

**Marstons Mills East Horace Mann Charter School
760 Osterville-West Barnstable Road
Marstons Mills, MA 02648**

**Technology Plan
2004 – 2008**

www.barnstable.k12.ma.us/mme/news/technology/techplandec06.pdf

Technology at Marstons Mills East



The Mission of Marstons Mills East Horace Mann Charter School is to be a whole school community that provides a challenging and enriching learning environment for all children Kindergarten through Grade 4; and where all children achieve high academic standards and develop character. We support the whole child and continuous improvement in the teaching process, and consider a whole school community as integral to success.

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**Marstons Mills East Horace Mann Charter School
Technology Plan
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Marstons Mills East Horace Mann Charter School Technology Plan 2004 – 2008

Executive Summary

Marstons Mills East Horace Mann Charter School is an elementary school housing preschool through grade 4 students and consists of approximately 450 students. MME was granted a Horace Mann Charter from the Massachusetts Department of Education in July 2004. Start-up funds were appropriated to begin the funding of a three-year technology plan. This Technology Plan is a guide for the implementation of technology throughout the school.

This plan was created to build upon the school's strong commitment to technology and help guide the integration of technology in the school.

This Technology Plan encompasses a three-year plan and is in line with the Massachusetts Department of Education benchmarks. The purpose of this plan is to assist the staff at MME HMCS in evaluating the current and proposed status of technology at our school along with creating a strategy to continue to integrate technology into the curriculum at Marstons Mills East Horace Mann Charter School.

Technology Planning Team

Marstons Mills East Horace Mann Charter School has a technology planning team. Participants on the team include teachers, principal, business manager, librarian, technology personnel, parents, community representative, and a student.

Instructional Tech Specialist	Julia Colby
Tech Assistant	Candy Johansen
Business Manager	Mary Smith
Principal	Ed Deusser
Elementary Librarian	Jane Kenney
Parent1	Toni Zugel
Teacher1	Jean Farrell
Teacher2	Deb Thonus
Local Business Owner	Eileen Rizzo
Student (adhoc member)	Grade 4 Student

Benchmark 1

Commitment to a Clear Vision and Mission Statement

Vision

In the Marstons Mills East Horace Mann Charter School, the learning community will be technology literate life-long learners in an environment supporting teaching and learning with technology. In our community, we are all teachers and learners working together in a setting where the knowledge, skills, and qualities required to be successful in an ever-changing technology rich-world of the 21st century will be provided.

Mission

Our mission at Marstons Mills East Horace Mann Charter School is to ensure our learning community is provided with educational excellence and equity, thereby providing all our students with the technology resources, technology knowledge, and technology skills to be successful in the 21st century.

Marstons Mills East Horace Mann Charter School Goals

In order to achieve our Vision, Marstons Mills East Horace Mann Charter School identifies the following goals.

Goal 1: Improve the integration of technology in the curriculum and its effectiveness

Goal 2: Maintain and improve existing infrastructure

Goal 3: Maintain and improve support services

- We will use our technology resources effectively to further the overall goal of providing a high-quality educational experience for our students which is in accordance with our charter and the Accelerated School Project model.
- Students will have technology integrated into their educational experiences and view technology as a means of acquiring and managing knowledge.
- Students will possess the necessary technology literacy skills needed to succeed in school as well as those needed to succeed in an ever changing technology rich world.
- Teaching and learning with technology will be accomplished through professional development, current hardware, software, and technical support.
- Access to technology for learning shall be available for learners with different learning styles and capabilities.
- Instructional technology will be used to enhance teaching and learning along with augmenting skills learned through the Accelerated School Project model.
- Staff will have the skills necessary to enhance teaching and learning with technology through ongoing professional development workshops, peer mentoring, best practices, and drop-in labs.
- Staff will be provided the support necessary to incorporate new technology into classroom instruction to support the Massachusetts Curriculum Frameworks.
- All teachers will continue to have a computer available for administrative use and to assist in developing electronic report cards and portfolios per our charter.
- Continue improvement of technology budgeting and purchasing process to increase our student to computer ratio and work towards the state's benchmark standard of 5:1 student to computer ratio of modern, fully functioning, Internet enabled computers and devices.
- Support the alignment of local curriculum guides to State Curriculum Frameworks and lesson plan sharing through the use of technology.
- Provide technology support to ensure that all staff receives high-quality technical support.

Marstons Mills East Horace Mann Charter School will work towards achieving its goals by implementing the following technology enhancements:

- Study Island subscription for Reading and Math MCAS preparation. This will allow our Grade 3 students to practice reading and math skills and our Grade 4 students to practice math skills. Study Island material is aligned with the Massachusetts State Frameworks and allows the children to practice questions in a format similar to those found on the MCAS test.
- Kidspiration software for every teacher and wireless mobile technology lab computers for the teachers to be able to integrate lessons in all areas of the curriculum using this software and aid in the facilitation of the Accelerated School Project model. Kidspiration allows young readers and writers to combine pictures, text, and spoken words to represent their ideas and show relationships.
- Maintain PLATO Learning System licenses. The PLATO Learning System would be a tool to use for enhancing curriculum skills. The main focus would be towards math and reading skills.
- Begin research and implementation of electronic portfolios for our cohort group of students in accordance with our charter.
- Investigate math software which would focus on Massachusetts math curriculum frameworks and help to increase MCAS test scores for math in accordance with our charter.
- Adobe Acrobat Professional software to enable PDF creation for teacher lessons in addition to forms for our web site. This will eventually allow us to publish a library of lessons and forms on our web site.
- Subscription to Enchanted Learning web site on a yearly basis to allow teachers to obtain elementary-level curriculum projects to integrate with their lessons.
- Investigate reporting procedures with special education.
- Investigate assistive technology devices for SPED and include them in our hardware purchases; for example, SMART Board Interactive Whiteboards.
- Investigate site license subscriptions to teacher sites for curriculum-related materials.
- Macromedia Dreamweaver MX for Technology Specialist to allow web site updates.
- Work collaboratively with Barnstable School District and the Barnstable Horace Mann Charter School to ensure a cohesiveness in technology among the Barnstable schools.

- Provide Marstons Mills East Horace Mann Charter School staff with technology professional development.
- SMART Board Interactive Whiteboard to be used by teachers in the classroom for whole-class instruction and by the Technology Specialist when giving professional development.
- Additional digital cameras for classroom projects by teachers and students.
- Laptop to be kept with the digital projector in order to make it more manageable for the teacher to set up their lesson using the projector and the laptop.
- Handheld device to allow educator access to our Administrator's Plus student and staff information. This tool would be a valuable tool on field trips, emergency situations, and as a backup of our student information database.
- Flash drives for teachers to copy information from their work computer to the laptop with the projector, the technology lab, or home.
- Laptops to be given to classroom teachers to help enhance their technology and information literacy and assist in curriculum planning.
- SMART Board Interactive Whiteboard for use in the whole-class technology lab along with a digital projector.
- Color network laser printer for use by the teachers and students on special projects.
- Purchase 20 to 25 Type A computers per year in order to increase our Type A workstation inventory, thereby improving our student:computer ratio to be in-line with the DOE recommendation of student:computer ratio of 5:1. Initially, the purchase of these computers would create a whole-class technology lab that would be available all-day for teachers to sign up and bring their class to the lab for a technology integrated lesson. The computers would then be allocated to the classrooms for use by the teachers and students.
- Investigate and begin implementation of supplying teacher classrooms with a classroom television to be connected directly to the teacher computer.
- Investigate and implement a wireless laptop mobile lab for use in the classroom, providing enough laptops for a one-to-one ratio in the classroom.

Budget

Marstons Mills East Horace Mann Charter School has a line item for technology in our operational budget.

For Year 2006-2007, our Technology Budget is as follows:

Technology		\$60,000
Software	\$15,000	
Student Management System	\$ 5,000	
Hardware	\$30,000	
Consultant	\$10,000	
Technology Personnel		\$59,000
Technology Specialist	\$42,000	
Technology Assistant	\$17,000	

When purchasing hardware and software, we include items that facilitate access to technology for students and staff with disabilities.

Marstons Mills East Horace Mann Charter School will employ the use of state, federal, and private resources.

	Year 2004-2005	Year 2005-2006	Year 2006-2007	Year 2007-2008
Technology Software	\$14,760	\$15,000	\$15,000	\$15,000
Student Management System		\$ 5,000	\$ 5,000	
Technology Hardware	\$29,800	\$35,000	\$30,000	\$32,000
Consultant	\$ 9,000	\$9,500	\$10,000	\$10,500
Personnel:				
Technology Specialist	\$27,000	\$40,000	\$42,000	\$44,100
Technology Assistant	\$15,000	\$16,000	\$17,000	\$17,850

E-Rate

- E-Rate qualifying expenses are primarily paid for with local funds.
- MMEHMCS is eligible as a school for support through the E-Rate Discount Program. The E-Rate discount program helps defray the costs for these services.
- MMEHMCS has received support for basic telephone service for the time period July 1, 2005 through June 30, 2006 in the amount of \$2,030.
- MMEHMCS has applied to receive support for basic telephone service for the time period July 1, 2006 through June 30, 2007 in the amount of approximately \$1,800.

Evaluation and Monitoring of Technology Plan

In order to evaluate the effectiveness of our technology resources and monitor the progress of our Technology Plan, Marstons Mills East Horace Mann Charter School will provide the following Internal Evaluations:

- **Principals' Needs Assessment Survey**
- **Technology Department Survey**
- **Parent Survey**
- **DOE's Technology Self-Assessment Tool (TSAT)**
Assessment of Staff's Technology Skills

Benchmark 2 Technology Integration

Teacher and Student Use of Technology

- We are working towards the goal of 85% of teachers using technology everyday
- We are working towards the goal of 85% of teachers using appropriately with students each week: multimedia, research, simulations, data interpretations, communications
- We are working towards the goal of 90% of the teachers working to meet the proficiency level in technology as defined in the TSAT
- We have a Student Acceptable Use Policy. We have received 100% return on our Acceptable Use Policy (AUP) forms for the last three years for Grade 1-4 students. AUP is currently posted on our school's website at:
<http://www.barnstable.k12.ma.us/mme/news/technology.html>.

We will work towards these goals with the continuation of our professional development plan that has been in effect for two years.

A survey will be distributed to all teachers at the beginning of the school year to determine their use of technology for administrative purposes and with students in the classroom.

The TSAT form will be distributed to all teachers at the beginning of the school year to determine their TSAT levels.

Listed below are the TSAT levels for the teachers at Marstons Mills East Horace Mann Charter School:

TSAT Levels	12/2003	5/2004	3/2005	11/2006
Early Technology Level	79%	0%	0%	4%
Developing Level	21%	42%	25%	13%
Proficient	0%	37%	44%	60%
Advanced Level	0%	21%	31%	23%

Technology Staffing

Technology Director	Ed Deusser, Principal
Technology Specialist	Julia Zangl Colby
Technology Assistant	Candy Johansen
DOE Data Management and Assessment	Julia Zangl Colby

Benchmark 3

Technology Professional Development

Marstons Mills East Horace Mann Charter School initiated a professional development program for the teaching staff. With technology changing so rapidly, there will always be a need for training and curriculum integration support.

Professional development is held on-campus for the staff at Marstons Mills East Horace Mann Charter School which covers technology skills and the integration of technology into the curriculum.

Our technology professional development program is sustained and has been ongoing since school year 2002-2003 and includes focused workshops, peer mentoring, best practices, and drop-in labs.

Professional development planning includes an assessment of the teachers' needs at Marstons Mills East Horace Mann Charter School in addition to feedback from the Principal and Teaching Staff. Each year, every teacher is assessed based on the competencies listed in the Massachusetts Technology Self-Assessment Tool. Professional Development for the year is then determined on the needs based on their TSAT and feedback from the Principal and Teaching Staff.

Year 2002-2003	Staff members received 20 hours of professional development.
Year 2003-2004	Staff members received 18 hours of professional development.
Year 2004-2005	Staff members will receive 10 hours of professional development.
Year 2005-2006	Staff members will receive 10 hours of professional development.
Year 2006-2007	Staff will be offered in-house a minimum of 10 hours of professional development.
Year 2007-2008	Staff will be offered in-house a minimum of 10 hours of professional development.

Marstons Mills East Horace Mann Charter School will work towards the goal of providing each teacher with 45 hours of professional development by the end of school year 2006-2007.

Benchmark 4

Accessibility of Technology

DOE Requirements

Technical Support

Commitment to provide timely tech support

Network Administrator

Full-time person to support 100-200 computers.

Marstons Mills East Horace Mann Charter School ensures that every administrator, teacher, and student receives high-quality user and system support. At the present time, our Technology Specialist and Technology Assistant provide the tech support for the staff. In addition, we have a district network coordinator and assistant network coordinator to maintain our network and to provide additional assistance, if needed.

Marstons Mills East Horace Mann Charter School has a Technology Specialist to support users in their efforts to achieve technology competency and to integrate technology into the curriculum.

Our building's electrical service is sufficient to support the computers and networks installed.

DOE Requirements

Students per Instructional Computer

Average ratio of fewer than 5:1 high capacity, Internet connected computer.

Portable/handheld appropriate to grade level

Establish a computer replacement cycle of 6 years or less

We currently have a handheld for the Principal and Prevention Specialist. We are presently investigating the use of a handheld for our student database records to serve as a backup and to be used on student field trips for emergency information.

We currently have 85 AlphaSmart devices for use by our Grade 2, 3 and Grade 4 students. The AlphaSmart devices help the children organize and complete their writing assignment without ever leaving their desks except to transfer their assignment to a printer.

Instructional Workstation Inventory

Marstons Mills East Horace Mann Charter School conducted an inventory of computer equipment for July 1, 2005 through July 30, 2006. Inventory is as follows:

Type A: 83 High-End Computers

Multimedia computer capable of running virtually all current software, including the latest high-end video and graphics programs.

Memory: 256MB RAM or higher

Processor: PC Pentium 4 (or equivalent); Macintosh G4 (or equivalent)

Type B: 20 Average Computers

Multimedia computer capable of running most software except for the latest video and graphics programs.

Memory: 128MB to 256MB RAM

Processor: PC Pentium III (or equivalent); Macintosh G3 (or equivalent)

Type C: 44 Low-End Computers

Multimedia computer capable of running most current productivity applications.

Memory: Less than 128MB RAM

Processor: PC Pentium II or lower; Macintosh PowerPC 604e or lower

Number of Students Enrolled in Grade K-4 at MME HMCS: 431

Student:Computer Ratio (Type A/B Computers) **4.9**

Marstons Mills East Horace Mann Charter School has reduced our student:computer ratio from 8.2 to the DOE recommendation of 5:1. We will continue to focus on purchasing 20 to 25 Type A computers per year in order to increase our Type A workstation inventory, thereby improving our student:computer ratio.

The purchase of these Type A computers would first be allocated towards a whole-class technology lab that would be available all-day for teachers. Teachers would sign up for a specified time and then bring their class to the lab for a technology integrated lesson. The main focus of this technology lab would be for the math curriculum in order to increase the MCAS math scores for our students. Second, we would purchase additional Type A computers for each classroom in order to ensure that every teacher has at least two Internet connected computers for use in the classroom.

Benchmark 5

Infrastructure for Connectivity

Internet Access

Internet Access is available to all classrooms.

10/100MB to each classroom.

Marstons Mills East Horace Mann Charter School uses two platforms: Macintosh Operating System and Windows Operating System (majority are Windows XP).

Each classroom has a PC computer, which is “network ready” meaning that it has an Ethernet NIC (Network Interface Card) installed and designed for an RJ45 network jack. There is one network drop, which enables, at this time, one computer in that particular classroom to be connected to the network. We have initiated a plan to install a six-port hub in every classroom in order to enable multiple Internet connections in the classroom if the teacher has an adequate computer to connect to the Internet.

Our Technology Lab has thirteen Internet-connected iMac computers.

The network topology used at MME HMCS is a tree topology which combines the linear bus and star topologies. The media type used in our network is Twisted Pair (UTP) CAT5 in the building and fiber optic between the buildings.

Marstons Mills East Horace Mann Charter School has recently purchased our own network dual-drive server. This server is the location for our student administration database. This server will also allow our teachers to share drive space.

Each teacher has a network account with login id and password along with an e-mail account which allows them to e-mail anyone in the school district or anyone with an Internet e-mail account.

Marstons Mills East Horace Mann Charter School is part of a network in the Barnstable School District.

Benchmark 6: Access to the Internet outside the School Day

Marstons Mills East Horace Mann Charter School maintains an up-to-date web site at <http://www.barnstable.k12.ma.us/mme>. Every educator has access to the Internet and an Internet e-mail account with the capability of sending and receiving e-mail.

The staff at MME HMCS takes pride in our website and we are continually looking for ways to improve our site since it is a communication tool and a resource for parents, students, staff, and the community.

The following information is provided on our web site:

- Monthly newsletters for each grade level
- Monthly newsletters for specialists
- Weekly newsletters by the Principal
- Monthly and yearly calendar
- Photos of current events at the school
- Archived photos of events held during previous years
- Monthly lunch menu
- Directions to our school
- Links to District Web Site information such as elementary curriculum, homework policy, athletics, and the main site.
- Links to the Massachusetts Department of Education for MCAS, Curriculum Frameworks, and MassONE.
- Student Links
 - Math Hotlist, Social Studies Hotlist, and Search Engine Hotlist created by MME's Technology Specialist
 - WebQuests created by the MME HMCS staff
 - StudyIsland for grade 3 and 4 student's MCAS math and reading review.

The district works with community groups to ensure that students and staff have access to the Internet outside of the school day.

MME HMCS has worked to ensure that there is a published list on their web site of community groups that have Internet use available outside of the school day.

The district web site includes an up-to-date list of places where students and staff can access the Internet after school hours.

MME HMCS has worked to ensure that there is a published list on their web site of places in the community ("points of access") where students and staff can gain access to the Internet after school hours. URL is <http://www.barnstable.k12.ma.us/mme/news/internetaccess.html>.

A list of Barnstable public libraries has been published: Centerville, Marstons Mills, Whelden, Sturgis, Osterville, Hyannis, and Cotuit.

Current and Proposed Status of Benchmarks

The following pages list the current and proposed alignment with the Massachusetts Department of Education benchmarks by Marstons Mills East Elementary Horace Mann Charter School.

Benchmark Standard 1: Commitment to a Clear Vision and Mission Statement	
A. The district has a realistic and clearly stated set of goals.	<p><i>Current:</i> The current goals for technology are outlined in our Local Technology Plan 2004-2008.</p> <p><i>Proposed:</i> The goals will be continually reviewed by the Technology Team and correlated with our school accountability plan.</p>
B. The district has a technology team.	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has a technology team in place to create and review the technology plan. Representatives are from a variety of stakeholders.</p> <p><i>Proposed:</i> The technology team will continually update member status to reflect the changes occurring at the school.</p>
C. The district has a budget for its local technology plan. The district's operational budget includes a line item for technology. Budgets should also reflect a line item for equipment and software that facilitate access to technology for students and staff with disabilities.	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has a line item for Technology in the operational budget and this line item includes accessibility options. MME HMCS leverages the use of state, federal, and private resources.</p> <p><i>Proposed:</i> MME HMCS will continue with this practice.</p>
D. The district evaluates the effectiveness of technology resources and monitors the progress.	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School evaluates the effectiveness of the technology resources with a principal's needs assessment survey, parent survey, technology department survey, and the Massachusetts DOE TSAT.</p> <p><i>Proposed:</i> MME HMCS will continue with this practice.</p>

Benchmark Standard 2: Technology Integration	
<p>A. Teacher and Student Use of Technology:</p> <ul style="list-style-type: none"> • 85% of teachers using technology everyday. • 85% of teachers using technology appropriately with students each week. • 90% of the teachers working to meet the proficiency level in technology as defined in the TSAT. • Acceptable Use Policy 	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has initiated a professional development plan to educate the staff on ways to integrate the technology into the curriculum and how to use the technology efficiently and effectively both for administrative and teaching purposes.</p> <p>Marstons Mills East Horace Mann Charter School uses the Barnstable School District Acceptable Use Policy for our students. We have posted our AUP on our web site and can be found at: www.barnstable.k12.ma.us/mme/news/technology.html.</p> <p><i>Proposed:</i> We will continue with our professional development plan and work towards the DOE benchmark goals. We have composed a survey for our staff which has been filled out at the beginning of this year and will be filled out again at the end of the year to see the changes.</p>
<p>B. Technology Staffing:</p> <ul style="list-style-type: none"> • 1 FTE Technology Director • 1 FTE Instructional Technology Teacher per 40-80 instructional staff • 1 FTE for data management and assessment. 	<p><i>Current:</i> At the present time, our Principal is fulfilling the role of Technology Director. Marstons Mills East Horace Mann Charter School has one full-time Technology Specialist and one full-time Technology Assistant. We have a consultant to work on the DOE data management and assessment for our school.</p> <p><i>Proposed:</i> We will continue with our current staffing.</p>

Benchmark Standard 3: Technology Professional Development	
<p>A. By the end of 2006-2007 school year, at least 85% of district staff will have participated in 45 hours of high quality technology professional development.</p>	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has initiated a professional development program for the teaching staff which has been in effect for 2 years. Year 1 (2002-2003) staff members received 20 hours; Year 2 (2003-2004) staff members received 18 hours; Year 3 (2004-2005) staff members received 10 hours. Year 4 (2005-2006) staff members received 10 hours. Year 5 and Year 6 (2006-2007) (2007-2008) staff members will be offered at least 10 hours of in-house professional development.</p> <p><i>Proposed:</i> MME HMCS will continue with the practice of providing staff technology professional development.</p>
<p>B. Technology professional development is sustained and ongoing.</p>	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has initiated a professional development program for the teaching staff which has been in effect for 4 years.</p> <p><i>Proposed:</i> MME HMCS will continue with the practice of providing technology professional development for the staff.</p>
<p>C. Professional Development is determined by assessment of teacher needs based on TSAT.</p>	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School teachers have filled out the TSAT form for the last two school years and will again fill out the TSAT form at the end of this year. The results of the TSAT forms will assist us in determining our professional development needs for the next year.</p> <p><i>Proposed:</i> MME HMCS will continue with the practice of providing technology professional development for the staff and assessing the staff with the TSAT form.</p>

Benchmark Standard 4: Accessibility of Technology	
<p>A. Students per instructional computer</p> <ul style="list-style-type: none"> • Average ratio of fewer than 5:1 high capacity, Internet connected computer. • Portable and/or handheld electronic devices • Establish a computer replacement cycle of 6 years or less. 	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School currently has a ratio of 4.93 (2005-2006) for its student:computer ratio.</p> <p>We currently have a handheld for the Principal and Technology Specialist. We currently have 85 AlphaSmart devices for use by our Grade 3 and Grade 4 students.</p> <p><i>Proposed:</i> We will continue to work towards the goal of keeping our student:computer ratio to be in line with the DOE recommended number. We will focus on purchasing 20 to 25 Type A computers per year in order to increase our Type A workstation inventory.</p>
<p>B. Technical Support</p> <ul style="list-style-type: none"> • Commitment to provide timely tech support. • Network Administrator • Full-time technical support person to support 100-200 computers. 	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School employs a Technology Specialist and Technology Assistant. Both provide support to the staff.</p> <p>We have a district network coordinator and assistant network coordinator to maintain our network and to provide additional assistance, if needed.</p> <p><i>Proposed:</i> We will continue with our current staffing. However, as our inventory increases, we will look at the staffing for technical support and address this need at that time.</p>

Benchmark Standard 5: Infrastructure for Connectivity	
<p>A. Internet Access Internet Access is available to all classrooms. 10/100Mb to each classroom.</p>	<p><i>Current:</i> Each classroom at Marstons Mills East Horace Mann Charter School has a PC computer, which is “network ready” and is connected to the Internet. With our existing equipment, we have 100Mb enabled to each classroom.</p> <p><i>Proposed:</i> We have initiated a plan to install a six-port hub in every classroom in order to enable multiple Internet connections in the classroom if the teacher has an adequate computer to connect to the Internet.</p>
<p>B. Networking/LAN</p>	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School is part of the Barnstable School District Network.</p> <p><i>Proposed:</i> MME HMCS will continue with our existing network. We will utilize our server which we recently purchased for our student administration database. In addition, the server will provide a directory area for each teacher.</p>
<p>C. Portable and E-Learning Environment District</p> <ul style="list-style-type: none"> • Encourages the development and use of innovative strategies for delivering specialized courses through the use of technology. • Deploys IP-based and or ISDN-based connections for access to web-based and/or interactive video learning. • Classroom applications of e-learning include courses, cultural projects, virtual field trips, etc. 	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School at the present time does not deliver specialized courses through the use of technology.</p> <p>Marstons Mills East Horace Mann Charter School at the present time does not utilize web-based and/or interactive video learning.</p> <p>Marstons Mills East Horace Mann Charter School has included as part of the professional development last year information on virtual field trips.</p> <p><i>Proposed:</i> MME HMCS will continue to provide the staff with information and professional development on classroom virtual field trips.</p>

Benchmark Standard 6: Access to Internet outside the School Day	
A. Up-to-date Web Site	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School currently has an up-to-date web site at www.barnstable.k12.ma.us/mme. Our web site is updated weekly and is currently used as a communication tool for the MME community.</p> <p><i>Proposed:</i> We will maintain our web site in order to keep the latest communication available to the community. We will continually work to improve our web site.</p>
B. Works with Community Groups – Staff and Students have Internet access outside of the school day	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has worked to ensure that there is available access outside of the school day for students to access the Internet. There is a published list on our web site of community groups that have Internet use available outside of the school day. This list is available at: www.barnstable.k12.ma.us/mme/news/internetaccess.html</p> <p><i>Proposed:</i> We will continue to maintain this published list.</p>
C. Web site lists places where students and staff can access the Internet	<p><i>Current:</i> Marstons Mills East Horace Mann Charter School has worked to ensure that there is a published list on their web site of community groups that have Internet use available outside of the school day.</p> <p><i>Proposed:</i> We will continue to maintain this published list.</p>

Massachusetts Recommended PreK – 4 Instructional Technology Standards



October 2001

Information contained on the following pages has been obtained from the Massachusetts Department of Education website and is available in full at:
<http://www.doe.mass.edu/edtech/standards/itstand.pdf>.

Technology skills are grouped under three grade spans:

- PreK – Grade 4
- Grades 5 – 8
- Grades 9 – 12

Exploratory Concepts and Skills for Grades PreK-4

Although technology opens up exciting avenues to learning, computers should complement rather than replace successful methods that teachers use to help students develop basic skills and understanding. The mathematics framework, for example, stresses the importance of understanding basic arithmetical operations in elementary school. The Massachusetts Department of Education encourages the use of a wide range of tools, both traditional and technological, to help students gain those understandings. However, in the PreK – 4 grade span the use of calculators should not supersede a firm grasp of basic mathematical skills. By the same token, as students learn the skills of electronic research, they should still know how to find a book in the library. As students become more fluent on the computer keyboard, they need to continue to develop legible handwriting. Throughout their school years students will grow to regard technology as one of the many tools that can be used to help them solve problems and improve productivity. However, in the elementary grades, technology should not replace the manipulatives, pencil-and-paper, and other manual methods through which children acquire basic skills.

Given this context, the instructional technology standards for the earliest grade span allow the teacher flexibility in deciding when students are ready to use technology. Instead of listing “performance indicators,” as in the two higher grade spans, the competencies listed for PreK – 4 are “exploratory concepts and skills.”

These are skills that will be introduced in the elementary grades and mastered in middle and high school. By the end of fourth grade, all students should have had the opportunity to become familiar with the tools they will be expected to use with proficiency later on. Through this exposure they will have gained a positive view of computers as tools for learning. For example, electronic sources such as multimedia encyclopedias or teacher-previewed Web sites can be used to gather information for a report. Additionally, there are many developmentally appropriate applications for young children: interactive books, graphic organizers, and writing assistants, as well as mathematical and scientific tools. Such tools can enhance learning for all children, including those with disabilities; for example, multi-sensory software reinforces literacy skills by providing visual and auditory feedback to early readers. At the teacher’s discretion, these tools can be integrated appropriately in an effective lesson plan.

Instructional Technology Standards

Standard 1. Demonstrate proficiency in the use of computers and applications as well as an understanding of concepts underlying hardware, software, and connectivity.

GRADE LEVEL: PREK – 4

EXPLORATORY CONCEPTS AND SKILLS

- 1.1 Develop basic skills for using hardware and applications (e.g., open/close a file, navigate using scroll bars, arrow keys, special keys, and mouse).
- 1.2 Use correct terminology for basic components of a computer system (e.g., monitor, keyboard, disk, printer, mouse), and develop understanding of their basic functions.
- 1.3 At district and teacher's discretion explore and develop keyboarding skills. (The district determines whether students will learn touch typing or simply become familiar with the keyboard functions.)
- 1.4 Explore basic formatting features of a word processing program (at teacher's discretion).
- 1.5 Explore and understand the basic function and purpose of a database.
- 1.6 Explore and understand the basic function and purpose of a spreadsheet.
- 1.7 Collaborate with classmates to use teacher-selected Web sites.
- 1.8 Collaborate with classmates and teacher to send a class e-mail message (at discretion of district and teacher).
- 1.9 Collaborate with classmates and teacher to create a slide presentation with existing template.
- 1.10 Explore the use of drawing and painting applications for class projects (at teacher's discretion).

Standard 2. Demonstrate responsible use of technology and an understanding of ethics and safety issues in using electronic media.

GRADE LEVEL EXPLORATORY CONCEPTS AND SKILLS

PREK – 4

- 2.1 Follow classroom rules for responsible use of computers.
- 2.2 Develop understanding of the school's rules for safe and ethical Internet use. (Use of Internet in this gradespan is under close supervision and determined by district policy.)
- 2.3 Explore practices for evaluating Web sites (District policy determines Internet use.)⁷
- 2.4 Develop understanding of how the computer is a tool for learning.
- 2.5 Explore issues of ergonomics and safety in using computers.

Standard 3. Demonstrate ability to use technology for research, problem-solving, and communication. Students locate, evaluate, collect, and process information from a variety of electronic sources. Students use telecommunications and other media to interact or collaborate with peers, experts, and other audiences.

GRADE LEVEL EXPLORATORY CONCEPTS AND SKILLS

PREK – 4

- 3.1 Explore and develop understanding of how to gather information from a variety of electronic sources, including teacher-selected Web sites, CDROM encyclopedias, and automated card catalog.¹¹
- 3.2 Explore the use of application programs (e.g., word processing, database, spreadsheet) for organizing information into charts, tables, and diagrams.
- 3.3 Explore the use of content-specific tools to enhance understanding of curriculum content (e.g., environmental probes, sensors, robotics, simulation software, and measuring devices).
- 3.4 Collaborate with classmates and teacher in creating a multimedia presentation to communicate learning with others.
- 3.5 Collaborate with classmates and teacher to exchange e-mail with another classroom (at discretion of district and teacher).

How the Massachusetts Standards Compare to the National Educational Technology Standards (NETS)

As a general frame of reference for developing these standards, we used the *Technology Foundation Standards for Students*, developed by the *National Educational Technology Standards (NETS) Project*. NETS is an initiative of the International Society for Technology in Education (ISTE) in collaboration with the U.S. Department of Education.²³

The goal of the NETS Project is to develop national standards for educational technology. The document, *Technology Foundation Standards for Students*, originally published in 1998, describes in detail what students should understand about technology and what they should be able to do with it.

The NETS Technology Foundation Standards for Students are:

- Standard 1. basic operations and concepts;
- Standard 2. social, ethical, and human issues;
- Standard 3. technology productivity tools;
- Standard 4. technology communications tools;
- Standard 5. technology research tools; and
- Standard 6. technology problem-solving and decision-making tools.

In order to simplify this document, the Massachusetts Department of Education has collapsed the six NETS standards into three standards. The NETS standards are incorporated into the three standards of *PreK – 12 Instructional Technology Recommended Standards* as follows:

RECOMMENDED PREK – 12 INSTRUCTIONAL TECHNOLOGY STANDARDS CORRESPONDING NETS FOUNDATION STANDARDS

- Standard 1 Standard 1, 3
- Standard 2 Standard 2
- Standard 3 Standards 3, 4, 5, and 6

There are areas in which the technology standards overlap with some of the learning standards in the curriculum frameworks. For example, the Media strand of the English Language Arts Framework contains standards on creating media presentations using computer technology.