

THREE YEAR TECHNOLOGY PLAN

2014-2016

For

The Gill-Montague Regional School District

Updated - 2014

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Introduction: Facing the Challenges of the Information Age

In the U.S. Department of Education “Goals 2000: Educate America Act”, it states that one of the challenges we must meet is that:

“... every school in America will ensure that all students learn how to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation’s modern economy.”

Another challenge goes on to state that:

“...every adult in America will be literate and will possess the knowledge and skills necessary to compete in a global economy...”

It is generally accepted that to be “literate” and well prepared for the workforce of today, it is essential that one possess the skills necessary to use computer technology effectively.

When planning to use technology effectively educators are faced with a twofold problem. The first is needing to learn how to use the appropriate technology tools available. The second is to redesign the curriculum and delivery methods to take full advantage of the potential assistance offered by technology.

Here in the Commonwealth of Massachusetts, in an attempt to address these issues, the Massachusetts Education Reform Act has been enacted. The reform act stresses the importance of the new place of technology within the educational system. It goes on to state:

“... computers, electronic networks, expanded telephone services and other technological tools are essential in the workplace. These tools must become standard within every classroom to insure that all students and teachers have the opportunity to apply and extend their skills and knowledge.”

Technology is fast changing and our schools must find ways to keep up with these changes, if we are to meet the new federal and states challenges put to us.

We must provide our schools with the necessary computer infrastructure to enable our teachers to effectively prepare students for this new technological age. The Common Core of Learning in the Massachusetts Education Reform Act states:

“Schools must have access to the newest technology and a sufficient number of computers and other tools so that teachers and students can prepare for the technological society in which they work and live.”

This plan provides the leadership of the Gill-Montague Regional School District with goals and recommendations as to how we can continue to prepare our staff and

students to use technology effectively. It is abundantly clear that educators must be capable of using technology as a tool to improve learning. We must provide our educational staff with continuous and strong professional development and training in the effective use of technology. They should have easy access to appropriate high quality software and a modern network infrastructure. They should be able to use the vast resources of the Internet to obtain relevant and valuable information for themselves and their students.

Technology is not only a valuable tool to be integrated into the instructional program but should also be a subject of study as well. Teachers should be training students in the use of technology starting in elementary schools. It is especially important that middle and high school students possess a good knowledge of technology in order to be prepared for further educational opportunities as well as opportunities in the workplace. A quick survey of the job market will show a continuing and expanding need for a technology literate work force.

This plan provides direction for those responsible for preparing our students to achieve their future personal and professional goals. Before this five year period ends it should be a high priority to develop an updated technology curriculum for the elementary, middle and high schools and to put in place the staff necessary to effectively teach it and support its implementation.

Data informed decision making is critically important in planning the improvement of our schools and educational programs. Decision makers must have ready access to the data needed. Another high priority for this five year plan is to identify and make easily accessible the data needed to improve teaching and learning.

If this plan is carried out we believe that our educational staff will be able to improve the quality of educational services provided to our students and all of those who use our facilities.

We attempt here to answer three fundamental questions facing us: Where are we now? Where must we be in the future? How do we plan to get there?

The GMRSD Technology Committee

Note: throughout this document all goals are highlighted with bullets so that they are more easily identified by the reader.

1. Background Information

1.1 School/District and Community Demographics

The Gill-Montague Regional School District is situated astride the Mohawk Trail (Route #2) in Western Massachusetts. It is at the foot of the Berkshire Hills, close to noted colleges and universities, UMASS and Hampshire College, as well as Smith and Holyoke Colleges.

Gill-Montague Regional is a fully regionalized PreK-12 school district. Upon completion of grade 5, students customarily attend Great Falls Middle School for grades 6, 7 and 8, and Turners Falls High School for grades 9-12. Our students come from the five villages which make up the Town of Montague and from the Town of Gill. In addition, at the secondary level, we receive students from the Town of Erving on a tuition basis.

There are two elementary schools in the district, Montague Elementary, a campus composed of the Sheffield and Hillcrest buildings, and Gill Elementary. The Hillcrest facility serves students in grades Pre-K and Kindergarten. The Sheffield facility enrolls pupils in grades 1-5. The only public school in the town of Gill is Gill Elementary which contains grades K-6.

Sheffield is a 20-classroom facility, which was rebuilt after the original building was destroyed by fire in 1987. It serves children from the five Montague villages: Montague Center, Montague City, Lake Pleasant, Millers Falls, and the largest, Turners Falls (pop. about 6,000).

The Great Falls Middle School and Turners Falls High School are in one building with extensive technology that was purchased as part of the 2002 building renovation. We have replaced much of that technology over the years and moved most of it to the elementary schools. Replacing and updating equipment is an ongoing challenge.

The District schools are well staffed in terms of the quality of their personnel. The quantity of personnel varies with the availability of funds to staff and operate the schools.

The District enrollment, grades Pre-K-12, is about 1,000 pupils, served by a staff of about 120 qualified teachers and about 40 paraprofessionals, as well as other ancillary personnel.

In recent years there has been little growth in the community and there has been an increase in the number of students choosing to be educated out-of-district. Because of this, the school population has decreased significantly.

Something should be noted as to the recent history of the technology staff. In 1996 the Technology Task Force recommended the creation of a new half-time position, that of District Technology Coordinator, and the position was filled. The job involved oversight

and supervision of technology services (support, training, purchases, maintenance, etc.) throughout the district. This position was eliminated in 2011.

Between 2000 and 2002 two of the district's 5 technology support staff positions were eliminated including the middle school technology teacher. In 2003, using grant funds, the position of Technology Education Coach was established. That position was eliminated in 2010. However, in 2011 we were able to hire an elementary technology teacher for Grades K-5.

1.2 The Technology Planning Process

The 1996 Technology Task Force became the GMRSD Technology Committee. It is a permanent committee that includes parents and citizens as well as representatives from each of our schools. The committee investigates changes and developments in technology and their impact on education in our schools. It ensures that the district has an adequate Acceptable Use Policy. It provides assistance in the updating of the district's technology plan and tracks progress toward the achievement of the plan's goals. It advises the school administration as to the implementation of technology related goals and the improvement of technology services.

This plan was developed with input from the GMRSD Technology Committee and the district's technology staff and made use of information from a variety of educational and technology journals and articles. It is aligned with the goals of the District Improvement Plan as well as the six benchmarks of the Massachusetts DESE's Local Technology Plan Guidelines of 2004-2007.

2.1 Technology Vision and Mission Statement

TECHNOLOGY VISION

We envision a learning community that is rich in technology-based resources; one in which students are discerning and effective users of technology resources in pursuit of their learning, teachers embrace technology to provide meaningful, engaging learning experiences, and parents, teachers and administrators use technology to exchange information in ways that promote effective communication and accomplishment of the district's strategic plan and our schools' improvement plans.

TECHNOLOGY MISSION STATEMENT

The Gill-Montague Regional School District is committed to promoting intellectual, ethical and social growth within a dynamic educational community in order to develop knowledgeable, productive and caring citizens. Because technology plays a vital role in the teaching and learning process, our students will have an active role in their learning through the skilled and appropriate use of technology.

The GMRSD will:

- incorporate the appropriate and effective use of technology into classrooms on a daily basis as recommended by the Massachusetts Technology Standards;
- provide all schools with the hardware and software needed to support the effective integration of technology into approved educational programs;
- provide secure Internet access inside and outside of school, both during and after of school hours;
- train all staff in the appropriate and effective use of technology;
- use technology to communicate efficiently with staff, with parents and with the local and global community;
- provide standards based technology instruction in an equitable manner to all students;
- nurture the creativity, inventiveness and curiosity of its students by cultivating real-world problem solving skills using technology resources where applicable;
- educate students about the opportunities and dangers of online activity and about appropriate and ethical online behavior
- provide monitoring of staff and students' online activities
- provide both economic parity and gender parity with respect to student computer access and use;
- provide high quality professional development opportunities to teachers and staff so that they are able to use the technology resources available to them to more effectively and efficiently achieve their professional goals as well as the goals of their school and the district; and,
- utilize technology to maximize efficiency and minimize costs in the administration of school and district business and operations.

2.2 The District Technology Committee

The 1996 Technology Task Force became the GMRSD Technology Committee in 2000 and is a permanent committee that includes administrators, teachers and parents. It is chaired by the Director of Teaching & Learning. Membership on the committee aligns with Benchmark Standard 1-B of the DESE Guidelines.

The committee investigates changes and developments in technology and their impact on education. It ensures that the district has an adequate Acceptable Use Policy. It provides assistance in the updating of the district's technology plan and tracks progress toward the achievement of the plan's goals. It advises the school administration as to the implementation of the plan's goals.

From 2003 to 2005 much of the work of the committee was focused on the design and installation of technology for the middle/high school building renovation project. Various members of the committee were involved in the many decisions related to the selection

and installation of new technology for that building project. Two members of the technology committee served on the Building Committee.

- The GMRSD Technology Committee will continue to meet and to oversee this technology plan and advise the district's administration as to the most effective way to develop and use technology resources in the schools.

2.3 Access and Inclusion

While the majority of students have computers at home, some do not. There are computer labs in all schools and *some* classrooms have computers for student use. All students have access to technology resources while in school depending on their schedule. We have actively collaborated with local organizations to provide access to computer technology during after school hours, but much remains to be done in this regard. To some extent technology resources are available in local public libraries and community service centers in the district. While we have made real progress in this area in past years, we must continue to pursue the following goal:

- The GMRSD will expand access to technology for its students during and after school in order to equalize learning opportunities for all students.
- All classrooms should have at least one, and preferably several, computers for student use during the school day.

Technology has the ability to allow students with learning differences to accomplish tasks that were previously impossible. Adaptable devices that permit special needs students to access technology should be provided. There is an identified Special Education (SPED) population consisting of 19% of the students in the district. Our special education staff should continue to work with students and teachers to make the most appropriate and effective use of technology for students with identified special needs.

- Whenever possible and appropriate, schools will order new textbooks in both hard copy and electronic format.

There are technologies that can assist teachers in adopting inclusive instructional strategies for students with special needs. Technology can help us address the diverse needs of **all** our students and support student-centered classrooms.

- Teachers will use applicable technology to support inclusion and educational equity in their classrooms.
- Teachers, especially special education teachers, will be familiar with the assistive technologies that assist and support learning for their students, and will use those technologies whenever possible.

Special Education teachers work often at several schools and will travel from one school to another. They frequently travel to the central office for meeting and work sessions.

- All SPED teachers and other SPED professionals will be equipped with laptop computers or tablets.

3. Program Goals and Technology Initiatives

Much has been accomplished in the past 5 years, and much remains to be done in the light of new federal and state initiatives such as No Child Left Behind. The following are the goals we deem to be most important at this time.

3.1. Administrative and Management Goals

Until last year, the administrative use of computers had been limited to word processing and spreadsheet functions, and the tracking and processing of operations by the business office. Some personnel were not proficient in using even these programs. In 2005 the district purchased and began using a comprehensive school administration software program from Rediker Software, Inc. The modules of this program allow us to use computer technology to accomplish many administrative tasks more quickly and efficiently. The new Data Warehouse hosted by the DESE has great potential for giving administrators access to a wealth of useful data about student demographics and performance. Training in the uses of administrative software is continually needed to accomplish the following goals.

- All school administrators and staff members will be able to effectively use a variety of software applications to more efficiently and effectively carry out their job responsibilities. This includes software for: word-processing, spreadsheet, databases, assessment, computer-based communications, curriculum mapping, lesson planning, managing substitute coverage, tracking professional development and PDP's, use of social media, and software to monitor the new Educator Evaluation System.
- All administrative support staff will know how to use applicable modules of our administrative software package, Rediker's Administrator's Plus.
- All staff members will be fluent in the use of specialized software pertaining to their division and/or function, i.e. general accounting, budgeting, special education software, etc.
- All administrators and staff will make effective use of the infrastructure of the district's wide area network (WAN) to enhance communication within the district and with the outside world. This involves the appropriate and competent use of e-mail and the Internet.

- Through the use of technology, administrators and the administrative support staff will be able to achieve the following:
 1. Maintain and retrieve data on:
 - Personnel
 - Student Demographics
 - Student Academic Performance
 - Scheduling and Attendance
 - Facilities and Inventories
 - Food Services
 - Payroll, Purchasing, Budgeting, A/P and A/R
 - Substitute Coverage
 - Professional development
 - PDP's
 - Educator Evaluation
 - Lesson Plans
 - Grants
 2. Generate reports required by the federal, state and local governments and agencies, as well as reports required by other institutions and organizations awarding grants.
 3. Search for and collect information from databases for the purposes of data based decision-making, including the state's new Data Warehouse and EDWIN.

3.2 Communications and Information Access

We have established LAN'S (Local Area Networks) and a WAN (Wide Area Network) connecting all computers throughout the district. This includes wireless connectivity.

All computers throughout the district have at least a 100 Mbit connection to the district's WAN. All schools are connected over high speed fiber lines to the district's WAN.

- We will maintain a wide area network connecting each school and the central office, and this network will be connected to the Internet via high-speed fiber connections. This includes wireless connectivity.
- At the middle/high school building we will maintain a network with a fiber backbone that operates at a speed of 1 gigabit to the desktop to facilitate the use of streaming video.
- We will support our capacity to broadcast live audio/video programs to the local community television station from our middle/high school.

- All school sites and all users will have high speed Internet access.
- We will participate with other districts in the region in purchasing programs that allow us to provide better technology services at lower cost.

The district maintains a web site for itself and for each of the schools. Every effort is made to keep the web site up-to-date but this is challenging due to the shortage of staff with the time or ability to do this type of task. Because of the cost of hosting our web site ourselves, we will investigate the advisability and cost of having some vendor or agency host our web site.

- We will provide software and/or services that will allow site-based, user-friendly control of district and school web pages.

The district has its own web servers located at the high school. All employees have e-mail, which is used extensively for internal communications. Employees are able to access their messages from off-site. We currently host our own e-mail and archive it on-site using a Barracuda appliance. In the future we should arrange for a service provider to host our e-mail service and archive our messages.

- All staff will be able to efficiently communicate throughout the school district using phone services, e-mail, the Internet, voice mail, fax etc.

All staff and students may access the Internet from any computer in the district through a password-protected system. **The tablet computer devices we have started to use are not password protected but the content is filtered, so these devices can safely be used by students.**

CIPA required Internet filtering is accomplished with software residing on the district's Internet server.

- We will maintain an effective firewall and filters in order to fully comply with the Children's Internet Protection Act.
- Also to comply with CIPA, we will educate our students about appropriate and ethical online behavior, monitor their online activities and educate them about the dangers present on the Internet including those to be found in chat rooms and on social networking web sites.
- **As part of our bullying prevention program, all students will be educated about cyber bullying and what to do if they encounter it.**

The district has a comprehensive and up-to-date Acceptable Use Policy which is posted on its web site. Students and staff sign an agreement to abide by this policy. Anyone violating the policy may lose on-line privileges. We have the ability to track all Internet activity for each user in the district.

- We will maintain an up-to-date Acceptable Use Policy for the district.

We need to inform parents as to the schoolwork that students are expected to accomplish daily and long term, and other information as to a student's status in school. They should also be able to learn what is happening in our schools and classes by accessing web pages maintained by our teachers and other school staff.

- We will continue to support use of the Edline program to give students and parents electronic access to homework assignments and share information about school activities.
- We will continue to support use of the One-Call-Now system to alert parents of important notices.

3.3 Instructional and Curricular Goals

The effective integration of technology tools and resources into the curriculum is a primary goal of the district. Much remains to be done to achieve this goal.

The instructional and curricular goals developed by the Technology Committee are listed below. They are based on the DESE Technology Standards.

1: To use technology resources in a responsible and ethical manner

New informational technologies are powerful tools for obtaining information and interacting with others. This provides us with opportunities for instilling respect for oneself and others, and “demonstrating personal, social, and civic responsibility” as described in the Working and Contributing goal of the Common Core of Learning.

As educators we have the responsibility to teach and model the appropriate and ethical use of technology.

2: To acquire a working knowledge of basic computer skills (see appendix for specific performance criteria).

Our students must be able to utilize evolving informational technologies to be successful in school as well as to be prepared for the world of work and higher education.

- All Gill-Montague students will be able to access and use current informational technologies as outlined in the district's technology performance criteria.

To accomplish the above goal it is essential that staff become competent in all phases of computer applications.

- Staff will be trained to use computers and related technologies with a high level of proficiency in order to support the instructional process. On-going training and support will be provided to ensure the effective integration of technology into lessons and the use of appropriate assessment data.

3: Utilize technology to stimulate critical and creative thinking in order to maximize learning.

New technologies provide students with powerful tools for gathering and analyzing information, as well as sharing and presenting ideas. These technologies broaden the scope of learning and help prepare our students with the competitive and cooperative skills needed to succeed in the world of work.

Internet connectivity gives us access to current real-world situations that promote creative thinking and problem solving. Classroom access to current informational technologies will help our students learn to “analyze, interpret, and evaluate information.” and to “seek, select, organize and present information from a variety of sources”, becoming self-directed lifelong learners, supporting the Thinking and Communicating goals in the Massachusetts Curriculum Frameworks.

4: Utilize technology to access and exchange information globally.

Internet access assists us in “exposing students to real-world problems, places, peoples, and issues,” in addition to fostering cooperative projects and learning partnerships. Global access provides opportunities for students to communicate with others and to “understand similarities and differences among people.” (Massachusetts Curriculum Frameworks)

The advent of tablet devices makes it more likely than ever before that we can support some form of a one-to-one program that would give each student access to the wealth of educational resources options available through the Internet.

- By the spring of 2014 we will explore and recommend possible ways of starting a one-to-one laptop or tablet program starting with students in the high school.

Technology Performance Criteria

The Technology Committee also developed specific performance criteria by grade levels (see appendix). They are based on the DOE Technology Standards.

At the present time few students can be said to be truly proficient in all of the district’s technology performance criteria. The criteria are comprehensive and challenging. Nevertheless, we believe they describe skills that are important for students to master before they leave grade 12.

- By June of 2016 at least 50% of students will demonstrate proficiency in the district’s technology performance criteria.

There are specific courses at the high school that teach technology skills. We also have a technology teacher at the elementary school level. However, the technology teacher for the middle school was eliminated in 2003 and should be re-established. We need to design programs for grades 6-8 that teach grade appropriate technology skills. We also

need to continue to instruct and support all teachers in ways of integrating technology into our curriculum in order to achieve our goals.

- By 2016 we will have designed and implemented programs to teach technology skills to students in grades K-8.
- We will continue to instruct and support teachers in effective ways of integrating technology into their daily lessons.

The most significant action we have taken to promote the accomplishment of these goals is to hire an Educational Technology Coach for the district. This person was hired in a half time position in 2003 and made full time in 2004. The position was eliminated in 2009. We should reinstate this position to meet the needs of the district.

- By 2015 we will have employed a full time Educational Technology Coach.

3.4 Staffing for Technology Leadership and Support Goals

The position of Director of Technology was eliminated in 2011. The Director of Teaching & Learning had oversight of the educational uses of technology and created and managed the budget with input from the Network & Technology Support Manager. Those tasks are now shared between the Director of teaching & Learning and the Network and Technology Support Manager.

One full time Network and Technology Support Manager oversees all network issues and assists in insuring that all computers and peripheral devices are properly configured and working. This person trains and supervises other Technology Department staff. At present there are two full time Technology Support Specialists who provide hardware and network infrastructure support for the schools under the direction of the Network and Technology Support Manager.

The Director of Teaching & Learning is responsible for the training and support of the instructional staff for the purpose of the integrating technology into the curriculum.

We hired an elementary computer education teacher in 2010. That teacher teaches classes in educational technology weekly for all classes in grades Pre-K to 5. There is no instruction in the uses of technology for middle school students. High school courses that make use of technology include: graphic arts, computer assisted design, personal finance, marketing, and accounting.

3.5 Staff Competency Goals in Support of Student Learning

In 2004 a great deal of new technology was introduced into the schools. The middle and high schools had all their hardware upgraded and much new hardware installed. This has required additional tech support at both of those schools.

All of our teachers use GradeQuick for maintaining performance records and attendance. However, a survey of teachers throughout the district showed the following:

A total of 61 % of teachers include technology in the teaching/learning process daily or weekly (80% at secondary level and 28% at the elementary level).

A total of 23% of teachers rarely or never use technology in their lessons as part of the teaching/learning process (12% at secondary level and 38% at the elementary level).

- **By June of 2016 we will have 70% of teachers using technology for instruction daily or weekly.**
- We will continue to make effective use of software programs aligned to our approved curricula.
- We will train teachers in the effective use of approved software programs.

We are active participants in the state's data warehousing effort and have trained professional staff how to use data for data based decision making.

- **All new administrators will be trained in data based decision making and use of the Data Warehouse and EDWIN within 3 months of hire.**

It is the opinion of the Technology Department that our present level of technology significantly exceeds our capacity to use that technology due to lack of training. The lack of time for school staff to engage in training programs is the biggest obstacle we face. Beyond that is the lack of technology staff to support use after training has been done. Nevertheless, we propose the following goal:

- All school office personnel will be advanced users of Microsoft Word and have a strong basic knowledge of Excel.
- All school office personnel will become proficient users of the Administrator's Plus modules applicable to their job responsibilities.

4. Technology Design and Integration

In our technology design over the past few years the focus was on standardization of software and hardware whenever possible so as to minimize the cost of acquisition, maintenance and upgrade. Additionally, when feasible, the priority was on upgrading existing software platforms, in order to take advantage of the existing knowledge base and shorten the learning curve for staff. Every effort was made to provide the most

value for the monies allocated. Bids and cost estimates were obtained from several vendors, local, statewide and nationwide.

4.1 Software

In order to provide our students with better skills and training in the use technology, it is essential to have a well trained staff. All staff members need to be well versed in the use of the general-purpose computer software, i.e. word-processing, spreadsheet, database, and communication. In addition, staff members need to be fluent in the use of specialized software pertaining to their responsibilities and/or function, i.e. administration, administrative support, instruction, instructional support, bookkeeping, budgeting, food services, etc.

- All members of the Gill-Montague Regional School District will be adequately trained in the use of the software relevant to their job responsibilities within one year of hire.

4.1.1 Administrative and Management

- Through the use of appropriate software programs, administrators and their assistants will maintain, update, and report computerized information on:
 1. Personnel
 2. Students
 3. Attendance & Scheduling
 4. Facilities Management
 5. Hardware and Software Inventories
 6. Payroll, Purchasing, Budgeting, A/P and A/R
 7. Grants
- Administrators will use technology to generate reports required by the federal, state and local governments and agencies, as well as reports required by other institutions and organizations.
- Administrators will be able to search information databases and generate data for the purposes of data based decision making.
- Special Education staff will be able to use E-SPED to record and retrieve student data and generate needed reports.
- All teachers will use E-SPED to record and access Individual Student Success Plans for their students assigned to them.

We use Rediker's Administrator's Plus software for school management purposes. Student information resides on this database, modules of which are used for scheduling, grading, and attendance.

There is a need to maintain health records electronically.

- All nurses will use SNAP software.

The middle/high school library uses library management software. No other school library collections are electronic. When feasible the elementary library collections should become electronic.

Food Services uses a POS computer system with Lunch Bytes software throughout the district. It is a new, up-to-date system that works well.

The Business and Operations Office uses Unifund's BudgetSense software (since 2006) which has been challenging to use but is doing the job. Some personnel records are also on Excel spreadsheets.

Classroom management

- Teachers will be able to search databases and generate data for the purposes of assessing student performance and developing appropriate instructional strategies and interventions to improve performance.
- Teachers will continue to use GradeQuick to maintain performance data on students and to generate progress reports.

4.1.2 Applications and Instructional Software

Microsoft Windows XP or 2007 are the operating systems on all computers throughout the district. Microsoft Office 2007 software is presently used on all computers. We have a Microsoft Certificate of Compliance stating that we are fully compliant with Microsoft licensing requirements. We also meet licensing requirements for all of the software used throughout the district.

While all secondary classrooms have multi-media projectors integrated with the teacher's computer, there should be such projectors in every elementary classroom along with document cameras to allow for the integration of technology within the instructional program.

- We will support the integration of technology in appropriate classes at the elementary school level by providing ongoing professional development in the use of technology and by providing adequate multi-media technology in each classroom.

- We will install multimedia projectors in all elementary classrooms by 2015.
- In the elementary schools we will make use of appropriate, high quality software programs in science, social sciences, and arts.

For research

For teaching basic computer skills

For learning and practicing skills identified in the state's standards.

We are using Lexia Reading and IXL Math and ThinkCentral in grades K-5. We have Type to Learn keyboarding software for students in the elementary schools but have minimal time for students to practice.

- Build time into the curriculum for grades 3-5 for the practice of keyboarding.
- Provide software programs that support our science and social studies curricula.

In the middle school, we presently use IXL Math and Lexia Reading software for instructional purposes. We must continue to support the integration of technology into appropriate classes at the middle school by providing ongoing professional development in the use of technology and by providing a computer technology program and teacher of technology. We also need to teach the computer skills specified in the district's curriculum of technology objectives. All middle school classrooms have multimedia projectors.

- We will expand the use of appropriate, high quality software programs in the middle school in the areas of science, social sciences and the arts.

For research

For learning and practicing skills

For teaching basic computer skills

For music notation/composition/recording

For graphic design

For digital photography

- We will provide a technology course for middle school students with a teacher who will teach the middle school technology objectives developed by the District Technology Committee.

In the high school, specialized software is in use in the business education, graphic arts, and technology classes, All high school classrooms have multimedia projectors.

- We will support the integration of technology in appropriate classes at the high school by providing ongoing professional development in the use of technology and by providing adequate technology support staff.

- We will expand the use of appropriate, high quality software programs in mathematics, English, science, social sciences, foreign language and the arts departments at the high school.

- For research
- For learning and practicing skills
- For teaching basic and advanced computer skills
- For music notation/composition/recording
- For graphic design
- For digital photography
- For audio-video production and editing, including TV production
- For robotics
- For accounting

For pre-K through grade 12, wealth of audio-visual media is available over the web and can add much interest and information to the instructional program. In 2012 we gave teachers access to U-Tube for educational uses.

- With appropriate safeguards and with acceptable use standards, we will provide access for teachers and students to Internet available sites that support our curricula and instructional programs.

4.2 Hardware

Due to the purchase of new equipment as part of the middle and high school building project we were able to replace all of the computers at the elementary schools with PC's between 2002 and 2003. Those computers are now all assigned for student use because in 2012 all teachers were provided with laptop computers In 2012 all administrators, and many SPED teachers were provided with iPads. Also, iPads were purchased for some SPED classes and more recently mobile iPad labs were purchased for the middle school and high school. The management of iPads and their apps has become a major issue for both administrators and the tech staff.

- Additional tech support staff is needed if we are to continue to provide digital projectors, document cameras, and tablets for our teachers and students. In particular, the management of tablets and their applications is very different from the management of computers.

In 2011 we began installing interactive whiteboards in the elementary schools. As of the spring of 2014 only a handful of elementary classrooms do not have access to this technology.

- By 2015 all elementary classrooms will have interactive whiteboards and all teachers will be trained the use of this technology.

More and more publishers are making their textbooks and trade books available over the Internet. This new form of textbook is often interactive with links to useful information not included in the text.

- By 2015 we will conduct a pilot program having at least some textbooks and/or trade books on laptops and/or tablets.

Computers in the district are PC's with Microsoft XP or Windows 7 and Office 2007 or 2010. The technology department has standardized on the use of PC's and HP printers. It is expected that these actions will lower the cost of maintenance and simplify support by the technology staff. It also means that teachers and students will see the same type of equipment and software in every school throughout the district. The district maintains a thorough inventory database of all equipment in all the schools and the central administration. It is updated annually and as needed.

All schools have servers connected to the district WAN which is managed by the Network Administrator located at the high school. The middle/high school site has a SAN unit for the back-up of files. Student data is hosted offsite by the vendor, Rediker Software. They are responsible for daily backups.

- Each school will have an equipment rack in an appropriate closet for its network and telecommunications equipment.
- Because of the need to reliably back-up data throughout the district, all data on the district's servers will be backed-up either daily or weekly.

The average ratio of computers to students in the district is 1:3. There are more computers available to students in the middle and high school than anywhere else since many courses require the use of computers. Schools with upper elementary students, Montague Elementary and Gill Elementary have computer labs. The elementary schools have at least one set of wireless laptops on a cart for use in any classroom.

- The district will support student access to technology by repairing or re-placing computers that become dysfunctional within 30 days, in so far as the budget allows. Overall, our policy will be to replace older computers every 5-7 years, in so far as the budget allows.

Secondary math and science teachers are finding more and more uses for newer technologies, especially graphic calculators, handheld computers and tablets and probes.

- Sets of graphing and/or scientific calculators will be available to high school math and science teachers when needed.
- Sets of laptops or tablets with appropriate scientific probes will be available to the middle and high school science teachers when needed.

Digital still and video cameras are being used by teachers throughout the district.

- Each school will have one or more digital cameras and at least one digital video camera and a multi-media projector on a cart.

More and more art and music teachers are finding uses for technology.

- Keyboards with MIDI interfaces and advanced music notation, composition and recording software will be available to music students in the middle and high schools.

Foreign language instruction has entered the world of technology. There is a dedicated, specialized computer lab available for foreign language instruction. The hardware in that classroom needs to be updated.

By 2015 we will update the hardware in the Foreign Language Lab.

The Business Office is using Unifund's BudgetSense software. There should be a maintenance agreement in place to support use and provide timely upgrades of this program. In the High School there is a separate server dedicated to the BudgetSense program to assure reliability. It will have its own reliable back-up system.

The server at the central office serves that office plus both Montague Elementary School (there is a high speed, underground fiber connection between the Hillcrest building and central office). The server was replaced in 2008.

The educational uses and benefits of tablet devices such as iPads will continue to be explored by the Director of Teaching & Learning and the Technology Department.

4.3 School LAN's and the District's WAN plus Wireless Connectivity

Each separate cluster of buildings hosts a separate local area network. There are three such clusters in the district's WAN.

1. Central Administration, Hillcrest & Sheffield buildings
 2. Turners Falls High School and Great Falls Middle School
 3. Gill Elementary School
- We will maintain a high speed wide area network for the entire school district with a qualified network administrator.
 - We will maintain fiber connectivity and adequate bandwidth for efficient electronic communications, streaming audio/video, video conferencing and distance learning programs.
 - **We will maintain wireless connectivity throughout each school building.**
 - Servers in the schools will be replaced every 5 years or as needed.

All rooms in each building throughout the district are wired using category 5e or 6 cable.

4.4 Computer Labs

There is one networked computer lab in each elementary school and the middle school, and 5 labs in the high school, one of which is for general use and the others are dedicated to departments.

When used for teaching, computer labs must be under the supervision of a teacher, para-professional or lab assistant. If used by the public, a lab supervisor should be designated. Students should never be able to use any computer lab without supervision.

Because of the shortage of technology staff, on-site support cannot always be available to teachers using the schools' computer labs. This discourages teachers from using the labs. This is especially true at the middle/high school where there are two all purpose labs and students are using computers for more advanced work. Trained computer lab monitors could solve this problem.

- There will be at least a part-time, trained lab monitor in all computer labs by September of 2015.
- A grade 7-8 computer technology curriculum will be developed and there will be a qualified teacher of computer science, including keyboarding, for the middle school by September of 2015.

The Department of Elementary and Secondary Education is planning to move from its MCAS test to the new online PARCC test in 2015. We will need to be able to test all students online by then, and so we will need to increase computer access for our students before DESE rolls out that test. Although challenging, we are presently able to create a schedule so that all students in grades K-10 can take the NWEA MAP test within a 2-3 week window. As far as we can tell, our technology capacity will satisfy the minimum PARCC requirements. However, we should expand our wireless capacity so that large scale testing can be done via laptops or tablets in regular classrooms.

- We will expand our wireless capability and purchase more computer carts with laptops or tablets each year.

4.5 Telecommunications Systems

As of the spring of 2012 we have a new VOIP phone system with a few POTS lines in the schools as back up.

For as long as it's available, our school district will apply for e-rate funding to help defray the cost of our applicable telecommunication services. These include:

- VOIP phone service
- POTS lines as needed
- Local and long distance service
- Cellular phone services
- T1 or faster connectivity for our LANs and WAN
- Comcast Business Class High Speed Fiber Connectivity

E-mail has become an essential form of communications within and outside of the district. Every member of the staff has an account and is expected to check their e-mail daily. SPAM is controlled by a Barracuda filter. All e-mails are considered public information and staff have been told of the need to be careful about what they include in their e-mails. All e-mail is archived.

5. Professional Development

A variety of opportunities for professional development will be provided, including:

- workshops and conferences within and outside of the district
- formal training programs by the technology staff or outside consultants
- on site one-on-one and small group trainings provided by the technology staff both during and after school hours
- the use of community experts collaborating with the schools
- peer to peer collaboration
- webinars

We strongly encourage teachers to assist each other in the use of technology. This is especially important since we no longer have an Educational Technology Coach to do trainings.

6. Budget for Technology

Funding for this plan depends on the availability of funds from grants and the district's operating budget. Due to the growth in the use and uses of technology resources in the district this level of funding will most likely need to increase annually.

- Technology costs will be funded through the district's operating budget. In addition, we will apply for and use grant funds whenever possible.
- An operating budget to support this plan will be developed and presented annually by the Director of Teaching & Learning and the Network and Technology Support Manager.

7. Assessment and Evaluation

Assessment and evaluation of our technology plans is accomplished through discussion, interviews and surveys. The achievement of our technology goals is determined primarily by feedback from administrators, teachers and the tech support staff as reported to the Director of Teaching & Learning and the GMRSD Technology Committee. Goals are set or revised based on this input.

In the spring we conduct a formal survey of staff to determine their level technological competency and need for additional training. The results of that survey are shared with the GMRSD Technology Committee and the Administrative Council.

The assessment of hardware, software and tech support needs is done by the Director of Teaching & Learning with input from the Network and Technology Support Manager, the tech support staff, teachers and administrators.

The district's Network and Technology Support Manager manages the district's WAN, oversees the condition and use of hardware throughout the district as well as Internet access and use. The person in this position is continually evaluating the use of technology hardware throughout the district.

The Director of Teaching & Learning coordinates the implementation and evaluation of this plan and brings the results of all assessments and evaluations to the GMRSD Technology Committee, the Administrative Council and the School Committee. This person also collects the required data and files the district's local technology plan with the state DESE, and also develops and manages the technology operating budget and all grants.

- A survey of the staff's uses of technology will be done annually to determine the need for additional training and resources as well as to assess progress towards our goals.

7.1 Process for Reporting to Stakeholders

This reporting process shall be through:

- Regular administrative meetings.
- Traditional print media used within the district and the district's web site
- Presentations to groups such as the PTO's and the School Committee.

Technology Performance Criteria for Gill-Montague Elementary Schools

GOALS

By the end of grade 5 students should:

Be able to express a basic understanding of the value and various applications of computer technology.

Be able to use computer technology effectively to attain mastery of the knowledge and skills of the Massachusetts Curriculum Frameworks.

OBJECTIVES

By the end of grade 5 students should:

1. Demonstrate basic computer skills such as desktop navigation and use of the school's network.
2. Type at a speed of 25 words per minute with 90% accuracy (e.g., using Type to Learn)
3. Be able to use instructional and productivity software for a variety of purposes in different subjects.
 - Have basic mastery of a word processing program (e.g., using MS Word)
 - Be able to create and use data from a simple spreadsheet (e.g., using Excel)
 - Be able to retrieve useable data from a pre-formed database (e.g., using MS Access)
 - Be able to do basic image editing (e.g., using digital photos)
4. Have basic knowledge of the structure and content of the Internet, and be able to use search engines to collect and use specified information on a variety of topics.
5. Be able to evaluate the relevance, appropriateness, comprehensiveness and bias of electronic information.
6. Be able to explain what dangers reside on the Internet, what to share and what not to share over the net, and what to do if they find themselves at an inappropriate site.
7. Be responsible for maintaining the integrity of any password(s) assigned to them and be able to independently log onto their school's network.
8. Be knowledgeable of the key points of our Acceptable Use Policy and respectful of the rules of computer usage in our schools.
9. Understand and apply common operational tasks, options for saving files, retrieving files and using a find search with the goal of being independent users of technology.

Technology Performance Criteria for Great Falls Middle School

GOALS

By the end of grade 8 students should:

Be able to express a basic understanding of the value and various applications of computer technology.

Be able to use computer technology effectively to attain mastery of the knowledge and skills of the Massachusetts Curriculum Frameworks.

OBJECTIVES

By the end of grade 8 students will be able to:

1. Identify the application(s) most appropriate for a given use.
2. Demonstrate basic computer skills showing competency with a variety of computer software programs, desktop navigation and use of the school's network.
3. Understand and apply common troubleshooting techniques (e.g., printer problems, saving how & where, use of the network, retrieving files, using a find search, desktop housekeeping) to become independent users of technology.
4. Achieve a keyboarding speed of at least 25 words per minute with at least 90% accuracy.
5. Compose and edit a multi-page document with appropriate formatting using word processing skills (e.g., text formatting, page layout, editing tools i.e. spell check).
6. Create electronic presentations (e.g., web pages, video tapes, power point presentations) using multimedia, desktop publishing and image editing tools that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
7. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
8. Understand basic Internet concepts and use Web Browsers or an Internet search engine to obtain background information for research purposes.
9. Be able to explain what dangers reside on the Internet, what to share and what not to share over the net, and what to do if they find themselves at an inappropriate site.
10. Use information, media, and technology resources in a responsible manner which includes following the school's acceptable use policy, adhering to copyright laws, respecting the rights of others, and employing proper etiquette in all forms of communication.
11. Use spreadsheets to organize, calculate, analyze and display data. Develop appropriate graphs (e.g., line, bar, circle) and charts that display data and results
12. Be able to retrieve useable data from a pre-formed database (e.g., using MS Access) and the Internet, including the use of basic Boolean search techniques.

Technology Performance Criteria for Turners Falls High School

GOALS

By the end of grade 12 students should:

Have a basic understanding of the value and various applications of computer technology.

Demonstrate proficiency in the use of word processing, spreadsheets, presentation software and use of the Internet according to the district's acceptable use policies.

Be able to use computer technology effectively to assist them in their mastery of the knowledge and skills of the Massachusetts Curriculum Frameworks.

OBJECTIVES

By the end of grade 12 students will be able to:

1. Identify the application(s) most appropriate for a given use.
Demonstrate proficiency with a variety of computer software programs, desktop navigation and use of the school's network.
2. Understand and apply common troubleshooting techniques (e.g., printer problems, saving how & where, use of the network, retrieving files, using a find search, desktop housekeeping) to become independent users of technology.
3. Achieve a keyboarding speed of at least 30 words per minute with at least 90% accuracy.
4. Compose and edit a multi-page document with appropriate formatting using word processing skills (e.g., text formatting, page layout, editing tools i.e. spelling and grammar checks).
5. Use spreadsheets to organize, calculate, analyze and display data, including the production of graphs (e.g., line, bar, circle) and charts that display data.
6. Be able to retrieve useable data from a pre-formed database (e.g., from MS Access) and the Internet, including the use of basic Boolean search techniques.
7. Create electronic presentations (e.g., web pages, video tapes, power point presentations) using multimedia, desktop publishing and image editing tools that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
8. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information.
9. Be proficient with the uses of the Internet, including Web Browsers and search engines to obtain information.
10. Recognize and demonstrate awareness of the dangers that reside on the Internet, what to share and what not to share over the Internet, and what to do if they find themselves at an inappropriate site.
11. Use information, media, and technology resources in a responsible manner which includes adhering to the school's acceptable use policy, copyright laws, plus respecting the rights of others and employing proper etiquette in all forms of communication.