BH-BL

smart schools investment plan

2016 • 2019

3 Year Technology Plan

www.bhbl.org

Burnt Hills - Ballston Lake CSD

50 Cypress Drive, Glenville, NY 12302 • (518) 399-9141

District Information

The Burnt Hills-Ballston Lake School District is proud to be one of the top performing school districts in the Greater Capital Region of New York State. Located within both Schenectady and Saratoga Counties, the district serves a suburban and rural area of approximately 40 square miles and includes parts of the towns of Ballston, Charlton, Clifton Park and Glenville. Modern residential developments are mixed in among the working farms, apple orchards and lake front property surrounding Ballston Lake.

The district serves approximately 3,173 students in kindergarten through twelfth grade and has five school buildings:

- Charlton Heights Elementary School
- Pashley Elementary School
- Stevens Elementary School
- Richard H. O'Rourke Middle School
- Burnt Hills-Ballston Lake High School.

A 100-year history of stability and excellence in education and of residents and staff working together defines the district which was created in 1915, when three one-room school houses joined forces and became New York's first ever "consolidated" school district.

The district's five schools have achieved an enviable record of pupil performance, staff accountability, and program efficiency, and have been named National Schools of Excellence, National Exemplary Schools, and most recently BH-BL High School was named a Reward School. These accomplishments are a reflection of students who are intelligent and willing to work hard, parents who value education and push their children to excel, and a community that demands outstanding schools. These accomplishments are also a reflection of staff who emphasize basic skills and work to improve programs annually, yet recognize the need to work within a budget. There are over 700 faculty and staff employed by the district.

While academics are at the heart of education, students also are provided with extensive extracurricular programs, a wide variety of clubs and athletic offerings, and numerous art- and music-related opportunities.

The proximity to educational, cultural, social and outdoor activities makes BH-BL a popular place for families to settle. It's an easy commute to the cultural centers and employers in neighboring Schenectady, Albany and Saratoga Springs. Major shopping malls, restaurants, theaters, and sporting facilities are only 15 to 30 minutes from the school district.

Who are we?

The District Instructional Technology Leadership Team consists of the five building teacher leaders called the Building Technology Coordinators (BTCs), as well as administrators and technology support personnel. The team for the 2015-16 school year is listed below.

Patrick McGrath
Superintendent of Schools

Maryellen Symer
Assistant Supt. for Curriculum & Instruction

Christopher Abdoo
Assistant Supt. for Support Services

Jill Bonacio - Pashley
Elementary School Principal

Tim Brunson - High School
High School Principal

Chris Deso - Charlton Heights
Fifth-Grade Teacher

Lisa Febraio - O'Rourke
Sixth-Grade Teacher

Kate Gurley - K-12 ELA
ELA /RTI /AIS Supv. /Prof. Dev. Coordinator

Brian Kane - High School
Social Studies Teacher

Roger Kopa - Pashley
Fourth-Grade Teacher

Michael Mosall - High School
Social Studies Teacher and TA President

Ann-Marie Mueller
IT Operations Manager

Dave Somoza - Stevens
Fifth-Grade Teacher

Michael Steinberg
Instructional Technology Specialist

William McQuay - K-12
Math Department Supervisor

Development of Technology Plan

The Burnt Hills-Ballston Lake Central School District takes a distributed approach to technology decision making including, but not limited to, the development of the instructional technology plan. To understand how the plan was developed, it is important to understand the structure and function of the Instructional Technology Leadership Team. Members of the team represent a variety of stakeholders who report back to the five schools' Building Councils. Each Building Council has been identified a teacher to be on a Building Technology Coordinator (BTC). The BTC acts as a liaison between the IT Leadership Team and the Building Council.

This group, entitled the District Instructional Technology Leadership Committee, meets twice a month to discuss agenda items such as procurement, professional development, technology support, best practices and provide input for other executive decisions.

An additional responsibilities of the five Building Technology Coordinators is to facilitate the building technology committee meetings with the building principal as part of the district's Shared Decision Making model. Each building technology committee includes the school library media specialist along with classroom teachers. Committee discussions are brought to the District IT Leadership Committee. The District Technology Plan was developed as part of the work of this large stakeholder group.

Key Dates and Outcomes

January-March 2015: Building Committees met to gather input from constituents. The input was given directly to each Building Council, which is the formal shared-decision-making body for the building. The Building Council includes parents and support staff.

February 26, 2015: The District IT Leadership Committee met with Aaron Bochniak and Dave Versocki (Deputy Directors for Northeastern Regional Instructional Center) for updates on the Smart Schools Bond Act and to provide guidance on updating Part 100.12 of the Technology Plan.

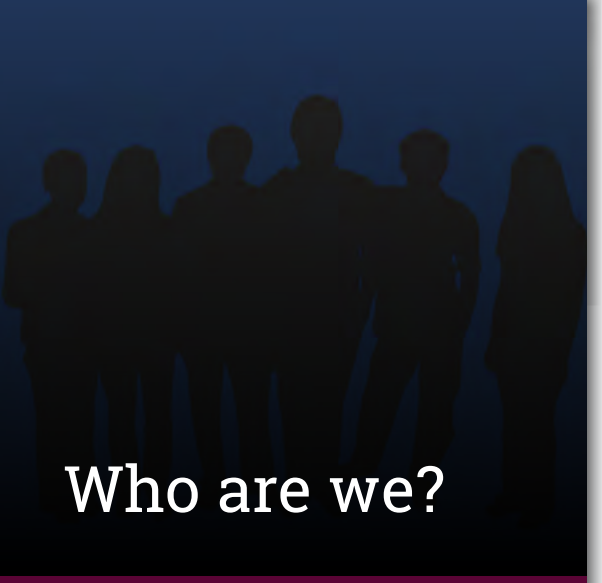
March 10, 2015: The District IT Leadership Committee was briefed on updates to Blackboard 9 in preparation for recommendation that this be the districtwide Learning Management System.

March 24, 2015: The District IT Leadership Committee a received report on year-long embedded Google Apps for Education training for elementary teachers. Teacher feedback was reviewed and the feedback was used for the formation of professional development in Part 100.12 of the Technology Plan. Additionally, the committee arranged for teachers and administrators to attend the NYSCATE conference on Blended Learning in an effort to help develop Part 100.12 of the plan.

April 14, 2015: The District IT Leadership Committee reviewed input from building committees and the memo on Part 100.12 guidance from NERIC Director Dale Breault. The Committee worked on the K-12 Scope and Sequence document.

May 12, 2015: The District IT Leadership Committee held a workshop to write an updated District Technology Plan.

May 28, 2015: The District IT Leadership Committee held a workshop to finalize the Technology Plan.



Who are we?

Mission Statement

The Burnt Hills-Ballston Lake Central School District creates an educational environment that ensures opportunities for learning, personal growth, and social responsibility.

Core Beliefs

- The BH-BL community values its children and the quality of their education.
- Comprehensive public education is available to all.
- The district provides a variety of experiences to allow all children to learn.
- High academic achievement is a priority.
- Students, staff, parents, and community members are partners, and all have a personal responsibility in the educational process.
- Students and staff need to be challenged to achieve excellence.
- Continuous improvement is essential.
- Change is the result of thoughtful study involving students, staff, and the community.
- Learning is a lifelong process.
- Quality education is worth the investment and requires sound, fiscal management.

Why do we use Technology?

Instructional Technology Vision Statement

Our vision is to develop an educational technology program that supports the implementation of the Skills and Themes of BH-BL's 21st Century Framework for Learning. We view technology as an important tool through which this objectives can be achieved. In addition to supporting our 21st Century Framework for Learning, our district's education system will leverage the power of technology to help measure student understanding and use assessment data for continuous improvement. We want to leverage the power of technology to open new opportunities for teaching and learning including flipped classrooms, blended learning, and distance learning. We use technology to report that data to parents and the public at large. We believe that district technology should be guided by stakeholders who have meaningful input into technology leadership and decision making. We will support instruction with readily available classroom instructional technology and a secure, reliable, cost-effective technology infrastructure, and effective IT support.

Context and Historical Development

BH-BL's 21st Century Framework: Skills, Themes & Guiding Questions

The use of technology in our district fits as part of the larger commitment that the district has made to educating our students in an ever-changing 21st century environment. What does it mean to provide 21st century education?

In September 2009, a Strategic Framework Committee made up of 10 members began meeting to answer the question: What do our students need to know and be able to do in order to be successful in the 21st Century?

Committee members were chosen to represent a cross-section of the local and educational community, and input was solicited from hundreds of interested individuals. In an effort to gain extensive information from varying perspectives, several tools were used to collect and synthesize data simultaneously. A survey was designed and posted on the BH-BL district website to collect input from residents, staff and students at large. The survey was advertised aggressively and resulted in much interest. A total of 699 people completed the survey.

While survey input was being collected, members of the committee read and analyzed educational research related to 21st-century skills, and collected additional input from constituent groups outside of the target survey audience. Committee members made a preliminary report of their findings to the Board of Education in December 2009. Structured input sessions were held with teachers, administrators, and support staff, soliciting input on 21st-century skills, themes, and guiding questions. Questions and suggestions from these meetings were used to prepare the final report, entitled **Preparing Students for the 21st Century**. The report refers to a list of Themes and Skills that are critical to education in the 21st century. The report also identifies six Guiding Questions the district uses to model the development of curriculum and instruction.

Themes

Global Awareness

- Understanding global issues such as economic changes, competition for natural resources, and growth of the worldwide middle class
- Understanding, appreciating, and working with individuals representing diverse cultures, religions, etc.

Life Balance & Wellness

- Taking charge of your life through balancing academics, extracurricular activities, sports, families, friends, media consumption and use of electronic devices, etc.
- Making appropriate choices regarding health and wellness
- Understanding preventative health measures such as: nutrition, exercise, risk avoidance, stress reduction

Desire to Learn

- Discovering what ignites an interest to learn more
- Feeling capable and competent as learners

Leadership

- Using interpersonal and problem-solving skills to influence and guide others toward a common goal
- Utilizing the strengths of others to accomplish desired results
- Inspiring others to reach their best through example

Energy & Sustainability

- Demonstrating an understanding of the environment and conditions affecting it such as air, climate, land, food, energy, water and ecosystems
- Understanding society's impact on the natural world
- Taking action toward addressing environmental issues

Meaning/Purpose/ Passion

- Discovering and cultivating talents, interests and passions
- Seeing the relevance of what is being learned in a clear and compelling way

Ethics, Civic & Personal Responsibility

- Exercising the rights and responsibilities of citizenship
- Demonstrating integrity and ethical behavior
- Acting responsibly by keeping the interests of others in mind

Character Development

- Treating self and others with empathy, respect, compassion, etc.
- Acting responsibly toward self, others and surroundings

Skills

Problem Solving/Critical Thinking

- Solve real-life problems in conventional and innovative ways
- Ask questions that clarify various points of view that lead to better solutions
- Interpret various forms of information, draw conclusions and solve problems
- Reflect critically on learning experiences and processes

Manage, Analyze and Synthesize Information

- Access information efficiently and effectively
- Evaluate information thoughtfully and critically
- Use information accurately, creatively, and ethically for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- See the relevance of what is being learned in a clear and compelling way

Financial Literacy

- Know how to make appropriate personal economic choices
- Understand the role of the economy in society

Productivity

- Set and achieve goals
- Manage time and projects effectively
- Produce and be accountable for results
- Work independently and with others to complete tasks without direct oversight
- Demonstrate initiative to gain knowledge and enhance skills

Communication

- Articulate thoughts and ideas using a variety of forms such as: oral, written, nonverbal, and electronic
- Use active listening to understand others' messages
- Communicate for a variety of purposes such as to inform, instruct, motivate, and persuade

Teamwork/Collaboration

- Interact positively and effectively with others
- Collaborate and cooperate effectively within and among diverse teams
- Hold self and others accountable for time, work production and quality results

Innovation/Creativity

- Create new ideas
- Work creatively with others
- Act on creative ideas and innovations

Adaptability

- Be flexible with varied roles, responsibilities, schedules, and situations
- Work effectively in a climate of ambiguity and change
- Deal positively with praise, setbacks and criticism

Media Literacy

- Understand, create, and utilize the most appropriate media tool to communicate to a variety of audiences (i.e. presentation, podcast, blog, short animation, etc.)
- Understand the ethical/legal issues surrounding the use of media

21st Century Curriculum: Guiding Questions

Based on the framework of Skills and Themes, the **21st Century Framework** Committee proposed the following guiding questions should be considered when writing curriculum:

?

1	What instructional strategies and tools should be used to maximize learning, engagement and achievement of 21st-century students?
2	How will this lesson, unit, or course explicitly teach students to think, read, write and express themselves like an expert in the particular content area?
3	In what new ways can we motivate and inspire students to want to learn about the subject area?
4	What opportunities will students have to apply 21st-century learning to relevant, real-life situations?
5	How will effective teaching and assessment of 21st-century learning be balanced with required standardized testing?
6	What partnerships will enhance the learning experience?

Examples of partnerships include, but are not limited to, intra-district, inter-district, parents, businesses, not-for-profits, community agencies, and post-secondary institutions.

Strategies for Implementing: 21st Century Framework for Learning Including Technology

http://www.bhbl.org/Publications/Academics/PDFs_other/21st_Cent_Implementation_Strategies.pdf

District leaders developed a document entitled "Strategies for Implementation of the BH-BL 21st Century Framework for Learning." This document made a list of recommendations for how the district could most effectively implement the 21st Century Themes and Skills discussed on previous pages. Many of these recommendations specifically involved a commitment to improving technology in the district. For example:

- Utilize highly interactive technology to engage students with web-based learning, personal technology, and distance learning.
- Improve classroom environment (desks, more storage, tables, outlets) to allow for more movement and group work.
- Build interpersonal, presentation, and teamwork skills in the classroom.
- Incorporate technical, digital, and financial skills for students to understand the role of economy, culture, society an the individual's impact upon the world.
- Provide and support professional development to inspire and encourage teachers to explore new teaching strategies and technology to deliver high-quality instruction for the 21st century.
- Promote extended learning opportunities and make them more accessible by offering a variety of delivery mechanisms.
- Expand alternative, differentiated learning opportunities .
- Integrate state-of-the-art technology and delivery systems to enhance learning outcomes.
- Expand opportunities for collaboration and communication to increase student learning opportunities.
- Increase communication with students, parents, the community and other schools utilizing digital resources.
- Use collaboration and communication tools to create and share knowledge with a larger audience because "the world is our stage."
- Utilize a balanced whole child educational approach that promotes academic, career, social, emotional, and physical development.

2013 Bond Referendum

Building Our 2nd Century

In the fall of 2013, district residents approved a **$34.2 million bond referendum** to bring significant improvements to the district's facilities. One of the most exciting aspects of the referendum is how much it will improve and extend classroom spaces to accommodate changes in how students learn in the 21st century. In fact, $19.8 million of the work focuses on the need to create 21st-century learning spaces. A hallmark of 21st century learning is today's easy availability of information. In the past, a primary role of schools was to transmit information to students. Small classrooms, lectures, and desks in neatly lined rows served schools well. In the 21st century, the challenge for schools is very different. One small computer or smartphone holds infinitely more information than any traditional textbook, lecture, or library of the past. Teachers now teach students how to access, sort, filter, and use the information that could otherwise so easily inundate them. Classroom spaces must allow students to collaborate, communicate, design, create, invent, solve problems, and think critically. This is the essence of 21st-century learning.

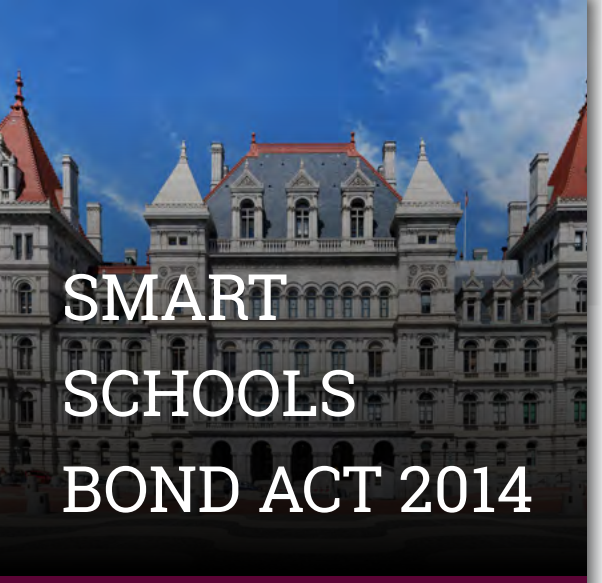
The referendum includes nearly $1 million earmarked for electrical infrastructure upgrades and to provide ample access to electrical power in all classrooms. Another $2.7 million is dedicated to classroom upgrades across the district. Some but not all classrooms were upgraded in various ways in the past, therefore, the plan is to bring each classroom up to a common district standard with regard to such things as lighting, doors, wireless coverage, projection, electrical access, heating and ventilation.

Technology has transformed the modern workplace, and it is important our facilities keep pace. The project is funding an addition on the southwest corner of the high school that will be devoted to applied arts and technology. The STEAM (science, technology, engineering, arts & mathematics) addition will include labs for hands-on work in areas such as advanced manufacturing, robotics, electronics, computer science, graphic design, applied math, 2-D and 3-D art, computer-aided design, and digital music.

High school libraries have been shifting away from the traditional image of a quiet study space with shelves of books to more vibrant, interactive, technology-based centers of information. In order for the high school library to become even more of a hub for teaching, learning and research, the layout within the current footprint will be reconfigured. The envisioned "Library Learning Commons" will make use of wasted space, condense the shelving, and create more adaptable spaces. It will include seating conducive to study and quiet reading, ample access to technology, and multi-use rooms for small group meetings, trainings and presentations.

In addition to the initiatives described above, the referendum includes many other improvements to instructional spaces. Among these are renovated middle school science labs, a black-box theatre and modern presentation center in the current high school red and blue rooms, and new, small flexible use teacher-student workspaces in the elementary schools.

Equipment for classroom upgrades and special function instructional spaces (i.e., high school Black Box/TV Studio, Distance Learning rooms, Red Room lecture hall, robotics classroom, computer science suite, CISCO suite, high-tech manufacturing labs (wood, metals) must be addressed in the three-year technology plan.



SMART SCHOOLS BOND ACT 2014

In November of 2014, the voters of New York State approved the Smart Schools Bond Act. This legislation enables districts to access state funding in high-priority areas including technology. The Burnt Hills-Ballston Lake School District received a $1.9 million allocation through Smart Schools. The Smart Schools legislation allows the district to spend these funds in any of six specific areas.

Six Allowable Expenditure Categories Under Smart Schools Funding:

1. Install high-speed broadband or wireless connectivity for schools.
2. Install high-speed broadband or wireless connectivity for communities.
3. Acquire learning technology equipment.
4. Construct, enhance or modernize educational facilities to accommodate pre-kindergarten programs.
5. Construct, enhance and modernize educational facilities to provide instructional space to replace classroom trailers.
6. Install high-tech security features in school buildings and on school campuses.

Smart Schools

District:
Burnt Hills-Ballston Lake
Proposed Allocation:
$1,900,404

BURNT HILLS BALLSTON LAKE

Technology and the Curriculum

BH-BL Technology Goals
(Required for NYSED 100.12 Technology Plan)

- Refine critical-thinking skills and foster creativity by encouraging and exploring ways for teachers and students to collaborate on shared digital projects across curriculum areas using relevant software applications.
- Employ hands-on, relevant and rigorous project-based learning opportunities for groups and individuals using technology to assist with collaboration and the sharing of information within these projects.
- Use relevant and rigorous curriculum based on the district technology scope and sequence (below) in order to differentiate instruction to meet the curricular needs of all learners.
- Utilize new technologies to vary modes of course delivery (i.e., Blended and Distance Learning.)
- Provide global access to information utilizing highly interactive technology to engage students with web-based learning, personal technology, and distance learning.
- Maintain appropriate programs that create a safe and secure learning environment for all students and develop skills for students to be responsible digital citizens.
- Acquire and maintain a strong infrastructure to support the technology-rich educational practices that embody our curricular goals.
- Expose students to careers and the technological skills and proficiencies needed to compete in a global market.
- Cultivate students' ability to use technology to read, write and express themselves as experts in a 21st-century world.
- Provide and support ongoing professional development to inspire and encourage all teachers to explore new teaching strategies and use new technologies to deliver the highest quality instruction.

BH-BL Technology Scope and Sequence

In order to reach the goals above the district is piloting a new K-12 Technology Scope and Sequence. A scope and sequence is a document that will map out the different skills and tools that will be introduced as students move through the various grade levels across the district. This document will help to ensure that our students' experiences in using and learning about technology is not only thorough, but also fair and equitable across classrooms and schools. The skills and tools needed are organized into three major digital literacy categories:

- Demonstrate proficiency in the use of computers and applications as an understanding;
- Demonstrate the responsible use of technology and understanding of ethics and safety issues using electronic media at home, in school and in society; and
- Demonstrate the ability to use technology for research, critical thinking, decision making, communication and collaboration, and creativity and innovation.

This document is a pilot. The plan is to spend the first year looking at how well our students' current experiences overlap with this "ideal" scope and sequence. This analysis will help us to make curricular decisions (and possible adjustments to the scope and sequence document) in subsequent years.

Scope and Sequence (Grades K-5)

Digital Literacy Categories		Skills	Suggested Tools	K	1	2	3	4	5	Alignment to CCSS
		I - Introduce R- Reinforce M- Mastery (ability to teach others) O - Optional for grade level								
Demonstrate proficiency in the use of computers and applications as an understanding	Basic Operation	Turn on a computer and login.		I	R	M	M	M	M	Fundamentals
		Use a pointing device such as a mouse to manipulate shapes, icons; click on the Omnibox, radio buttons, check boxes; identify links; use scroll bar.	Kidspiration, Chrome browser	I	R	M	M	M	M	
		Use desktop icons, windows, tabs, and menus to open applications and documents.	Chrome browser, iPad	I	R	M	M	M	M	
		File management-saving documents.	Online Storage and Retrieval (Google Drive, Dropbox, etc), school servers, and flash drives.	O	I	R	M	M	M	
		File management- identify file formats (.doc, .pdf, .jpeg, .png, .mov, .xls).	Google Drive, Microsoft Office	O	O	O	I	R	R	
		Navigate and use appropriate devices and online tools for the given task.	iPad, Chromebook, Laptop, PC, Web browser, Apps, Extensions	I	R	R	M	M	M	
		Use accurate technology terminology.	Google Apps for EDU	I	R	R	R	R	R	
	Troubleshooting	Check for spelling	Youtube	I	R	R	M	M	M	
		Ask a friend		I	R	M	M	M	M	
		Use online help resources		O	O	I	R	M	M	
		Check device cables (Internet connectivity, power source)		O	I	R	M	M	M	
	Keyboarding	Use proper posture and hand position	Online Keyboarding websites	I	I	I	R	R	M	W 6
		Locate and use letter and numbers keys with left and right hand placements.	http://www.sense-lang.org/	I	I	I	R	R	M	
		Locate and use correct finger, hand for space bar, return/enter and shift key.		I	I	I	R	R	M	
		Typing proficiently with minimal glancing at the keyboard.		I	I	I	R	R	M	
		Use keyboard shortcuts		O	O	O	I	R	R	
	Word Processing	Use a word processing application to write, edit, print and save assignments.	Google Drive & Apps (Docs, Slides, Sheets, Forms, etc.), Microsoft Office (Word, PowerPoint, Excel, etc.)	I	R	M	M	M	M	W 5, W 6, W 10
		Use menu/tool bar functions (font/size/style/line spacing, margins to format, edit and print a document.		O	I	R	M	M	M	W 5, W 6, W 10
		Highlight text, copy and paste text.		O	O	I	R	M	M	
		- Insert images within the document and from outside sources - Insert and size graphic in a document		O	I	R	M	M	M	W 5, W 6, W 10
		Proofread and edit writing using appropriate resources	Dictionary, Spell Check, Grammar, Thesaurus	O	O	I	R	M	M	L 4
		Peer edit using comment function.	Google Apps for EDU	O	O	O	O	I	R	W 5, W 6, W 10, SL 1
	Spreadsheet (Tables/Charts and Graphs)	Demonstrate an understanding of the spreadsheet as a tool to record and organize information.	Google Sheets, Microsoft Excel, Numbers	O	O	O	I	R	R	MD
		Identify and explain terms and concepts related to spreadhseets (cell, column, row, values, labels, chart, graph).		O	O	O	I	R	R	MD
		Enter/edit data in spreadsheets.		O	O	O	I	R	R	MD
		Use spreadsheet data to choose and create an appropriate graph.		O	O	O	O	O	I	MD
		Perform calculations using formulas.		O	O	O	O	O	I	MD
		Use mathematical symbols e.g. + add, - minus, * multiply, / divide, ^exponents.		O	O	O	O	O	I	MD
	Multimedia and Presentation Tools	Create, edit and format text on a slide.	Google Slides, Keynote, Prezi, Microsoft PowerPoint	O	I	R	M	M	M	W 6
		Use a variety of technology tools (e.g., dictionary, thesaurus, grammar checker, calculator, graphing calculator) to maximize the accuracy of the work.	Goole Apps for Education	O	O	O	I	R	R	
		Create a series of slides and organize them to present research or convey an idea.	Google Slides, Keynote, Prezi, Microsoft PowerPoint, Lucid Press	O	O	I	R	M	M	W 6
		Copy and paste or insert graphics; change their size and position on a slide.	Google Slides, Keynote, Prezi, Microsoft PowerPoint	O	O	O	I	R	M	W 6, SL 5
		Use painting and drawing tools/applications to create and edit work.	Educreations, Doodle, Showme, Google Drawings, Lucid Chart	O	O	I	R	M	M	W 6, SL 5

Scope and Sequence (Grades K-5)

Demonstrate the responsible use of technology and understanding of ethics and safety issues using electronic media at home, in school and in society	Acceptable Use, Copyright and Plagiarism	Explain and demonstrate compliance with classroom, school rules (AUP) regarding responsible use of computers and networks.	BH-BL Library Program, Common Sense Media	I	R	R	M	M	M	Digital Citizenship
		Explain responsible use of technology and digital information; describe possible consequences of inappropriate use.		I	R	M	M	M	M	Digital Citizenship
		Explain Fair Use guidelines for the use of copyrighted materials (e.g. text, images, music, video in student projects) and giving credit to media creators.		O	I	R	R	M	M	Digital Citizenship
		Identify and explain strategies for safe and efficient use of computers (e.g. passwords, virus protection, popup blockers).	BH-BL Library Program, BrainPop	O	I	R	M	M	M	Digital Citizenship
		Demonstrate safe email practices, recognition of potentially public exposure of email and email etiquette.	BH-BL Library Program, Gmail	O	O	O	I	R	M	Digital Citizenship
		Identify cyberbullying and describe strategies to deal with such situations.	BrainPop, Common Sense Media, BH-BL Library Program	I	R	R	R	M	M	Digital Citizenship
		Recognize and describe the potential risks and dangers associated with various forms of online communications (social media sites, chat rooms, texting, IM, etc.).		I	I	R	M	M	M	Digital Citizenship
Demonstrate the ability to use technology for research, critical thinking, decision making, communication and collaboration, and creativity and innovation	Research and Gathering Information	Use age appropriate technologies to locate, collect, organize content from media collection for specific purposes, citing sources.	EasyBib, Bibme, Creative Commons, Google Docs, BHBL Library Program	I	R	R	M	M	M	RI 5, RI 7
		Perform basic searches on databases (e.g. library research pages, library catalog, One search, encyclopedias, etc.) to locate information.	BH-BL Library Program, Destiny library catalog and One Search, World Book, Grolier, eLibrary	O	O	I	R	M	M	RI 5, RI 7
		Evaluate teacher-selected or self-selected Internet resources in terms of their usefullness to research.	Common Sense Media, BH-BLlibrary program	I	R	R	M	M	M	RI 5, RI 7
		Use Web 2.0 tools (e.g. online discussions, blogs, wikis, vlogs) to gather and share information.	Google Apps for EDU	O	O	O	I	R	M	RI 6, RI 7, RI 9
		Use Web 2.0 tools (e.g. online discussions, blogs, wikis, vlogs) to gather and share information	BH-BL Library Program, Google Apps	I	R	M	M	M	M	RI 7
	Communication and Collaboration	Work collaboratively online with other students under teacher supervision.	Google Apps for EDU, Google Presentation, Google Classroom	O	O	I	R	M	M	W 6
		Use a variety of age-appropriate technologies (e.g. drawing program, presentation software) to communicate and exchange ideas.	Google Drawings, Google Slides, Showme, Voicethread, Google Classroom, Lucid Press	O	I	R	M	M	M	W 6, W 10
		Create projects that use text and various forms of graphics, audio and video (with proper citations) to communicate ideas.	Google Docs, Google Slides	O	O	I	R	M	M	W 6, W 10, SL 2, SL 5
		Evaluate multimedia presentations for organization, content, design, presentation and appropriateness of citations.	Goobric, Forms, Docs, Sheets, Google Classroom, Lucid Press	O	O	O	I	R	M	W 6, W 10, SL 3
		Use appropriate Web 2.0 tools for communication and collaboration.	Voicethread, Piclits, Prezi, Gmail, Blogger, KidBlog, Google Apps	O	O	I	R	M	M	W 6, W 10, SL 1

Scope and Sequence (Grades 6-12)

Digital Literacy Categories		Skills	Suggested Tools	6	7	8	9	10	11	12	Alignment to CCSS
		I - Introduce R- Reinforce M- Mastery (ability to teach others) O - Optional for grade level									
Demonstrate proficiency in the use of computers and applications as an understanding	Basic Operation	Identify successful troubleshooting strategies for minor hardware and software issues/problems (e.g., "frozen screen").	Google, YouTube	R	R	M	M	M	M	M	Technology Operations and Concepts
		Independently operate a variety of wireless and peripheral devices.	iPad, smartphone, Chromebook, camera, scanner	R	R	M	M	M	M	M	Technology Operations and Concepts
		Compress and expand large files.	Youtube, Google Apps for EDU, Zip file	I	R	M	M	M	M	M	Technology Operations and Concepts
		Identify and use a variety of storage media and provide a rationale for using a certain medium for a specific purpose.	Online Storage (Google Drive, Dropbox, etc) and flash drives.	R	M	M	M	M	M	M	Technology Operations and Concepts
		Identify file formats and select appropriate programs for use and manipulation of those files.	Google Apps for EDU	R	M	M	M	M	M	M	Technology Operations and Concepts
		Use accurate technology terminology.	Google Apps for EDU	R	R	R	R	R	R	R	Technology Operations and Concepts
		Independently integrate keyboarding skills with accuracy and speed. (For students with disabilities, use alternate input techniques as appropriate.)	Apps for EDU, Any dictation app (for students with disabilities)	R	M	M	M	M	M	M	W 6
		Identify and assess the capabilities and limitations of emerging technologies.	Goobric, Rubrics, BH-BL Library program	I	R	M	M	M	M	M	Creativity and Innovation
	Word Processing	Demonstrate use of intermediate features in word processing application (tabs, indents, headers and footers, end notes, bullet and numbering, tables).	Google Apps for EDU	I	R	M	M	M	M	M	W 5, W 6, W 10
		Apply advanced formatting and page layout features when appropriate (colums, templates, and styles) to improve the appearance of documents and materials.		I	R	M	M	M	M	M	W 5, W 6, W 10, SL 5
		Highlight text, copy and paste text		R	M	M	M	M	M	M	W 5, W 6, W 10
		Use the Comment function in Review, or Suggested Edits for peer editing of documents.		R	M	M	M	M	M	M	W 5, W 6, W 10, SL 1
		Use the Revision History feature for peer editing of documents.		I	R	M	M	M	M	M	W 5, W 6, W 10, SL 1
	Spreadsheet (Tables/Charts and Graphs)	Use spreadsheets to calculate, graph, organize, and present data in a variety of real-world settings and choose the most appropriate type to represent given data.	Google Sheets, Google Forms, Excel	I	R	M	M	M	M	M	F,SMP 5, RI 7
		Enter formulas and functions; use the auto-fill feature in a spreadsheet application.	Google Sheets, Google Forms, Excel	O	O	I	R	R	M	M	F, SMP 5, RI 7
		Use functions of a spreadsheet application (e.g., sort, filter, find.)	Google Sheets, Google Forms, Excel	O	I	R	R	M	M	M	F, EE, SMP 5, RI 7
		Use various number formats (e.g. scientific notations, percentages, exponents) as appropriate.	Google Sheets, Google Forms, Excel	O	I	R	M	M	M	M	EE, SMP 6
		Use advanced formatting features of a spreadsheet application (e.g., reposition columns and rows, add and name worksheets,use multiple sheets within a worksheet).	Google Sheets, Google Forms, Excel	O	I	R	M	M	M	M	F, SMP 5, RI 7
	Mathematical Applications	Draw two dimensional geometric shapes using a variety of technology applications.	Google Drawing, Paint, AutoDesk	O	O	I	R	M	M	M	G, SMP 5
		Use and interpret scientific notations using a variety of technology applications	Google Sheets, Excel, Gmath	O	O	O	I	R	M	M	EE, SMP 5
		Explain and demonstrate how specialized technology tools can be used for problem solving, decision making, and creativity in all subject areas.	Simulation software, environmental probes, computer aided design, geographic information systems, dynamic geometric software, graphing calculators	I	R	M	M	M	M	M	EE, A, F, SP, SMP5, W 8, SL 5
	Multimedia and Presentation Tools	Create presentations for a variety of audiences and purposes with use of appropriate transitions and animations to add interest.	Google Presentatiosn, Prezi, Haiku, Powerpoint, Keynote	R	M	M	M	M	M	M	SMP 3, SL 5
		Use a variety of technology tools (e.g., dictionary, thesaurus, grammar checker, calculator, graphing calculator) to maximize the accuracy of the work.	Google Apps for EDU	R	M	M	M	M	M	M	SMP 5, W 6
		Make strategic use of digital media to enhance understanding.	BH-BL Library program, Google Apps for EDU	R	M	M	M	M	M	M	SL 5
		Use painting and drawing tools/applications to create and edit work.	Google Drawings, Paint	R	R	M	M	M	M	M	W 6, SL 5
		Use editing tools to edit video (Cropping, trimming, adding voice over, adding still pictures, etc.).	iMovie, WeVideo, YouTube	I	R	R	M	M	M	M	RL 7, RI 7
		Independently use appropriate technology tools (e.g., graphic organizers, audio, visual) to define problems and propose hypotheses.	Popplet, Mindmap,Google Apps for EDU	R	R	M	M	M	M	M	SMP 3, SL 5

Scope and Sequence (Grades 6-12)

Demonstrate the responsible use of technology and understanding of ethics and safety issues using electronic media at home, in school and in society	**Acceptable Use, Copyright and Plagiarism**	Comply with the district's Acceptable Use Policy (AUP) related to ethical use, cyberbullying, privacy, plagiarism, spam, viruses, hacking, and file sharing.	BH-BL Library Program, Common Sense Media, AUP	R	R	R	R	R	R	R	Digital Citizenship
		Explain Fair Use guidelines for using copyrighted materials (e.g., images, music, video, text) and consequences of misuse in school projects.		R	R	M	M	M	M	M	Digital Citizenship
		Analyze and explain how media and technology can be used to distort, exaggerate, and misrepresent information.		I	R	M	M	M	M	M	Digital Citizenship
		Explain the potential risks associated with the use of networked digital environments (e.g., internet, mobile phones, wireless, LANs) and sharing personal information.	BH-BL Library Program, Gmail	I	R	M	M	M	M	M	Digital Citizenship
Demonstrate the ability to use technology for research, critical thinking, decision making, communication and collaboration, and creativity and innovation	**Research and Gathering Information**	Identify probable types and locations of websites by examining their domain names (e.g. edu, com, org, gov, uk, ca).	Any web browser (ex: Chrome), BH-BL Library Program	I	R	M	M	M	M	M	RI 5, RI 7
		Use effective search strategies for locating and retrieving electronic information (e.g. using syntax and Boolean logic operators).		I	R	M	M	M	M	M	RI 5, RI 7
		Use various search engines. Observe the differences among various search engines and how they display results.		I	R	M	M	M	M	M	RI 5, RI 7
		Use appropriate academic language in online learning environments (e.g. post, thread, intranet, discussion forum, account and password).	Any Web 2.0 tool (ex: Google Apps)	I	R	M	M	M	M	M	RI 7
		Discuss how technology can support communication and collaboration, personal and professional productivity, and lifelong learning.	Google Apps for EDU	I	R	M	M	M	M	M	RI 5, RI 7, SMP 3
		Include correct-in-text citations and reference lists for text and images gathered from electronic sources.	Easy Bib, Google Research Tool in Google Docs, Noodlebib	O	O	I	R	R	M	M	RI 5, RI 7
		Use web browsing to access information (e.g. enter a URL, access links, create bookmarks / favorites) Social Bookmarking.	Any web browser (ex: Chrome)	R	R	M	M	M	M	M	RI 5, RI 7
		Use and modify databases and spreadsheets to analyze data and propose solutions.	Sheets, Forms	I	R	M	M	M	M	M	RI 7, RI 10, SMP 5
		Develop and use guidelines to evaluate the content, organization, design, use of citations, and presentation of technologically enhanced projects.	Goobric, Forms, Docs, Sheets	I	R	M	M	M	M	M	RI 7, SMP 3
	Communication and Collaboration	Use a variety of media to present information for specific purposes (e.g. reports, research papers, presentations, newsletters, web sites, podcasts, blogs), citing sources.	Docs, Slides, Sheets, Prezi	R	M	M	M	M	M	M	W 6, W 10, SL 5, SMP 5, RI 7
		Demonstrate how the use of various techniques and effects (e.g. editing, music, color, rhetorical devices) can be used to convey meaning in media.	Google Apps for Education	I	R	M	M	M	M	M	W 6, W 10, SL 2, SL 5, SMP 3
		Use a variety of district approved Web 2.0 tools (e.g. e-mail discussion groups, blogs, etc.) to collaborate and communicate with peers, experts, and other audiences using appropriate academic language.		R	M	M	M	M	M	M	RI 6, RI 7, RI 9, SMP 3, SL 5
		Use teacher developed guidelines to evaluate multimedia presentations for organization, content, design, presentation and appropriateness of citations.		R	M	M	M	M	M	M	W 6, W 10, SL 3
		Plan and implement a collborative project with students in other classrooms and schools using telecommunications tools (e.g. e-mail, discussion forums, groupware, interactive websites, video-conferencing).		I	R	M	M	M	M	M	RI 6, RI 7, RI 9, SMP 3

The most widely referenced benchmarks for best practices for integration of technology in schools are the ISTE Standards (previously the National Educational Technology Standards (NETS), published by the International Society for Technology in Education.

In 2001, a collaborative including the National Association of Secondary School Principals, the National Association of Elementary School Principals, the National School Boards Association, the North Central Regional Education Laboratory, the International Society for Technology in Education, two state departments of education and two universities recognized and promoted the idea that there were technology-related skills, knowledge, and practices that were essential to good educational leadership.

This collaborative developed the National Educational Technology Standards for Students (NETS-S). In 2009, these standards were further refined and developed. They are now referred to as the ISTE•S standards. The ISTE•S standards are complemented by a similar set of standards for teachers (ISTE•T), administrators (ISTE•A), instructional technology coaches (ISTE•C), and computer science educators (ISTE•CSE).

The ISTE standards have been adopted by 29 states. They are broadly accepted as the best current attempt at defining the technology-related skills, knowledge and practices that are important in the K-12 environment. BH-BL values these standards and encourages educators to consider them in writing and implementing new curriculum.

Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

- Apply existing knowledge to generate new ideas, products, or processes.
- Create original works as a means of personal or group expression.
- Use models and simulations to explore complex systems and issues.
- Identify trends and forecast possibilities.

Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

- Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- Develop cultural understanding and global awareness by engaging with learners of other cultures.
- Contribute to project teams to produce original works or solve problems.

Critical Thinking, Problem Solving, and Decision Making

Students use critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

- Identify and define authentic problems and significant questions for investigation.
- Plan and manage activities to develop a solution or complete a project.

ISTE - NETS

- Collect and analyze data to identify solutions and/or make informed decisions.
- Use multiple processes and diverse perspectives to explore alternative solutions.

Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

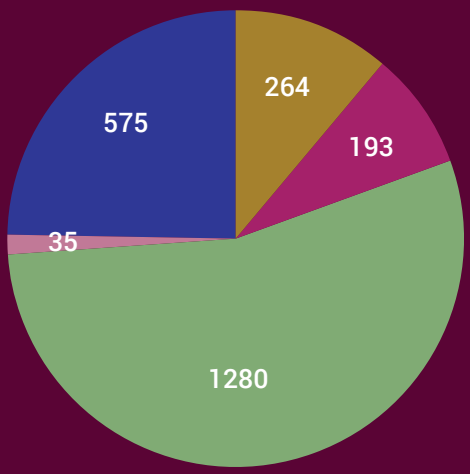
- Advocate and practice safe, legal, and responsible use of information and technology.
- Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- Demonstrate personal responsibility for lifelong learning.
- Exhibit leadership for digital citizenship.

Technology Operations & Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

- Understand and use technology systems.
- Select and use applications effectively and productively.
- Troubleshoot systems and applications.
- Transfer current knowledge to learning of new technologies.

Current State of Technology



2014-15 Inventory:

Devices with ability to connect to the LAN:

- Chromebooks
- Desktop Computer/Virtual Machine
- Laptops/Virtual Machine
- < 9" Tablets (no keyboard)
- > 9" Tablets (no keyboard)

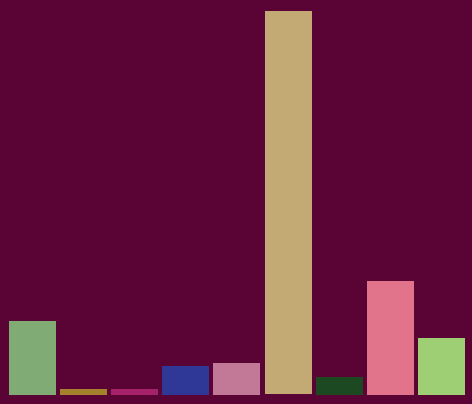
TOTAL: **2227**

Desktop computers/Virtual Machine	264
Laptops/Virtual Machine	193
Chromebooks	1280
Tablets less than 9 inches with access to an external keyboard	0
Tablets 9 inches or greater with access to an external keyboard	0
Tablets less than 9 inches without access to an external keyboard	35
Tablets 9 inches or greater without access to an external keyboard	575
TOTAL devices with the ability to connect to the LAN	**2227**

Technology to Assist Students with Disabilities

- Approximately 25 percent of the total number of students with disabilities in the district are provided with assistive technology as documented on their Individualized Education Plan (IEP).
- Students with disabilities require access to a number of assistive technology devices including iPads, laptops, augmentative communication devices, interactive smart-boards, and personal and field sounds systems.
- Additionally, there are a wide variety of text-to-speech and speech-to-text programs, word prediction audiobooks, and other language-based software applications that our students require to allow them to successfully access the curriculum and communicate in the school setting.
- In addition to these devices and applications, there is a great deal of staff development and ongoing implementation required in order to prepare and support teachers and other school staff in the use of these resources with students. Oversight of assistive technology within the district is critical to the procurement, implementation and sustainability of services to our students with disabilities. Therefore, professional development and assistive technology staffing resources would enhance the use of technology across the district for all students.

Current State of Technology



2014-15 Inventory:

Number of devices in use that are less than five years old:

- Document Cameras (26)
- Flat Panel Displays (2)
- Interactive Projectors (2)
- Interactive Whiteboards (10)
- Multi-function Printers (11)
- Projectors (135)
- Scanners (6)
- Kindles and eReaders (40)
- Cameras (20)

Number of devices in use that are less than five years old

Document Cameras	26
Flat Panel Displays	2
Interactive Projectors	2
Interactive Whiteboards	10
Multi-function Printers	11
Projectors	135
Scanners	6
Kindles and eReaders	40
Cameras	20

Other notes regarding inventory

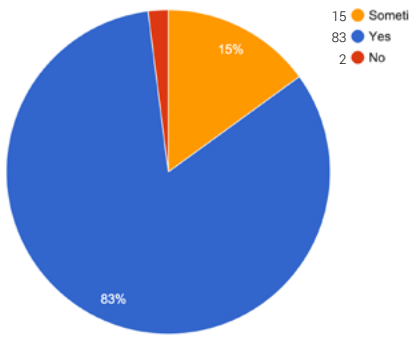
- The district has an inventory tagging system for district-owned equipment.
- The district allows students to bring their own device and log onto the district's instructional network.
- In the 2014-15 school year, approximately 1,000 student devices accessed the district's network daily.
- The school district has provided for the loan of instructional computer hardware to students legally attending non-public schools pursuant to Education Law, section 754, but did not receive any requests for the 2014-15 school year.

Smart Schools Survey Summary

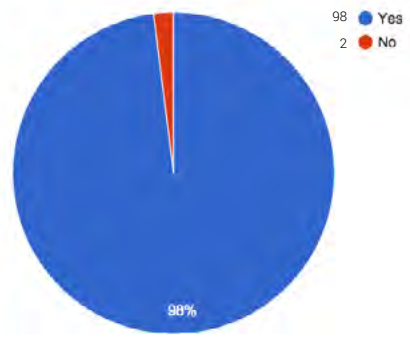
In an attempt to offer more technology opportunities to our students, we asked elementary parents and secondary (6-12) students for input through a short survey. The survey allowed us to learn more about the school/home technology connection. All responses were collected anonymously and reported in an aggregate manner.

Elementary: Devices and Internet Access

Do you have some type of computer or tablet in your home that would be regularly available for each of your elementary children to use for schoolwork on any given night? (880 elementary parents responded.)

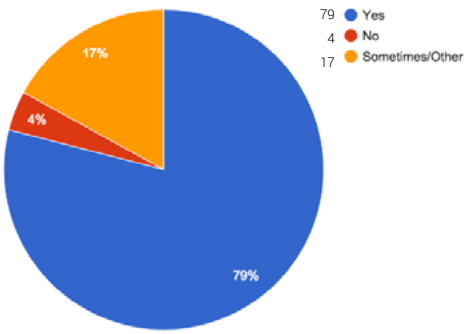


Do you have an internet connection in your home? (880 elementary parents responded.)

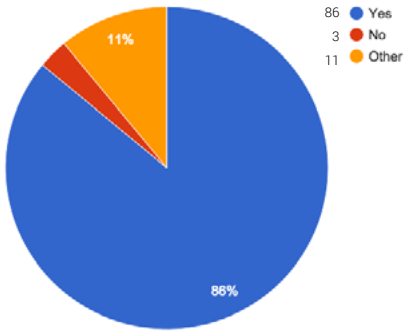


Middle School: Devices and Internet Access

Do you have some type of computer or tablet in your home that you can use for schoolwork? (508 middle school students responded)



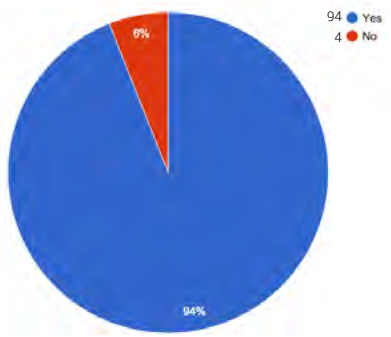
Do you have a reliable wireless internet connection in your home? (490 middle school students responded)



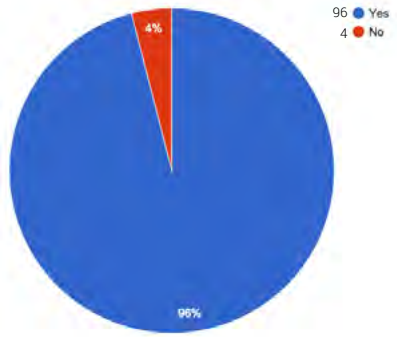
Smart Schools Survey Summary (cont.)

High School: Devices and Internet Access

Do you have a reliable computer available to use at home? (897 high school students responded.)



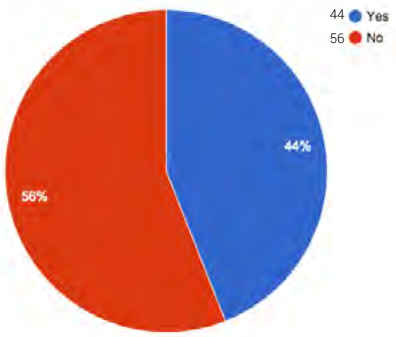
Do you have an Internet connection at home? (905 High School Students responded.)



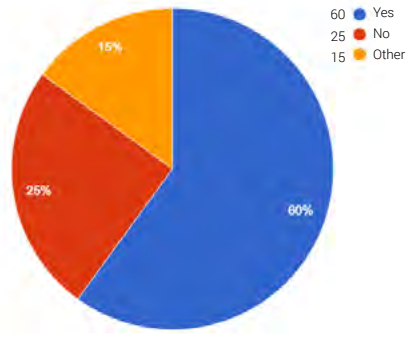
Grades K-8: Take Home Program

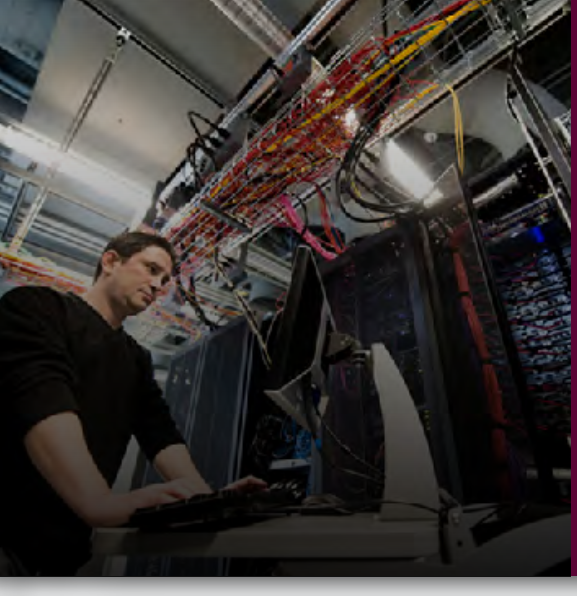
Our District Technology Committee is considering a program that allows students who need a computer at home to take home their "chromebook" in the evening. Students who do not have access to the internet at home would be provided with a device that grants them home wireless access to the district's computer network. IF BHBL had such a program, the following conditions would apply: (1) The computer would only be able to access the student's school account; (2) The computer would always work through the school district's internet filter. Given that information, elementary parents and middle school students were asked the following question:

If BHBL had a program that allowed your student to take home a computer in the evening, would you be interested in participating? (842 elementary parents responded.)



If BHBL had a program that allowed you to take home a chromebook in the evening, would you be interested in participating? (529 middle school students responded.)





Technology work completed in the past 5 years

To understand the future plan, it is important to understand the work related to the instructional technology plan that has been done in the district over the the past several years.

2010 - 2011

The district underwent an initial infrastructure and wireless upgrade.

2011 - 2012

The district purchased elementary iPad carts at one elementary school and interactive projectors at another elementary school, and add a PC lab at the third elementary school.

2012 - 2013

The district upgraded the elementary and middle schools library media labs with iMacs and added pods with six PC laptops to elementary classrooms.

2013 - 2014

The district began upgrading teacher devices, purchasing MacBooks for all elementary teachers, purchasing primary (K-2) iPad integration centers to support full-day kindergarten implementation and K-2 instruction, purchasing a high school classroom set of Chromebooks, installing a new high school graphic arts iMac lab, supporting the high school computer science program by adding a class set of Macbook Pros, purchasing a class set of Macbook Airs for the physics program, and purchasing a Chromebook for every student in grades 3 through 6.

2014 - 2015

Most recently, the district continued to upgrade teacher computers and purchased a Chromebox lab and additional chromebooks for the high school. In addition to classroom technology, the district has been committed to purchasing technology that improves the security of our school buildings. This has included the creation of secure vestibules, an enhanced security camera

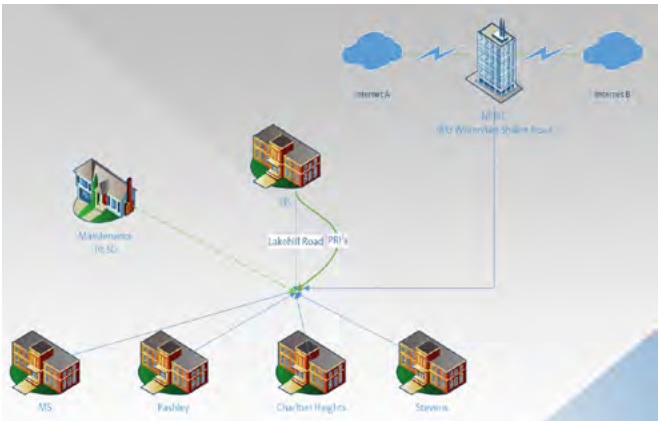
Redundancy Project

"As more and more of the work that we do depends on a connection to the internet, it becomes essential to ensure a level of network and Primary Rate Interface (PRI) redundancy. As one outage at the Lakehill Road location affects all buildings, the general solution is to provide network and PRI redundancy by taking advantage of the recently acquired Maintenance Facility at 834 Saratoga Road. The Capital Project, currently underway, can provide a conduit and fiber from BH-BL High School to the Maintenance Facility (or from the High School to the Kingsley Road exit). The general solution will be to have one network connection come out of the high school via Lakehill Road and travel south, and a second WAN connection to NERIC leaving from 834 Saratoga Road and taveling north. From a PRI perspective, the primary PRI (to be called a SIP trunk) will be located at 88 Lakehill with the second SIP trunk hosted at NERIC."

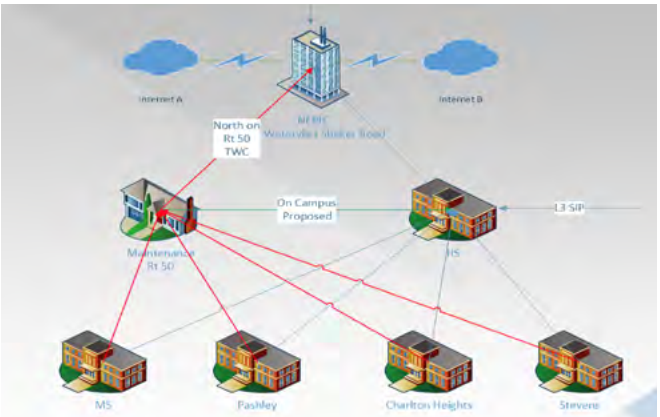
— Deputy Director at Northeastern Regional Information Center David Versocki

The recommended solutions are as follows:

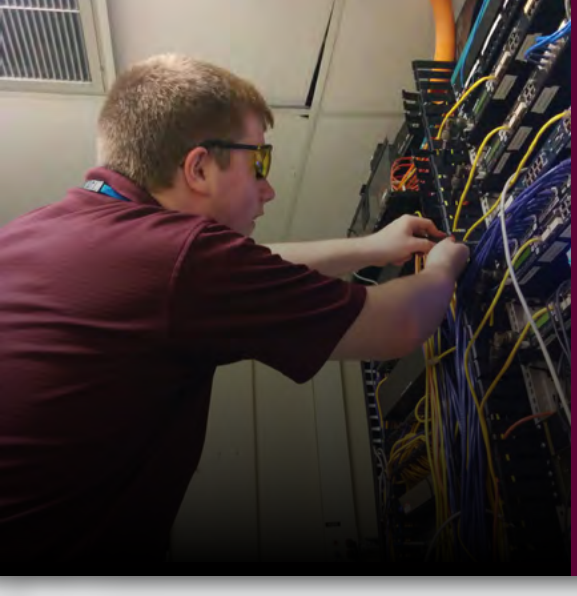
- Change PRI providers from Verizon to L3 Communications, which has quoted a service that provides an automatic failover of the inbound calls to allow for minimal downtime. One PRI will come out of BH-BL High School (88 Lakehill Road) while the other will terminate at the Northeastern Regional Informatoin Center (NERIC) Datacenter. In the event of a significant local outage, inbound calls will come in to NERIC where they can be forwarded to pre-determined numbers (cell phones).
- Contract with Time Warner Cable (TWC) for the second WAN connection to NERIC. Their solution provides single carrier redundancy in that if any part of the build out goes down, TWC re-routes traffic to the other end of the network leaving single points of failure to Stevens, O'Rourke Middle School, Pashley and Charlton Heights. However, it guarantees that the BH-BL network always has a connection to NERIC and, in turn, an internet connection.
- In the immediate future provide redundancies by turning on microwave infrastructure that is still in place. The District Office is currently connected to the network via the high school with this technology. This option will provide network redundancies at 45Mbps, which will provide sufficient connectivity to support services like VOIP while allowing for some capacity for instructional activities.
- For the longer-term solution of complete redundancy, authorize NERIC to put out an RFP so that multiple carriers can bid on the project.



Current Network Path



Proposed Network Path



Future: 3-Year Tech Infrastructure & Hardware Plan

(Smart Schools Investment Plan 2015-16)

The plan moving forward represents a continuation of the work that began in 2010. There are three major priorities for the purchase of technology equipment to support teaching and learning across the district over the next three years. These correspond with priorities #1, #3, #6 of the Smart Schools allowable expenditure categories.

3

Continued Enhancement of School Connectivity

(Wireless and Broadband)

- Ensure that high-quality wireless access is available across the district; and
- Ensure the speed of the district's internet connection meets or exceeds the FCC's minimum speed standard of 100 Mbps per 1,000 students in order to meet the needs of all 21st-century learners.

Continued Acquisition of Classroom Learning Technology

(Equipment and Devices)

- Ensure end-user technology devices for all students and teachers such that they have state-of-the-art classroom technology and access to 21st-century information and tools;
- Provide a one-to-one, student-to-device environment by the end of the current plan;
- Ensure upgraded presentation equipment in all district classrooms; and
- Ensure equipment for specialty classroom spaces such as television studios, distance learning facilities, and manufacturing (CNC) labs.

Continued Installation of High-Tech Security Features

- Provide enhanced access control; and
- Ensure continued improvement of surveillance camera system.

Funding Sources

For the duration of this plan, funds for technology across the district come largely from three sources: General Fund Budget **(GF)**, which includes includes New York State instructional hardware and software allocations, Smart Schools Bond Act **(SS)** funding (see previous section), the 2013 Bond Referendum **(BR)** funding (see previous section). The projected funding source for the various planned purchases is indicated in the tables that follow. A discussion of the sustainability of technology purchases into the future comes later in this document.

Continued Enhancement of School Connectivity

(Broadband & Wireless)

LAN Network Infrastructure

We are proposing an upgrade and expansion of the existing network in the district. At both the high school and middle school, an additional core switch will be installed to support higher speed, 10 Gig, and connectivity to the new data switches in the network. In the network closets, we will install a new switch to support additional access points and physical security devices.

Wireless Network Infrastructure

The wireless network will receive a major upgrade in both the middle and high school. The access points will be updated to the 802.11AC standard to increase throughput speeds to the 930 Meg range. Additionally, we will increase the number of access points to provide full coverage in all buildings in the district. The result is that we will have a simultaneous user experience, regardless of the user's location in the network.

Network Management

The network management platform will be updated to provide increased visibility and reporting for the network. Some of the new desirable features include:

- Live Heat Maps: These reflect the current wireless coverage area.
- Location: To locate devices in the network.
- Application Monitoring and Control: To control and allocate client bandwidth usage in the network.
- BYOD Support: To authenticate and generate reports on users in the network.

Estimated Costs

Item **SS**: Smart Schools | **GF**: General funds | **BR**: Bond Referendum	Proj. Funding Source	Cost
LAN Network Infrastructure	SS	$100,000
Wireless Network Infrastructure	SS	$420,000
Network Management	SS	$70,000
Total Smart Schools		**$590,000**

Continued Acquisition of Classroom Learning Technology

(Equipment and Devices)

A. Our Elementary Schools

At BH-BL elementary schools, technology is fully accessible to students and is integrated into classrooms. Technology is a basic component to our programs. Each building has a computer lab with either PCs or Macs, as well as a mobile cart with a class set of MacBook Air computers. All students also have access to a fully functional Mac lab in the library. All classrooms are equipped with projectors and screens, and many of the projectors are interactive. All of our schools have wireless networks so mobile devices can be used anywhere in the buildings. Each K-2 class currently has 6 to 9 iPads that are used in centers and can also function as document cameras. Our grades 3 to 5 classrooms each have a rolling cart with a full class set of Chromebooks for a one-to-one computer model. Throughout the buildings Google Apps are used to create and share projects, including Docs, Sheets, Slides, Draw, and Google Classroom. In some classes students also use Gmail to communicate with classmates and teachers. The significant investment the district has made at the elementary schools over the past few years, means the need is not as great in those buildings as it is at the middle and high schools. However, there still are a few needs at the elementary schools, including:

Item **SS**: Smart Schools | **GF**: General funds | **BR**: Bond Referendum	**Proj. Funding Source**	**Quanity**	**Cost**
Completing one-to-one mobile devices for all K-2 students	GF	698	$270,550
Storage and charging stations for mobile devices	GF	30	$61,000
Document cameras for all K-5 classrooms	SS	55	$41,000
Completing one-to-one mobile devices for all teachers	GF	30	$13,050
Totals:	**Smart Schools = $41,000 | General Fund = $344,600 | Bond Referendum = $0**		

Continued Acquisition of Classroom Learning Technology *(cont.)*

B. Our Middle School

It is the goal at O'Rourke Middle School to provide a technology-rich environment where all students have access to current technology to improve communication and make instruction more effective and efficient. With this technology, students are provided with the opportunities to acquire the knowledge and skills needed to be competitive in the 21st century.

The O'Rourke Middle School is a 1:1 Chromebook environment in grades 6 and 7. The 1:1 model will be phased into grade 8 during the 2016-17 school year. Students extensively use Google Apps for Education(GAFE) to collaborate with peers and share assignments with teachers and other staff. Teachers receive ongoing professional development training where they learn how to integrate GAFE and Chrome Web Store applications and extensions into their daily instruction to enrich the learning experience. The purchase of mobile devices for all teachers will allow for easier use of Gmail, Google Classroom, and Blackboard to communicate assignments, videos, and announcements with students and parents.

By integrating technology into daily instruction, O'Rourke Middle School leaders plan to promote and provide opportunities for all students, teachers and staff to better learn, communicate and collaborate.

Item **SS**: Smart Schools | **GF**: General funds | **BR**: Bond Referendum	**Proj. Funding Source**	**Quantity**	**Cost**
Chromebooks plus storage	SS	330	$100,000
Interactive TVs	SS/GF	80	$400,000
Document Cameras for all classrooms	GF	80	$57,600
Promethian Touch Screen	GF	1	$24,000
Teacher Mobile Devices	SS	45	$33,750
10 VEX Robots	GF	10	$3,000
Lego Expansion Sets	GF	2	$13,600
Speakers	GF	16	$2,400
Smartboards	GF	3	$6,000
Wards Single Probes (Science Department)	GF	10	$7,000
Dell Precision M6800 Workstations	SS	30	$66,000
32 Pad CPS IR System (Science Department)	GF	2	$2,390
Total	**Smart Schools = $249,750 | General Fund = $465,990 | Bond Referendum = $0**		

Continued Acquisition of Classroom Learning Technology *(cont.)*

C. Our High School

Burnt Hills-Ballston Lake High School leaders and staff value the use of instructional technology to increase student learning and achievement. To that end, we have proposed a number of technology purchases that will allow students to work in a 21st-century learning environment.

The purchase of an array of technology devices will allow students, faculty and staff to work in a nearly 1:1 computing environment. The result of this will be increased student engagement, exposure to relevant technology and the ability to move from consumers of information to more active participants in the classroom. Collaboration in the classroom will be greatly enhanced.

Increased computer access in classrooms enables teachers and students to access cloud-based learning management systems (i.e., Blackboard, Google Classroom, etc.). As the high school moves toward a blended learning format, more classes will rely heavily on internet access and electronic means of presenting information.

Item (cont.) **SS**: Smart Schools | **GF**: General funds | **BR**: Bond Referendum	**Proj. Funding Source**	**Quanity**	**Cost**
Chromebooks plus storage	SS	1100	$366,300
Laptops	SS	188	$94,000
Classroom Chromebox	SS	100	$35,000
Chromebox HS Library	SS	45	$14,625
Elmos, Projectors, & Speakers	SS	50	$76,420
Interactive TVs	SS/GF	23	$115,000
Nooks, Nexus 7, Graphing Calculators, & TI Navigators	GF	90	$48,320
Fine Arts Printers and Cameras	GF	1/10	$6,000
Special Instructional Space: Black Box Theater/Television Studio	BR	1	$35,000
Special Instructional Space: Interactive Classroom	SS	1	$100,000
Special Instructional Space: High-Tech Lecture Hall	SS	1	$40,000
Teacher Mobile Devices	SS	85	$63,750
Teacher Assistant Mobile Devices	SS	40	$10,000
Cafe Sound System Replacement	GF	1	$4,000
Misc Printer Requests (All building included)	SS	30	$22,500
Totals:	**Smart Schools = $903,915 | General Fund = $92,000 | Bond Referendum = $35,000**		

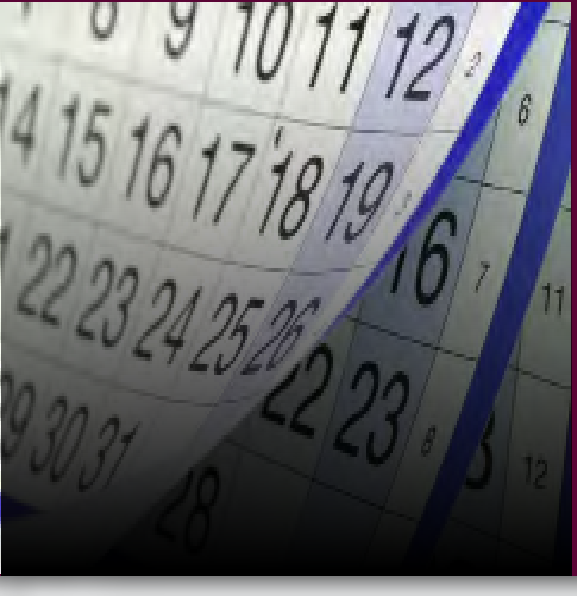
Installation of High-Tech Security Features

The following plan allows for future video surveillance of all district properties, as well as the deployment of silent visual notification of an emergency scenario using strobe lighting at critical locations.

The list below does not include the cost of Cat-5 cable for video, any additional POE switches, wiring for emergency strobes, or other unforeseen installation cost. Four additional LNVR video recorders ($2,000 to 4,000 each) will be necessary for each site as well as an additional video work station at O'Rourke Middle School (Security Post 2) where assigned security monitors will assist the high school (Security Post 1) with the daily task of actively viewing all video surveillance throughout the district. It may also be recommended that additional Intelligent Direct Drive Outdoor PTZ cameras ($1,500) be planned for both the new maintenance site as well as the Transportation Department.

Item (cont.)	Quanity	Cost
Intelligent Direct Drive Outdoor PTZ camera	1	$1500
Outdoor Cameras	47	$35,344
Indoor Dome Cameras	101	$36,057
Lenel Video Recorder Licenses	149	$27,714
Indoor Emergency Strobe Light w/blue lens	92	$4,140
Outdoor Emergency Strobe Light w/blue lens	36	$2,160
Altronix Power Supply (strobes)	25	$6,000
Dell Precision Video Workstation	1	$2,755
Totals:	**Smart Schools = $115,670 | General Fund = $0 | Bond Referendum = $0**	

Breakdown of Smart Schools Funding - Total $1,900,335	
School Connectivity	$590,000
Classroom Devices for Learning	$1,194,655
High Tech Security	$115,670



Timeline for Rollout of New Equipment

2015 - 2016

Purchase Chromebooks for all students in grade 7. This will make devices available to incoming 7th graders who have been immersed in the one-to-one environment. Also upgrade the wireless and network infrastructure, carryout full implementation of teacher mobile technology devices; begin deployment of high school Chromebooks, and begin security upgrades.

2016 - 2017

Purchase Chromebooks for all students in grade 8 to continue one-to-one environment; begin mass deployment of mobile technology devices to students in grade 9 to 12 through a combination of purchase and BYOD; and complete security upgrades.

2017 - 2018

Complete mass deployment of mobile technology devices to students in grade 9 to 12; and add distance learning technology, television production technology, and CNC-controlled machinery to new high school additions.

The staggered roll-out described above creates an established plan for cycle of purchases that is sustainable for the district moving forward.

How do we support this level of technology moving forward?

Sustainablity

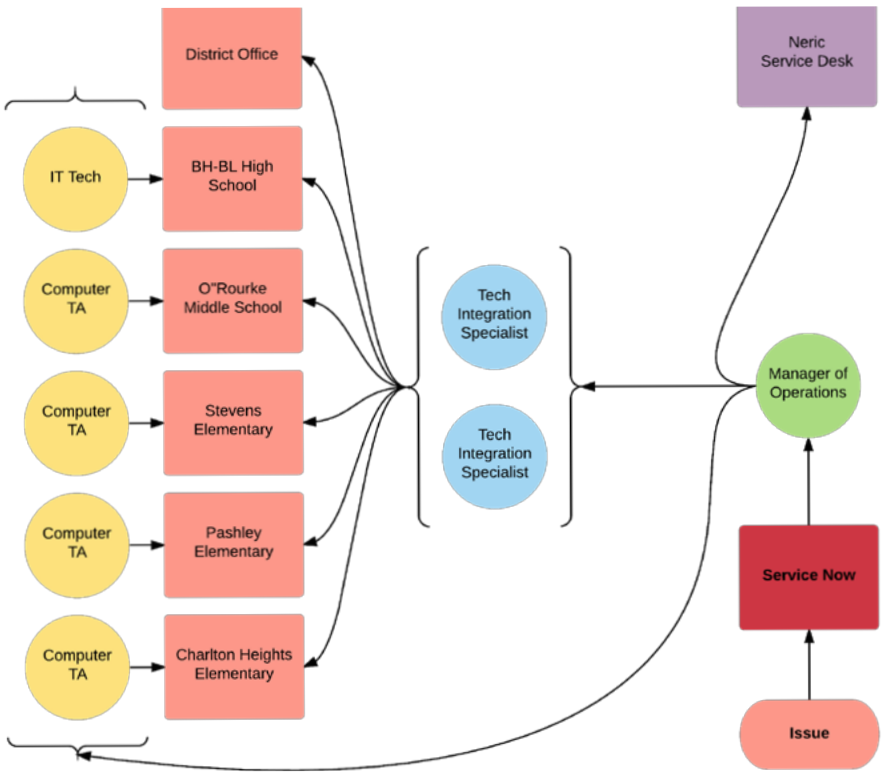
In the 2012-13, 2013-14 and 2014-15 school years, Burnt Hills-Ballston Lake CSD has incurred net expenditures of approximately $325,000 per year for technology purchases. The district partnered with BOCES through the Northeastern Regional Information Center (NERIC) to use those budgeted funds to acquire roughly $500,000 of instructional technology and infrastructure for students in each of those three years. During the 2015-16 school year, those funds associated with technology purchases have been repurposed for other district priorities in anticipation of being able to address improvements in our instructional technology through the Smart Schools Bond Act. We anticipate repurposing district funds in the same manner during the 2016-17 school year as we continue to utilize the Smart Schools Bond Act to meet our instructional technology needs.

We have been purchasing technology in a measured way over the past several years, and therefore, are on a balanced purchasing cycle. Burnt Hills-Ballston Lake intends to resume annual budget allocations (partnering with BOCES/NERIC) in the 2017-18 school year if future projections for state aid and property tax revenue hold to expectations. We anticipate using these relatively large annual budget allocations to maintain and replace older technology, including purchases associated with the Smart Schools Bond Act, for the 2017-18 school year and beyond.

Technical Support Model

Technology decisions within the district are made by the Instructional Technology Leadership Team. Members of this team represent a variety of stakeholders Including the central office, building administration, and teachers. The team communicates with the buildings, building councils, and the various academic departments across the district. Representatives on the team also chair building-level technology teams at their respective buildings. This system allows for a free flow of ideas and information back and forth between buildings and the group responsible for making major technology-related decisions.

Technical support is provided at a number of levels. The district uses a ticket-based system (ServiceNow) for requesting support. Each building has a technology teacher assistant who helps classroom teachers with a combination of technical and academic work. The district also employs two technology integrators, professionals with both an education and a technical background. These individuals are responsible for higher-level tech support as well as professional development for teachers and assistance with a variety of technology-related technology. The district purchases a Network Administrator service from NERIC (BOCES) to help with high-level technical issues. Onsite day-to-day technical operations including oversight of technical personnel, assignment of tickets, and purchasing are overseen by the Technology Operations Manager.



Technology-Related Professional Development

Each year, according to the Commissioner's 100.2 Regulations, districts must create a Professional Development (PD) Plan for the upcoming school year. A key component to the PD Plan are the Priorities. All professional development plans must be tied to one of the priority components listed below:

PD PRIORITIES for 2015-2016
(Priorities in bold indicate a need for Technology Professional Development)

Professional Practice

Trainings in order to enhance:

- Professional practice
- Family engagement
- Pedagogical expertise
- **Collaboration/Professional Learning Communities**
- **Technology proficiency**

Instruction/Student Learning

Trainings in order to implement and incorporate:

- **Data collection on students**
- Behavior management
- Tier 1 strategies
- **Differentiated instruction**
- Progress monitoring
- **Instructional technology**

CCLS/Content

Trainings in order to:

- Create assessments
- Plan and develop curriculum
- **Integrate curriculum/infuse nonfiction literacy into content area**
- Infuse CCLS instructional shifts into content area
- **Enhance instruction through technology**

Necessary/Required Trainings

In order to:

- **Implement current and new district technology**
- Maintain state-mandated regulations

Technology-Related Professional Development (cont.)

Staff Development in Instructional Technology

In reviewing the district's overall professional development priorities, it is clear that training in instructional technology is emphasized in all priority areas. Technology training is critical to our overall professional development plan. Staff development is offered throughout the academic year and in the summer. On the average, the majority of teachers spend 30 to 40 hours per academic year on scheduled professional development activities. Below are the different modes of instruction available for teachers to fulfill professional development requirements within these four priorities:

- Professional design days
- Half days and Superintendent's Conference Days
- Faculty meetings, department or grade-level meetings focused on student learning and/or professional growth
- Team Time meetings
- Workshops provided by BH-BL staff members
- Out-of-district conferences and workshops for teachers
- Online classes and courses.

In the 2014-15 school year, the district offered:

- Embedded, weekly, small-group training in Google Apps for Education for all elementary teachers.
- On-going district-wide training in Google Docs and Google Drive.
- After-school workshops run by technology integrators on Google Classroom and Blackboard.
- External trainers brought in as needed, which included iReady trainers for math and elementary teachers and kindergarten teachers, NewsELA Pro training for Grade 9 ELA teachers, and ThinkCentral for elementary math teachers.
- TI-Inspire Graphing Calculators and Smartboards Workshops for math teachers,
- Individualized Summer Tech Training Program on Instructional Technology Integration. Topics included: Google Drive, Google Docs, Google Sheets, Google Forms, Google Slides, Google Sites, Prezi, LucidPress, Lucid Charts, Gmail, Google Calendar, Google Classroom, Adobe Illustrator, Adobe Photoshop, Adobe InDesign, iMovie, iPhoto, and Garageband.
- Full participation in Model Schools through NERIC.
- Support of conferences and trainings out of district. In 2014-15 teachers went to NERIC Tech Awareness Day, NYSCATE Blended Learning Conference, and NERIC Blackboard Training.
- Pilot program for new software packages (i.e., Flipd.com, FitStats, NewsELA, iRead, iReady).

BH-BL

1915 - 2015

100th Anniversary

Charlton Heights Elementary School

170 Stage Road
Ballston Lake, NY 12019
(518) 399-9141
ext. 85500

Pashley Elementary School

30 Pashley Road
Glenville, NY 12302
(518) 399-9141
ext. 84500

Francis L. Stevens Elementary School

25 Lakehill Road
Ballston Lake, NY 12019
(518) 399-9141
ext. 83500

Richard H. O'Rourke Middle School

173 Lakehill Road
Burnt Hills, NY 12027
(518) 399-9141
ext. 84000

Burnt Hills-Ballston Lake High School

88 Lakehill Road
Burnt Hills, NY 12027
(518) 399-9141
ext. 83300