

**FRONTIER REGIONAL/UNION#38 SCHOOL
DISTRICTS
TECHNOLOGY PLAN
2007-2010**

**Adopted - July 1, 1996
Revised - July 1, 2001
Revised - January 1, 2004
Revised - January 1, 2006
Revised - January 1, 2007**

Mission Statements.....	p.2
Vision, Beliefs, and Rationale	p.3,5-6
I. Benchmark 1 – Commitment to a Clear Vision and Mission Statement	p.4
II. Benchmark 2 – Technology Integration	p.6
III. Benchmark 3 – Technology Professional	p.7-8
Development	
IV. Benchmark 4 – Accessibility of Technology	p.8
V. Benchmark 5 – Infrastructure for Connectivity	p.9
VI. Benchmark 6 – Access to the Internet Outside.....	p.9-10
the School Day	
Appendix 1	p. 11
STAR Chart	p. 12-18
Appendix 2	p. 19
Staff Survey.....	p. 20-22
Appendix 3	p. 23
FRS/Union#38 Acceptable Use Policy	p. 24-30
Appendix 4	p. 31
NETS for Students.....	p. 32
NETS for Teachers	p. 33-34
Technology Standards for Administrators.....	p. 35-36
21 st Century Skills.....	p. 37

MISSION STATEMENTS

FRONTIER REGIONAL MISSION STATEMENT

The mission of the Frontier Regional School is to provide the highest quality education which values the individual, emphasizes community, builds a strong foundation for life-long learning and reflects the changing needs of society.

CONWAY MISSION STATEMENT

The mission of the Conway Grammar School is to be a mutually dedicated staff, community, and student body that work together within a safe, supportive, respectful, and challenging environment to develop confident life-long learners who value individual differences and are responsive to global needs.

DEERFIELD MISSION STATEMENT

The Deerfield Elementary School promotes the joy of lifelong learning.

SUNDERLAND MISSION STATEMENT

To enable our children to realize and attain their full potential in a positive school environment that values individual differences and meets their diverse needs.

WHATELY MISSION STATEMENT

The Mission of Whately Elementary School is to prepare our students in a supportive school and community to be confident, life-long learners.

VISION, BELIEFS AND RATIONALE

INTRODUCTION

Student learning is at the heart of what we do in the Frontier Regional/Union#38 School Districts. It is our belief that student learning is improved with the use of computer technologies. This plan begins with a vision for student learning, a statement of beliefs, and a rationale for creating and continuing to build networked learning environments. Benchmarks derived from the Massachusetts State Chart (appendix 1) provide guidance, development, and integration of technology into the school environment.

In 1996, educators and community members created a plan to implement the use of computer technologies in the Frontier Regional/Union#38 School Districts, based on increasing student skills in communication, information processing, and productivity. Since then, considerable work has been accomplished. Students and staff work within a networked environment in which classrooms, labs and library/media centers are equipped with networked computers. All computers are equipped with a suite of applications that include Microsoft Office used by all members of the learning community. All staff and students have network accounts. The districts are linked by a wide-area network.

In order to be eligible for E-Rate discounts, as well as federal and state technology funding, every school district is required to have a long-range strategic technology plan approved by the Department of Education.

The district recognizes the importance of reaching the articulated goals set forth by the U.S. Department of Education:

- All students and teachers will have access to information technology in their classrooms, schools, communities, and homes.
- All teachers will use technology effectively to help students achieve high academic standards.
- All students will have technology and information literacy skills.
- Research and evaluation will improve the next generation of technology applications for teaching and learning.
- Digital content and networked applications will transform teaching and learning.

Benchmark 1

Commitment to a clear Vision and Mission Statement

- A. The district's technology plan contains a realistic and clearly stated set of goals and strategies that align with the district-wide school improvement plan. It is committed to achieving its vision by the end of the school year 2009-2010.
- B. The district has a technology team with representatives from a variety of stakeholder groups. The technology team has the support of the district leadership team.
- C. Budget
 - 1. The District has a budget for its local technology plan with line items for technology in its operational budget.
 - 2. The budget includes staffing, hardware, software, professional development, support, and contracted services.
 - 3. The district leverages the use of federal, state, and private resources.
 - 4. The technology budget provides sufficient funding to cover the local share of E-rate services requested and other resources that are needed to provide these services over a period of the plan. Frontier Regional/Union#38 School Districts will continue to use E-rate money to provide upgrades in the areas of telecommunications and information technology services.
- D. Evaluation
 - 1. The district evaluates, through on going surveys & self-assessment, the effectiveness of technology resources toward attainment of educational goals on a regular basis. Prior to purchasing the district assesses the products and services that are needed to improve teaching and learning.
 - 2. The district's technology plan includes an evaluation process that enables the district to monitor its progress in achieving its technology goals and to make mid-course corrections in response to new developments and opportunities as they arise. Every 6 weeks the Technology Team meets to discuss technology issues and considers new innovations. (We use the TSAT and self-assessment surveys to plan professional development activities. (Appendix 1 & 2))

BELIEFS

- Our schools must prepare students for today's workplace and the workplace of the future.
- Our schools must prepare students to be lifelong learners, who are responsible for their own learning, skilled in accessing and processing information, confident in using technological tools, able to solve problems alone or collaboratively, capable of being creative and innovative, and able to communicate locally, nationally, and world-wide.
- Our schools must stress the importance of ethical use of technology.
- Students need to be able to use a wide variety of technological tools to enhance their future success as students and workers.
- It is imperative for all students to have access to information via technology as a basis for lifelong learning.
- It is essential for all learners, including educators, to process and manage information through the skillful use of technology.
- Skillful use of technology supports the development of process skills such as flexibility, adaptability, critical thinking, problem solving and collaboration which are essential to success in our rapidly changing information age.
- Networked technology systems permit efficient and effective communications within and outside the district.
- Technology allows us to better serve the diverse learning styles of our schools.
- Technology maximizes productivity and efficiency and enables schools to better prepare students for future learning.

RATIONALE

To accomplish our vision for successful technology integration and use in our schools, our plan includes:

Benchmark 2 Technology Integration

A. Teacher and Student Use of Technology

1. (a) Outside the classroom

At least 85% of teachers use technology everyday, including some of the following areas: lesson planning, administrative tasks, communications, and collaboration. Teachers share information about technology uses with their colleagues.

(b) Within the Classroom

At least 85% of teachers use technology appropriately with students each week, including some of the following areas: research, multimedia, simulations, data interpretation, communications, and collaboration.

2. At least 85% of students in grades 5 to 8 show proficiency in all the Massachusetts Recommended Pre-K-12 Technology Standards for Grades 5 to 8.
3. At least 90% of teachers are working to meet the proficiency level in technology, 60% of teachers will have reached the proficiency level as defined by the Massachusetts Technology Self-Assessment Tool (TSAT).
4. The district has a CIPA-compliant Acceptable Use Policy (AUP) regarding Internet use. (Appendix 3)

B. Staffing

1. The district has a full-time equivalent (FTE) district-level technology director/coordinator.
2. The district provides one (FTE) instructional technology teacher per 40-80 instructional staff.
3. The district has one (FTE) person dedicated to data management and assessment.

Benchmark 3

Technology Professional Development

- A. By the end of the school year 2009-2010, at least 85% of district staff will have participated in 45 hours of high-quality technology professional development covering technology skills and the integration of technology into instruction.
- B. Technology professional development is sustained and ongoing and includes coaching, modeling best practices, district-based mentoring, and study groups. The professional development includes concepts of universal design and scientifically based research models.
- C. Professional development planning includes assessment of district and teachers' needs. The assessment is based on the competencies listed in the Massachusetts Technology Self-Assessment Tool. (The Department, the Educational Technology Advisory Council and stakeholders will review the levels of competencies in the Massachusetts Technology Self-Assessment Tool on an annual basis.)

Frontier Regional/Union#38 School Districts support a culture of continuous learning for staff that:

- Provides introduction to networked systems.
- Supports using the basic network software.
- Develops school-based technology planning and learning.
- Builds online learning opportunities.
- Incorporates learning new curriculum (math, writing, etc.) with technology applications.

Frontier Regional/Union#38 School Districts support instructional change that:

- Facilitates access to collegial support and best practice information from a wide variety of resources.
- Expands the variety of teaching tools and strategies to support diverse learning styles.
- Supports productive and efficient management of student assessment and portfolio data.
- Increases support for emerging instructional strategies: inter-disciplinary, collaborative, active learning options, and brain based layered curriculum.
- Enables curriculum, instruction and assessment to be developed and aligned with each other.
- Provides a system that helps students, parents and teachers work together to support educational outcomes. (Mass One)
- Pilots new teaching strategies, technologies, and instructional resources.
- Investigates emerging possibilities for electronic learning resources such as: e-books, wireless technology, personal digital assistants, scientific probes, video conferencing, on-line learning and streaming video.
- Uses Community Cable Access to improve communication and offer learning opportunities within our communities.

In the last several years, much has changed in the world of technology and in our understandings about literacy, teaching and learning. Our district goal is that there be a program of studies of 21st Century curriculum to include: rigor, relevance and relationships; each enhanced by technology use. The Frontier Regional/Union#38 School Districts have adopted *Technology Standards* for all students. These new standards emphasize communication, expands expectations for students to be responsible and ethical users of technology, uses technology for thinking, learning, and producing, and develops problem-solvers and effective users of information based on the National Education Technology Standard for Students, Teachers and Administrators. (Appendix 4)

Benchmark 4

Accessibility of Technology

- A. Students per Instructional Computer
 - 1. The district has an average ratio of fewer than five students per high-capacity, internet-connected computers. The District will work with stakeholders to review the capacity of the computers on an annual basis. (The ultimate goal is to have a one-to-one, high-capacity, internet-connected computer ratio.)
 - 2. The district considers students' access to portable and/or handheld electronic devices where appropriate to their grade level..
 - 3. The district has established a computer replacement cycle of six years or less.

- B. Technical Support
 - 1. The district makes a commitment to provide timely in-classroom technical support with clear information on how to access the support, so that technical problems will not cause major disruptions to curriculum delivery.
 - 2. The district provides a FTE network administrator.
 - 3. The district provides at least one FTE person to support 100-200 computers. Technical support can be provided by dedicated staff or contracted services.

Benchmark 5
Infrastructure for Connectivity

- A. Internet Access
 - 1. The district provides connectivity to the Internet in all classrooms in all schools including wireless connectivity, if appropriate.
 - 2. The district provides bandwidth of at least 10/100MB to each classroom.
- B. Networking (LAN/WAN)
 - 1. The district provides a minimum 10/100 MB Cat 5 switched network and/or 802.11b/g wireless network.
 - 2. The district provides services for secure file sharing, backups, scheduling, email, and web publishing, either internally or through contracted services.
- C. E-Learning Environments
 - 1. The district encourages the development and use of innovative strategies for delivering specialized courses through the use of technology.
 - 2. The district deploys IP-based and or ISDN-based connections for access to web-based and/or interactive video learning on the local, state, regional, national, and international level.
 - 3. Classroom applications of e-learning include courses, cultural projects, and virtual field trips.

Benchmark #6
Access to the Internet Outside of the School Day

- A. The district schools maintain up-to-date web sites that include information for parents.
- B. The district works with community groups (i.e.: libraries, public) to ensure that students and staff have access to the Internet outside of the school day.
- C. The district web site includes an up-to-date list of places where students and staff can access the Internet after school hours.

The technology of the Frontier Regional/Union#38 School Districts

- Establishes basic technological networking capabilities provided at all sites.
- Provides for minimum standards of hardware and software for all students, staff, and sites.
- Assures that all students, staff and sites will be provided with and have equal access to minimum standards of hardware and software.
- Implements grade level technology goals identified to ensure equity of delivery to all students.
- Expands and enhances voice communications to provide parents/community greater access to school information, to school staff, and the capability to leave messages 24 hours a day.
- Utilizes Telecommunications to enable 24-7 access to school learning resources, classroom lessons and assignments, school information and electronic messages for students, staff, and community members.

- Provides the learning community with greater opportunity for interaction, collaboration and information exchange. The school will become a vital meeting place for a host of community services.
- Promotes equitable access to learning technology as a community investment and encourages as active partnership among schools, businesses, homes, and the community.

Frontier Regional/Union#38 School Districts' missions strive for the continued development of lifelong learners who learn lifelong learning skills and process skills such as: flexibility, adaptability critical thinking, problem solving, and collaboration, which are essential to success in our rapidly changing information age.

As a result of implementing the Frontier Regional/Union#38 Technology Plan, our educational community will produce technology literate students with focus on:

- Technology operations and concepts
- Responsible and ethical use
- Effective and creative communications
- Thinking, learning, and producing
- Research, problem-solving, and decision making
- Emerging technologies

APPENDIX 1

STAR CHART

Massachusetts School Technology and Readiness (STaR) Chart

Key Areas	Teaching & Learning					
	A	B	C	D	E	F
Focus Areas/ Level of Progress	Impact of Technology on Teacher Role	Pattern of Teacher Use	Design of Instructional Setting	Curriculum Areas	Pattern of Student Use	Content of Training
Early Tech	Mostly teacher-centered lectures. Minimal student use of technology in instruction	85% teachers use technology as a productivity tool (e.g. e-mail, grades) and or as a classroom supplement (e.g. drill and practice).	Mostly computer labs or libraries; scheduled use only	Limited to teaching technology skills at different grade levels.	85% of students are developing skills to meet Massachusetts Standards 1 & 2.	Technology skills (e-mail, word processing, internet browser use, etc.) for teachers' professional use.
Developing Tech	Mostly teacher directed learning. Students use technology to work on individual projects.	85% teachers explore using technology to support curriculum goals (e.g. research, lesson planning).	Labs, libraries, many classrooms; flexible scheduling.	Use of technology is minimal in a few curricular areas across grade levels.	85% of students show proficiency in Massachusetts Standards 1 & 2 and are developing skills in Standard 3.	Training encompasses more complex professional uses (district applications such as attendance and report cards, scanners, cameras) and curriculum integration strategies.
Proficient Tech	Mostly teacher facilitated learning. Students use technology for cooperative projects in their own classroom.	85% teachers use technology for research, lesson planning, multimedia and graphical presentations and simulations, and share technology uses with colleagues.	Lab, libraries, all classrooms, and portable technology (e.g. wireless laptops or handheld electronic devices); flexible scheduling.	Integrated into most Framework curricular areas and activities at all grade levels.	85% of students show proficiency in all Massachusetts Technology Standards.	Training directly ties technology to its use in content areas and how to effectively manage it in the classroom.
Advanced Tech	Mostly student-centered learning, teacher as mentor/facilitator. Students use technology to communicate and collaborate outside the classroom.	85% teachers integrate evolving technologies that transform the teaching process by allowing for greater levels of access, interest, inquiry, analysis, collaboration, creativity, and content production.	Seamlessly integrated throughout classes and all content areas. Technology is available anytime both in school and within the community.	Integral to all curricular areas at all grade levels.	All students show proficiency in all Massachusetts Technology Standards.	Training focuses on modeling, mentoring and adopting new technologies as well as the integration of Universal Design and access considerations for all students.

Massachusetts School Technology and Readiness (STaR) Chart

Key Areas Focus Areas/Levels of Progress	Educator Preparation and Development					Vision and Planning
	Capabilities of Educators	Leadership and Capabilities of Building Principals and District Administrators	Models of Professional Development	Levels of Understanding	Universal Access: Integration of Universal Design and Assistive Technology	
Early Tech	10% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	Recognizes benefits of technology in instruction to improve learning outcomes for all students. Minimal personal use (e-mail, word processing, internet browser use, etc.) Awareness of national standards for administrators.	Whole group, skill based training with minimal follow-up.	Most at entry or adoption stage (Students learning to use technology; teachers use technology to support traditional instruction).	Emerging awareness of universal design and assistive technologies (hardware/software) limited to special educators; few examples across the district of universal design strategies or assistive technology used to promote access to the general curriculum.	Minimal technology plan; technology used mainly for administrative tasks such as word processing, budgeting, attendance, grade book.
Developing Tech	30% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	Supports use of technology in instruction. Uses technology in daily work. Approaching proficiency of national standards for administrators.	Whole group curriculum based training with follow-up to facilitate classroom implementation.	Most at adaptation stage (technology used to enrich curriculum). Most beginning use with students.	Awareness of universal design and assistive technologies (hardware/software) by special educators & some general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels.	The technology plan is aligned with the Massachusetts Technology Plan, approved by the School Committee & supported by the Superintendent. Plan collaboratively developed by stakeholders (e.g. teachers, parents, community members, local business & individuals with disabilities), guiding policy & practice. Addresses local district teaching & learning standards.

Proficient Technology	60% meet ISTE and/or local district teacher technology competencies and implement into the school environment.	Recognizes and identifies exemplary use of technology in instruction. Uses technology skills in daily work, such as research and communication and models appropriately with staff. Provides constructive feedback to teachers on their technology use.	Coaching, modeling best practices, district-based mentoring. Involvement in a development/improvement process. Study groups.	Most at appropriate stage (technology is integrated, used for its unique capabilities).	Awareness of universal design and assistive technologies (hardware/software) by special educators and most general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels; staff are designated to provide AT assessment, procurement, support (training) and maintenance.	The technology plan aligns with the Massachusetts Technology Plan; integrated into district plan; used for internal planning, budgeting, applying for external funding and discounts. Teachers/administrators have a vision for technology use in support of student learning, teacher professionalism, and data management.
Advanced Tech	90% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	Promotes exemplary use of technology in instruction. Models and uses in daily work in communication, presentations, on-line collaborative projects, and management tasks. Develops a school culture that expects all teachers to use technology. Advocates for the community integration of technology in instruction. Expects all teachers to use technology well.	Creates a culture of inquiry, sharing and knowledge building. Anytime learning available through a variety of delivery systems (e.g. Just in time support, mentoring, peer observation).	Most at invention stage (teachers discover and accept new uses for technology).	Systemic adoption of universal design curriculum development strategies and the seamless integration of assistive technology to promote access to the general curriculum for all students; staff are designated to provide AT assessment, procurement, support (training), and maintenance.	The technology plan and vision are focused on improving the success of all students based on needs, research, proven teaching and learning principles and is actively supported by the School Committee and Superintendent. Technology plan is collaboratively developed, guiding policy & practice; updated at least annually.

Massachusetts School Technology and Readiness (STaR) Chart

Key Areas	Administration and Support Services					
Focus Areas/Levels of Progress	Technical Support (hardware, operating system, network)	Curriculum Integration Staffing	Budget Levels	Budget Allocated for Technology (Total Cost of ownership)	Universal Design: Physical Access/Software & hardware Compatibility	Students per Instructional Computer
Early Tech	Technical support call-in; response time greater than 24 hours. Problems cause major disruptions to curriculum delivery using technology.	No district level Technology Director. Local instructional technology support is inconsistent.	Budget for hardware and software purchases and professional development.	Less than \$125. per student	Universal design and access considerations for computers, mobile technologies and eLearning tools are considered through individualized Education Programs (IEPS) for students with disabilities; no procurement policies in place to ensure usability and/or backwards compatibility.	10 or more students per Type A or B computer; no firm computer replacement policy established by district.
Developing Tech	At least one technical staff per 350 computers. same-day technical support for infrastructure problems by call-in. Problems sometimes cause major disruptions to curriculum delivery using technology. Network administrator.	District level Technology Director, One-half instructional technology specialist per 60-120 staff.	Budget for hardware and software purchases (new and replacement) and professional development, minimal staffing support, and some ongoing costs.	Between \$125-\$250 per students	Universal design & access considerations for limited number of computers, workstations, mobile technologies, and eLearning tools are established in areas of high student use (e.g. libraries, computer labs); limited awareness of procurement policies ensuring backwards compatibility.	Less than 10 students per type A and B computer; replacement policy established; one computer per teacher.
Proficient Tech	At least one technical staff per 200 computers. Same-day in-classroom technical support available. Problems infrequently cause major disruptions to curriculum delivery using technology. Network administrator.	District level Technology Director. Dedicated instructional technology specialist – one half person per 30-60 staff. Dedicated staff at district level for data management and assessment.	Budget for purchases, professional development, adequate staffing support, and ongoing costs. Other state, federal, and local programs directed to support technology funding. Business partnerships, donations, and other local funding designated for technology.	\$250 - \$375 per student	UD & access considerations for limited number of computers, workstations, & mobile technologies are established in areas of high student use (e.g. libraries, computer labs), some computers classrooms & administrative offices; routine implementation of procurement policies ensuring backwards compatibility.	Less than 5 students per type A and B computer; replacement cycle established for 6 years or less; one computer per teacher – possibility a laptop for homework. Most students have access to handheld electronics (e.g. PDA's, graphing calculators, Alpha Smarts). Maintains a list of places students can use technology outside of school.

<p>Advanced Tech</p>	<p>At least one technical staff per 150 computers for just-in-time support. Technical support is readily available on-site for both infrastructure and application problems. Problems do not cause major disruptions to curriculum delivery using technology. Network administrator</p>	<p>District Technology Director. Dedicated instructional technology specialist – one half person per 30-60 staff. Dedicated staff at district level for data management and assessment and to help produce integrated curriculum content.</p>	<p>Budget for purchases, incentives for professional development, sufficient staffing support, and ongoing costs. Appropriate budget to support district technology plan.</p>	<p>375 or more per student.</p>	<p>Universal design and access considerations for all computers, workstations, mobile technologies, and eLearning tools are implemented throughout the district.</p>	<p>One student per type A and B computer or other electronic device. Replacement cycle established for 5-8 years or less; one computer per teacher – possible a laptop for homework. 75% of computers meet Massachusetts A.B standards. School works with community to provide equitable access to technology for students and community members after school hours.</p>
-----------------------------	---	---	---	---------------------------------	--	--

Massachusetts School Technology and Readiness (STaR) Chart

Key Areas	Infrastructure for Technology				
Focus Areas & Levels of Progress	Internet Access Connectivity/Speed	E-Learning Environments	LAN/WAN	Other Technologies	Security
Early Tech	Dial-up connectivity to the Internet available only for a few computers. District wide acceptable use policy in place.	Web- and/or satellite-based interactive learning opportunities delivered synchronously, or asynchronously, on a scheduled or unscheduled basis, primarily for professional development on a limited basis.	Limited print/file sharing network at each school for lab, administration, and some classrooms. Some shared resources and providing some secure storage space.	Shared teacher use of resources such as telephone, TVs, VCRs, DVDs, and classroom sets of programmable calculators.	Backup and restoration procedures and virus protection to guard individual computers.
Developing Tech	Direct connectivity to the Internet available at each school and in most rooms. Adequate bandwidth to the school to avoid most delays.	Expanded web- and/or satellite based interactive learning opportunities with the possible addition of asynchronous video streaming or synchronous videoconferencing. The addition of courses for professional development for teachers and student courses at the high school and college level (K-16).	Most rooms connected to Internet via LAN/WAN and wireless connectivity where possible at each school with student access. Minimum 10/100 mb Cat 5 hubbed network. Basic servers for sharing some resources at each school.	Shared use of resources such as telephone, TVs, VCRs, and DVDs, classroom sets of programmable calculators, digital cameras, and scanners. Computer/Video projectors available.	Basic firewall protection and diligent upgrading of network vulnerabilities added to protect against external threats.
Proficient Tech	Direct connectivity to the Internet available in all rooms in all schools. Adequate bandwidth to each classroom over the LAN (10/100mb) to avoid most delays. Easy access for students and teachers including some wireless.	Development of connections for improved access to web-based and/or interactive IP-based video learning on the local, state, regional, national and international level (school to school, district to district, school/district to state, state to state, country to country). Applications to include courses, cultural projects, virtual field trips.	All rooms connected to Internet via LAN/WAN with significant wireless connectivity at each school with sufficient bandwidth for effective student access. Minimum 10/100mb Cat 5 switched network. Servers for providing secure storage, backups, schedule, e-mail, web. Students, teachers, and parents have easy access to educational resources from home and school (e.g. web portal).	Dedicated and assigned use of common technologies such as telephone, TVs and VCRs and DVDs. Programmable calculators assigned to each student as needed. In each school there is shared use of specialized technologies, digital cameras, scanners, handheld electronic devices, and computer/video projectors.	Adequate server and availability protection added to above for expanded capabilities and to ensure dependable access.
Advanced Tech	Direct connectivity to the Internet available in all rooms in all schools. Adequate bandwidth to each classroom over the LAN (10/100mb). Easy access for	Seamless IP-based infrastructure expanded to K-16 to allow development of high-quality web and video-based content. Content distribution available	All rooms connected to Internet via LAN/WAN with significant wireless connectivity at each school with sufficient bandwidth for	Fully equipped classrooms with computer/video projectors and technology that will enhance student instruction readily available as above as well as	Usage authentication added to above for mobile computer and home/external access requirements.

	<p>students and teachers including most wireless connectivity to enable interactive presentations and video.</p>	<p>for all students and teachers. Archives allow for content review asynchronously and sharing/distribution of these resources.</p>	<p>effective student access. All schools connected to the WAN (100mb/gb switched network) have sufficient servers and bandwidth for content delivery through resources such as video streaming and conferencing. Students, teachers and parents have easy access to educational resources from home and school (e.g., web portal).</p>	<p>using new and emerging technologies.</p>	
--	--	---	--	---	--

APPENDIX 2

Staff Survey

**FRONTIER REGIONAL/UNION #38 SCHOOL
DISTRICTS
2006-2007**

Please take a moment to fill out this short survey. The survey provides a snapshot of how prevalent technology is in education today, and what you believe about the technology. We plan to use this survey in the coming years and thus better track the growth of technology use in the district.

**** PLEASE RETURN TO DIANA CAMPBELL, DISTRICT TECHNOLOGY
COORDINATOR ON OR BEFORE SEPTEMBER 15, 2006.**

Demographics:

STAFF:

<input type="checkbox"/> Pre School	<input type="checkbox"/> Support Staff
<input type="checkbox"/> Elementary	<input type="checkbox"/> Administrator
<input type="checkbox"/> Middle School	<input type="checkbox"/> Instructional Assistant
<input type="checkbox"/> Secondary	

Do you have a computer at home that you use for school related:

email Internet other school activities

Do you have a computer at home that you use for personal:

email Internet other activities

Do you have a website?

School _____ Home _____

Would you like to have a website?

School _____ Home _____ No _____

Do you use assistive technology tools with students?

Yes _____ No _____

If so, please list tools:

Do you use hand held computers?

School _____ Personal _____ No _____

Do you use hand held computers with probes?

Yes _____ No _____

From where do you receive information about teaching with technology? (Estimate the percentage for each category)

Conferences _____ Journals _____

Local Resource Person _____ Other _____

What, if anything, do you need to make technology an integral part of your school or classroom's curricular activities? Please use the numbers 1-5 where 1 represents a less urgent need and 5 represents a more urgent need.

- | | | | | | |
|---|---|---|---|---|---|
| 1. Need more training with technology and internet use | 1 | 2 | 3 | 4 | 5 |
| 2. Need more training with curriculum and pedagogy that integrates technology | 1 | 2 | 3 | 4 | 5 |
| 3. Need more time to change the curriculum to better incorporate the technology | 1 | 2 | 3 | 4 | 5 |
| 4. Need more software that is curricular-based | 1 | 2 | 3 | 4 | 5 |
| 5. Need more opportunities to work with colleagues to become more proficient using technology-enhanced curriculum units | 1 | 2 | 3 | 4 | 5 |
| 6. Need more access to computers in the lab | 1 | 2 | 3 | 4 | 5 |
| 7. Need more technical support to keep the computers working | 1 | 2 | 3 | 4 | 5 |
| 8. Need more resources that illustrate how to integrate technology into the curriculum | 1 | 2 | 3 | 4 | 5 |

Please read the descriptions of each of the six stages related to adoption of technology. Circle the number of the stage that best describes your level.

Stage 1: Awareness

I am aware that technology exists but have not used it– perhaps I’m even avoiding it.

Stage 2: Learning the process

I am currently trying to learn the basics. I am sometimes frustrated using computers. I lack confidence when using computers.

Stage 3: Understanding and application

I am beginning to understand the process of using technology and can think of specific tasks in which it might be useful.

Stage 4: Familiarity and confidence

I am gaining a sense of confidence in using the computer for specific tasks. I am starting to feel comfortable using the computer.

Stage 5: Adaptation to other contexts

I think about the computer as a tool to help me and am no longer concerned about it as technology. I can use it in many applications and as an instructional aid.

Stage 6: Creative application to new contexts

I can apply what I know about technology in the classroom. I am able to use it as an instructional tool and integrate it into the curriculum.

Stage 7: Creative application of new technologies

I would like to integrate new technologies such as:

- 1. _____
- 2. _____
- 3. _____
- 4. _____

NAME (optional) _____

APPENDIX 3

Frontier Regional/Union#38
Acceptable Use

FRONTIER REGIONAL/UNION #38 SCHOOL DISTRICT

FRONTIER REGIONAL/UNION #38 ELECTRONIC RESOURCES ACCEPTABLE USE POLICY

A joint document drafted by the Technology in Education Partnership of Greater Franklin County

Reviewed and approved by the following parties:

**Amherst-Pelham Regional Schools
Franklin County Technical School
Frontier Regional and Union 38 School Districts
Gill-Montague School Regional School District
Greenfield Public Schools
Mohawk Trail Regional School District
Orange Elementary Schools
Pioneer Valley Regional School District**

I. Introduction

This document is a joint effort of the greater Franklin County public schools, drafted and approved by the school superintendents and technology coordinators for the purpose of guiding appropriate use of technology in education. The electronic resources at the public schools in greater Franklin County are provided by and in consonance with their mission to:

- Improve education for all students through access to unique resources and partnerships;
- Improve learning and teaching through research, teacher training, collaboration and distribution of successful education practices, methods and materials.

In addition, we seek to ensure a healthy and appropriate use of Internet resources by making provisions for:

- Prevention of access by minors to inappropriate matter on the Internet
- The safety and security of minors when using electronic mail, chat rooms, and other forms of direct electronic communications;
- Prevention of unauthorized access, including "hacking" and other unlawful activities;
- Prevention of unauthorized disclosure, use and dissemination of personal information regarding minors, and

- The design of measures to restrict minors' access to harmful materials.

Our electronic resources—including, but not limited to, computers and Internet access—allow users access to local, national, and international sources of information and collaboration vital to intellectual inquiry and democracy, and are intended solely for educational purposes. Every user has the responsibility to respect and protect the rights of every other user in our school communities and on the Internet. Account holders are expected to conduct themselves in a responsible, ethical, and legal manner, in accordance with both school and district policies, rules, regulations and guidelines and the laws of the Commonwealth of Massachusetts and the United States.

The potential exists, outside the school/district network, for users to access inappropriate material. A user may intentionally or innocently access material inconsistent with our educational purpose. While violations of school/district policy are cause for concern, we maintain the educational advantages of using the web outweigh the disadvantages. It is the burden of parents and guardians to establish standards of use of electronic media consistent with school/district policy and to ensure that users comply with established policy. We respect each family's decision whether their child should or should not have access to the Internet. Students and staff will be given an account on the network and access to the Internet after the Acceptable Use Policy has been read and the Consent and Waiver Form has been signed by the user and submitted to the school. Both students and parent/guardian must sign the Consent and Waiver Form.

The following explains our common policies for acceptable use of the schools' and districts' computer networks. Policies specific to individual schools and districts are at the end of this document. Use of our computer networks and the Internet are revocable privileges dependant upon compliance with school/district policy. A user's failure to comply with policy shall result in limited network/Internet access, suspension of access, and/or other disciplinary action.

II. General provisions

Greater Franklin County schools have established certain protocols to ensure the safety of our school communities, the security of computer networks, and compliance with applicable law. All users should be aware of the following standard practices:

A. Network and Internet monitoring

Our schools have software and systems in place that monitor and record all Internet usage. Our security systems are capable of recording each web site visit, chat, newsgroup, e-mail message, and file transfer into and out of our internal networks for each user. Given reasonable cause, we will intermittently monitor Internet traffic and other usage of electronic resources, for instance, by tracking destination URLs of individual users. Users should have no expectation of privacy when browsing the web, sending or receiving e-mail, or using other electronic resources.

B. Filtering

In accordance with the Children's Internet Protection Act (CIPA), passed by the U.S. Legislature in January 2001 (Public Law 106-554), our schools shall employ filtering software to block access to inappropriate content on all computers with Internet access. Our schools and districts certify that a policy of Internet safety and technology protection measures shall be enforced. Users are restricted from accessing visual depictions of subject matter that is obscene, pornographic, child pornographic or harmful to minors. In compliance with CIPA our schools and districts shall, in furtherance of this policy of Internet safety, monitor the online activities of minors.

Users should be aware that filtering software will not block ALL inappropriate web sites. Users shall report all inappropriate sites not blocked by filters to a technology administrator for appropriate action. Filtering software may be disabled for users 18 and over by a technology administrator for legitimate research purposes.

Our schools and districts can not be held responsible for misuse of material downloaded from any online service, or for inappropriate or sexually explicit material being obtained through the network.

III. User-specific provisions**A. All users**

Students, staff and faculty shall not:

1. Use the network to access and/or transmit material in violation of any U.S. or Commonwealth law, including copyrighted material.
2. Access, download, display, transmit, produce, generate, copy or propagate any material that is obscene or pornographic material; advocates illegal acts; contains ethnic slurs, or racial epithets; or discriminates on the basis of gender, national origin, sexual orientation, race, religion, ethnicity, handicap or age.
3. Degrade, damage or disrupt equipment or system performance.
4. Gain unauthorized access to network resources.
5. Permit or authorize any other person to use their name or login password.
6. Use an account of any other person or vandalize another user's data.
7. Waste electronic storage space by saving unnecessary files or programs.
8. Download, install, load or use programs without written permission of the technology administrator.
9. Use the Internet for personal commercial purposes or for political lobbying.
10. Use inappropriate, offensive, foul or abusive language.
11. Harass or annoy any other party with obscene, libelous, threatening or anonymous messages, objectionable information, images or language.
12. Forward chain letters.
13. Forward e-mail messages of broad interest—including virus alerts and jokes—to the entire school community (see number 5 below).
14. Knowingly make use of pirated software or violate software licensing agreements.
15. Engage in the practice of "hacking" or knowingly engage in any other illegal activity with using the network.

Students, staff and faculty must:

1. Use the Internet and other electronic resources only for legitimate educational purposes.
2. Respect commonly accepted practices of Internet etiquette including, but not limited to, use of appropriate language.
3. Be aware of potential security risks at all times and take all reasonable steps to minimize risks by, at minimum, logging off the network when a computer is unattended and reporting all unauthorized use of one's account to a technology administrator.
4. Avoid bulk e-mailing
5. Forward all e-mails of broad interest, such as virus alerts, to a technology administrator for appropriate distribution to the entire school community.
6. Treat all computer areas and equipment with the utmost care and respect

B. Students

Students may access the Internet only with adult supervision, and must notify a teacher or technology administrator immediately if they come across inappropriate content. In addition, students may not use the Internet to give out personal information (such as a home address, telephone number, or picture) about themselves or other students. Student use of electronic resources is restricted to teacher-approved projects and research.

IV. E-mail

School and district resources for electronic communication shall be used for educational purposes. Incidental and occasional personal use of electronic mail may occur when such use does not generate a direct cost for the district, but such messages will be treated no differently from other messages on the network. Prohibited electronic communications include, but are not limited to:

1. Use of electronic communications to send copies of documents in violation of copyright laws.
2. Use of electronic communication systems to send messages access to which are restricted by laws and regulations.
3. Use of electronic communications to intimidate others or to interfere with the ability of others to conduct school/district business.
4. Constructing electronic communications as if they appear to be from someone else.
5. Obtaining access to the files or communications of others for the purpose of satisfying idle curiosity, with no substantial school/district business purpose.

V. Software policies

A. Supported software

Software upon which the District has standardized will be given priority in terms of installation, troubleshooting and training. A list of standardized and supported software, and other software owned by the district, will be updated from time to time and made available for viewing at a location designated by the superintendent, principal, or technology administrator.

B. Other software

Installation, troubleshooting and training for all other software used by faculty, staff and students will be supported as time permits. Software to be used in the curriculum or in a lab environment must be purchased in "lab packs" of sufficient quantities to account for the greatest number of simultaneous users or as site licenses, and must be owned by the school/district. Single copies of software are considered evaluation copies and will not be supported, installed on multiple computers, or made available from the network to multiple computers.

C. Unsupported software

Software which makes the computers and network harder to maintain and support and which offers little or no benefit over comparable software will not be supported. Please do not install unsupported software, including downloaded freeware or shareware, on your computer. A current list of software known to be incompatible with the school's/district's network or having issues such as a propensity for spreading viruses will be maintained by technology administrators and forwarded to school principals (or their designees) on a regular basis.

D. Downloaded software

If you would like specific software downloaded and made available to you and/or your students, please contact a technology administrator. Please do not download software to your computer.

VI. Web page policies**A. General guidelines for student, teacher & classroom sites****1. Posting**

All web pages produced by faculty or staff that reference or depict the school/district are assumed to be school- or district-owned educational resources, created for the sole purpose of education, and shall be posted on a school-maintained web site, with the exception of school-authorized sites whose purpose is to simplify the process by which a page/site is posted. All student web sites/pages must be approved by authorized school personnel for posting prior to being posted.

2. Disclaimers

If your home page is housed on a school/district server, but has links to sites/pages which are *not* housed on a school/district server, you must include the following disclaimer:

"The Frontier Regional and Union 38 School Districts are not responsible for any content which is not hosted on our servers."

Any school-related web page produced by staff but not housed on the school web site must be posted to an authorized site and must include the following disclaimer:

"The contents of this site/page express the views of the author(s) only and do not necessarily express the views of the Frontier Regional and Union 38 School Districts."

The school/district is not responsible for content on school-related web sites not housed on our site or on another authorized site.

3. Student pictures and work

Use of student photos on any web page is to be at the discretion of individual schools and districts. In all cases, however, a signed release form must be on record at the school before a student's photo can be placed on a web page, and only first names will be used with either pictures or school work.

4. Content

Do not advertise, endorse or link to any product or organization whose primary function is not to disseminate educational content (e.g., commercial enterprises or political groups). Certain fundraising information and links may be allowed, such as "shopforschool.com" or "marketday.com" and certain exceptions may be made for commercial entities who have significantly contributed to the school community (e.g., Verizon or Microsoft). These company links are allowed at the discretion of appropriate school administrators; please see school- and district-specific provisions at the end of this document for more information. In all cases, exceptions may be made when links to commercial or political groups are provided for legitimate educational purposes—for instance, links to the sites of political parties for civics courses, or links to commercial entities for media literacy courses.

Proof your content and use a spell checker before posting. As an educational institution with a potentially broad audience, it is incumbent upon us to have grammatically correct content. Viewers often have high expectations and we must maintain a high level of accountability to our community.

5. Copyright issues

Make certain that your use of copyrighted material conforms to the "fair use" test <http://www.benedict.com/basic/fairuse/fairtest.htm> and that all copyrighted material on your site is appropriately credited.

B. Design guidelines**1. Title**

Make sure your page has a title. This is what appears in the browser's title bar.

2. Fonts

Use common fonts (e.g., Times New Roman, Arial, Courier, and Palatino) and always view your page in both Netscape Navigator and Internet Explorer before posting.

3. Graphics

When using graphics, make sure that the file extension is either .gif or .jpeg. Try to keep the size of any graphic files to less than 50 KB, as many people are accessing our site from home with slow modems. (You can check the size of a file on a PC by right-clicking and selecting "Properties." On a Mac, select the file and then select "Get Info" from the File menu).

4. Links

Check all links. Keep in mind that web sites come and go at an alarming rate and frustrated users will stop visiting your page if they consistently find links which are out of date.

5. Updating

Update time-sensitive information in a timely fashion. It doesn't look very good to have a banner wishing viewers a Happy New Year in April!

6. Accessibility

Make sure your sites are Bobby-compliant. Bobby is a free service provided by the Center for Applied Special Technology (CAST) to help web page authors identify and repair significant barriers to access by individuals with disabilities. You can check your pages at <http://www.cast.org/bobby>

Legal Reference:

Adopted:

October 18, 2001 Conway

October 3, 2001 Deerfield

October 16, 2001 Sunderland

October 1, 2001 Whately

October 9, 2001 Frontier

**FRONTIER REGIONAL/UNION #38
ELECTRONIC RESOURCES ACCEPTABLE USE POLICY
Consent and Waiver Form**

Name of User: _____

(Check One)

Administrator___ Faculty___ Staff___ Student___Gr. _____

I certify that I have read and understand the Frontier Regional and Union #38 School District's Electronic Resources Acceptable Use Policy and pledge to abide by its provisions.

Signed_ _____

Date: _____

Parent or Guardian:

I certify that I am the parent or legal guardian of the student listed above, and that we have both read and understand the provisions of the Electronic Resources Acceptable Use Policy. Further I grant permission for the above named student to utilize this network in support of his/her education at Frontier Regional and Union #38 School District.

Signed: _____

Date: _____

Revised 10/01

APPENDIX 4

NETS for Children

NETS for Teachers

Technology Standards for Administrators

NETS for Students

Technology Foundation Standards for All Students

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

Technology Foundation Standards for Students

- 1 Basic operations and concepts
 - Students demonstrate a sound understanding of the nature and operation of technology systems.
 - Students are proficient in the use of technology.
- 2 Social, ethical, and human issues
 - Students understand the ethical, cultural, and societal issues related to technology.
 - Students practice responsible use of technology systems, information, and software.
 - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 3 Technology productivity tools
 - Students use technology tools to enhance learning, increase productivity, and promote creativity.
 - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
- 4 Technology communications tools
 - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
 - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
- 5 Technology research tools
 - Students use technology to locate, evaluate, and collect information from a variety of sources.
 - Students use technology tools to process data and report results.
 - Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.
- 6 Technology problem-solving and decision-making tools
 - Students use technology resources for solving problems and making informed decisions.
 - Students employ technology in the development of strategies for solving problems in the real world.

NETS for Teachers

Educational Technology Standards and Performance Indicators for All Teachers

Building on the NETS for Students, the ISTE NETS for Teachers (NETS•T), which focus on pre-service teacher education, define the fundamental concepts, knowledge, skills, and attitudes for applying technology in educational settings. All candidates seeking certification or endorsements in teacher preparation should meet these educational technology standards. It is the responsibility of faculty across the university and at cooperating schools to provide opportunities for teacher candidates to meet these standards.

The six standards areas with performance indicators listed below are designed to be general enough to be customized to fit state, university, or district guidelines and yet specific enough to define the scope of the topic. Performance indicators for each standard provide specific outcomes to be measured when developing a set of assessment tools. The standards and the performance indicators also provide guidelines for teachers currently in the classroom.

1 TECHNOLOGY OPERATIONS AND CONCEPTS.

Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:

- demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students)
- demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

2 PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.

Teachers plan and design effective learning environments and experiences supported by technology.

Teachers:

- design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
- apply current research on teaching and learning with technology when planning learning environments and experiences.
- identify and locate technology resources and evaluate them for accuracy and suitability.
- plan for the management of technology resources within the context of learning activities.
- plan strategies to manage student learning in a technology-enhanced environment.

3 TEACHING, LEARNING, AND THE CURRICULUM.

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning. Teachers:

- facilitate technology-enhanced experiences that address content standards and student technology standards.
- use technology to support learner-centered strategies that address the diverse needs of students.
- apply technology to develop students' higher order skills and creativity.
- manage student learning activities in a technology-enhanced environment.

4 ASSESSMENT AND EVALUATION.

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

Teachers:

- apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

5 PRODUCTIVITY AND PROFESSIONAL PRACTICE.

Teachers use technology to enhance their productivity and professional practice. Teachers:

- use technology resources to engage in ongoing professional development and lifelong learning.
- continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- apply technology to increase productivity.
- use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

6 SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES.

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice. Teachers:

- model and teach legal and ethical practice related to technology use.
- apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- identify and use technology resources that affirm diversity
- promote safe and healthy use of technology resources.
- facilitate equitable access to technology resources for all students.

Copyright ISTE NETS. All Rights Reserved.

NETS for Administrators

Educational Technology Standards and Performance Indicators for Administrators

I. LEADERSHIP AND VISION.

Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision. Educational leaders:

- A. facilitate the shared development by all stakeholders of a vision for technology use and widely communicate that vision.
- B. maintain an inclusive and cohesive process to develop, implement, and monitor a dynamic, long-range, and systemic technology plan to achieve the vision.
- C. foster and nurture a culture of responsible risk-taking and advocate policies promoting continuous innovation with technology.
- D. use data in making leadership decisions.
- E. advocate for research-based effective practices in use of technology.
- F. advocate on the state and national levels for policies, programs, and funding opportunities that support implementation of the district technology plan.

II. LEARNING AND TEACHING.

Educational leaders ensure that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching. Educational leaders:

- A. identify, use, evaluate, and promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.
- B. facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning.
- C. provide for learner-centered environments that use technology to meet the individual and diverse needs of learners.
- D. facilitate the use of technologies to support and enhance instructional methods that develop higher-level thinking, decision-making, and problem-solving skills.
- E. provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.

III. PRODUCTIVITY AND PROFESSIONAL PRACTICE.

Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others. Educational leaders:

- A. model the routine, intentional, and effective use of technology.
- B. employ technology for communication and collaboration among colleagues, staff, parents, students, and the larger community.
- C. create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity.
- D. engage in sustained, job-related professional learning using technology resources.
- E. maintain awareness of emerging technologies and their potential uses in education.
- F. use technology to advance organizational improvement.

IV. SUPPORT, MANAGEMENT, AND OPERATIONS.

Educational leaders ensure the integration of technology to support productive systems for learning and administration. Educational leaders:

- A. develop, implement, and monitor policies and guidelines to ensure compatibility of technologies.
- B. implement and use integrated technology-based management and operations systems.
- C. allocate financial and human resources to ensure complete and sustained implementation of the technology plan.

- D. integrate strategic plans, technology plans, and other improvement plans and policies to align efforts and leverage resources.
- E. implement procedures to drive continuous improvement of technology systems and to support technology replacement cycles.

V. ASSESSMENT AND EVALUATION.

Educational leaders use technology to plan and implement comprehensive systems of effective assessment and evaluation. Educational leaders:

- A. use multiple methods to assess and evaluate appropriate uses of technology resources for learning, communication, and productivity.
- B. use technology to collect and analyze data, interpret results, and communicate findings to improve instructional practice and student learning.
- C. assess staff knowledge, skills, and performance in using technology and use results to facilitate quality professional development and to inform personnel decisions.
- D. use technology to assess, evaluate, and manage administrative and operational systems.

VI. SOCIAL, LEGAL, AND ETHICAL ISSUES.

Educational leaders understand the social, legal, and ethical issues related to technology and model responsible decision-making related to these issues. Educational leaders:

- A. ensure equity of access to technology resources that enable and empower all learners and educators.
- B. identify, communicate, model, and enforce social, legal, and ethical practices to promote responsible use of technology.
- C. promote and enforce privacy, security, and online safety related to the use of technology.
- D. promote and enforce environmentally safe and healthy practices in the use of technology.
- E. participate in the development of policies that clearly enforce copyright law and assign ownership of intellectual property developed with district resources.

“This material was originally produced as a project of the Technology Standards for School Administrators Collaborative.”

21st Century Skills

In addition to the *National Educational Technology Standards (NETS)* and the models of other states, the Massachusetts Department of Education also incorporates the recommendations from the partnership for 21st Century Skills¹ in this revised version of the Massachusetts K-12 Instructional Technology Standards.

The Partnership emphasizes that “states can provide students with a truly relevant education *only* if they incorporate 21st century skills into core subjects.” It also points out that “in fact, 21st century skills *enable* students to master core subjects.” In developing the Massachusetts standards, we have identified the technology skills needed to complement the six key elements of 21st century learning as identified by the Partnership:

1. Core subjects as identified by the No Child Left Behind Act of 2001. (In Massachusetts we also include the Massachusetts Curriculum Frameworks.)
2. Twenty-first century content that includes global awareness; financial, economic, business and entrepreneurial literacy; civic literacy; and health and wellness awareness.
3. Learning and thinking skills that include critical-thinking and problem-solving skills; communication skills; creativity and innovation skills; collaboration skills; contextual learning skills; and information and media literacy skills.
4. ICT literacy is information and communications technology literacy, for students to use technology to learn content and skills so that they know how to learn, think critically, solve problems, use information, communicate, innovate, and collaborate.
5. Life skills that include leadership, ethics, accountability, personal productivity, personal responsibility, people skills, self-direction, social responsibility.
6. 21st century assessments that measure the core subjects; 21st century content; learning and thinking skills; ICT literacy; and life skills. The use of modern technologies is recommended to “increase efficiency and timeliness.”

¹ The Partnership for 21st Century Skills is a tax-exempt 501 (c) 3 organization that includes approximately 26 member organizations. The Partnership’s original work was supported by a two-year grant from the U.S. Department of Education.