	M
3.11. Switch between views	*	AI	I	RM	M
Format and Edit Text					
3.12. Define word wrap	AI	IR	RM	M	M
3.13. Select, insert, and delete text	AI	R	M	M	M
3.14. Move and copy text	AI	IR	RM	M	M
3.15. Change font face (typeface), size, and color	AI	R	RM	M	M
3.16. Use bold, italic, and underline styles	AI	R	RM	M	M
3.17. Change page setup options	A	I	R	M	M
3.17.1. Set page orientation (i.e., portrait, landscape)	AI	I	R	RM	M

<i>alignment</i>	3.17.2. Set horizontal and vertical text	AI	IR	RM	M	M
	3.17.3. Set document margins	A	I	R	M	M
	3.17.4. Change document default settings	*	AI	IR	RM	M
<i>source</i>	3.17.5. Change paper size and print	*	A	IR	RM	M
	3.18. Insert and format text boxes	*	AI	R	RM	M
	3.19. Create, insert, size, move, format, and link charts	*	AI	IR	RM	M
	3.20. Change font case	*	AI	R	M	M
	3.21. Set line spacing	*	AI	R	M	M
	3.22. Create and customize bulleted or numbered lists	*	AI	IR	RM	M
	3.23. Apply and edit borders and shading options	*	AI	IR	RM	M
	3.25. Apply special font effects	*	A	I	R	M
	3.26. Reveal formatting	*	*	A	IR	M
	3.27. Insert a hard return, soft return, and hard page break	*	A	I	R	M
	3.28. Apply highlight feature to text	*	A	I	R	M
	3.30. Set, edit, and clear indents on the ruler or using menu options	*	*	AI	R	RM
	3.31. Set, edit, and clear tabs on the ruler or using menu options	*	*	AI	IR	RM
	3.32. Insert and format sections	*	*	AI	IR	RM
	3.33. Find and replace characters and formatting	*	*	AI	IR	M
	3.34. Insert and format page numbers (i.e., different first page)	*	*	AI	IR	RM
	3.35. Apply, create, modify, and clear styles for characters and paragraphs	*	*	A	I	RM
	3.36. Adjust character spacing	*	*	A	I	RM

3.37. Save a document in appropriate formats for different usages (i.e., RTF, webpage, XML, template)	*	*	*	IR	RM
3.38. Insert and view hidden text	*	*	*	AI	IR
3.39. Structure documents using Extensible Markup Language (XML)	*	*	*	A	AI
Tools					
3.40. Use undo/redo actions	AI	IR	RM	M	M
3.41. Explain the difference between insert mode and typeover mode	A	IR	RM	M	M
3.43. Explain the function of the clipboard	*	AI	IR	RM	M
3.44. Insert symbols and special characters	*	AI	IR	RM	M
3.45. Use proofing tools (i.e., spell check, grammar check, word count, comments, document summarization, document statistics)	*	AI	R	M	M
3.50. Create and modify footnotes and endnotes to cite sources	*	*	AI	IR	RM
3.51. Import, embed, and link a spreadsheet worksheet in a file	*	*	AI	R	RM
3.53. Insert, format, edit, delete, and position headers/footers (include different first page, odd/even pages, page numbering)	*	*	AI	IR	RM
3.54. Create, edit, delete, format, size, and move tables	*	*	AI	IR	RM
3.55. Format text into columns	*	*	AI	IR	RM
3.55.1. Edit column size and spacing	*	*	AI	IR	RM
Graphics					
3.64. Insert clip art and pictures from various sources	AI	IR	RM	M	M
3.14.1. Manipulate clip art and pictures (i.e., washout, grayscale, black/white, resize, rotate, change size, change color, move)	*	AI	IR	RM	M
3.65. Create a word/text art object	AI	R	RM	M	M

3.66. Draw, size, format, and move shapes and lines	A	AI	IR	RM	M
3.67. Flip, rotate, and crop objects	*	AI	IR	RM	M
3.68. Wrap text around clip art, pictures, and text art	*	AI	IR	RM	M
3.69. Explain the differences between picture file types (i.e., jpeg, gif, tiff)	*	AI	IR	RM	M
3.70. Control image brightness and contrast	*	*	I	RM	M
Create Documents					
3.72. Create reports (i.e., single page, multi-paragraph, multi-page)	*	AI	IR	RM	M
3.74. Create and format web pages	*	*	AI	IR	RM
3.75. Create special documents (i.e., resume, minutes, itinerary, agenda, newsletters, flyers, envelopes & labels, organizational charts and diagrams)	*	*	AI	IR	M
3.76. Print a document	AI	R	RM	M	M
Use Collaboration/Integration Tools	*	*	AI	IR	RM
3.77. Insert, view, and edit comments	*	*	A	IR	RM
3.78. Track, accept, and reject proposed changes	*	*	A	IR	RM
3.78.1. <i>Modify track changes options</i>	*	*	*	AI	RM
3.78.2. <i>Print document with markup</i>	*	*	*	AI	RM
Presentation and Multimedia	A	AI	R	RM	M
3.81. Describe how slide shows assist in the presentation of ideas and facts to an audience	A	AI	R	RM	M
3.82. Organize a presentation plan	*	A	I	R	RM
Work with Presentations					
3.83. Create a slide show	AI	IR	R	M	M
3.83.1. <i>Use a design template</i>	AI	IR	R	RM	M
3.83.2. <i>Insert automatic slide content</i>	*	*	A	IR	RM
3.84. Insert slides using different slide layouts	AI	IR	R	M	M

3.85.	Open, modify, and save an existing presentation	AI	IR	R	M	M
3.86.	Switch between slide views	A	IR	R	M	M
Format and Edit						
3.87.	Move and copy slide objects	AI	IR	RM	M	M
3.88.	Revise the sequence of slides	A	IR	R	M	M
3.89.	Change the slide background	AI	I	R	RM	M
3.90.	Change the slide layout	A	AI	IR	RM	M
3.91.	Apply transitions and timings	*	AI	IR	RM	M
3.92.	Insert slides from file	*	AI	IR	RM	M
3.93.	Apply animation to text and create custom animations	*	AI	IR	RM	M
3.94.	Change the slide design color scheme	*	*	AI	IR	RM
3.95.	Insert and modify hyperlinks within a presentation	*	*	A	AI	R
Graphics, Audio, and Video						
3.98.	Use the drawing tools	A	AI	IR	RM	M
3.99.	Manipulate clip art, drawing objects, and pictures	*	AI	IR	RM	M
3.100.	Work with gridlines and page guides	*	AI	IR	RM	M
3.101.	Insert audio and video clips	*	AI	IR	RM	M
3.102.	Apply animation to graphics and create custom animations	*	AI	IR	RM	M
3.103.	Insert diagrams and graphs	*	*	*	AI	IR
Presentation Delivery						
3.104.	Run a slide show	AI	IR	R	M	M
3.105.	Preview and print slides and audience handouts	AI	IR	R	M	M
3.106.	Deliver an oral presentation with a slideshow	A	AI	IR	RM	M
Spreadsheets						
3.110.	Describe how worksheets are used to analyze data and solve problems	*	AI	IR	RM	M

Work with Spreadsheets						
3.111.	Open, modify, and save an existing spreadsheet	A	IR	R	RM	M
3.112.	Identify cells, columns, rows, and ranges	A	IR	R	RM	M
3.113.	Insert and delete data in cells	A	IR	R	RM	M
3.114.	Select cells, columns, rows, ranges, and the entire worksheet	A	IR	R	RM	M
3.115.	Insert and delete cells, columns, and rows	A	IR	R	RM	M
3.116.	Interpret spreadsheet data	A	IR	R	RM	M
3.117.	Select the appropriate chart type to best represent given data	A	I	R	RM	M
3.118.	Delete, add, copy, cut, paste, and rename worksheets	*	AI	IR	RM	M
3.119.	Use cut, copy, paste, and paste special to manipulate spreadsheet data	*	AI	IR	RM	M
3.120.	Insert, position, and size graphics	*	AI	IR	RM	M
3.122.	Hide and unhide columns and rows	*	AI	IR	RM	M
3.123.	Create spreadsheets from templates	*	A	IR	RM	M
3.124.	Create formulas	*	AI	IR	RM	M
3.125.	Preview and print spreadsheets	*	AI	R	RM	M
3.125.1.	<i>Size to fit</i>	*	*	A	IR	RM
3.125.2.	<i>Set print area to print a specified area of a worksheet</i>	*	*	A	IR	RM
3.125.3.	<i>Print a workbook containing multiple worksheets</i>	*	*	AI	IR	RM
3.125.4.	<i>Print column and row titles on multiple pages</i>	*	*	AI	IR	RM
3.125.5.	<i>Print gridlines and column headings</i>	*	*	AI	IR	RM
3.126.	Copy and move a worksheet to another spreadsheet	*	A	IR	RM	M

3.127.	Present spreadsheet data orally to a group	*	A	IR	RM	M
3.131.	Import data into a spreadsheet	*	*	A	IR	RM
3.131.1.	<i>Link spreadsheet data</i>	*	*	A	IR	RM
3.131.2.	<i>Embed objects in spreadsheets</i>	*	*	A	IR	RM
3.132.	Export spreadsheet data	*	*	A	IR	RM
3.133.	Create and edit templates	*	*	A	IR	RM
3.134.	Insert and modify hyperlinks	*	*	*	AI	IR
Format a Spreadsheet						
3.135.	Change fonts and apply font styles	A	IR	RM	M	M
3.136.	Center cell contents across a range	A	IR	RM	M	M
3.137.	Align text horizontally in cells	A	IR	RM	M	M
3.138.	Align text vertically in cells	*	AI	IR	RM	M
3.139.	Change column width	A	IR	RM	M	M
3.140.	Change row height	A	IR	RM	M	M
3.141.	Change page orientation	A	I	R	RM	M
3.142.	Set margins	A	I	R	M	M
3.143.	Change number formats	A	AI	IR	RM	M
3.144.	Add borders and shading to cells	*	AI	IR	RM	M
3.145.	Customize worksheet tabs	*	AI	IR	RM	M
3.146.	Align, indent, and rotate cell contents	*	*	AI	RM	M
3.147.	Apply and modify cell styles	*	*	AI	RM	M
3.148.	Arrange worksheets	*	*	A	I	RM
3.149.	Format multiple worksheets in one spreadsheet simultaneously	*	*	A	IR	RM
3.150.	Add a background image to a worksheet	*	*	*	AI	RM
3.151.	Use conditional formatting	*	*	*	AI	RM
Tools						
3.157.	Sort data	*	AI	IR	RM	M
3.160.	Search for and replace text	*	*	AI	IR	RM

3.161. Name a range and use a range in a formula	*	*	AI	IR	RM
3.162. Filter data	*	*	AI	IR	RM

Description	K-2	3-5	6-8	9-10	11-12
4. Technology Communications Tools					
4.1. Select appropriate technology tools for the task and audience	AI	IR	M	M	M
4.2. Identify examples of programs that can harm your computer (i.e., viruses, worms, Trojan Horses, adware and spyware)	A	AI	I	M	M
4.3. Use a web browser	AI	R	M	M	M
4.3.1. Explain website extensions (i.e., .org, .com, .edu, .gov)	AI	IR	R	M	M
4.3.2. Navigate teacher-approved websites	AI	R	M	M	M
4.3.3. Identify navigation bar buttons and their purpose	A	IR	RM	M	M
4.3.4. Identify the purpose of search engines	A	IR	R	M	M
4.3.5. Create and use Favorites and Bookmarks	A	AI	R	M	M
4.3.6. Copy and paste a picture from the Internet	A	AI	R	M	M
4.3.7. Define URL	*	AI	R	RM	M
4.3.8. Identify a home page	*	AI	IR	RM	M
4.3.9. Identify a hyperlink	*	A	I	R	M
4.4. Use email	*	AI	IR	RM	M
4.4.2. Explain the purpose and intent of email	*	AI	I	IR	M
4.4.3. Identify the parts of an email message	*	A	AI	IR	RM
4.4.4. Send and receive email	*	A	AI	IR	RM

4.4.5. Demonstrate proper netiquette	*	A	AI	IR	RM
4.4.9. Explain Spam	*	*	A	IR	RM

Description	K-2	3-5	6-8	9-10	11-12
5. Technology Research Tools					
5.1. Demonstrate correct usage of Internet terminology and vocabulary	AI	I	R	R	M
5.3. Identify various electronic research resources and reference tools	A	AI	IR	RM	M
5.4. Conduct research using appropriate electronic sources and tools (i.e., CD-ROMS and Internet)					
5.4.1. Appropriately cite sources when using information from the Internet	*	A	IR	RM	M
5.5. Conduct a simple search (i.e., keyword, subject)	A	AI	R	M	M
5.6. Conduct an advanced and/or limited search	*	AI	R	M	M
5.7. Utilize research results	A	AI	I	R	M
5.8. Acquire information (i.e., text, audio, graphics)	A	AI	R	M	M
5.9. Use web directory links	A	AI	R	M	M

Description	K-2	3-5	6-8	9-10	11-12
6. Technology Problem-Solving and Decision-Making Tools					
6.1 Determine the appropriate software application for a given task	*	A	AI	IR	RM
6.2. Use technology to compare, contrast, evaluate, and validate information	*	A	AI	IR	M
6.3. Consider the quality, quantity, and relevance of information	*	A	AI	IR	M

6.4. Use technology to compile, organize, synthesize, produce, and disseminate information	*	*	AI	IR	RM
6.5. Collaborate with others in problem solving and decision making	*	*	AI	R	M
6.6. Present, in an oral or written report, the problem, the chosen solution, and the rationale for the related decisions	*	*	AI	R	RM
6.7. Troubleshoot basic information technology problems using help screens and reference materials	*	*	A	I	R
6.8. Integrate software applications to maximize the potential of available functions	*	*	A	IR	M
6.9. Develop criteria to determine the effectiveness of the process used for a given task or problem	*	*	*	AI	R

Key: A=Awareness, I=Introduce, R=Reinforce, M=Master