

**ERVING ELEMENTARY SCHOOL DISTRICT  
TECHNOLOGY PLAN**

JULY 1, 2010-JUNE 30, 2014

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# CONTENTS

	Page
MISSION STATEMENT.....	1
INTRODUCTION-VISION, BELIEFS, AND RATIONALE.....	2
CHAPTER	
I. BENCHMARK 1 - COMMITMENT TO A CLEAR VISION AND MISSION STATEMENT.....	4
II. BENCHMARK 2 - TECHNOLOGY INTEGRATION.....	7
III. BENCHMARK 3 - TECHNOLOGY PROFESSIONAL DEVELOPMENT.....	9
IV. BENCHMARK 4 - ACCESSIBILITY OF TECHNOLOGY.....	11
V. BENCHMARK 5 - INFRASTRUCTURE FOR CONNECTIVITY.....	13
APPENDICES	
1. STAFF SURVEY.....	14
2. ERVING ELEMENTARY SCHOOL'S ACCEPTABLE USE POLICY .....	18
3. NETS FOR STUDENTS , NETS FOR TEACHERS, AND TECHNOLOGY STANDARDS FOR ADMINISTRATORS.....	23
4. ERVING ELEMENTARY SCHOOL GRADE LEVEL TECHNOLOGY STANDARDS.....	31
5. MASSACHUSETTS STAR CHART.....	34



## **MISSION STATEMENT**

### **Erving Elementary School**

Our mission is to provide all students the opportunity to develop academic skills. We provide a curriculum aligned with the Massachusetts Frameworks that includes reading, writing, math, social studies, science, technology, physical education, art, and music. Throughout the academic program, we provide opportunities for children to develop skills in problem solving and decision-making. Erving Elementary School District's children will develop a strong sense of community. With these experiences, we expect that children will use their acquired knowledge and will develop a sense of responsibility.

We are committed to providing a school that is safe for children and adults.

We also are committed to an educational environment that recognizes and develops the individual potential of all students. We are committed to learning; we have high expectations for all students and hope that each graduate leaves this school with motivation to excel. We focus on the process of learning and hope that each Erving child will maintain an excitement about learning for a lifetime.

Another aspect of our philosophy is our emphasis on responsible decision-making. We expect that each child will have plenty of opportunities to make important decisions about their learning, their friends, and their activities. We hope that children will develop the courage to maintain their friendships and, at the same time, maintain their own individuality to resist peer pressure.

In short, we expect that each child will have opportunities to reach his/her individual potential, develop a respect for the individuality of others, develop decision-making skills, and feel a strong sense of community.

## **INTRODUCTION-**

### **VISION, BELIEFS AND RATIONALE**

Erving Elementary School, also known as the Erving Elementary School District, had an early vision of the importance for integrating technology into every student's learning and teacher's instructional practices throughout the school year. Please note that any further reference to Erving Elementary School also refers to the school as its own district. The school believes that students will improve their learning through the consistent use of technology. As the world becomes very technological in every area of people's lives, it is essential our students remain current in their understanding of technology. Teachers also have utilized technology in their daily instruction. The teachers access purchased educational programs that enhance reading, mathematics, science, and social studies. The school continues to promote the value of providing a technology curriculum for Erving Elementary School staff and students.

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 4) provide guidance, development, and integration of technology into the school environment.

During the most recent 2002 renovation project for the Erving Elementary School, the Town of Erving and the school created a plan to implement the use of computer technologies at the Erving Elementary School based on increasing student skills in communication, information processing, and productivity. Since then, considerable work has been accomplished. A robust wired and wireless switched network infrastructure was installed and is functioning smoothly. The network has been fast and reliable. A large modem computer lab was installed, and the school was provided an adequate number of new computers in each classroom. Most classrooms have at least three student computers and access to a nearby laser printer. We have provided teachers with a laptop computer. Ceiling mounted data projectors have been installed in most classrooms. In 2008, 70 new Intel based iMac 20"

computers were purchased by the town for the school. The 7-year old eMacs were reconditioned and appropriated to the citizens of Erving for home usage. New laser printers were installed and a new Intel based AppleX server was installed to increase access speed, reliability, and data storage volume.

We have implemented a new web-based student information system that has dramatically improved our ability to create state reports, collect student data, and run our cafeteria. We have implemented a new web-based special education program that allows our special education team around the clock access to student special education information. Recently we installed a suite of web-based learning products from Renaissance Learning and Read Naturally. These instructional materials are used in all grade levels.

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 Word used by members of the learning community. All staff and students have network accounts. During the summer of 2009, the Town released money to upgrade the computers in the school.

In order to follow the mission of the school, support student learning, facilitate staff professional development and be eligible for E-Rate discounts, as well as federal and state technology funding, Erving Elementary is required to have a long-range strategic technology plan approved by the Department of Education.

Erving Elementary 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.

**CHAPTER I**

**BENCHMARK 1-**

**COMMITMENT TO A CLEAR VISION AND MISSION**

**STATEMENT**

- A. The district's technology plan contains a clearly stated and reasonable set of goals and implementation strategies that align with the district-wide school improvement plan. The district is committed to achieving its vision by the end of the school year 2013-2014.
  
- B. The district has invested in professional development for staff members in the area of computer technology. School Psychologist-Assistive Technology training and Technology for Autistic Children, Special Educators-MCAS Alternative Program for Data Collection and Assistive Technology, Technology Coordinator-Apple Forward Thinking for Educators and IT Leaders, Apple Technology Update for Educators, Open Source Software Workshop, Using Data to Enhance Instruction, MA State Technology Directors Workshop, and teachers/paraprofessionals-Internet use and email trainings.
  
- C. In addition, the school has had administrators and staff attend summer workshops to better understand and utilize data warehousing programs. A Data Team consisting of the Superintendent, Special Education Director, the Principal, IT, classroom teachers, and a paraprofessional attended two different summer Data Warehousing to Enhance Technology workshops.
  
- D. Needs Assessment
  - 1. The district assesses the technology products and services that will be needed to improve teaching and learning. The Technology Coordinator and Principal meet to discuss and

review the technology products and services. Approval for purchasing new items is made and endorsed by the Principal.

2. The technology plan includes an assessment of the services and products that are currently being used and that the district plans to acquire. The Technology Coordinator and Principal review this assessment. This information is kept on file with the Technology Coordinator. Upgrades are discussed.

B. The district has an Acceptable Use Policy (AUP) regarding Internet and network use (Appendix 2). The policy is updated as needed to help ensure safe and ethical use of resources by teachers and students.

C. Budget

1. The district has a budget for its local technology plan with line items for technology in its operational budget. The Erving Elementary School budget provides an adequate amount of money to support the annual operating costs of our technology program.

- Administrative Technology-\$2,000
- Instructional Software and Hardware-\$4,500
- Technology Maintenance and Supplies-\$4,000
- Networking and Telecommunication-\$8,250

The school budget also covers the cost of a .6 Technology Coordinator and computer instructor.

1. The budget includes staffing, infrastructure, hardware, software, professional development, support, and contracted services (including telephone services).
2. For our district to apply for E-rate reimbursement, the technology plan specifies how the district will pay for the non-discounted

portion of their costs for the services procured through E-rate. Additional monies are included within the previously mentioned items.

#### D. Evaluation

1. The district evaluates the effectiveness of technology resources toward attainment of educational goals on a regular basis. The staff reviews the Erving Elementary Schools Grade Level Technology Standards on a yearly basis.
2. The district's technology plan includes an evaluation process that enables it to monitor its progress in achieving its goals and to make mid-course corrections in response to new developments and opportunities as they arise. The IT person continually reviews the goals with the Principal throughout the year.

#### **Beliefs**

- Our school must begin to prepare young students for the workplace of today and the future.
- We believe our students should be lifelong learners who possess the ability to be critical thinkers, strong communicators, effective users of modern technology tools, problem solvers, and motivated learners to new ideas.
- The ethical use of technology is paramount to our students' understandings.
- It is imperative for all students to have access to information via technology as a basis for lifelong learning.
- Processing and managing information through the skillful use of technology is essential for the staff and students.
- Networked technology systems permit efficient and effective communications within and outside the district.
- Technology is used to help those students who need a different format for learning. The special education

students utilize Read Naturally as a tool to improve reading skills.

- Individual student skills in reading and math can be addressed through the use of specific computer programs.
- Accessing data on individual students can enhance instructional practices.

## **CHAPTER II**

### **BENCHMARK 2 -**

### **TECHNOLOGY INTEGRATION**

#### **Rationale**

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

#### **Benchmark 2-Technology Integration and Literacy**

(High quality professional development is described in the Massachusetts 2001 State Plan for Professional Development <http://www.doe.mass.edu/pd/stateplan/>).

#### **A. Technology Integration**

1. Outside Teaching Time - At least 95% of teachers use technology every day; every classroom teacher and special education teacher has a school purchased laptop computer for professional use. These computers are used to create daily lesson plans; communicate with families, colleagues, and administration; develop trimester report cards (Standards Based Report Cards) and special education documents; access information pertinent to daily lessons via the Internet, and update information regarding the DESE's newest initiatives.
2. For Teaching and Learning - At least 95% of teachers use technology appropriately with students every day to improve student learning of the curriculum. Read Naturally is used to enhance special education students' reading skills. Accelerated Reading and Math provide individual information for teachers to access skills in those content areas. Researching information for special projects is completed using the Internet. IXL is utilized to individually evaluate students' skills in mathematics at the fifth and sixth grade levels. MCAS information is

available for review to prepare for the high stakes tests in math, ELA, and science. Each classroom is equipped with a projector to access computer programs that enhance all content areas. Word processing, Power Point presentations, and Excel are programs students at various levels have received instruction to learn.

## **B. Technology Literacy**

1. All grades preschool through sixth receive instruction in computer skills weekly. These skills are developed collaboratively between the classroom teachers and the instructor.

## **Computer Class Schedule**

Preschool-sixth grade have one-half hour to one-hour lessons.

Grades 3-6 have 15 minutes of Type to Learn.

### Computer Class Schedule

- preschool-4 year olds-sixth grade
- one half hour - one hour lessons
- grades 3-6 have 15 minutes of Type to Learn
- Touch base with teachers regularly

PK-K	Kid Pix
Grade 1	Trudy-directional program for mapping and Bailey's Book House-learning to type the alphabet and tell a story)
Grade 2	Key skills in simple
addition	
Grade 3	Key skills in ELA (adj.,
nouns, verbs)	
Grade 4	Writing Prompt from the classroom for MCAS with Microsoft Word
Grade 5	Power Point and will be
doing graphing	
Grade 6	Excel and IXL and will be
doing graphing	

2. Teachers are working to meet the proficiency level in technology. Professional development opportunities in assistive technology have been given to all staff that currently work or will be working with a student who has severe language concerns. The staff also has worked with a curriculum specialist to analyze data from the Data Warehouse in both English Language Arts and mathematics to refine the curriculum.

## **C. Staffing**

1. The district has a school level Computer Technologist/Teacher to service 172 students and 47 staff members.
2. The district has staff dedicated to data management and assessment.

**CHAPTER III**  
**BENCHMARK 3 -**  
**TECHNOLOGY PROFESSIONAL**  
**DEVELOPMENT**

**Benchmark 3-Technology Professional Development**

- A. At the end of three years, at least 85% of the staff will have participated in 60 hours of high-quality professional development that includes technology skills and the integration of technology into instruction. High quality professional development is described in the Massachusetts 2001 State Plan for Professional Development (<http://www.doe.mass.edu/pd/stateplan/>). Staff will be using Aims Web to access data from Dibels, MAZE, Aims Web Math, and MCAS to individually evaluate their students' needs.
- B. Technology professional development is sustained and ongoing and includes working with the Data Warehousing site, group mentoring work, re-evaluating the newly developed Standards Based Report Card, MCAS data analysis, reviewing new program information associated with the Reading Street and new math programs (Envisions, Every Day Math, and Investigations), participates in selected Webinars, and learns about new assistive technology devices. The info projector is used by teachers to access information from the Web to instruct students in the various content areas. In addition, the new mathematics program has a computer component that allows students to visually engage in their mathematics learning. The school is currently researching the use of Smart Boards to enhance instruction. Two staff members have visited two local schools that utilize these technology tools. The Erving School is planning to purchase some Smart Boards.
- C. Professional development planning includes an assessment of district and teachers' needs. The Computer Technologist and the Principal, through staff meeting discussions and informal meetings with staff

members throughout the year, will gather the information.

- D. Administrators and teachers consider their own needs for technology professional development through ongoing discussions with the Computer Technologist.

**Erving Elementary School supports 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. The four Computer Technologists in Union#28 meet to discuss individual school needs and share information among the schools concerning technology initiatives.
- Incorporates learning new curriculum (math, writing, etc.) with technology applications.

**Erving Elementary School supports instructional change that:**

- Facilitates access to collegial support and best practice information from a wide variety of resources including job alike workshops held four times each year with Wendell-New Salem, Leverett, and the Shutesbury Elementary Schools.
- Expands the variety of teaching tools and strategies to support diverse learning styles.
- Supports productive and efficient management of student assessment and portfolio data.
- Enables curriculum, instruction, and assessment to be developed and aligned with each other.
- Pilots new teaching strategies, technologies, and instructional resources.
- Working with the Town of Erving to allow community access availability for annual town meetings and school events.

Erving Elementary School has a Computer Curriculum Guide that was developed to include the most current Massachusetts States Standards which is available for downloading from the Massachusetts DESE web site.

**CHAPTER IV**  
**BENCHMARK 4 -**  
**ACCESSIBILITY OF TECHNOLOGY**

**Benchmark 4-Accessibility of Technology**

**A. Hardware Access**

1. The district has an average ratio of fewer than three students per computer.
2. The district provides students with access to two, stationary mini-computer laboratories. Also each classroom has between two and three computer stations.
3. The district maximizes access to the general education curriculum for all students, including students with disabilities. The school has purchased a Vantage Lite computer for a significantly language impaired student.
4. The district has procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability. This process is coordinated with the Business Manager for Union #28.
5. The district provides classroom access to devices such as digital projectors and digital cameras.
6. The district has established a computer replacement cycle of five years or less.

**B. Internet Access**

1. The district provides connectivity to the Internet in all classrooms in all schools including wireless connectivity, if possible.

### **C. Networking (LAN/WAN)**

1. The district provides a minimum 100 Mb Cat 5 switched network and/or 802.11b/g/n wireless network.
2. The district provides access to five servers. Staff can save files to a file server so that staff access files in school from any computer connected to the network.
3. Each staff member has an email account to communicate with staff and parents/guardians about their students and their practices.
4. Each staff member can access the school's web site. The staff has provided links to important sites for their students to utilize outside of the school day. It also gives updates to important school information; school calendar, weekly school publication, town information, etc.

### **D. Access to the Internet Outside the School Day**

1. The district web site includes an up-to-date list of places where students and staff can access the Internet after school hours. There is a "Links" listing on the side menu that offers places for students and staff to access additional information.

### **E. Staffing**

1. The district provides a Computer Technologist/Teacher as a .6 position during the 2010-2011 school year. During the 2011-2012 school year, a full time position will be recommended if the budget can accept that cost.
2. The district provides timely in-classroom technical support with clear information about how to access the support so that technical problems will not cause major disruptions to curriculum delivery.

3. The district provides a .6 person to support 70+ computers. Technical support can be provided by dedicated staff or contracted services.

**CHAPTER V**  
**BENCHMARK 5 -**  
**INFRASTRUCTURE FOR CONNECTIVITY**

**Benchmark 5-Infrastructure for Connectivity**

- A. The district deploys IP-based connections for access to web-based learning on the local, state, regional, national, and international level.
- B. The district maintains an up-to-date web site that includes information for parents and community members.
- C. The district complies with federal and state law, and local policies for archiving electronic communications produced by its staff and students. The district informs staff and students that any information distributed over the district or school network may be a public record.

# APPENDIX 1

## STAFF SURVEY

### ERVING ELEMENTARY SCHOOL DISTRICT

2010-2011

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 Charlene Galenski, Principal**

**Demographics:**  
**STAFF (Please check):**

Support Staff  
Instructional Assistant  
Preschool  
Elementary  
Administrator

**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?**

\_\_\_ Home

-

**Do you use assistive technology tools with students?**

\_\_\_\_\_Yes      \_\_\_\_ No

If so, please list tools: \_\_\_\_\_

**Do you use hand held computers?**

\_\_\_\_\_School                      \_\_\_\_\_Personal

**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 2**

### **ERVING ELEMENTARY SCHOOL'S ACCEPTABLE USE POLICY**

#### **Erving School District Computer Network Acceptable Use and Internet Safety Policy**

##### **Introduction**

The computer network resources at the Erving Elementary School are provided by and in consonance with the mission of the Erving School District which serves 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 will be given an account on the network and access to the Internet unless a parent or legal guardian submits a signed Refusal Form.

The following explains our policies for acceptable use of the Erving Elementary School computer network. Use of our computer network 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.

## **I. General provisions**

The Erving Elementary School has established certain protocols to ensure the safety of our school community, 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 school may have software and systems in place that monitor and record all Internet usage. Given reasonable cause, we may 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 school district shall employ filtering software to block access to inappropriate content on all computers with Internet access. Our school district certifies 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 school district 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 school district 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.

## II. 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 a 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.

**III. 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 communications to intimidate others or to interfere with the ability of others to conduct school/district business.
3. Constructing electronic communications to they appear to be from someone else.
4. Obtaining access to the files or communications of others for the purpose of satisfying idle curiosity, with no substantial school/district business purpose.

#### **IV. Posting of Student Photos and Work on the School Web Site**

Parent Permission is required before any student's photo, art work, writing, or other project, may be posted on the Erving Elementary School web site, a part of the Internet. Student work will appear with no reference to the student's last name, home address or telephone number.

## **APPENDIX 3**

# **NETS FOR CHILDREN, NETS FOR TEACHERS, AND 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.

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## **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.

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## **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 teach 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.

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**APPENDIX 4**

**ERVING ELEMENTARY SCHOOL GRADE LEVEL TECHNOLOGY  
STANDARDS**

	KEYBOARDING	WRITING TOOLS	MULTIMEDIA TOOLS	INFORMATION TOOLS	NUMERIC TOOLS	CURRICULUM TOOLS	TECHNOLOGY LITERACY
PreK - K	Guided exploration and introduction to the keyboard as students learn the alphabet and numbers.	Type letters and numbers. Learn to type names and other familiar words. Dictation to teacher.	Draw and label pictures.	Develop awareness of CD-ROMS and their uses.	Introduction of math software (matching, sorting, counting, patterning, numeral recognition, adding).	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Learn basic computer components, and know start-up and shut-down procedures. Use care in handling equipment.
Grade 1	Introduction to the keyboard as students learn the alphabet and numbers. Learn the basic function keys: return, space bar, and software tool bar.	Type letters and learn to type name, type numbers to learn numeric notation for date. Describe a picture in a sentence or phrase and independently save to file.	Draw a picture and label the picture with the name of the student.	Develop awareness of CD-ROMS and their uses.	Type numbers via math programs. Continue use of math software (matching, sorting, counting, patterning, numeral recognition, adding and subtracting).	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Learn basic computer components, develop appropriate terminology and know start-up and shut-down procedures. Use care in handling equipment.
Grade 2	Learn and use the basic function keys: return, space bar, delete, shift, and command. Learn the meaning of symbols of the software tool bar and the menus.	Type and revise a short story or describe a picture in a sentence or phrase. Independently save to disk or file server.	Create one page of a class multimedia project using one or more media.	Introduction to CD Rom encyclopedia	Use appropriate software to record and graph data. Use appropriate math drill software.	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Learn basic computer components, develop appropriate terminology and know start-up and shut-down procedures. Use care in handling equipment.
Grade 3	Introduction to two-handed typing.	Type and revise writing projects with several sentences or paragraphs.  Begin editing and revising using available software tools.	Create simple multimedia project using <i>MicroWorlds Project Builder</i> .	Introduction to other information technologies (e.g. Internet, CD ROMS).	Introduce the use of the calculator as a tool. Use appropriate software to record and graph data. Use appropriate math drill software	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Learn basic computer components, develop appropriate terminology and know start-up and shut-down procedures. Use care in handling equipment.
Grade 4	Continue development of keyboarding skills concentrating on speed (faster than handwriting) and accuracy.	Continue to type and revise writing projects with several sentences or paragraphs.  Continue editing and revising using available software tools.	Create a multipage multimedia project using <i>MicroWorlds Project Builder</i> . Create at least one page of a class multimedia projects illustrated with a picture from a digital camera or other media resource.	Introduction to information technologies (e.g. Internet, CD ROMS).	Use appropriate technology tools to facilitate problem solving for recording and graphing data.	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Learn basic computer components, develop appropriate terminology and know start-up and shut-down procedures. Use care in handling equipment.
Grade 5	Continue to work for speed (Goal = 25 gross wpm) and accuracy.	Publish a variety of documents that demonstrate an understanding of the Clarisworks word processing program.	Create multimedia projects which include three of more media components and links between key ideas	Locate information on the Internet and incorporate information into research project. Demonstrate understanding of Erving LAN. Use e-	Use a spreadsheet and other appropriate technology tools to facilitate problem solving, data collection and analysis.	Use appropriate software to support integration throughout the curriculum and to develop critical thinking skills.	Continue use and appropriate care when handling the tools of technology as well as continued development of appropriate terminology.



## APPENDIX 5

### MASSACHUSETTS STAR CHART

#### Massachusetts School Technology and Readiness (STAR) Chart

Key Areas	Teaching & Learning					F
	A	B	C	D	E	
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
<b>Early Tech</b>	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.
<b>Developing Tech</b>	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.
<b>Proficient Tech</b>	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.
<b>Advanced Tech</b>	Mostly student-centered learning, teacher as mentor/facilitator. Students use technology to communicate	85% teachers integrate evolving technologies that transform the teaching process by	Seamlessly integrated throughout classes and all content areas. Technology is available	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

	and collaborate outside the classroom.	allowing for greater levels of access, interest, inquiry, analysis, collaboration, creativity, and content production.	anytime both in school and within the community.			integration of Universal Design and access considerations for all students.
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## Massachusetts School Technology and Readiness (STAR) Chart

<b>Key Areas</b> Focus Areas/Levels of Progress	<b>Educator Preparation and Development</b>					<b>Vision and Planning</b>
	<b>Capabilities of Educators</b>	<b>Leadership and Capabilities of Building Principals and District Administrators</b>	<b>Models of Professional Development</b>	<b>Levels of Understanding</b>	<b>Universal Access: Integration of Universal Design and Assistive Technology</b>	
<b>Early Tech</b>	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.
<b>Developing Tech</b>	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.

<p><b>Proficient Technology</b></p>	<p>60% meet ISTE and/or local district teacher technology competencies and implement into the school environment.</p>	<p>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.</p>	<p>Coaching, modeling best practices, district-based mentoring. Involvement in a development/improvement process. Study groups.</p>	<p>Most at appropriate stage (technology is integrated, used for its unique capabilities)</p>	<p>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.</p>	<p>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.</p>
<p><b>Advanced Tech</b></p>	<p>90% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.</p>	<p>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.</p>	<p>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).</p>	<p>Most at invention stage (teachers discover and accept new uses for technology).</p>	<p>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.</p>	<p>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 &amp; practice; updated at least annually.</p>



## Massachusetts School Technology and Readiness (STAR) Chart

<b>Key Areas</b>	<b>Administration and Support Services</b>					
<b>Focus Areas/Levels of Progress</b>	<b>Technical Support (hardware, operating system, network)</b>	<b>Curriculum Integration Staffing</b>	<b>Budget Levels</b>	<b>Budget Allocated for Technology (Total Cost of ownership)</b>	<b>Universal Design: Physical Access/Software &amp; hardware Compatibility</b>	<b>Students per Instructional Computer</b>
<b>Early Tech</b>	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.
<b>Developing Tech</b>	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.
<b>Proficient Tech</b>	At least one technical staff per 200 computers. Same-day in-classroom technical support available.	District level Technology Director. Dedicated instructional technology specialist - one half person per	Budget for purchases, professional development, adequate staffing support, and ongoing costs. Other	\$250 - \$375 per student	UD & access considerations for limited number of computers, workstations, & mobile technologies are established in	Less than 5 students per type A and B computer; replacement cycle established for 6 years or less; one

	Problems infrequently cause major disruptions to curriculum delivery using technology. Network administrator .	30-60 staff. Dedicated staff at district level for data management and assessment.	state, federal, and local programs directed to support technology funding. Business partnerships, donations, and other local funding designated for technology.		areas of high student use (e.g. libraries, computer labs), some computers classrooms & administrative offices; routine implementation of procurement policies ensuring backwards compatibility.	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.
<b>Advanced Tech</b>	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	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.	Budget for purchases, incentives for professional development, sufficient staffing support, and ongoing costs. Appropriate budget to support district technology plan.	375 or more per student.	Universal design and access considerations for all computers, workstations, mobile technologies, and eLearning tools are implemented throughout the district.	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.

