West Bridgewater Public Schools
Technology Plan
2022-2027

November, 2022

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Introduction

In recent years, technology has become an integral part of educating students. The pandemic of 2020 brought on new, and innovative ways for teachers to reach students in ways never done before. Students were issued chromebooks, instruction was done through online meeting platforms, such as Google Meet, and Instructional materials were shared through Learning Management Platforms, such as Google Classroom. In order to support remote instruction, we had to have the proper infrastructure, proper security protocols and access to appropriate hardware and software.

The purpose of this document is to present a vision of where West Bridgewater should be in the near future when it comes to technology. Technology is no longer an add-on, it is an essential part of day to day instruction. The goal of the technology department is to support the teachers, students, and administrators in providing the tools necessary to teach and learn.

Administration

- Mark Bodwell, Superintendent of Schools
- Kathy Marble, Student Services Director
- Kathy Grant, School Business Manager
- Debbie Llanes, Curriculum Director
- John Collins, Director of Instructional Technology
- Keitha Goulet, Principal, Spring Street School and Rose L. MacDonald School
- Richard Leeman, Principal, Howard Elementary School
- Christine Page, Principal, Middle-Senior High School
- James Hanna, Assistant Principal, Middle-Senior High School

Technology Department Members

- John Collins, Director of Instructional Technology
- Ed Sarro, Network Administrator
- Scott Cray, Technology Coordinator, MSHS
- Cathy Edgar, Computer Science Teacher, MSHS
- Kelly Newell, Library Media Specialist, MSHS
- Sarah O'Donnell, Computer Teacher, K-6
- Melissa Wenzel, Science Teacher, Howard School
- Karen Alves, Grade 3 Teacher, Rose L MacDonald School
- Matthew Hatch, Computer Technician

District Success Plan

WEST BRIDGEWATER PUBLIC SCHOOLS
District Plan for Success 2023-2027

MISSION

The mission of West Bridgewater Public Schools is to work together with home and community to provide our students a safe environment in which to acquire the knowledge, skills, and values needed for success in a diverse and global society of the 21st Century.

VISION

The vision of West Bridgewater Public Schools is to meet or exceed all of our students' academic, social, and emotional needs, inclusive of all abilities, by creating a sense of belonging and providing academic pathways to success.

CORE VALUES

THEORY OF ACTION

If the West Bridgewater Public Schools provide students with an array of opportunities to ensure all students achieve the Vision of the Graduate that is diverse, equitable, and inclusive; establish and implement a cohesive, rigorous equitable PreK -12 curricula; promote the implementation of curricular materials with consistency to ensure student success academically and social and emotionally; ensure appropriate staffing and support to address the growing academic and social-emotional needs of students and staff; and ensure that the facilities and resources provide effective learning environments to meet the educational and social-emotional needs of all students and staff, then the vision of West Bridgewater Public Schools is to meet or exceed all of our students' academic, social, and emotional needs, inclusive of all abilities, by creating a sense of belonging and providing academic pathways to success.

STRATEGIC OBJECTIVES

Student Success	Curriculum		Staff Development	Facilities Resources
1. Provide students with an array of opportunities to ensure all students achieve the Vision of the Graduate that is diverse, equitable and inclusive.	2. Establish and implement a cohesive, rigorous equitable PreK -12 curricula.	3. Promote the implementation of curricular materials with consistency to ensure student success academically and social and emotionally.	4. Ensure appropriate staffing and support to address the growing academic and social-emotional needs of students and staff.	5. Ensure that the facilities and resources provide effective learning environments to meet the educational and social-emotional needs of all students and staff.

STRATEGIC INITIATIVES

1.1 Provide quality and differentiated professional development for all staff with the intention of strengthening content and SEL pedagogy, focusing on the whole student.	**2.1 Create PreK-12 teams to lead and support the development of a curriculum plan.**	3.1 Allocate funding for professional development for new and existing curricula.	**4.1. Create a competitive hiring process to entice highly qualified diverse candidates.**	**5.1 Work with MSBA to address facility needs within the district.**
1.2 Utilize the tiered supports available within each building to meet the needs of all learners.	2.2 Organize a professional development committee to facilitate staff buy-in, understanding, and effective training, according to DESE guidelines as applicable.	**3.2 Continue the implementation of the elementary literacy program.**	4.2 Ensure the support of highly qualified staff by providing appropriate, meaningful, and timely professional development opportunities.	**5.2 Develop & implement a classroom technology plan to replace outdated equipment in the district.**
1.3. Implement instructional strategies that promote student engagement resulting in students reaching their individual potential.	2.3 Establish common vocabulary and pedagogical approaches.	**3.3 Continue the implementation of the MSHS math curriculum.**	**4.3 Create programs to support our higher needs students with qualified and appropriate staffing.**	**5.3. Create and implement a safety and security plan in collaboration with the School Resource Officer.**
1.4. Develop and implement pathways to provide students with authentic learning opportunities.	2.4. Offer curriculum development opportunities using a common template.	3.4 Allocate funding for elementary social studies, science, and math curricula.	4.4 Collect data consistently on student and staffing needs to provide a supportive culture.	5.4 Regularly review and update network infrastructure to meet district needs.
1.5 Organize and implement a Diversity, Equity, and Inclusion Committee to foster and monitor equitable access for all students through curriculum and staff development.	**2.5 Revise existing professional development plan.**	3.5 Explore the opportunity of adding elementary world language.	4.5 Develop a DEI (Diversity, Equity, and Inclusion) Committee to ensure all students and staff are represented.	5.5 Develop yearly budget priorities that identify needs for facilities and resources.
			4.6 Foster and maintain relationships with town officials to provide a deep and clear understanding of the district's needs.	**5.6 Continue to implement a long-term 5 year capital improvement plan that focuses on facilities and technology.**
			4.7 Collect ongoing data on staffing deficits to provide information to stakeholders, including School Committee and town officials.	

OUTCOMES

OUTCOMES: Objective 1 - Student Success

A. By June 30, 2027, student achievement will be at or above state levels.
B. By June 30, 2027, student participation in Advanced Placement and honors classes will increase as measured by enrollment and successful course completion amongst a more diverse population.
C. By June 30, 2027, an initial pathway providing students with authentic opportunities has been developed.

OUTCOMES: Objective 2 – Curriculum Alignment

A. By June 30, 2027, a PreK- grade 12 district wide curriculum plan will be developed and implemented as measured by observations, teacher goals, and NEASC Vision of the Graduate.
B. By June 30, 2027, a Professional Development Committee will provide staff with relevant and equitable professional development as measured by providing up to 10 professional development opportunities.

OUTCOMES: Objective 3 - Curriculum and Instruction

A. By June 30, 2027, we will have implemented elementary science and social studies curricula as measured by student outcomes.
B. By June 30, 2027, we will have implemented a new elementary math curriculum as measured by student outcomes.
C. By June 30, 2027, we will continue implementing new programs (elementary literacy, middle school math, and high school math) and maintain/update the existing curriculum as measured by student outcomes.

OUTCOMES: Objective 4 – Staffing Growth and Development

A. By June 30, 2027, the District will have a strong working relationship with town officials that supports student and staffing needs.
B. By June 30, 2027, the District will have appropriate, highly qualified, and effective staffing to ensure ALL students' needs are met, including general education and special education teachers, ESL teachers, behavioral staffing, and related support staff (counselors, coordinators).
C. By June 30, 2027, the District will encompass a supportive and collaborative environment through open communication in results-driven concepts.

OUTCOMES: Objective 5 – Facilities and Resources

A. By June 30, 2027, the district's facilities will provide an effective learning environment that supports the needs of all students and staff.
B. By June 30, 2027, the annual budget will be sufficient to optimally operate the district and to support the instructional core.
C. By June 30, 2027, the annual budget will support replacing outdated technology equipment to support the educational needs of all students and staff.
D. By June 30, 2027, security practices and plans will be in place to ensure safety of all students and staff in all buildings.

Vision of the Graduate

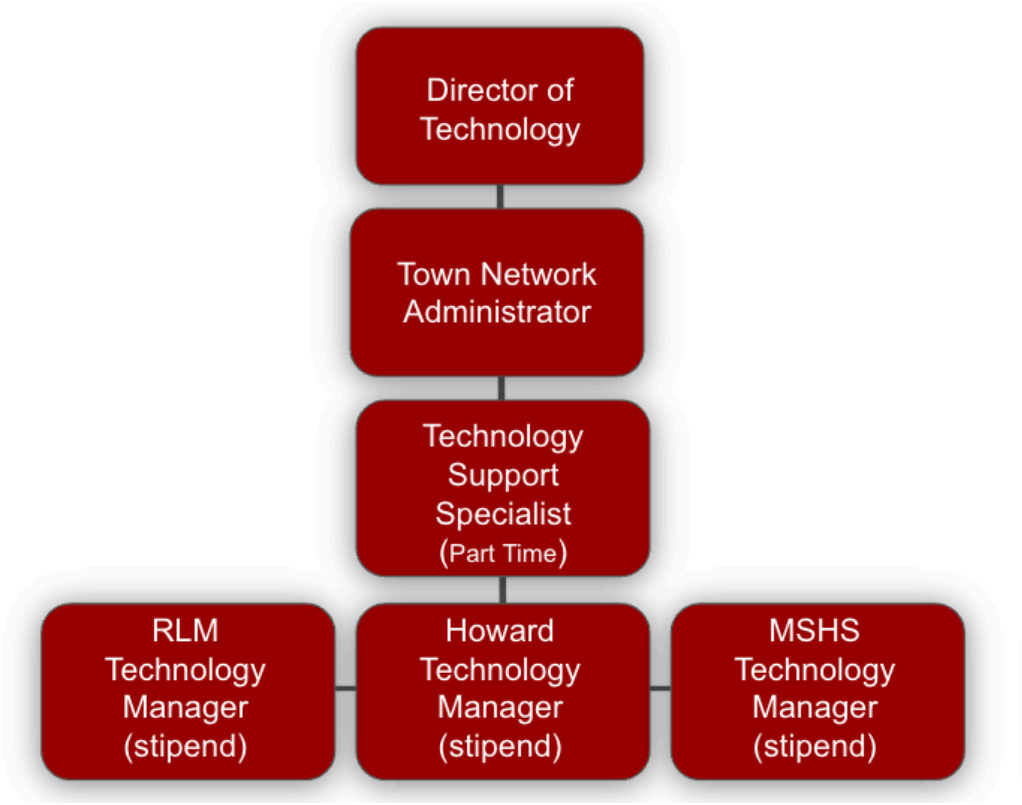
- ACADEMIC EXPECTATIONS
    - Read Actively and Critically - The graduate is able to read varied materials with both literal and inferential comprehension for a variety of purposes.
    - Write Effectively - The graduate is able to write using standard English for a variety of purposes and audiences.
    - Listen Effectively and Critically - The graduate is able to listen to presentations of information gaining both literal and inferential meaning.
    - Communicate Effectively - The graduate is able to communicate ideas and information coherently for a variety of purposes.
    - Locate, Analyze and Synthesize Information - The graduate is able to locate, analyze, and synthesize appropriate materials for a variety of purposes.
    - Identify, Evaluate, and Solve Problems - The graduate is able to identify, evaluate, and solve problems effectively employing a variety of methods/process(es).

- CORE VALUES (P.R.I.D.E)
    - **Passion**: The graduate from West Bridgewater honors their passions, pursues their interests, and shares their talent and creativity.
    - **Respect**: The graduate from West Bridgewater practices citizenship, grace, honor and gratitude.
    - **Ingenuity**: The graduate from West Bridgewater is empowered by their learning to create, to invent, to problem solve, and to think critically.
    - **Determination**: The graduate from West Bridgewater has grit and courage enough to persevere in the face of risk, failure, and the unknown.
    - **Empathy**: The graduate from West Bridgewater is compassionate, tolerant, informed, and embraces their global and civic responsibilities.

Current State of Technology

2014	2022
Hardware	
311 Chromebooks	2000 Chromebooks
250 ipads	30 ipads
6 computer labs	2 computer labs (1 Windows Lab/1 Mac Video Lab)
6 Windows shared computer carts	All teachers have a laptop computer. Paraprofessionals/IA's have a chromebook
12 classroom "Pods"/ Thin client PC's	All classrooms have a mounted digital projector
All teachers had desktop computers	75 Ruckus Access points
Each classroom had a projector (mounted or on a cart)	300 IP Phones
10 Ruckus AP's 10 HP Procurve AP's	18 Copy Machines
9 Copy Machines	17 Printers
15 Printers	43 Security Cameras Cameras
5 Food Service POS Registers	MSHS Door Access Control
SonicWall Firewall	7 Food Service POS Registers
	Fortigate Firewall
Software	
Aspen Student Information System (1st year) ● Transition from Rediker Spring 2013	Aspen SIS
Google Workspace for Education (year 1) ● Email ● Documents	Google Workspace for Edu ● Email ● Documents ● LMS/Google Classroom ● Meet videoconferencing ● Sites
Website (Self-Hosted Joomla site)	Apptegy Web and Communication Platform
Self-Hosted School Nutrition/Nutrikids	Mosaic Cloud Food Service
Spiceworks support ticket system	IncidentIQ support and asset management
Core Services	
Managed Services - HUB Technical Services	Managed Services - HUB Technical Services
Bandwidth - 300mbs up/down	Bandwidth - 2GB up/down
	Cloud Based Wireless Management (Summer, 2022)

Organizational Structure



Google Workspace for Education

The introduction of Google Workspace for Education in 2014 was a major stepping stone in transforming instruction in West Bridgewater. As we rolled out the platform, we began with migrating email over to Gmail and introducing users to Google Docs. With the introduction of Google Docs, we introduced the idea of sharing files with users, rather than emailing static documents to each other. Google Workspace introduced collaboration amongst students, teachers and administrators. Over the years, the use of Google Workspace and Docs has increased immensely and is used each day by teachers and students.

When Google Classroom was introduced, it gave teachers a means to control how documents were shared amongst the students in their classrooms. With this tool, teachers are able to assign documents that students can work on individually, or collaboratively and can have control over sharing permissions for documents. Just about every teacher uses Google Classroom on a daily basis as a means to extend beyond the classroom, and to share materials for students that may be absent.

The use of chromebooks by all students provides a seamless integration with Google workspace. Once logging into a chromebook, students immediately have access to all of the tools available to them in Google Workspace. No additional logins are required, which means less troubleshooting required by teachers and more time for instruction.

For administration, the use of Google Workspace has increased productivity. Lengthy reports and spreadsheets can be shared so teams can work on them collaboratively, and even simultaneously. The use of Meet video conferencing software has allowed administrators to conduct meetings remotely, if needed.

Devices

Student 1:1 Chromebook Program

To coincide with the opening of the new Middle-Senior High School in 2015, the district purchased 650 HP chromebooks to give to each 7-12 grade student. Students would use these devices daily in the classroom, and at home for homework and other projects. These devices were purchased with a limited 3-year warranty and parents had the option of insuring them through a 3rd party vendor. Along with this rollout, teachers were provided with professional development on teaching in a 1:1 classroom setting, along with more in-depth Google Workspace training.

Shortly after rolling out 1:1 at the MSHS, all previously purchased chromebooks and charging carts were brought to the elementary schools, where every classroom had a cart of devices to use. By the start of the 2016-2017 school year, each classroom in grades 1-6 had a chromebook cart. For Kindergarten, they were using ipads that had previously been purchased for the shared carts. We have since retired all classroom ipads and every student K-12 now has access to a school issued chromebook. Up to date chromebooks are required for MCAS testing in grades 3-10.

All classrooms, Grades K-6 have a classroom set of chromebooks. All grade 7 students receive a chromebook to take home at the start of the school the school year. If inventory supports, we will refresh devices in grade 10.

Staff Devices

All staff are assigned a device when they begin working in West Bridgewater. All teachers are issued a Windows laptop. Administrators and office staff are issued either a Windows laptop or desktop computer. All Paraprofessionals and Instructional Assistants are issued a chromebook.
As technology continues to change, the department will continually evaluate the needs of the classroom teacher, staff and administration and provide the best possible device required.

Device Refresh - The department will strive to refresh staff devices every 6-7 years so that they have devices that can meet the demands of the classroom every day.

Classroom Technology

At the current time, each classroom has a mounted digital projector that connects to their Windows laptop or student chromebook. All classrooms also have document cameras that connect to their computer. The technology currently in the classroom is outdated, and failed devices can no longer be replaced. Most notably, the Mimio interactive bars that are in each classroom. One of our goals is to focus on updating the technology in the elementary classrooms. The department will continue to evaluate trends in technology and evaluate changing needs in the classroom.

Computer Labs

At the current time, there is 1 Windows Computer Lab at the Middle-Senior High School with 26 workstations. There is also a dedicated Mac lab in the TV studio at the Middle-Senior High School. This lab is used exclusively by the Television Production students and Town Cable Access station. There are no additional labs in the district.

Budget

The technology department will continue to work with administration to develop a budget that meets the needs of classroom teachers, staff and administration. This includes working with our IT Services vendor to ensure that our network infrastructure is secure and meeting the demands of all users. The following technology items should have an adequate budget:

- Network Infrastructure
- Software
- Classroom Hardware
- Staff Devices
- Student Devices
- Building Security (in collaboration with the maintenance department)

Management

The department currently contracts with HUB Technical Services for Managed Services. This vendor works with us to ensure that all of our back-end infrastructure is up to date, secure and meeting the needs of the district. They meet with us regularly to review the status of our network and servers, and give us recommendations on appropriate upgrades and maintenance.

In addition, HUB Technical provides reseller services for laptops, chromebooks, and other classroom equipment. We have used HUB Technical in the past to oversee large scale projects, such as upgrading the phone system, upgrading the WIFI network and an upcoming security camera project.

Internally, the department utilized IncidentIQ to manage IT service tickets, as well as manage our inventory. This includes classroom equipment, laptops, chromebooks and more. Having one platform to manage our inventory and ticketing has improved efficiency within the department. The Director of Technology and Network Administrator meet regularly to review technology needs across the district.

Professional Development

The Technology team will work with administration to explore opportunities for professional development in the area of classroom technology integration. These topics include, but not limited to:

- The SAMR Model
- Review of:
    - ISTE Standards for teachers
    - Digital Literacy and Computer Science Standards
- Google Workspace training
    - Google Classroom
    - Google Meet
    - Google Docs and Drive
    - Gmail
- Using technology tools to enhance Differentiation in the classroom
- Drop in weekly Technology Sessions

Curriculum

In 2021, the technology team was awarded a grant to work with DESE on reviewing and enhancing the use of the DLCS standards. Several teachers also have opportunities to attend workshops over the summer to review the DLCS standards. The department will continue to review the DLCS standards and work with teachers to bring these standards into the Core Curriculum.

ISTE

ISTE is the International Society for Technology in Education. They have developed a set of standards for Students, Teachers and Administrators as a guide for essential technology skills. The technology department will strive to use these standards as guiding principles in their teaching, coaching or for their own professional growth.

Students	Administrators	Teachers
• Empowered Learner • Digital Citizen • Knowledge Constructor • Innovative Designer • Computational Thinker • Creative Communicator • Global Collaborator	• Equity & Citizenship Advocate • Visionary Planner • Empowering Leader • Systems Designer • Connected Learner	• Learner • Leader • Citizen • Collaborator • Designer • Facilitator • Analyst

(https://www.iste.org/iste-standards)

Massachusetts Digital Literacy & Computer Science Standards

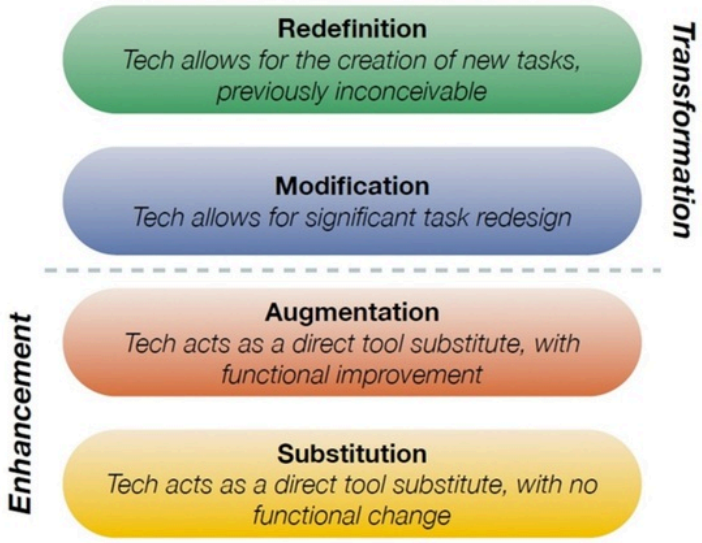
https://www.doe.mass.edu/stem/dlcs/

The new technology standards from 2016 focus on 4 strands (see below). These strands are designed to be incorporated across all curriculums. The technology department will strive to work with teachers to introduce them to these standards and use them in their lesson plans.

Learning Progression				
Grade Spans	**Strands**			
K-2 3-5 6-8 9-12	**Computing and Society [CAS]** a. Safety and Security b. Ethics and Laws c. Interpersonal and Societal Impact	**Digital Tools and Collaboration [DTC]** a. Digital Tools b. Collaboration and Communication c. Research	**Computing Systems [CS]** a. Computing Devices b. Human and Computer Partnerships c. Networks d. Services	**Computational Thinking [CT]** a. Abstraction b. Algorithms c. Data d. Programming and Development e. Modeling and Simulation
Practices				
Connecting, Creating, Abstracting, Analyzing, Communicating, Collaborating, Research				

SAMR

SAMR is a methodology used to rate technology integration in the classroom. Administrators use this model when conducting walkthroughs to see how teachers are using technology in the classroom.
The model begins with Substitution, where technology is being used as a direct substitute for previous tasks. An example might be taking notes using Google Docs, instead of in a spiral notebook. We strive to get teachers into the transformation stage of the SAMR model by offering various types of Professional Development



(https://www.schrockguide.net/samr.html)

Student Data Privacy

West Bridgewater is currently a member of the Student Data Privacy Consortium https://sdpc.a4l.org/
Being a part of this organization gives us access to resources to ensure that the applications we use are FERPA & COPPA compliant. This ensures that student privacy is protected and not shared outside of the application, as well as being compliant. West Bridgewater currently has Privacy agreements with 70 vendors. The goal is to keep these agreements current, as well as develop a review process for applications to ensure that all vendors we use are compliant.

Clever

West Bridgewater adopted Clever in 2016. This platform provides Single Sign-On (SSO) Services for many of the platforms used. By using this platform, students log in using their Google Information, and then can visit any of the applications that have been configured to work with this platform. No additional usernames or passwords are required.
For students in Kindergarten, we have provided QR codes for them to use to assist them logging into chromebooks, and to other platforms that work with Clever. This ensures that all students, and parents, have access to the platforms necessary in the classroom.
Finally, Clever provides critical analytics showing app usage across the district. This will aid in preparing a budget and ensuring that apps used have appropriate privacy agreements.

Communication

The district incorporates various methods of communication to reach parents and the community. At the current time, the department support several platforms that are used for communication:

- Aspen SIS (Email, Parent Portal)
- Apptegy (Website, Social Media publishing, Emergency Alerts)
- Smore (Newsletter)
- GSuite (Learning Management, Email, Document Collaboration)

The department will continue to work with administration to ensure that all platforms used for communication are meeting the needs of the district and the community.

Goals

- Develop a replacement plan for staff computers where all staff laptops will be replaced every 6-7 years.
- Replace all classroom projectors with interactive touch panels.
    - Start with the elementary schools and work through the high school classrooms.
- Hire an Instructional Technology Coach that will work with Staff on the effective use of technology in the classroom, and offer classroom support for platforms currently being used.
    - Work with teachers on reaching various levels on the SAMR Model
    - Explore the DLCS standards with teachers and coach them on using this framework in the classroom.
- Expand the department to include a full time Computer Technician/AV Manager.
- Develop a budget that will meet the needs of the district for years to come. This will include appropriate funding for annual software renewals, replacement equipment, Professional Development, and future initiatives.
- Develop a software review process that will ensure that all applications used with students are following Privacy Laws and are educationally appropriate.
- Create a searchable database of approved software applications that staff can access as needed.
- Develop an IT training plan for new hires