

Technology in the Westborough Schools

Spring update to the School Committee

May 23, 2018

Jon Green, Director of Technology

Why Westborough schools need technology

“Technology is an accelerator of greatness already in place, never the principal cause of greatness.” - Jim Collins, author of “Good to Great”

“Technology should empower users!” - Jon Green

- We have students who benefit from learning with technology
- We have skillful and dedicated teachers who want to help students learn with technology
- Technology helps students, teachers, and administrators be more efficient
- School and district operations are data heavy and benefit from IT

Overview Focus Points:

This presentation is organized into the following parts:

- Teaching and Learning
 - PK-3 students
 - 4-6 students
 - 7-8 students
 - 9-12 students
 - Teachers
 - Instructional support
- Communication and Management & Organization
- Technology Support and Infrastructure
 - Tech support
 - Infrastructure
- Budget

Teaching and Learning Students

Technology is an important part of our students' learning environment:

- Use of diverse digital media such as text, audio, and visual resources can help all of our learners access concepts and skills in multiple ways including those that work best for them
- Students learn with technology by incorporating it into their practice of researching, visualizing, writing, synthesizing, creating, communicating, discussing, and working together in ways that reduce barriers to understanding and accomplishment
- The capabilities afforded to students with mobile devices increase access to resources and experiences and reduce barriers to learning, understanding, and applying

Teaching and Learning

Teachers

Laptops, classroom projectors, and document cameras help teachers:

- Facilitate incorporation of multimedia using Universal Design for Learning (UDL) principles
- Facilitate professional collaboration and communication
- Model the 21st century skills and literacies our students need
- Facilitate data analysis for decision making
- Increase efficiency and productivity

Teaching and Learning

PK-3 Students

Overview:

- Preschool and Kindergarten classes get foundational use lessons
- Teachers in all grades use apps and website with projects, independent work, remediation, and extension with support from Building Technology Specialist and librarian
- Digital citizenship is part of learning throughout the year

Accomplished this year:

- More teachers are using SeeSaw to publish student work to parents
- Several classrooms in different grades are trying various programs and websites to help students be more familiar with keyboard layout
- Repurposed 2 year old iPads used by 6th graders to achieve 1:2 ratio
- Moved some iPads out of carts and into classroom sets

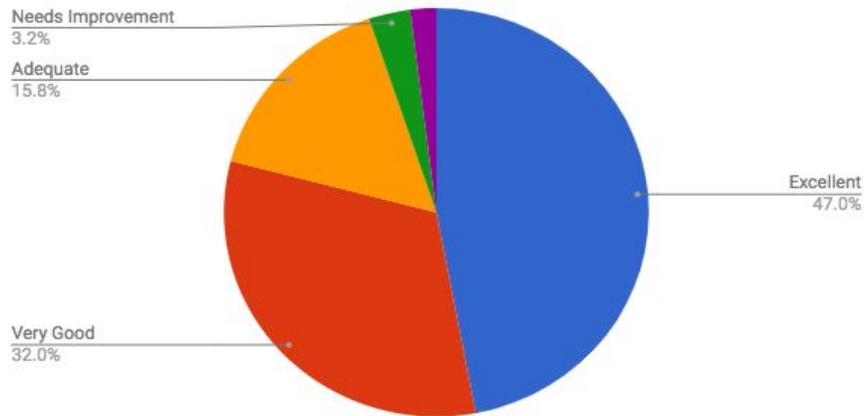
Planned for next year:

- Expand opportunities for students to practice keyboard letter recognition and location skills to prepare for computer based testing in grade 3
- Explore how Chromebooks can be used effectively

Teaching and Learning

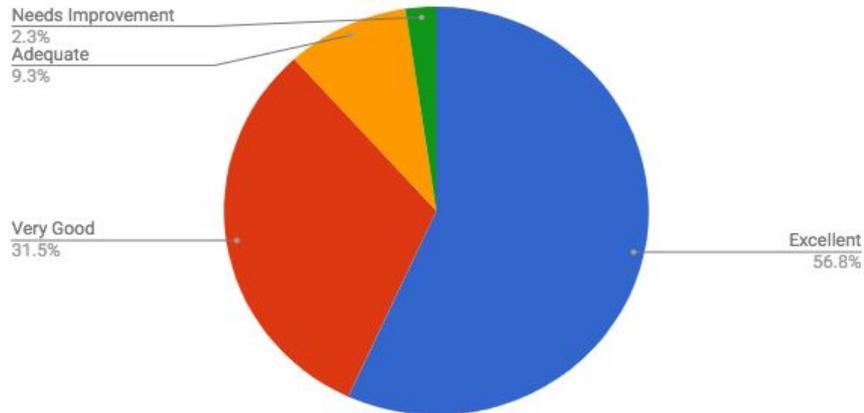
PK-3 Students

The quality of instruction my child receives in Technology/Library



79% of 253 responses were favorable

Rating of how effectively the school incorporates use of technology to enhance my child's learning.



88% of 257 responses were favorable

Teaching and Learning

Timeline of 1:1 program

Grade(s)	This year
4	1:1 with iPads that stayed at school by late September
5	1:1 with iPads that started going home by mid November
6	1:1 with iPads that started going home by mid September
7-9	1:1 with Chromebooks that went home from first day
10-12	Bring Your Own Device (BYOD)

Teaching and Learning

4-6 Students

Overview:

- Students use apps, websites, and services on iPads to organize and access curriculum materials and help make learning visible
- Teachers can individualize and differentiate
- Digital Citizenship incorporated into culture

Accomplished this year:

- Reimagined Media Center lab with flexible furniture and Makerspace
- Access to more Chromebooks
- Students able to print from GSuite apps on iPad
- Apps and subscriptions for grammar, family communication, data collection/analysis/visualization, coding, reading, and educational videos

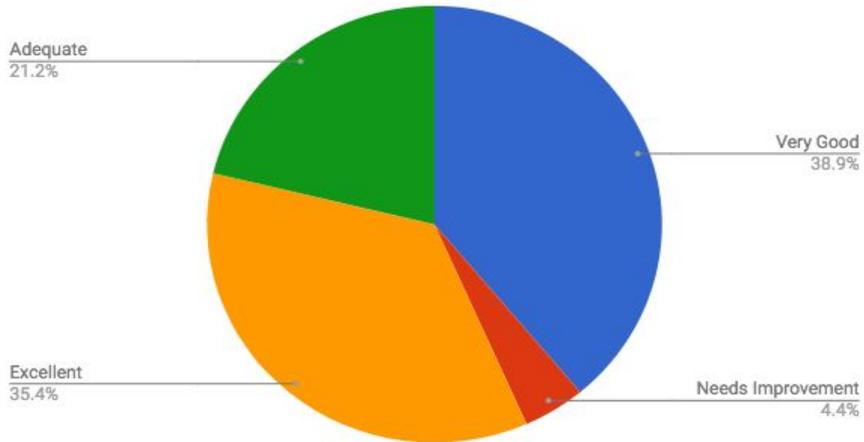
Planned for next year:

- More Makerspace projects and kits
- New apps and subscriptions as requested and vetted

Teaching and Learning

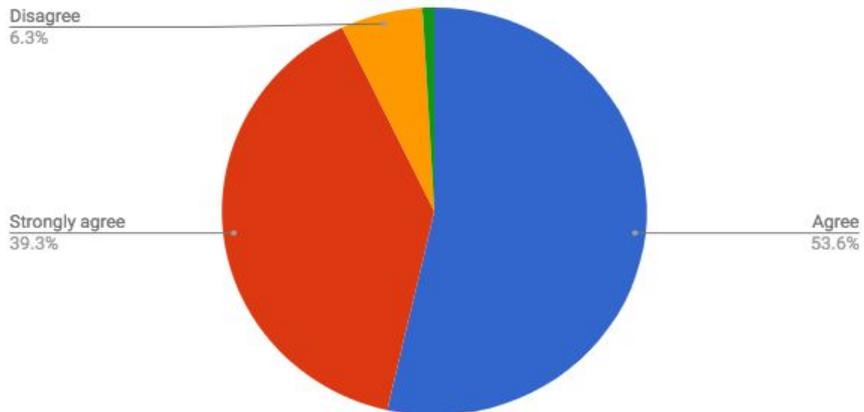
4-6 Students

My child receives quality instruction in technology/library



74% of 113 responses were favorable

My child has had a positive experience at Mill Pond School with the effective integration of technology



93% of 112 responses were favorable

Teaching and Learning

7-8 Students

Overview:

- Students use apps, websites, and services on Chromebooks to organize and access curriculum materials and help make learning visible
- Digital Citizenship incorporated into culture early and throughout the year

Accomplished this year:

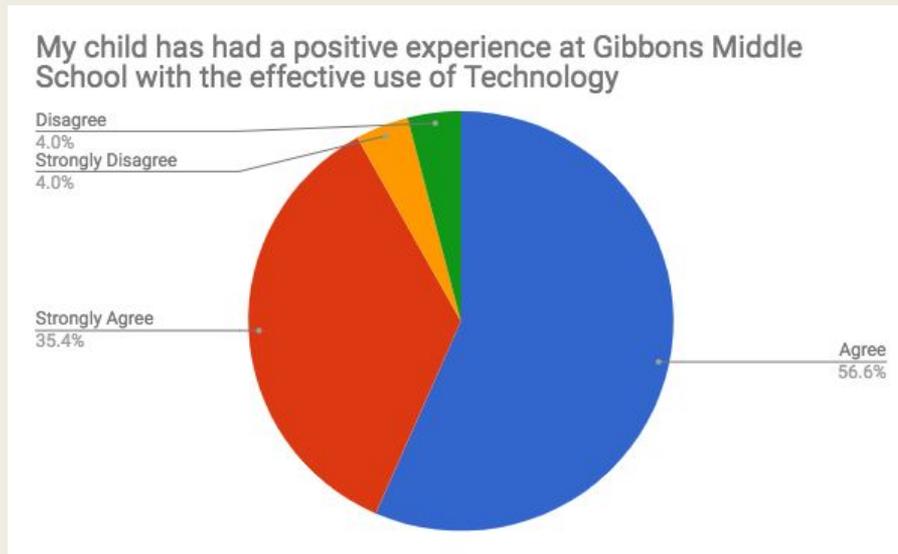
- Student Tech Squad meets as a club
- Students able to print from GSuite on Chromebooks
- Robotics with Lego Mindstorms
- iPads for additional digital multimedia creation options

Planned for next year:

- Advanced Lego Mindstorms features not currently available on Chromebook
- Geogebra for math on Chromebooks
- Other new apps and subscriptions as requested and vetted

Teaching and Learning

7-8 Students



92% of 99 responses were favorable

Teaching and Learning

9-12 Students

Overview:

- Every student should bring their charged device every day
- Students use apps, websites, and services on Chromebooks to organize and access curriculum materials and help make learning visible
- Digital Citizenship incorporated into culture early and throughout the year
- Ranger Tech Squad helps students be successful and productive with their devices

Accomplished this year:

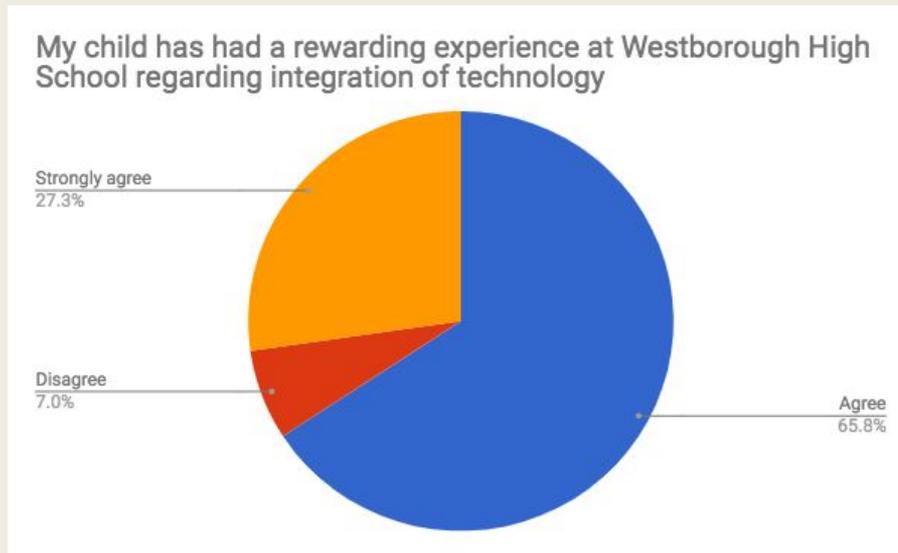
- Tech Support 1, 2 and Design Thinking courses for Ranger Tech Squad

Planned for next year:

- Pilot printing from GSuite apps on student devices
- Reduced reliance on loaners
- Geogebra for math on student devices
- Other new apps and subscriptions as requested and vetted

Teaching and Learning

9-12 Students



93% of 187 responses were favorable

Teaching and Learning

Teachers

Overview:

- Maintain five-year replacement cycle so laptops stay usable by replacing laptops as they complete their fifth year of service with option to choose Mac or Windows
- Outfit classrooms with interactive projectors and document cameras

Accomplished this year:

- Installed interactive projectors in middle school classrooms and conducted introductory workshops
- Piloted SMART Notebook and SMART Amp with middle school teachers
- Piloted new and improved teacher gradebook

Planned for next year:

- New classrooms at Hastings and Armstrong
- Fully deploy new teacher gradebook

Teaching and Learning

Instructional Support

Overview:

- Technology paraeducators at Armstrong, Fales, and Hastings
- Technology teacher and coach at Mill Pond
- Technology integration specialist shared across 7-12
- Student Tech Squads at Mill Pond, Gibbons, and WHS
- PK-8 School Technology Councils are actively problem-solving and supporting innovation

Accomplished this year:

- Innovation teacher working with teachers at Gibbons
- Student Tech Squad started at Gibbons as a club

Planned for next year:

- Explore Student Tech Squad during 7th period

Teaching and Learning

Professional Development

Overview:

- Teachers and staff share their expertise with colleagues
- Teachers attend and present at local conferences
- Teachers participate in locally hosted graduate level course
- Tech squads

Accomplished this year:

- Pilot of PBL PD
- Short-term innovation coach position now at Gibbons
- 35 teachers taking locally hosted graduate course

Planned for next year:

- More of the same

Tech for Communication and Management &

Accomplished this year:

- Parent Portal used to update contact and health forms and for various sign-offs
- Streamlining state data reporting process
- Streamlining process for registering new students
- Swipe card security system:
 - Operational at Gibbons as new standard
 - Integration into Gibbons' system is underway at Mill Pond, Fales, Armstrong, and The BORO
 - Included in Hastings renovation project
 - Included in WHS security camera project
- Forbes renovation
- Preschool registration, PE, and Facility Use websites redesigned

Planned for next year:

- Streamline payroll and time and attendance
- Increase use of electronic records management

Tech Support & Infrastructure

Overview

- Tech Support and Infrastructure that allow for frictionless operation of tools allows us to operate high on Maslow's Hierarchy/Bloom's Taxonomy
- Horizontal and vertical teams
 - Building Technology Specialist paraeducator at each school
 - Computer Support Technicians support multiple schools
 - Districtwide Data Architect, Data Specialist, AV Coordinator, and IT Infrastructure Administrator
 - Student Tech Squads at Mill Pond, Gibbons, and WHS
- We are always working to improve and optimize:
 - The wired network for security, bandwidth, and availability
 - The WiFi for high capacity and high density
 - Servers and storage arrays for security, performance, and capacity
 - Power systems for reliability and availability
 - Response and resolution times for typical cases
 - The overall experience users have with tech and the tech department

Tech Support & Infrastructure

Technical support

Accomplished this year:

- No prolonged or major system or service outages
- Computer based AP, MCAS, and ACCESS testing district wide
- Automated some move/add/change user processes
- Field trial of computer based MCAS testing at WHS
- Implemented remote management of interactive projectors at Gibbons and Mill Pond
- Increased ability to support voicemail and phone system programming

Planned for next year:

- Expanded computer based MCAS testing at WHS
- Automate more move/add/change user processes
- Adapt to unanticipated change

Tech Support & Infrastructure

Infrastructure

Accomplished this year:

- Reduced staff WiFi complaints
- Installed 10G fiber between MDF and IDF's at WHS
- Replaced ~50% of EOL switches at WHS
- Pilot to decrease single point of failure in WiFi infrastructure

Next year:

- Finish replacing EOL switches at WHS and connect to core at 10G
- Improve resiliency of WiFi infrastructure

Budget

We appreciate the community's ongoing generosity and commitment to support technology in our schools and take the accompanying responsibility seriously

- FY17 to FY18 was flat
- FY18 to FY19 decreased \$48,000 (6.1%)
 - Coincided with lull in teacher laptop replacements
 - Slowed replacement of projectors at WHS
 - Coming in close to projections
- FY19 to FY20 projecting increase of at least \$48,000 (6.5%)
 - Additional increase could reduce lease amounts and mitigate risk of rising interest rates

Community-based support

Westborough Education Foundation

- Equipment and supplies for teacher innovation

Westborough Ed Tech Fund

- Fund a Project campaigns
 - Mill Pond Makerspace
- Westborough 1:1 Store and hands-on BYOD device sessions

School Parent Groups

- Supplies and support

Tata Consultancy Services

- Hour of code

