Strategic Instructional Technology Plan

*2014 - 2017*

*Brewster Central School District*

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# 1. Introduction

The following document provides strategic direction and establishes specific action steps related to how the instructional technology will be implemented so as to benefit teaching and learning in Brewster Central School District over the next three years. The 2014 – 2017 Strategic Technology Plan is designed to provide supporting documentation and a clear roadmap for district technology efforts.

The basic premise of this plan – as informed by research -- is that pedagogy and curriculum must drive instructional technology use in the Brewster Schools. Beyond this, the plan is also built upon the knowledge that Brewster students need teachers who understand how to teach in ways that foster the development of 21st century skills, standards-aligned thinking and learning skills, as of course the acquisition of content knowledge. Technology has a role to play in supporting teachers in all of these tasks. The strategic directions of this plan aim to develop teacher skills, and to facilitate teacher use of technology to accomplish new tasks as dictated by an ever more complex and challenging world for our students both within and outside of their school experience.

We realize that we face considerable obstacles in achieving our overall goal of utilizing technology tools to enrich and improve learning for all students. As the Current Status (Chapter 2) section of this document shows, at present many of our teachers come to the challenge of employing technology without adequate training, instructional support, or guidelines. While many of our schools and classrooms have modern technology within them, many teachers do not yet possess the skills in pedagogy to utilize these tools effectively to produce the desired learning outcomes. Adequate levels of support and training do not exist to bring these teachers into the 21st century do not exist. Nor do we generally have the policies in place to establish the accountability necessary to insure that teachers are teaching in the ways we know are necessary to prepare our students for the futures that we imagine for them.

Armed with the knowledge that we need to change how teachers think about learning and pedagogy and the tools used to accomplish both, a major thrust of this new Strategic Technology Plan is teacher professional development and instructional support. The district will create professional development models and resources that can be implemented across the all schools and grade levels. New professional development efforts include work on mapping technology tools, and the NETS standards, onto core curriculum frameworks so that teachers can have specific, concrete, examples of how they can achieve the teaching of 21st Century skills aligned with curriculum and learning standards in their own classrooms.

A central principle that underlies this Strategic Technology Plan is that achievement of the ISTE NETS standards for students, teachers and administrators drives the work of this plan. For the most part, NETS describe the desired outcomes for students/teachers/administrators as related to how technology is used to support 21st Century learning. Meeting the NETS standards means creating those learning environments that facilitate the development and practice of the types of thinking and learning that are necessary to success as a lifelong learner. Much of what follows is about how Brewster will establish the professional development, infrastructure, and accountability process for meeting NETS standards and thereby supporting 21st Century learning for all students.

This plan is meant to be a living document that is referred to frequently and adjusted as necessary.

## Brewster’s Technology Organization – Roles and Responsibilities

Brewster’s efforts to integrate technology into teaching and learning are overseen and supported by several committees and a variety of staff positions. These – in both their current configurations as well as intended modifications detailed in the 2014 – 2017 Strategic Technology Plan -- are described below.

### Technology Oversight Committees

At the level of oversight and advice, there are two committees that meet regularly to collectively drive and manage Brewster’s technology vision. These committees currently (Fall 2014) exist, but will be focused and charged anew with the advent of the 2014 – 2017 Strategic Technology Plan.

* District Technology Committee - This group was initially formed (Spring 2014) to develop the BSCD Technology Plan. It will continue to meet at least biannually. The Assistant Superintendent of Technology and Human Resources is responsible for recruiting members and filling committee position openings.

The District Technology Committee is primarily responsible for the coordination and oversight of the variety of technology initiatives and actions conducted across the district. The District Technology Committee exists in order to ensure that all key stakeholders have input into district decisions related to technology’s use as a tool for teaching and learning. The committee will be lead by Brewster’s Assistant Superintendent of Technology and Human Resources (in close collaboration with the District Instructional Technology Specialist(s)). It will include representation from each Building Technology Committee (see below), district Curriculum and Instruction administrators, district-level leadership, and students. Building-based staff (teachers and administrators) and students who are on the District Technology Committee should also be on their respective Building Technology Committees.

Each year, the District Technology Committee will coordinate a review/evaluation of district progress toward meeting the goals in the Strategic Technology Plan and will revise/update the plan as necessary. The District Technology Committee will review the annual budget request for technology and will make recommendations to the Assistant Superintendent of Technology and Human Resources as to the budget.

* Building Technology Committees - The group is constituted by representation by each of the departments and/or grade level teams in the building and the building administration. The committee is chaired by the building Instructional Technology Specialist. These committees have existed in many buildings prior to Fall 2014, but with the advent of the 2014-2017 Strategic Technology Plan the building committees will take on a newly official and coordinated role across all Brewster schools.

The Building Technology Committees are responsible for gathering, aggregating, and formulating building-level decisions around how technology best fits with each individual school’s instructional program. The Building committees are charged with deliberating around the particulars of technology integration – e.g. training needs, desired policies, hardware, software and network needs – and then advocating for these needs at the level of the District Technology Committee (where each building-level committee is represented). Building Technology Committees should contain representation from teachers, computer aides, Instructional Technology Specialists, students, and parents.

Building Technology Committees do not have a “budget” per se, but rather provide input on building needs to the District Technology Committee and the Assistant Superintendent of Technology and Human Resources who oversee and disburse the district’s technology budget.

### Brewster’s Current Technology-Related Staffing

Currently the Brewster Central School District has staffing positions for administrative, technical, and instructional, and building support.

#### Administrative Coordination for Technology

Brewster’s Assistant Superintendent of Technology and Human Resources oversees and administratively coordinates all district technology operations. The Assistant Superintendent of Technology and Human Resources collaborates with all areas of the district in his/her ultimate responsibility of supporting technology-related solutions for instruction and operations. This person is also responsible for the department budget, vendor contract negotiations, project and staff management, district technology policy, industry trends assessment, planning, resource allocation and efficiency improvements. The Assistant Superintendent – through working with a range of district staff -- ensures that federal, state and district policies, such as CIPA, eRate technology needs, Department of Education technology requirements are supported and completed. The Assistant Superintendent of Technology and Human Resources is a critical Central Office function that must be maintained throughout the plan in order to have a successful implementation.

#### Instructional Technology Staff

Brewster maintains several professional staff positions – some salaried and some stipended – in support of the *instructional* use of technology. Please note that these are distinct from *technical support* positions (which will be described later in this chapter).

* One District Instructional Technology Specialist - coordinates training, evaluates software acquisitions, and drives district based initiatives for the district. The District Instructional Technology Specialist is a new position that was first staffed for the 2014-2015 school year.
* Four Building Instructional Technology Specialists - coordinate training and build based initiatives including leading the build Technology Committee. These positions are filled by teachers who are released from a duty and given a stipend for this role.
* One Adaptive Technology Specialist - manages all Student Services Assistive technology needs district-wide, including IEP technology compliance, classroom solutions, specialty software, systems, etc. Works with IEP teams to develop appropriate and efficient technology solutions for students with assistive technology needs.

#### Building-Based Technology Support (Computer Aides)

Building-based Computer Aides play an important function in implementing technology, coordinating computer equipment in the building, delivering and setting up computer carts in buildings, maintaining inventories, and more. These staff are currently often the “first line of support” for all building technology issues both instructional and technical. The current staffing goal for Computer Aides is one aide in every building. Nevertheless, this is a goal that is not presently (Fall, 2014) realized and therefore it is the intention of this plan to increase Computer Aide staffing across the district.

Current (Fall, 2014) computer aides:

* JFK - 0.5
* CVS - 0.5
* WMS - 0.5
* BHS - 0

#### District-Wide Technical Support

The district supports several systems, including instructional technology, data systems, operates a helpdesk, and manages large amounts of data for reporting purposes. The last school year, the helpdesk successful resolved 7800 tickets. The current configuration of the technical staff, as of Fall 2014 is as follows:

* Senior Network Specialist - Service calls and coordination
* Network Specialist - Service calls
* Information Systems Support Specialist – Service calls
* Sr. Network Specialist - Data reporting and management
* Student Information Systems Specialist - Data reporting and management
* Computer Operations Aide II–Web page development, purchasing, software coordination
* Computer Aide (District-wide Responsibilities) – Helpdesk management, phone support
* Clerical Aide – Helpdesk management, phone support

Proposed Changes to Staffing and Organization

As the district moves to manage more devices, as outlined in this plan, additional technical support will be needed. We are proposing one additional Network Engineer for every 400 computers or devices added to the network.[[1]](#footnote-1)In addition, the new Strategic Technology Plan proposes the addition of instructional technology support staff – to work with teachers on the instructional issues related to technology use for teaching and learning -- at several levels.

#### Proposed Additional Staff

2015-16 School Year:

* Add one additional District Instructional Technology Specialist.
* Add 4 0.5 Computer Aide positions so that each of the four schools has one full time Computer Aide.
* Additional Technical Support staffing (as needed)

2016-17 School Year:

* Add one Additional District Instructional Technology Specialist
* Additional Technical Support staffing (as needed)

## Brewster’s Technology Infrastructure

### Hardware Current Configuration (Fall 2014)

The technology tools and devices in the district support the instructional needs of 3280 students, 657 teachers, administrators, and support staff. These technologies come in a variety of forms to best address the diverse needs of the constituents of the BCSD. Each of the four schools is outfitted with a wireless network managed through individual wireless access points strategically located throughout the school building. Most classrooms are outfitted with a SmartBoard and projector. Each classroom has at least one desktop computer. Security cameras are located throughout and around each of the school and the around the school campus. The current inventory as of the fall of 2014 includes the following:[[2]](#footnote-2)

|  |  |
| --- | --- |
| 970 | Desktops |
| 215 | Laptops |
| 519 | Chromebooks |
| 160 | iPads |
| 45 | Systems & Servers |
| 178 | Smartboards |
| 190 | Projectors |
| 155 | Printers |
| 137 | Security Cameras |
| 39 | WiFi units |
| 3 miles | Fiber Optic Cable |

### Network Infrastructure

District’s network infrastructure must provide a comprehensive, interconnected, foundation for learning and operations. As such, the district’s physical and wireless network infrastructure will be upgraded to support the capacity necessary to meet our instructional and information management needs.

Learning resources aligned with instruction goals should be accessible, while ensuring filtering regulations and student safety. Therefore, the district will need to upgrade its network bandwidth over the next three years to meet both the needs of the district and the state and national guidelines for educational networks. Moving forward, we anticipate that an increasing number of formal assessments will be conducted using technology. This will require a stable, secure and accessible network foundation. National standards call for a minimum of 100mbps of Internet bandwidth per 1000 students and faculty.[[3]](#footnote-3) Meeting this standard would require Brewster to have a 400mpbs connection. At present (Fall 2014), the district’s connection to the Internet is only 100mpbs. While this is sometimes adequate for current levels of use, it is clear that meeting the goals of the 2014 – 2017 Strategic Technology Plan (including an ever growing demand for online assessment such as PARCC that requires an Internet connection) will quickly exceed current bandwidth availability. Hence the need to meet the minimum 400mbps standard.

As the district continues to evaluate and assess new initiatives, the network infrastructure must be constantly evaluated and funded to ensure long term performance of instructional technology.

### Communication, Productivity and Collaboration Systems

With communication central to district operations, reliance on electronic messaging increases daily. In addition, mobile access to resources and systems for collaboration and productivity are essential to meeting the district’s vision for instructional technology.

The district will employ and continue to develop the utilization of cloud-based cross-platform solutions – many available at little or no cost to the district. These solutions will integrate productivity tools as well as collaboration allowing staff to work collaboratively across buildings to engage in professional learning, curriculum development and student centered discussions.

Students are provided cloud-based productivity tools that allow for collaboration and electronic assignment management, resulting in a savings of time and the cost of paper and printing.

Communications with parents will be supported in several ways. The district, school, and teacher websites will continue to be updated on a regular basis to provide current and comprehensive information about the activities of the district. There is a portal component of the student management system, Infinite Campus, that allows parents and students to access live data for student grades and attendance. Teachers can also use the messenger component of Infinite Campus to contact parents as a class or individually. There is also an email system, Bear Backpack, that sends parents relevant information and announcements for the district.

The district will implement technology-based assessment solutions that allow staff to assess student progress and provide instructional staff access to data and reports. Efficient access to assessment data is critical in terms of allowing teachers to differentiate instruction and thereby meet the needs of all learners.

### Classroom Technology

To disseminate instructional materials to students, teachers currently use their teacher web pages, Infinite Campus, Google Docs, Castle Learning, and a variety of other platforms. The district will continue to develop and explore student center instructional opportunities including blended and online learning.

Staff utilize a variety of different technologies in the district including dedicated labs, mobile carts, classroom workstations, coupled with the utilization of students personal devices. As existing devices such as workstations, mobile carts of devices, interactive whiteboards, etc., approach end of life, new solutions are required to replace the aging equipment. The district will support and upgrade these devices to ensure learning environments are complete.

### Standardized Assessments

There are several applications to assess students for the purpose of benchmarking for growth as well as formative and summative assessments. In order to ensure that this type of standardized testing and less formal assessment can be completed comprehensively and securely, the district needs to work to ensure that our system is prepared for these and future testing requirements. We will have to maintain hardware that is adequate in number and reliable. The network stability and bandwidth also needs to be robust and stable to support these forms of assessment.

### Anticipated Expansion and Upgrades

The district will conduct an infrastructure audit to evaluate our existing technology infrastructure, hardware, and equipment.[[4]](#footnote-4) Buildings, via the Building Technology Committees, will also work to identify their need to best address the educational need of their students under the parameters of the Technology Plan. Our infrastructure audit evaluation will also be compared with state requirements for on-line testing. The results of this review of District infrastructure will provide the necessary information to properly prepare for state testing mandates. The District will follow the replacement cycle plan to periodically upgrade technology tools including desktops, laptops, tablets, Smartboards and affiliated peripherals.

# 2. Technology Needs – Current Status

## Current Status of Technology Use in Brewster Schools – Fall 2014

Late in the 2013 – 2014 school year and in anticipation of the creation of the 2014 – 2017 Strategic Technology Plan, Brewster engaged the services of the Lower Hudson Regional Information Center (LHRIC) and Sun Associates to conduct an evaluation of the district’s current implementation of instructional technology within the teaching and learning environment. This evaluation was intended to examine the degree to which the district is supporting its teachers and students in the use of instructional technology to facilitate the sorts of learning experiences which are generative of the skills, habits of mind, and dispositions necessary for success as lifelong learners. The findings and recommendations deriving from this evaluation are summarized below.[[5]](#footnote-5)

Using district-developed indicators[[6]](#footnote-6) as a framework, the evaluators collected data via focus group, interview, and classroom observation (walk-thorough). In addition, June 2014 data from Brewster’s use of BrightBytes-Clarity was also considered in this evaluation. The data set was analyzed by the evaluators and a series of evaluative findings and connected recommendations was created.

Overall, the evaluators were impressed by the general belief expressed by Brewster’s teachers and parents, and reflected in the district-developed evaluation indicators, that technology use must be grounded in a plan for how that technology will improve learning and student outcomes. Repeatedly, the evaluators heard that technology must not exist “for technology’s sake”. It appears that Brewster’s educational community (parents, teachers, administrators) is quite adamant about applying this underlying philosophy to the district decision-making process related to technology.

The evaluators were also impressed by overall levels of teacher interest in exploring the use of technology to improve student skills and outcomes. This connection is made quite specific in the Student Skills indicator where success in technology integration is defined as being the student use of technology to develop the skills and dispositions associated with the Common Core for Learning. This orientation toward the development of higher order thinking and learning skills is very much in keeping with national and regional trends in both actual student technology use and the intent/vision behind that use. Likewise, the district’s Teacher Skills and Pedagogy indicator reflects best practice in its intent that pedagogy support student learning experiences that align with 21st century skills and learning environments. The evaluators found evidence that there are teachers at all levels who actively work to implement these environments and support these sorts of technology-infused learning experiences with their students. In addition to these relatively small “pockets” of technology using teachers who are actively working in ways that meet the district’s indicators, virtually all teachers are making use of the technology available – usually Smartboards and some access to portable devices/workstations – to engage their students’ attention and to augment what is still largely a teacher-directed instructional environment.

Still, It is clear from the June 2014 evaluation that Brewster still has some way to go in terms of fully meeting its indicators, and nowhere is this more the case than in the District Supports for Technology Integration indicator. Here, the evaluators found that the district experiences its greatest challenges in meeting what is considered best and proven practice as affirmed by research and the district’s own indicators/community. Brewster is found to not currently be providing its teachers with a sufficient level of teacher technology professional development. In addition, the district is not providing sufficient levels of instructional technology support, and is experiencing difficulty in ensuring that the efforts of its technical staff are being applied efficiently and appropriately. The district is continually challenged in its ability to maintain its infrastructure to levels necessary to support the uses defined in the Student Skills and Teacher Pedagogy indicators. This is reflected in data that shows that a majority of teachers are frustrated over the lack of adequate access to technology tools and network resources.

The evaluators found that the lack of a clear and articulated vision for technology’s role in teaching and learning is negatively impacting the district’s current instructional technology program. Specifically, parents are reluctant to invest further in their support of technology that they are not sure is currently being used effectively by teachers or students. Likewise, teachers find that a lack of clarity as to priorities related to technology use, infrastructure, and curriculum connections has resulted in a situation where it’s easier to simply “not deal with technology” (at least beyond the use of the Smartboard) until the district sorts out these issues. Contributing to the lack of traction experienced around these issues is the fact that the district is lacking the administrative structure for technology that would be necessary for setting clear, curriculum-aligned, priorities for technology *and* commanding the technical improvements that are necessary to implement these priorities.

With these June 2014 findings in hand, the evaluators recommended that the district begin work immediately on the development of a comprehensive strategic technology plan. It was recommended as critically important that this plan be seen (and exists in reality) as primarily being about how technology supports student learning. “Infrastructure” (i.e., what gets purchased, installed, etc.) should only be a *supporting* component of the strategic technology plan. At its core, the plan needs to define technology’s role in supporting the sorts of pedagogies that are generative of standards-based, 21st century, student learning.

As important as the actual vision and goals is the fact that the district needs to create and empower staff that can lead the implementation of the plan. Largely this means that the district needs to develop a *leadership structure* for technology within the context of the district’s curriculum and instruction administration. Technology needs to be seen as an integral part of how learning happens in Brewster. Typically, this sort of integration requires more instead of less administrative attention in a school district. Therefore, technology oversight needs to be fully integrated into the core curriculum and instructional administration and leadership of the district.

In addition to ensuring strong and effective district-level leadership for instructional technology, the district should also create full time Instructional Technology Specialist (ITS) positions, ideally/ultimately one per building. The individuals in these positions should be fully occupied with providing instructional support to teachers. This support will constitute the sorts of professional development that teachers believe – and the evaluators agree – will allow them to develop the pedagogies and instructional strategies that can allow the district to meet its Student Skills indicator. Further bolstering the work of the ITS should be a clear K-12 set of expectations for *how* technology is best woven into the district’s curriculum in support of curriculum goals.

In conclusion, the evaluators found that Brewster presents as a district that is well positioned in terms of teacher beliefs and attitudes related to technology integration. Parents are eager for their students to begin to utilize technology tools in ways that parallel the world of work and that support lifelong learning. What remains in order for the district to realize the potential offered by these desires is for the district to take the necessary steps to demonstrate leadership and to begin to craft the sort of visionary, highly strategic plan that will ensure a bright future for all of Brewster’s learners.

# 3. 2014 – 2017 Vision, Goals and Action Plans

## Brewster Central School District Mission

To create a culture within BCS that embraces the whole child, challenges children’s abilities, values diversity, incorporates relevant technology, and develops a Professional Learning Community that strives to rigorously evaluate its effectiveness on student learning.

## Brewster’s Vision for Technology

As citizens of a global community Brewster’s students continuously develop the skills necessary for functioning in an interconnected and technologically evolving world.  Brewster’s students use technology, aligned with state and national standards, to develop age and developmentally-appropriate skills in thinking, communication, collaboration, creativity, and problem-solving.

Teachers continuously develop their knowledge and practice of how technology supports, improves and transforms student learning. Teachers work, collaborate, and learn in ways that allow them to utilize their creativity to develop effective learning experiences for all students.

Brewster Central Schools have a reliable and responsibly funded technology infrastructure that supports student, parent, teacher, and administrator access to technology tools and resources. Our district provides and supports ongoing professional learning, support structures, effective policies, and procedures for all stakeholders to safely and responsibly work, collaborate, and learn. Through the implementation and maintenance of this strategic technology plan, Brewster’s district leadership ensures that technology is an essential part of the educational experience.

## 2014 – 2017 Strategic Technology Goals

In overall support of Brewster’s vision for technology the district has established the following strategic instructional technology goals.

### Student Skills

1. Students will develop mastery of skills at the appropriate grade and developmental levels to meet the internationally benchmarked curriculum and technology learning standards.
2. Students will be self-directed learners who develop the skills necessary to support their education goals and use technology responsibly.
3. Students will have the opportunity to be actively involved in planning, designing, and implementing the district’s vision for technology.

### Teacher Skills and Pedagogy

1. Teachers will prepare students to be productive and responsible 21st century citizens by incorporating the ISTE NETS standards into the current New York State curriculum.
2. Teachers will acquire a uniform set of basic skills and the pedagogical techniques to facilitate a learner-centered, project-based, curricula that integrates the use of technology tools.

### District Supports

1. The district will develop and support a technology plan with school community representation that is consistent with the district's vision for technology role in teaching and learning.
2. The district will provide ongoing job-related professional development and opportunities for collaboration for all employees to effectively implement and use technologies.  Teachers will engage in comprehensive professional development programs that include meaningful 21st century training for instruction: instructional software and emerging technologies.
3. The district will develop and maintain a network infrastructure that will support the district's technology plan that is functional, reliable and secure.
4. The district will provide equitable, consistent, and sustainable access to technology - hardware, software, peripheral devices -- that supports the district plan.
5. The district will create, review and communicate policies and procedures that support the district's technology plan.
6. The district will provide responsible and ongoing funding to support the district’s technology plan.

## Action Plans

### Student Skills

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| **GOAL 1:** Students will develop mastery of skills at the appropriate grade and developmental levels to meet the internationally benchmarked curriculum and technology learning standards. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 - ongoing | Teachers will be introduced to and will apply subject or grade level specific instructional technologies (guided by the instructional technology and curriculum maps). | 9/2014 | Ongoing | District Instructional Technology Specialist |
| 2014 - ongoing | Provide ongoing, job-embedded and collaborative professional learning[[7]](#footnote-7) to support teachers in their implementation of the ISTE [NETS-T](http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf) and [NETS-S](http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-S_PDF.pdf) Standards. | 10/2014 | Ongoing | Assistant Superintendent of Curriculum |
| 2014 - ongoing | Identify, evaluate, and then utilize applications with immediate feedback to assess and develop student learning of the benchmarked standards. | 9/2014 | Ongoing | District Instructional Technology Specialist |

(Student Skills Goals continued)

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| **GOAL 2:** Students will be self-directed learners who develop the skills necessary to support their education goals and use technology responsibly. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2015 - ongoing | Using the curriculum and technology maps created in Teacher Skills Goal 1, Action Item 5, Instructional Technology Specialists and teachers will identify & use authentic learning opportunities to prepare students for real world experiences. | 3/2015 | Ongoing | District Instructional Technology Specialist |
| 2015 - ongoing | Teachers will encourage, implement and model a variety of teaching and learning strategies (such as project-based learning and blended learning) to support student motivation and mastery both in and out of the classroom. | 3/2015 | Ongoing | Teachers |
| 2015 - ongoing | Instruct and model examples of ways teachers can guide students in the use of a variety of instructional technologies. | 11/2014 | Ongoing | District Instructional Technology Specialist |

(Student Skills Goals continued)

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| **GOAL 3:** Students will have the opportunity to be actively involved in planning, designing, and implementing the district ‘s vision for technology. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2015 | Expand course offerings, clubs, and student support positions so that students may develop opportunities to develop the breadth and mastery of technology in both classroom and non classroom settings. | 1/2015 | 3/2015 | School Principals |
| 2015 - ongoing | Establish an outreach tech tutor program for students to provide technology training and assistance to the school community. | 9/2015 | Ongoing | School Principals |
| 2015 - ongoing | Students, including representatives from the Democratic Congress will provide feedback to the District Technology Committee. | 9/2015 | Ongoing | District Instructional Technology Specialist |
| 2015 | Develop a student “bill of technology rights & responsibilities” to set the framework and expectations for student directed learning (to be done in conjunction with the current “[acceptable use policy](http://www.brewsterschools.org/technology/acceptable_use.html)”). | 9/2015 | 6/2016 | District Instructional Technology Specialist |
| 2015 - ongoing | Utilize “Clarity” and other applicable student data and feedback from students to help shape the district technology vision and opportunities. | 9/2014 | Ongoing | Assistant Superintendent of Technology and Human Resources |

### Teacher Skills and Pedagogy

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| **GOAL 1:** Teachers will prepare students to be productive and responsible 21st century citizens by incorporating the [ISTE NETS standards](http://www.iste.org/standards/standards-for-teachers) into the current New York State curriculum. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 | Present technology goals and vision to BCSD faculty | 10/2014 | Fall 2014 | Principals |
| 2014 | Provide meaningful support and training for the staff on the ISTE-NETS technology standards <http://www.highered.nysed.gov/tcert/pdf/pdstds.pdf> | Fall 2014 | Spring 2015 | District Instructional Technology Specialist |
| 2014 | Identify areas of strength and weakness relative to the NETS standards using Clarity and the Spring 2014 district technology audit; use this information to inform curriculum development | Fall 2014 | On-going | District Instructional Technology Specialist |
| 2014 | Investigate other districts who have mapped the NETS-S to inform our alignment of our curricular areas | Fall 2014 | Winter 2015 | District Instructional Technology Specialist |
| 2014-2015 | Define a uniform set of 21st century technology skills - modeled on the ISTE NETS-T standards - that should be integrated across the curriculum. | Winter 2015 | Summer 2015 | District Instructional Technology Specialist |
| 2014 | Connect technology-based pedagogy to all core curriculum maps by aligning ISTE-NETS technology standards with the New York State standards, district curriculum, and the Danielson framework. | Spring 2015 | End of Summer 2015 | Assistant Superintendent of Curriculum |
| 2015-on-going | Create a bank of technology based instructional activities that correlate with the curriculum maps and reflect grade level benchmarks | Fall 2015 | On going | District Instructional Technology Specialist |
| 2015 – on-going | Develop a scope and sequence for all technology based courses and ensure that these benchmarks are aligned with the NETS Standards. | Summer 2015 | On going | Assistant Superintendent of Curriculum |

(Teacher Skills and Pedagogies Goals continued)

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| **GOAL 2:** Teachers will acquire a uniform set of basic skills and the pedagogical techniques to facilitate a learner-centered, project-based, curricula that integrates the use of technology tools. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 - on-going | Identify faculty needs and design appropriate professional development opportunities to foster technology-supported student centered learning | Fall 2014 | On going | District Instructional Technology Specialist |
| 2014 -on-going | Plan and implement monthly half days dedicated to staff training, embedded professional development and coaching through flexible use of substitute staff. | Fall 2014 | On Going | District Instructional Technology Specialist |
| 2014 - on-going | Model effective use of instructional technology and student centered learning activities at faculty meetings, PLCs, and peer observation.[[8]](#footnote-8) | Fall 2014 | On Going | District Instructional Technology Specialist |
| 2015 | Identify professional expectations regarding the use of technology in instruction - aligned with NETS-S, NETS-T, and NETS-A | Spring 2015 | Fall 2015 | Assistant Superintendent of Technology and Human Resources |
| 2014 - on-going | Utilize 21st century tools and emerging technologies to collaborate and coordinate between buildings and remotely | Fall 2014 | On going | Assistant of Technology and Human Resources |
| 2014 - on-going | Evaluate the effectiveness of technology based lessons through data and feedback (from students, teachers, and parents) to continuously inform planning and implementation of student centered learning. | Fall 2014 | On Going | Building Principals |

### District Supports

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| **GOAL 1:** The district will develop and support a technology plan with school community representation that is consistent with the district's vision for technology’s role in teaching and learning. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 | Complete a District Technology Audit for use as baseline information on how technology currently supports teaching and learning in Brewster Central School District. | Spring 2014 | July 2014 | Assistant Superintendent of Technology and Human Resources |
| 2014 | Charge a district-wide committee of stakeholders in the development of a 3 year technology plan (vision, goals, action plans) | Summer 2014 | Fall 2014 | Assistant Superintendent of Technology and Human Resources |
| 2014 | Present 2014 - 2017 BCSD Strategic Technology Plan for Board of Education Approval | Fall 2014 | Fall 2014 | Assistant Superintendent of Technology and Human Resources |
| 2015 – On-going | Review, and update when necessary the district technology plan on an ongoing basis with input from building technology committees. | Summer 2015 | Biannual/On-going | Assistant Superintendent of Technology and Human Resources |

(District Supports Goals continued)

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| **GOAL 2:** The district will provide ongoing job-related professional development and opportunities for collaboration for all employees to effectively implement and use technologies. Teachers will engage in comprehensive professional development programs that include meaningful 21st century training for instruction, instructional software and emerging technologies. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 – On-going | Utilize Clarity Survey findings to identify gaps and professional development opportunities. | 9/14 | On going | Assistant Superintendent of Technology and Human Resources |
| 2014 – On-going | Utilize survey result analysis and the district’s mapping of technology to the curriculum (See Teacher Skills/Pedagogy Goal 2, Action Item 5), to develop professional development to support technology plan. | 11/14 | On going | Assistant Superintendent of Technology and Human Resources |
| 2014 – On-going | Provide multiple opportunities and venues for staff training and collaboration. | Fall 2014 | On going | District Instructional Technology Specialist |

(District Supports Goals continued)

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| **GOAL 3:** The district will develop and maintain a network infrastructure that will support the district's technology plan that is functional, reliable and secure. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Anticipated**  **Cost** | **Lead Person** |
| 2014 | Contract with vendor to audit and investigate network infrastructure problem areas such as: Firewall, Wireless, Bandwidth, Email | 10/14 | 11/14 | $5000 | Senior Network Engineer |
| 2014 | Present audit findings and recommendations to District Wide Technology Committee | 11/14 | 11/14 | None | Vendor |
| 2014 | Budget and plan District Wide Technology committee accepted recommendations | 12/14 | 1/15 | None | Assistant Superintendent of Technology and Human Resources |
| 2014 | Purchase networking equipment and contract services based on accepted committee recommendations | 1/15 | 2/15 | TBD | Assistant Superintendent of Technology and Human Resources |
| 2015 | Repeat audit process above and assess progress and network performance. | 10/15 | 10/15 | TBD | Vendor |

(District Supports Goals continued)

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| **GOAL 4:** The district will provide equitable, consistent, and sustainable access to the technology-based systems and devices - hardware, software, peripheral devices - that supports the district plan. |

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| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 – On-going | Inventory current hardware, software, and peripherals. | 10/14 | On going | Senior Network Engineer |
| 2014 – On-going | Define minimum hardware needs to ensure equitable technology access. Buildings will recommend to the district-wide committee their specific needs. | 11/14 | On going | Senior Network Engineer |
| 2014 – On-going | Assess relevance of all equipment that supports student learning. | 10/14 | On going | District Instructional Technology Specialist |
| 2014 – On-going | Recommend purchases to meet hardware needs. | 10/14 | On going | Senior Network Engineer |

(District Supports Goals continued)

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| **GOAL 5:** The district will create, review and communicate policies and procedures that support the district's technology plan. |

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| --- | --- | --- | --- | --- |
| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Lead Person** |
| 2014 | Identify areas where policies or procedures need to be developed or changed including review, development and recommendations. Including AUP, BYOD, filtering, and others as determined by the committee. | 9/14 | 6/15 | Assistant Superintendent of Technology and Human Resources |
| 2014- – On-going | Forward policy recommendations as appropriate to District Technology Committee, Assistant Superintendent of Technology and Human Resources, Superintendent, and/or Board of Education for approval. | 12/14 | on-going | Assistant Superintendent of Technology and Human Resources |
| 2014 – On-going | Publish policies on the technology section of the Brewster webpage. | Fall 2014 | On going | District Instructional Technology Specialist |
| 2014 – On-going | Building Technology Committees will develop building technology procedures and protocols as necessary. | Fall 2014 | On going | Building Instructional Technology Specialists |

(District Supports Goals continued)

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| **GOAL 6:** The district will provide responsible and ongoing funding to support the district’s technology plan. |

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| --- | --- | --- | --- | --- | --- |
| **Year** | **Action Item** | **Start Date** | **Completion Date** | **Anticipated**  **Cost** | **Lead Person** |
| 2014 | Identify infrastructure items (main switches, routers) for potential district bond project | 8/14 | 10/14 | $400,000 | Assistant Superintendent of Technology and Human Resources |
| 2014 | Identify additional hardware to be included in year 2 plan | 10/15 | 11/15 | TBD | Assistant Superintendent of Technology and Human Resources |
| 2014 | Identify hardware and software solutions by building. | 9/14 | 11/14 | TBD | Assistant Superintendent of Technology and Human Resources |
| 2014 – On-going | Explore outside funding opportunities and possible grant writer | 9/14 | On going | N/A | Assistant Superintendent of Technology and Human Resources |
| 2015 | Purchase hardware for year 1 lease purchase based on committee recommendations the include network improvements and workstation recommendations and upgrades. | 1/15 | 1/15 | $375,000 | Assistant Superintendent of Technology and Human Resources |
| 2015 | Provide dedicated support including resources and staffing for technology integration and staff development in multiple years of the plan. | 9/15 | 9/15 |  | Assistant Superintendent of Technology and Human Resources |
| 2016 | Provide a second and third dedicated positions for technology integration and staff development for a total of 3.0. | 9/15 and 9/16 | Fall 9/15 and 9/16 |  | Assistant Superintendent of Technology and Human Resources |
| 2015 | Evaluate / Increase Support Staffing based on expanded technology purchases | 9/15 | On going |  | Assistant Superintendent of Technology and Human Resources |

# 4. Budget and Funding – Phase I

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Additional Budget Items Added with the Tech Plan** | | | | |
| **Date** | **One-Time Cost** | **Yearly Cost** | **Number** | **Total** |
| **Staffing** | | | | | |
| Network Specialist | 9/2015 & 9/2016 |  | $80,000 | 2 | $160,000 |
| District Instructional Technology Specialist | 9/2015 & 9/2016 |  | $80,000 | 2 | $160,000 |
| 5 additional 0.5 Building Computer Aides | 9/2015 |  | $80,000 | 1 | $80,000 |
| **TOTAL STAFFING** |  |  |  |  | **$400,000** |
| **Equipment** | | | | | |
| Network Upgrades: replace Cisco switch, upgrade infrastructure | 12/2014 | $300,000 |  | 1 | $300,000 |
| Network Storage Upgrades | 12/2014 | $50,000 |  | 1 | $50,000 |
| Computer Replacement – Phase I | 9/2015 |  |  |  |  |
| 60 Units – JFK |  | $30,000 |  | 1 | $30,000 |
| 60 Units – CVS |  | $30,000 |  | 1 | $30,000 |
| 120 Units – WMS |  | $60,000 |  | 1 | $60,000 |
| 120 Units – BHS |  | $60,000 |  | 1 | $60,000 |
| Additional Units & Software |  | $30,000 |  | 1 | $30,000 |
| **Total Phase I** |  | **$210,000** |  |  | **$210,000** |
| **TOTAL EQUIPMENT** |  |  |  |  | **$560,000** |
| **Professional Development** | | | | | |
| Subs, Training Costs, Conferences |  |  | $20,000 | 2 | $40,000 |
| **TOTAL PROFESSIONAL DEV’T** |  |  |  |  | **$40,000** |
|  |  |  |  |  |  |
| **TOTAL ONE-TIME COSTS** |  |  |  |  | **$560,000** |
| **TOTAL YEARLY COSTS** |  |  |  |  | **$440,000** |
| **GRAND TOTAL** |  |  |  |  | **$1,000,000** |

## Funding

This multi-year living plan will be implemented from September 2014 through September 2017. It is the intent of the BCSD to begin the implementation of the goals and actions of this Strategic Technology Plan as soon as possible, in service of the district’s mission and overall vision of the plan. Given that several of the action items identified in the plan require funding, the implementation of these items will be contingent on available funds. The district plans to utilize the following funding sources in order to support implementation of these action items: Allocation of funds within the operating budget, grants and private funding, and establishment of community partnerships. These funding strategies are discussed in more detail below.

### Allocating funds within our Operating Budget

Each year funds will be requested through the annual budget process, coordinated by the Assistant Superintendent of Technology and Human Resources. The amount requested will vary based on the aggressiveness determined to implement the action items in a timely manner. The 2014-2015 School Budget includes funds for a lease purchase for approximately $350,000. This amount is budgeted to upgrade and replace technology equipment and infrastructure. In order for this plan to move forward, funds need to be allocated annually for hardware, software, ongoing costs, and staffing.

### Grants and Private Funding

Efforts to identify grants and private funding are in process. Any funds received for this purpose will allow the District to accelerate implementation based on priorities unless there is a specific funding requirement that establishes a use of the funds that is not consistent with the priorities established in this plan. The speed of implementation will be based on opportunities and specific funding request requirements.

### Establish Community Partnerships

The District's Technology Committee will research and reach out to other community resources and establish partnerships. A focus will be on matching action items to community expertise and determine if the community has the resources to assist with the implementation of identified action items.

# 5. Evaluation and Assessment for Technology

## Evaluation Design

Brewster Central School District is committed to conducting a systemic, rigorous, and highly formative evaluation process that aims to measure the impact that this Strategic Technology Plan is having in schools and classrooms across the district. This evaluation goes well beyond accounting for technology infrastructure and reporting quantitative data on students, teachers, and administrators achieving basic technology literacy benchmarks. In addition to such basic data, the district’s technology plan evaluation effort will report on the qualitative impact of technology on teaching and learning. Through such data, and the formative reflection on progress that this will support, Brewster will be in a position to monitor the impact of the district technology infrastructure, technology policy, and technology professional development initiatives. This will allow for responsive and frequent fine-tuning of efforts; and ultimately a much greater degree of accountability for the use of resources to support instructional technology.

Through this evaluation plan, Brewster will apply a uniform data collection process across the district, using a standardized set of evaluation tools that have been mapped to the plan’s goals and objectives. These tools include the Clarity/BrightBytes teacher, student, and parent online survey instruments, classroom observation protocol, and interview/focus group questions for teachers and administrators. Brewster will initiate a data collection effort in the spring of each school year that collects data at the classroom level in every school in the district. Information collected in this manner will create a uniform dataset to be used to determine the district’s progress toward meeting the goals and indicators in the technology plan. Further, school level data can be used by schools as a driver for instructional technology goals in their annual School Improvement Plans.

## Technology Program Evaluation Indicators

### Student Skills and Outcomes

**What do we want students to know and be able to do with regard to the use and integration of technology?**

*Students are developing the skills and habits as described by the ISTE NETS-S in conjunction with the Common Core Learning Standards, in particular, communication, collaboration, critical thinking, and creativity. Students at all levels utilize technology to take ownership of their learning, collaborate, problem solve, nurture creativity, and adapt productively to new situations. Information literacy and digital citizenship skills are incorporated in students’ learning across all grade levels as developmentally appropriate. Students will be contributing members of a global digital community.*

### Teacher Skills/Pedagogy

***What skills – pedagogical and technical – do we want teachers to have to support the development of student skills and outcomes?***

*Teachers demonstrate fluency in the use of the NETS-T Standards and technology-infused pedagogy and use these to establish flexible and student-centered learning environments. Teachers design and differentiate relevant, real-world learning experiences that incorporate available digital tools and resources to promote creativity, communication, collaboration, and critical thinking in line with best pedagogical practices (e.g. differentiation, home-school connections, accountability and assessment). Teachers continuously improve their professional practice through taking advantage of professional learning opportunities.*

### District Supports for Technology Integration

***What conditions need to be in place in Brewster to effectively leverage technology for student learning?***

*The District ensures the development of, and effectively communicates, a clearly defined K-12 plan for technology literacy and integration. The district provides and ensures that teachers engage in ongoing, job-embedded professional development by providing professional learning opportunities to utilize technology to support student learning. This plan is aligned to national and local standards with measurable essential learning outcomes (such as curriculum standards and the CCL). The district ensures equal and adequate access to technologies and learning opportunities for all students and staff using contemporary and reliable technology. Teacher and student use of technology as a tool for learning is bolstered by the existence of a robust technology infrastructure, effective technical supports, and teacher/staff professional learning that emphasizes the role of technology in meeting curricular and learning objectives. The district maintains and constantly reviews policies necessary to ensure safe and ethical technology use.*

## Technology Plan Evaluation and Updates: 2014 – 2017

The following table describes the main activities associated with technology plan evaluation and technology plan updating between Fall 2014 and Fall 2017.

| **Date** | | **Activity** | **Responsibility** | **Product/Outcome** |
| --- | --- | --- | --- | --- |
| 2014 | Fall  (October/November) | Review data collection instruments | Assistant Superintendent of Technology and Human Resources  District Technology Committee | Data collection instruments properly mapped to technology plan indicators and other Sample District initiatives as necessary |
| 2015 | Spring  (March) | Data Review (June, 2014 data) with schools | District Technology Committee and  School Technology Committees | Updated technology-related goals/actions for School Improvement Plans |
| Spring  (May/June) | Data Collection – Clarity Surveys, Focus Groups, Observations | Assistant Superintendent of Technology and Human Resources |  |
| Summer | Data Analysis and Reporting | Assistant Superintendent of Technology and Human Resources  District Technology Committee and  School Technology Committees | Data reports and data review meeting with District and School Technology Committee |
| Fall | Technology Plan Update | District Technology Committee and  School Technology Committees | Updated District Plan and Updated School Technology Plans |
| 2016 | Spring  (March) | Data Review (Spring 2015 data) with schools | District Technology Committee and  School Technology Committees | Updated technology-related goals/actions for School Improvement Plans |
| Spring  (May/June) | Data Collection – Clarity Surveys, Focus Groups, Observations | Assistant Superintendent of Technology and Human Resources |  |

(continued)

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| --- | --- | --- | --- | --- |
| **Date** | | **Activity** | **Responsibility** | **Product/Outcome** |
| 2016 cont. | Summer | Data Analysis and Reporting | Assistant Superintendent of Technology and Human Resources  District Technology Committee  School Technology Committee | Data reports and data review meeting with District and School Technology Committee |
| Fall | Technology Plan Update | District Technology Committee  School Technology Committees | Updated District Plan and Updated School Technology Plans |
| 2017 | Spring  (March) | Data Review (Spring 2016 data) with schools | District Technology Committee and  School Technology Committees | Updated technology-related goals/actions for School Improvement Plans |
| Spring  (May/June) | Data Collection – Clarity Surveys, Focus Groups, Observations | Assistant Superintendent of Technology and Human Resources and Staff |  |
| Summer | Data Analysis and Reporting | Assistant Superintendent of Technology and Human Resources  District Technology Committee and  School Technology Committees | Data reports and data review meeting with district and School Technology Committee |
| Fall | Technology Plan Revision | District Technology Committee  School Technology Committee | Revised District Plan (2018 – 2021) and Updated School Technology Plans |

# Appendix I: ISTE Standards

## NETS-S (Students)

**1. Creativity and Innovation**

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

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

**2. 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.

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

**3. Research and Information Fluency**

Students apply digital tools to gather, evaluate, and use information.

1. Plan strategies to guide inquiry
2. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
3. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
4. Process data and report results

**4. 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.

1. Identify and define authentic problems and significant questions for investigation
2. Plan and manage activities to develop a solution or complete a project
3. Collect and analyze data to identify solutions and/or make informed decisions
4. Use multiple processes and diverse perspectives to explore alternative solutions

**5. Digital Citizenship**

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

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

**6. Technology Operations and Concepts**

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

1. Understand and use technology systems
2. Select and use applications effectively and productively
3. Troubleshoot systems and applications
4. Transfer current knowledge to learning of new technologies

## NETS-T (Teachers)

**1. Facilitate and Inspire Student Learning  and Creativity**

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face  and virtual environments.

1. Promote, support, and model creative and innovative thinking and inventiveness
2. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources
3. Promote student reflection using collaborative tools to reveal and clarify students’ conceptual understanding and thinking, planning, and creative processes
4. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

**2. Design and Develop Digital Age Learning  Experiences and Assessments**

Teachers design, develop, and evaluate authentic learning experiences and assessment incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS·S.

1. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
2. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
3. Customize and personalize learning activities to address students’ diverse learning styles, working strategies, and abilities using digital tools and resources
4. Provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

**3. Model Digital Age Work and Learning**

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

1. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
2. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
3. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats
4. Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

**4. Promote and Model Digital Citizenship and Responsibility**

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

1. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
2. Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources
3. Promote and model digital etiquette and responsible social interactions related to the use of technology and information
4. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

**5. Engage in Professional Growth and Leadership**

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

1. Participate in local and global learning communities to explore creative applications of technology to improve student learning
2. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
3. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
4. Contribute to the effectiveness, vitality, and self- renewal of the teaching profession and of their school and community

## NETS-A (Administrators)

**1. Visionary Leadership**

Educational Administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization.

1. Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders
2. Engage in an ongoing process to develop, implement, and communicate technology-infused strategic plans aligned with a shared vision
3. Advocate on local, state and national levels for policies, programs, and funding to support implementation of a technology-infused vision and strategic plan

**2. Digital Age Learning Culture**

Educational Administrators create, promote, and sustain a dynamic, digital-age learning culture that provides a rigorous, relevant, and engaging education for all students.

1. Ensure instructional innovation focused on continuous improvement of digital-age learning
2. Model and promote the frequent and effective use of technology for learning
3. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners
4. Ensure effective practice in the study of technology and its infusion across the curriculum
5. Promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration

**3. Excellence in Professional Practice**

Educational Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.

1. Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration
2. Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology
3. Promote and model effective communication and collaboration among stakeholders using digital age tools
4. Stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning

**4. Systemic Improvement**

Educational Administrators provide digital age leadership and management to continuously improve the organization through the effective use of information and technology resources.

1. Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources
2. Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning
3. Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals
4. Establish and leverage strategic partnerships to support systemic improvement
5. Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning

**5. Digital Citizenship**

Educational Administrators model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture.

1. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners
2. Promote, model and establish policies for safe, legal, and ethical use of digital information and technology
3. Promote and model responsible social interactions related to the use of technology and information
4. Model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools

1. Guidelines vary widely as to the recommended number of technicians a school district should have. One common guideline -- the School Technology and Readiness (STaR) Chart, a set of benchmarks for schools to reach “advanced” states of technology readiness – calls for one technician for every 400 devices. <http://etac.tecedge.net/> provides details on Massachusetts’ version of the STaR Chart. Using this guideline which is more modest than our goal, Brewster should have approximately five support technicians. At present (Fall 2014) there is only one support technician. [↑](#footnote-ref-1)
2. In addition to the equipment listed in the table below, the district also manages a variety of networking equipment, the district phone system, and other equipment. A full inventory is available from the Assistant Superintendent for Technology and Human Resources’ office. [↑](#footnote-ref-2)
3. SETDA’s “Broadband Imperative” - <http://www.setda.org/web/guest/broadbandimperative> - recommends this target amount for the 2014/2015 school year. [↑](#footnote-ref-3)
4. The infrastructure audit will provide insight into the district’s current capacity and systems related to the wireless network, LAN and Internet bandwidth, classroom devices such as interactive white boards, the teacher website system, email systems, and desktop/workstation platforms. [↑](#footnote-ref-4)
5. The full June 2014 evaluation report is available from the office of Brewster’s Director of Technology. This report contains a considerable amount of data, graphs, analysis, etc. that would not be feasible to include in the Strategic Plan document. [↑](#footnote-ref-5)
6. See Chapter 5, Evaluation and Assessment, for the full text of the developed indicators. These indicators will guide the district’s on-going evaluation of its technology initiative throughout the live of this strategic plan. [↑](#footnote-ref-6)
7. Professional development should be aligned to the state standards described at <http://www.highered.nysed.gov/tcert/pdf/pdstds.pdf> [↑](#footnote-ref-7)
8. In line with state PD standards - <http://www.highered.nysed.gov/tcert/pdf/pdstds.pdf> [↑](#footnote-ref-8)