



# **BRIDGEWATER – RAYNHAM REGIONAL SCHOOL DISTRICT**

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## **TECHNOLOGY PLAN 2012-2015**

The mission of the Bridgewater-Raynham Regional School District is to provide excellence in education for all students in an environment that values the individual.

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## **School Committee**

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Mr. Matthew T. D'Andrea  
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Dr. Jacqueline Forbes, *Superintendent of Schools*  
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## **District Technology Committee**

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Ms. Meg Keohan, *Database Manager*  
Mr. Kenneth Dubois, *Information Technology Manager*  
Ms. Paula Bartolo, *WIS Technology Teacher, District Webmaster*  
Ms. Janice Zawada, *Library Media Specialist*  
Mr. David Audet, *Middle School Technology Teacher*  
Ms. Amy Holmes, *Mitchell Elementary School Teacher*  
Mrs. Ellen Chiocca Carey, *Bridgewater Middle School Teacher*  
Ms. Louise Horne, *Bridgewater Raynham Regional High School Department Head*

## Introduction

The Bridgewater Raynham Regional School District holds as one of its fundamental goals the support of student achievement by providing all students engaging and empowering learning experiences. We are committed to provide our professional staff with the skills and tools that will enable them to utilize best practices in creating the best possible learning environments for students.

Association for Educational Communications and Technology (ABCT): **"Instructional Technology is a field dedicated to the theory and practice of design, development, utilization, management and evaluation of processes and resources for learning."** The field is essentially a 20th century movement with the major developments occurring during and immediately after World War II. What began with an emphasis on audio-visual communications media gradually became focused on the systematic development of teaching and learning procedures which were based in behavioral psychology. Currently, major contributing fields are cognitive psychology, social psychology, psychometrics, perception psychology, and management. (Ely,1998)

The plan was developed in an effort to support the vision, mission and strategic plan of the District already in place. This plan will serve as a guide to help staff members integrate grade level appropriate technology skills into daily instructional activities. It is our belief that technology is a means to an end, not an end in itself.

School districts throughout the country are facing new challenges. We need to provide all students the opportunity to be "college and career ready" through the acquisition of 21<sup>st</sup> century competencies. Our job is to provide students with the competencies to understand and utilize current knowledge and to be prepared to learn and incorporate new knowledge and skills as they emerge.

The concept of career readiness is changing. Recent research has shown that people who engage in lifelong learning will be empowered to be creative and to take advantage of new opportunities. Our role, in part, is to inspire students through engaging instruction, to be ready to accept those challenges. The challenge is to provide our students with both the 21<sup>st</sup> century skills and the habits of mind that their futures will demand. Students need to know subject specific knowledge and how to manage and interpret the knowledge in meaningful ways. They will need to learn to manage information and to work with systems and technology.

The technology plan presents a roadmap for increasing student performance in our classrooms. It will support our students' learning experiences and introduce them to new ideas and concepts. While we recognize that this plan addresses present and future needs, it cannot be all encompassing as the technology we use today is ever changing. This plan has to have some degree of flexibility to allow for the rapid changes in technology. The plan will be reviewed annually to be certain that the District's technological capabilities and approach meets the needs of our students, staff and community

## Community Profile

Incorporated in 1656, The Town of Bridgewater flourished as an industrial and agricultural center within Southeastern Massachusetts. Bridgewater today is a growing community of over 7,841 people, an increase of 17.7 percent since 2000 (U.S. Census Bureau, 2012). The introduction of MBTA Commuter Rail service in 1997 set off a real estate boom, resulting in an influx of upper-middle class professionals to

the community. The town is governed by a Town Council with a Town Manager. It is centrally located in Plymouth County at the 5 interchange of Route 24 and Interstate 495, 27 miles south of Boston and 29 miles northeast of Providence, Rhode Island. Two of the town's largest employers are Bridgewater State University, the nation's first teacher's college and the Massachusetts Correctional Institute. The median household income in Bridgewater is \$58,293(U.S. Census Bureau, 2012); the FY 2012 tax rate is \$15.11per \$1,000. School enrollment among Bridgewater residents has increased 14.17 percent since 1993 at an average of 2.36 percent per year. With its three parks and playgrounds consisting of 40 acres, Bridgewater offers a full range of sports and recreational opportunities for its residents.

The town of Raynham was established in 1731, it is known as the site of the earliest successful iron works in the nation. Raynham continues to be a thriving, successful community governed by a Board of Selectmen and a Town Administrator. At present, Raynham has a population of approximately 13,383 people, an increase of 14 percent since 2000. The median household income is \$61,300; the 2012 tax rate is \$14.29 per \$1,000. School enrollment among Raynham residents has increased 5.41 percent since 1993 at an average of 0.9 percent per year. Raynham provides recreational programs and facilities for both children and adults. The town's 300 acre Borden Colony complex has fields for soccer, baseball, softball, fishing, ice-skating, picnicking and boating. Johnson's Pond is open to the public for fishing, ice-skating, picnicking and boating.

In 1962, the communities of Bridgewater and Raynham combined resources to construct a regional high school, and the Bridgewater-Raynham Regional School District was fully regionalized in 1994. Presently, the district, which is overseen by a Regional School Committee, serves 5,814 students in grades preK-12, and includes four elementary schools, two middle schools, and one high school.

## **Bridgewater – Raynham Regional School Districts' Mission**

The mission of the Bridgewater-Raynham Regional School District is to provide excellence in education for all students in an environment that values the individual.

## **The Role of the Technology Committee**

The Members of the Committee is to develop the 2013-2015 Technology Plan to encompass the current and future needs of the Bridgewater-Raynham Regional School District community. The committee developed the Bridgewater -Raynham Regional School District Technology Plan for 2013-15 based on a review of research-based best practices, needs assessment surveys, teacher and administrator participation data in technology training, and feedback meetings with school community stakeholders.

The Technology Committee crafted a vision for the 21st Century Learner and the role of technology. Consideration was given to emerging trends in technology, and connection to efforts for reform such as framing a vision of our graduates as 21st century students, a district-wide initiative to integrate technology into the classroom, develop interdisciplinary units, and a review of the Media and Technology Literacy curriculum.

## **Vision**

The changes in our world have introduced a need to teach students skills that transcend all curricular areas. The 21st century classroom will ensure that technology is an integral and ubiquitous part of a flexible and relevant environment. Students will be challenged to use technology and information resources responsibly and to think critically and creatively to solve problems effectively and efficiently.

# Technology and Learning Mission Statement

The application of technology is necessary to maintain quality education in today's informational age. Application involves an integration of existing educational practices with current and emerging technologies. Our goal is to enhance the lifelong learning skills of students and teachers through the use of appropriate technological tools.

## District Technology Goals

1. *To transform our classrooms into 21<sup>st</sup> Century classrooms utilizing 21<sup>st</sup> Century skills*
2. *To provide instruction and education in the use of technology to all staff and students through a formalized technology curriculum partnered with classroom integration*
3. *To design a professional plan for technology*
4. *To conduct an annual assessment of technology requirements grounded in curriculum and national standards.*

## 2013 – 2015 Focus Areas

Purposeful use of technologies and digital tools is an essential component of the 21st Century classroom. In the next three years, the District is committed to moving forward to address our vision by improving access, flexibility, and cost-effectiveness of technology resources and tools to meet a variety of student learning needs within the context of a challenging economic reality

### Curriculum

- Revise and/or update the current Technology Curriculum.
- Collaborate among staff, to infuse web technologies creating authentic, project-based units.
- Provide shared-access to curriculum maps, including resources for teachers to collaborate on lesson plans, benchmark assessments, and alignment to standards.
- Explore and implement, as dictated by the curriculum review process, online textbooks and other digital curricular materials.
- Train students on the safe and appropriate use of technology.

### Creating Effective Digital Learning Environments in the Classroom

- Continue the phase-in of interactive whiteboards in every classroom by 2015.
- Explore, pilot and begin implementing Wi-Fi access to the Internet in all schools.
- Increase use of “cloud computing” for remote access, sharing of resources and collaborative group work.

### Media Center

- Develop a collection for the 21st Century to include eBooks, audio books, research databases, and other high-quality resources for all learners.
- Provide greater access to tools for students to create digital content – including digital cameras, and other emerging technologies.
- Create district infrastructure for video conferencing and webinars.
- Explore, pilot and begin implementing a variety of tablets and other mobile devices.
- Maximize the use of existing software applications and technologies through systematic focus and integration into “best practices” training.

## **Tools and Resources**

- Explore and begin using distance learning, webinars, online meetings and “virtual fieldtrips” to provide enriched experiences for both teachers and students.
- Provide means for students to “hand-in” homework through electronic drop-box.
- Explore and pilot ePortfolios of student work that follow students from grade-to-grade.
- Explore and implement subject-specific software to support and improve student learning.
- Integrate video library system into the classroom.
- Provide eLearning means of delivering personal, “just-in-time” training on technology tools for students and teachers.
- Train staff in effective ways of using technology in the classroom such as group work, collaborative projects and targeted, differentiated instruction.
- Train teachers on using and manipulating data for RTI (Response to Intervention) and as part of data teams.
- Implement an annual assessment of teacher and administrator technology needs.

## **Universal Design for Learning**

- Explore, pilot, implement or build upon research-based software to support improvement in curriculum-based skills.
- Explore emerging technologies to meet the needs of all students and identify programs and devices that reflect best practices for diverse learning needs.
- Explore and establish district standards to ensure universal access to all technologies for all students.
- Develop and provide effective training for the use and maintenance of instructional and specialized technologies.
- Improve management of existing technologies and develop a system to maintain and track equipment and materials.
- Develop and implement protocol for new technology selection, purchase and implementation.
- Promote the use of Assistive Technology “best practices” to ensure maximum learning opportunities and inclusion of all students
- Investigate existing e-textbooks and curriculum support materials that are available in accessible formats
- Identify and resolve hardware and software compatibility issues to ensure access to curriculum for all learners.

## **Resources**

- Efficiently allocate resources to increase student access to technologies through flexible use.
- Focus on maximizing use of existing software, open source and open content.
- Match the hardware to the task. eg. use Netbooks for keyboarding and word processing instruction to free up labs for multimedia and intensive, digital access.
- Partner with community organizations to ensure access for all students to computers and Internet access.
- Work with district wide parent groups to support technology initiatives
- Communicate and adhere to purchasing guidelines to ensure consistency of support, service, training and warranty contracts as well as operability.

## **Information Systems**



Evaluate current systems and upgrade, refine or maintain as needed to reflect changing needs, i.e., e-mail, student information, teacher portal, web content management system, professional development system, etc.

## Curriculum

Curriculum	Integration	Next Steps/Gaps
Develop K-12 articulation and curriculum map aligned to state and national standards	Complete a formal curriculum review aligned to state and national standards while addressing gaps based on research based practices	Implemented curriculum beginning in Sept. 2013
Develop, implement and refine assessments to evaluate skills.	Implement exit assessments for grades 5,8,10 based on national standards and used to inform revisions in Computer skills classes	Development of benchmark assessments to serve as part of teacher toolbox
Infuse high-quality, digital resources and tools into the classroom.	Teachers have been introduced to the following high-quality digital tools to support our vision of the 21st Century Classroom: Interactive White Boards Streaming Video Library Online library catalog system Consistent online periodicals, databases, encyclopedias and a home-grown, in-house virtual library of curriculum resources.	Explore using and infuse open source, digital technologies into classrooms. Provide ongoing training to teachers on available resources.

## Professional Development

Curriculum	Integration	Next Steps/Gaps
Implement and monitor the use of web based content software for school to home communication	Full implementation of web based content software	Explore ways to use EdLine to provide staff and administrators more flexibility in disseminating information to the school community
Ensure that library specialists and lead teachers serve as the leaders in technology and 21st Century information literacy skills within their school buildings	Provide means for introducing resources, instructional strategies and new systems to all media specialists	Train specialists in collaborative instruction, resource based learning and use of technology in the classroom and new tools and resources
Create and implement professional learning initiatives for Administrators to address Mass Administrator Technology Standards.	Provide workshops for administrators on 21 <sup>st</sup> Century Learning skills	Create a better means of assessing technology professional development for administrators

## Equitable Use of Technology

In our fast-changing, technology-rich society, Bridgewater –Raynham Regional School District seeks to ensure that all students are prepared for their future. One of the critical goals of the 2012-2015 District Technology Plan is to provide equitable access to technology for all students. The technology that the District provides includes high-quality digital resources, websites for communication, curriculum-specific software resources and, a high-level of student access to computers.

In order to meet this goal, the District works with schools to maintain a standard classroom/school model for number of computers per student based on grade-level and research-based instructional

practices and needs. The District will address schools that fall below the recommended ratio levels listed as follows:

<b>School</b>	<b>Student/Computer ratio (*figure base on January 2012 data)</b>
BMS –	2.57 student/computer ratio
BRRHS -	3.32 student/computer ratio
LES –	4.09 student/computer ratio
Merrill –	2.85 student/computer ratio
RMS –	2.82 student/computer ratio
WIS –	5.40 student/computer ratio
District –	3.47 student/computer ratio

### **Elementary Schools:**

Although schools deploy computers per specific curriculum and student needs, typically, elementary schools currently range from 2.85 students to computer ratio, a full media computer lab as well as various administrative machines. In addition in circulation in the elementary schools are xx portable labs, xx interactive white boards, presentation systems, adaptive technologies, and Library Automation System

### **Middle Schools:**

Middle schools typically deploy at least one computer per classroom and additional classroom computers per curriculum need in such classrooms as Language Arts and Tech Ed. Additionally, middle schools have computer labs and several presentation carts. The introduction of interactive white boards are being installed in all discipline areas The difference in their ratio compared to other grade levels is accounted for the fact that instructional practices are “in the middle” between a lab model (utilized at the high school) and a classroom model (utilized at elementary schools).

### **High School:**

Bridgewater Raynham Regional High School employs predominantly a computer lab model for whole class instruction. The high school has 4 labs though out the school and 16 workstations in the Library Media Center. The computer labs are available for sign out and are utilized by all department areas. Students have accesses to computers in the Library and teachers have a workstation on their classroom desk. The implementation of presentation carts and interactive whiteboards are being used throughout BRRHS thereby enhancing classroom instruction.

## Technology Availability to Staff

	<b>Please include information about the type and availability of staff access both on and off campus.</b>
Administrators	Workstation on office desk, internet access, productivity tools, presentation cart, SIS System, Mass Alert System, Edline for school home communication tools computer lab for instruction network printing and local printing
Teachers (preschool)	Workstation on office desk
Teachers	Workstation on office desk, internet access, productivity tools, presentation cart, SIS System, Mass Alert System, Edline for school home communication tools computer lab for instruction network printing and local printing

## Technology availability to Students

	<b>Please include information about availability in classrooms, the library-media center and all other areas where students have access.</b>
Students (preschool)	None
Students (elementary)	<ul style="list-style-type: none"> <li>• weekly or biweekly lessons in computer lab</li> <li>• use classroom computers for center work time</li> <li>• access to internet for research</li> <li>• tutorial software</li> <li>• computer lab for teacher sign-up</li> <li>• there is access to computers as part of the afterschool program</li> </ul>
Students (middle school)	<ul style="list-style-type: none"> <li>• Students attend computer class</li> <li>• Additional computers labs are available for teacher sign-up</li> <li>• Set of 15 Ipad for classroom sign-out</li> <li>• Internet access available for research</li> <li>• Afterschool access to library computer labs</li> </ul>
Students (high school)	<ul style="list-style-type: none"> <li>• Dedicated computer labs to support technology courses</li> <li>• Internet access for student research</li> <li>• Library Media Center is open until 4:00pm (Mon - Thurs)</li> </ul>
Students (with disabilities)	<ul style="list-style-type: none"> <li>• Classroom computers</li> <li>• Ipad as a communication tools</li> <li>• Adaptive tools to meet students needs</li> </ul>

## Infrastructure

### Overview

The District allocates technology resources for instructional support (computers, printers, and other peripheral devices) based on the approved District Technology Plan. This plan is adopted by the district.

### Technology

Servers are sized as to number of processors and speed, memory, and storage requirements based on specific function. The district server farm includes local print and file servers at each building with centrally located servers and appliances for electronic mail, content filter, web services, caching and proxy services, virus protection, spam filtering, domain authentication, terminal services, mission critical business applications, library management, and student information systems.

School	Server	Current Use	Future Use
Central Office	centralfs1	File, Print and Domain Server	Print and Domain Server
	unifundds1	Database Server (Accounting System)	Same
	unifundws1	Web Server (Accounting System)	Same
	posfs1	Database Server (POS System)	Same
BRRHS	brhsfs1	File, Print and Database Server	Print and Domain Server
	brhsfs2	File, Print and Database Server	Retired (Testing Server)
	brhsas1	Ardence Server (Virtual Streaming Desktop Server)	Same
	brhsas2	Ardence Server (Virtual Streaming Desktop Server)	Cloud Backup Server
	brhsdc1	Domian Server	Retired (Testing Server)
	brhsdc2	Backup Domain Server	Retired (Testing Server)
BMS	bmsfs1	File, Print, Database and Backup Domain Server	Print and Domain Server
	bmsdc1	Domian Server	Retired (Recycled)
RMS	rmsfs1	File, Print, Database and Backup Domain Server	Print and Domain Server
	rmsdc1	Domian Server	Retired (Recycled)
WIS	wisfs1	File, Print, Database and Backup Domain Server	Print and Domain Server
	wisdc1	Domian Server	Retired (Recycled)
LES	lesfs1	File, Print, Database and Backup Domain Server	Print and Domain Server
	lesdc1	Domian Server	Retired (Recycled)
GMES	gmesfs1	File, Print, Database and Domain Server	Print and Domain Server
LBMES	lbmesfs1	File, Print, Database and Domain Server	Print and Domain Server

## Software

The Microsoft Office Suite comprises the core set of productivity software provided for each personal computer. The District subscribes to the Microsoft School Agreement for its licensing of core Microsoft based products.

To the extent practicable, software products are centrally based and delivered to personal computers via application servers. Some curriculum software must be fully or partially installed locally. Notebook computers must have all required software products fully installed in order to ensure their availability outside the District network.

## Administrative Needs

Type	Strategy	Availability	Needs
Accessing Data for Data for Decision-Making	Meet with staff to assess needs	All staff have access to interactive reports, and ability to export data to Excel/Word to perform additional data manipulation	Increase capabilities district wide
Student Information Management System (SIMS)	Ongoing training to provide maximum capability of SIMS	Availability to all staff by January 2014	User friendly interface to SIMS
Communication Tool	Content Management System	Pop-Up notification to end user when leaving the	Content Management System
	District Email	All Certified staff have 24/7 access to email. Non-certified staff are assigned accounts as required by their administrators and position	Easier access to accounts via mobile and smart phones
	Home Communications		Single platform
	Telecommunications	See Telecommunications section	Wireless accessibility in all buildings
Information Gathering	Variety of local database systems	Elementary and Middle School FileMaker Pro databases provide flexibility in reporting High school MS Access database provides flexibility to the high school as regards reporting and scheduling State Discipline MS Access database to provide accurate data for ED166 submission Program-specific databases, i.e. ALP, FLES, ELL, Lang Arts, etc. The use of these databases are restricted	Unify all data so that it is available 24/7 as needed by certified and non-certified staff Fully implement Intranet capabilities of the dashboard

## Plan Implementation

### Technology Goals and Strategies

The goals of the Technology Plan center on using technology to further our vision of academic excellence as well as ensuring that students demonstrate proficiency in Information, Media and Technology Literacy Standards. The Technology Plan's goals speak to the larger issues of preparing our students for their future, providing professional learning for teachers to use information technology tools and resources in the everyday business of teaching, and ensuring proper and adequate funding and resources necessary to equip our classrooms for teaching digitally.

The goals of the Bridgewater Raynham Regional School District's Technology Plan will help us expand the vision to ensure that students are prepared for their future. The key goals of the Technology Plan are:

- To fully integrate technology into the academic curriculum and to ensure that skills are taught in context.

- Provide professional learning opportunities for teachers to be able to integrate technology in the classroom for productivity, engagement, differentiation and for assessment.
- Ensure equitable access to high-quality digital resources to facilitate student learning.
- Develop a performance-based method for assessing student learning for information and technology literacy.
- Develop a schema of current and future financing requirements to support the Technology Plan.

## Priority Areas

The Technology Planning Committee reviewed the top technology trends as well as how these trends will help to support our vision. The Trends reflect the priorities of the Plan for the next three years and include:

- ❖ Curriculum: Refine and develop interdisciplinary curriculum units featuring standards-aligned, assured experiences with measurement through student assessments.
- ❖ 21st Century Classroom: Continue implementation of interactive whiteboard plan, begin expanding access to Wi-Fi, establish “cloud computing” as well as increase access to technologies through low-cost devices.
- ❖ Media Tools and Resources: Increase access to high-quality digital resources including eBooks, databases and ability to video conference for collaboration.
- ❖ Professional Learning: Increase access and flexibility to professional learning as well as provide differentiation based on assessment of staff and administrator skills.
- ❖ Systems: Explore, pilot and/or upgrade critical systems such as Student Information, E-mail and other.

Our journey for creating a vision for the 21st century learning, providing teachers with the tools and resources needed to teach in context and assessing student skills will enable us to ensure their future success. The goals of the Bridgewater Raynham Regional School District’s Technology Plan can help frame larger district discussion on a vision that includes 21st Century learning and skills.