Strategic Instructional Technology Plan

*2013 - 2016*

*Winchester Public Schools*

**Table of Contents**

1. Introduction 3

Background 3

Winchester’s Technology Organization – Roles and Responsibilities 4

The District Technology Oversight Committee 4

Technology Department Management and Staffing 4

District Mission 7

Vision for Instructional Technology 7

2. Technology Needs – Current Status 8

Spring 2013 -- Status of Instructional Technology in Winchester Public Schools 8

Findings 8

Recommendations 11

3. 2013 – 2016 Goals and Action Plans 14

Goals 14

Student Outcomes 14

Teacher Skills 14

District Policies and Community Engagement 14

Technology Infrastructure and Support 14

Action Plans 15

Student Outcomes 15

Teacher Skills 19

District Policy and Community Engagement 28

Technology Infrastructure and Support 24

4. Evaluation and Assessment for Technology 32

Evaluation Design 32

Evaluation and Technology Plan Updates: 2013 – 2016 33

Budget/Funding 34

Winchester’s Technology Infrastructure 35

Summary of Major Infrastructure Initiatives 35

Computing Devices 35

Network Infrastructure 36

Classroom Technology 38

Online Courses 38

Purchasing 38

Technology Inventory 40

Appendix I: Winchester’s Technology Indicators 41

Appendix II: Standards 42

NETS-S (Students) 42

NETS-T (Teachers) 43

NETS-A (Administrators) 44

# 1. Introduction

## Background

(just Jeff’s first pass…needs to be edited by Winchester) The following plan 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 Winchester schools over the next three school years. The Strategic Technology Plan is designed to provide a blueprint for district technology efforts.

The basic premise of this plan – as informed by research -- is that pedagogy and curriculum must drive instructional technology use. Beyond this, the plan is also built upon the knowledge that Winchester students need teachers who understand how to teach in ways that foster the development of thinking skills as well as the acquisition of content knowledge. Technology has a role to play in supporting teachers in both of these tasks, even if at present most teachers are largely only familiar with the use of technology for teaching content or perhaps with the teaching of technology skills as content. The strategic directions of this plan aim to develop teacher skills, and to facilitate teacher use of technology to accomplish new tasks and to truly bring our schools and the work that occurs within them into the 21st Century.

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 all too many of our classrooms are organized as teacher-centered environments that are more characteristic of the 19th century than the 21st century learning spaces that they aspire to be. While many of our schools and classrooms have modern technology within them, our teachers do not yet possess the skills in pedagogy to utilize these tools effectively to produce the desired learning outcomes. The supports and training necessary 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 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 Technology Plan is teacher professional development. At the district level, Winchester will create professional development models and resources that can be implemented at the school level. 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 Learning skills aligned with curriculum in their own classrooms. This will be just one of a number of major professional development efforts starting as soon as the spring of 2012.

As noted above, a central principle that underlies this 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. This too is the over-aching goal of Winchester’s Strategic Technology Plan. Therefore, it is reasonable to say that the point of this plan is to enable all teachers, students and administrators to achieve the NETS standards. Much of what follows then is about how Winchester will establish the professional development, infrastructure, and accountability process for meeting NETS standards and thereby supporting 21st Century learning for all students.

## Winchester’s Technology Organization – Roles and Responsibilities

(again, Jeff’s take on things. Needs to be verified against the action plans and by the district) In order to implement its Strategic Instructional Technology Plan and move forward into implementing the 21st century learning environments called for in the following pages, the district will need to reform the way in which technology is overseen and managed within the district. Key to this new organization is the creation of a stronger connection between technology management and the district’s curriculum and instruction infrastructure, and the placement of considerably more instructional and technical resource people at the building level.

### The District Technology Oversight Committee

As a starting point for its re-envisioned organization for Instructional Technology, the district will create a district-wide Instructional Technology Oversight Committee composed of district stakeholders such as teachers, administrators, and other community members. This is the committee that during the Summer and early Fall of 2013 has created the 2013 – 2016 Strategic Technology Plan. Beyond this initial act of plan creation, this Committee will meet regularly to oversee the broad implementation of the district’s technology plan. Committee members are appointed by Winchester’s Assistant Superintendent for Curriculum and Instruction.

Throughout the year, the Committee will provide guidance and input into how the district interprets its strategic needs related to technology and how these needs are met through the various initiatives, purchases, and actions of the district staff working to support technology as a tool for teaching and learning. The advantages of this committee approach are clear. Stakeholder involvement and oversight are critical for gaining the buy-in necessary for technology to be implemented meaningfully throughout the district. Most importantly, by engaging regularly with this plan, the Instructional Technology Team will insure that the plan is more than a “document on the shelf” but instead provide a living, fluid, roadmap – one that is continually assessed as to its ability to meet the curriculum-focused needs of all learners – that the district desires.

* What it does?
	+ Design plans for implementation of long-term major projects involving purchase and use of educational technology.
	+ Recommendations funding procedures - operational budget, WFEE, PTA,....
	+ Recommendations for specific technologies - equipment, software, etc.
	+ Standardize equipment.
	+ Discussion and recommendations on equity.
	+ Recommendation for policy to school committee
* Who is on it?
	+ Infrastructure personnel, tech personnel, teachers,(library media specialist(s), parent organization reps, administrators,

### Technology Department Management and Staffing

The current Strategic Technology Plan specifies a revised structure for roles and responsibilities related to technology management and staffing. This structure is shown below and described in the following brief position descriptions.

(INSERT TECHNOLOGY ORGANATIONAL CHART HERE)

**District Technology Director**

Reporting to Winchester’s Assistant Superintendent for Curriculum and Instruction, this position oversees all District Technology operations, while collaborating with all areas of the district to provide technology 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 Director ensures that federal, state and district policies, such as CIPA, eRate technology needs, MA DESE technology requirements are supported and completed.

#### Instructional Technology Integration Services

**Building-Based Instructional Technology Specialists (5 Proposed)**

These positions work directly with building leaders and staff to integrate Winchester’s instructional technology initiatives. This work includes the development of ongoing face to face and on-demand staff professional development, the setup and management of ongoing central instructional technology solutions, as well as the evaluation and required modification of these initiatives to meet District instructional technology goals and timelines. This team will report to the Instructional Technology Integration Manager and will utilize the ISTE NETS-C standards for instructional technology coaching.

Winchester strives to meet the MA DESE guidelines (ideal) for .5 FTE ITS for every 30 teachers.[[1]](#footnote-1) As of Summer 2013, this means that Winchester should have 5 ITS.

#### Infrastructure Services

**District Network Administrator**

This position manages the entire Winchester Public Schools district network, including connectivity between all buildings.  This includes network routers; wired network drops; wireless network access points; access controls; network and web security; specialized networks for phones, cafeterias, and data centers; guest and Internet-only access; all data/server backup services and disaster recovery; power backup systems for all core network devices and data centers. The District Network Administrator interfaces as appropriate with the Town of Winchester MIS/Network Services manager.

**Information Systems Manager**

This position oversees the student data systems, including all administrative functions, teachers’ grade books, the student/parent portal, and interfaces to peripheral databases and outside entities.  This position is responsible for overseeing the Special Services’ software system and maintaining district-wide content management sites. The Manager coordinates data solutions for a variety of district instructional and operational departments as well as government agencies.

#### Technical Support Services

**System Support Technicians (# = ?, I’m not sure of the current #, but I doubt it’s 4)**

Winchester has X district technology field technicians who are responsible for addressing all staff, student, and administration technical support service requests for all computers, printers, and multiple software packages at all Winchester Public Schools buildings. Technicians are assigned (by the DTC) to address issues per their individual areas of expertise and as called for by the district’s technical service helpdesk system.

Per MA DESE guidelines, the district strives to maintain a technician to workstation ratio that allows for 95% of all technical problems to be solved within one day. Industry standards call for approximately one technician for every 400 devices. As of Summer 2013, the ideal number of technicians would be 4 (there are approximately 1600 devices in the district). As the district works toward an ideal *student:computer* ratio of 1:1, it is clear that the demand for technicians will somewhat grow.

## District Mission

*Out Mission is to provide all students with an outstanding education in a nurturing yet challenging environment that fosters academic achievement, healthy social and emotional development, enthusiasm for education, and a life-long love of learning.*

## Vision for Instructional Technology

*We envision that technology is used seamlessly for differentiated teaching and learning in Winchester’s educational community.  Students will utilize technology as a catalyst and tool for creation, critical thinking, collaboration, and problem-solving. We will prepare all students to become information literate, productive, contributing citizens in an ever more complex world.*

# 2. Technology Needs – Current Status

## Spring 2013 -- Status of Instructional Technology in Winchester Public Schools

### Findings

Between March and May 2013, Winchester contracted the services of an independent evaluator to assess key dimensions of the district’s instructional technology implementation effort. Over the course of the three-month review process, the evaluators spoke to and listened to a large number of Winchester teachers, parents, administrators and interested community members. Throughout the data resulting from this review, several trends and themes emerged as to what Winchester Public Schools stakeholders felt was necessary to improve students’ use of technology in the educational environment. These themes are concisely summed up by the following parent comment:

*First and foremost, improve the infrastructure so that it can support the use of technology. Second, create a well thought out technology plan/vision for all schools to work toward. Third, make thoughtful technology purchases, with inclusion of professional development. Implement and track its use and effectiveness. Fourth, ensure there are enough technicians to support the technology that is deployed.*

This comment, and the many others like it, addresses the main finding from the technology program review. That is, the district needs to have a clear vision, policies, and infrastructure in place to support effective use of technology as a tool for teaching and learning. At the conclusion of the technology program review effort, the evaluators – like the parent quote above – found that Winchester is currently lacking nearly all of the functional elements that the district itself has identified in its performance indicators as being necessary to implement a successful instructional technology program. Therefore, Winchester students have for the most part not received the full benefit from instructional technology.

Winchester developed three highly descriptive performance indicators to guide its program review and to express its intent for how technology is to be used to support student learning (see **Appendix**). Of all of the indicators, it turns out that the indicator for Administration and District Policy contains the key for understanding much of what the evaluators found during the course of Winchester’s technology program review. The Administration and District Policy indicator states:

*Winchester Public Schools administrators effectively communicate to all stakeholders the need to create and support a culture for the meaningful use of technology to aid student learning. The district takes a lead in crafting and implementing a vision for technology centered on its use as an essential tool for teaching and learning. Teachers, administrators, and parents across the district understand and know their role in the implementation of this vision.*

*The district establishes and funds equitable access for all students to the digital tools and resources appropriate to their learning needs. Administrators consistently model responsible, innovative use of technology to serve district goals and actively seek professional development opportunities to facilitate staff’s ability to learn about and share best practices in and outside the district. The district, through the work of its administrators and via district policy, provides the necessary professional development resources for teachers so that they may collaboratively develop and share strategies for enriching and improving student learning.*

The evaluators found that in virtually no way does actual, current (Spring 2013), district performance meet with the statements in this indicator. This is critical not just for the lack of performance, but also because in the case of Winchester, the Administration and District Policy indicator is central to supporting performance in the district’s other two indicators – Student Skills and Outcomes and Teacher Skills/Pedagogy. In short, the evaluators found that through the lack of effective district policies and supports, most of Winchester’s students and teachers have been denied access to most of the positive impacts that technology could bring to their learning and teaching. To be sure, the evaluators found some examples of technology use that run counter to the norm in the district. Still, these examples all involve single teachers working with resources that have been provided through the support of parents, WFEE, or outside grants. Not to take any credit away from inventive teachers and generous supporters, but these “one-off” efforts are clearly not scalable to *every* building and *all* teachers and students. Likewise, the construction of a new Vinson-Owen school promises to bring new technology to that school’s students (through capital construction funds), but Winchester’s students cannot typically wait until their schools are physically reconstructed in order to have access to the basic technology tools for learning. Finally, new devices will ultimately do little when not supported instructionally or technically.

As stated in the indicator, a central point for supporting technology’s role in district classrooms is the existence of a “vision for technology centered on its use as an essential tool for teaching and learning”. Time and time again, the evaluators were told by teachers, administrators and parents that no such vision exists. Survey data confirms this finding. Most teachers and parents expressed in surveys that they were not aware of nor did they understand the district’s vision for technology.



**Figure 1 –** Average teacher and parent agreement with the statement “I believe that I understand/am aware of Winchester’s vision for how technology is intended to support teaching and learning” 4 = Strongly Agree, 3 = Agree, 2 = Neutral, 1 = Disagree, 0 = Strongly Disagree

In addition, parents, teachers, and administrators, with a few exceptions, seem to agree on the *importance* of technology in education. On parent and teacher surveys, both groups agreed that technology is an essential tool for teaching and learning.



**Figure 2** – Average teacher and parent agreement with the statement “I believe that technology is an essential tool for teaching and learning.” 4 = Strongly Agree, 3 = Agree, 2 = Neutral, 1 = Disagree, 0 = Strongly Disagree

Likewise, a number of teachers, parents, and administrators expressed opinions on how technology could be used within the educational environment that were very much in line with the district’s indicators.

*It can enhance learning, provide engaging experiences, aid in differentiation. Ideally it will foster communication and collaboration and allow students to participate in project based learning where they are responsible and in control of their learning.*

*Science, technology is also extremely useful for the recording, analysis, and presentation of data. Probes that connect either directly or wirelessly to a network and/or computer make working with data much easier and more accurate than traditional methods of collection. More and more companies are producing software and hardware that work with tablets, smartphones, and computers, and smartphones now can be used as in situ data collection devices, which can then send information via a network to all other students and teachers.*

*Students can learn how to do research, analyze the validity of resources, and analyze resources for content bias. Students can become more vested in their own learning (ex. web quests involving primary and secondary resources). The internet provides access to primary sources that would otherwise be difficult to gather and show students (maps, current events articles, videos, works of art, photographs, songs, poetry, etc.) Being able to display these primary sources on the internet real time through links (instead of downloading and/or copying) also allows teachers to honor copyright laws. Visuals especially engage learners and question prompts can further encourage critical thinking about issues and ideas.*

Nevertheless, as nearly every teacher and administrator – as well as most parents – noted in the program review, a lack of sufficient working technology hinders the use of technology to support the desired learning outcomes.

*My main focus with technology now is teacher driven--using internet videos and games, powerpoints, etc. that can be projected onto a Smartboard via LCD projector. To adequately incorporate using interactive websites with students I would need access to a classroom of student computers with reliable internet connections.*

*I think that technology is incredibly useful for the many different learning styles we have in each of our classrooms. Our own instruction, supplemented with information on the internet gives the students many ways to view information. There are also great programs that kids can access individually, but the hardware we have available is so slow that I rarely use it. IPads would be amazing, but not available. Not having a Tech specialist to work with K-2 is also frustrating.*

*I think it can support us in many ways but we need to have more technology that is current and works. Our computers are so old that [they] are not supporting us. If fact I am reluctant to use them because they cause more disruption. We also need more in-house support and professional development to implemented first before they can truly support the learning. We also need consistency within the classrooms and schools.*

The evaluators strongly concurred with these teacher statements. It is a clear finding of this program review that Winchester is lacking the necessary infrastructure as well as technical and instructional supports to make technology a useful and relevant part of the district’s learning environment. The district has approximately 1500 workstations and 200 iPads (with 200 more scheduled to come in with the opening of the new Vinson-Owen school). The workstations are uniformly old and generally well past their functional life. The iPads are of course relatively new, but are relatively unsupported by the district in that they have largely been supplied by WFEE and the PTOs. There is no uniform or centralized system for acquiring or licensing apps. District bandwidth has been at the level of a moderately fast *home* connection (25mbps/5mbps) and has only recently been upgraded to speeds approaching a moderate small business connection (100mpbs/10mpbs). Nevertheless, this connection is intended to serve the needs of nearly 5000 students and teachers working on up to 2000 networked devices. Furthermore, the district’s entire network is supported by 2.5 technicians and (for almost the entire past school year) no full-time network manager. At the instructional technology support (integration) level, there are only 2.5 instructional technology specialists who work only at the elementary level and who are often responsible for teaching students. This leaves little time for these specialists to work with teachers in a coaching or professional development mode. The middle school has two computer teachers who work entirely with students (on basic technology skills courses) and who have no time or responsibilities related to teacher instructional support. The high school has one ITS position, which unfortunately was vacant for about half of the 2012 – 2013 school year.

Within this clearly less than adequate environment, it is not surprising that the only places where the evaluators found that students and teachers are starting to utilize technology in ways that meet with the district’s indicators are those few elementary situations where hardware resources (iPads mostly) have been provided by WFEE or PTO funding. Still, the inequity of this situation is intolerable to many teachers, parents, and administrators.

### Recommendations

In order for Winchester to make substantive progress toward meeting its indicators – and implicitly, its goals for technology’s integration within the learning environment – the Spring 2013 program review found that Winchester needs to engage in a top-to-bottom reform of how it currently deploys technology as well as how it provides instructional and technical support. Key recommendations are for Winchester to:

* **Engage a broad stakeholder population in the development of a visionary and detailed strategic plan for instructional technology**. It is essential that this plan be aligned with the district’s strategic improvement plan (and that plan should be reviewed for relevance and alignment with 21st century initiatives such as the Common Core for Learning). The vision for the plan should be based in the sorts of skills, outcomes, and procedures described in the indicators around which this evaluation has been framed. This plan needs to be shared with the entire community.
* **Create the proper conditions and structures for district-wide leadership in instructional technology**. Whether or not the district has a specific individual in the role of “District Technology Coordinator”, it is nevertheless important that this leadership be vested in some district-level staff who can marshal the variety of resources (staff, policies, funding) necessary to implement the district’s technology plan. It is particularly important that this leadership not be diffusely spread out among multiple individuals or departments. Rather, it is essential that technology leadership be exercised over both instructional as well as technical support staff and that it be very clear that *curriculum and instruction* is driving technology decision-making. The primary job of district-wide technology leadership is to implement the district’s technology plan and to ensure that the plan’s vision is maintained and promoted throughout the entire Winchester educational community.
* **Upgrade instructional and technical support to teachers**. Best practice states that a district the size of Winchester (approximately 4300 students, 300 teachers, and currently 1500 – 2000 networked devices) should have between 2.5 to 5 instructional technology specialists who focus on teacher technology instructional support (professional development) and between 4 and 5 technicians who handle technical support to the desktop. In addition, the district should have a full time network administrator and a full time database administrator. There should be a formal help desk operation that tracks technical support requests and the ability of technicians to address problems.
* **Work with teachers and instructional technology specialists to create a mapping of student technology (NETS-S) and 21st century learning skills** against the district’s academic grade level curriculum. Specifically, Winchester should create a document that identifies a set of instructional technology-infused student activities that support key curriculum concepts at each grade and subject area. These would be *suggested* activities that teachers could choose from and through these activities meet both NETS standards and grade/subject level curriculum goals.[[2]](#footnote-2)
* **Develop teacher professional development that addresses teacher skills necessary to facilitate the student skills identified in the technology/21st century skills mapping** (above). This professional development should be job-embedded and largely facilitated by the Instructional Technology Specialists who would serve as instructional technology coaches to teachers. Further, the professional development should generate resources, exemplars, and teacher reflections that are shared across buildings and within levels. This will do much to increase equity between buildings.
* **Develop a target student-device ratio in the new strategic technology plan and then immediately commence the process of meeting this ratio**. The target device ratio should be informed by instructional needs at various levels and the demands of initiatives such as online standardized testing. The evaluators recommend that the ratio be met through a combination of district-owned devices and BYOD. It is critical that this ratio be consistent throughout the district (or within grade levels). Equity of access has been a consistent problem in the district and the district must make clear and dramatic efforts to remedy this situation.
* **Upgrade the district’s network infrastructure so that appropriate network resources, including bandwidth, exist at all buildings**. Current guidelines for school district network Internet connectivity state that a district the size of Winchester should have approximately 400mbs of bandwidth coming into the district. This is four times the current downstream speed of the district’s network and 40 times the upstream speed.

In conclusion, the Spring 2013 program review urged Winchester to undertake a thorough, comprehensive, re-design of the district’s technology program. Through such work, it is highly likely that the district will be able to meet the highly visionary indicators laid out at the beginning of this program review work. Such work will take time, resources, and community support, but the payoff is one that will allow *all* Winchester students to learn in an environment reflective of the district’s student skills and outcomes indicator:

*Winchester Public School students are life-long learners who utilize instructional technology as a catalyst and tool for critical thinking and engagement in authentic, curriculum-centered, learning experiences.  These experiences promote discovery, exploration, investigation, risk taking, and perseverance.  Students are engaged in collaborative learning opportunities to encourage global and local communication and foster a culturally enriched perspective. Our students are responsible and safe digital citizens who are able to select and utilize appropriate tools and applications, troubleshoot problems and formulate solutions.*

# 3. 2013 – 2016 Goals and Action Plans

## Goals

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

### Student Outcomes

1. Establish clear expectations of student technology skills connected to the academic curriculum
2. All students will participate in project-based learning that incorporates technology to support the development of skills in the 4C’s – collaboration, communication, critical thinking and creativity.
3. All students will have opportunities to (develop and) apply digital citizenship practices, information (literacy), and media literacy skills across the curriculum.

### Teacher Skills

1. Teachers will continuously improve their practice by participating in professional development and promoting and demonstrating the effective use of digital tools and resources.
2. Teachers will establish a student-centered atmosphere in which students learn to think critically, problem-solve, communicate, and collaborate about real world experiences.
3. Teachers will use their knowledge of subject matter, teaching and learning, and technology to facilitate differentiated experiences that advance student learning, creativity and innovation.
4. Teachers will develop and implement opportunities for students to apply digital citizenship practices.
5. PD for administrators

### Technology Infrastructure and Support

1. Create synergy between all stakeholders that leads to seamless, effective and efficient management of educational technology
2. Create systems that make the management of teaching and learning more efficient (including school-home communication)
3. Ensure the equitable access to all technology resources and infrastructure.
4. Facilitate and improve curriculum planning by using an online tool such as Understanding by Design.

### District Policies and Community Engagement

1. The (students and staff of the) Winchester Public Schools educational community has (have) equal access to technology to support teaching, learning and administrative functions by forming a Technology Oversight Committee
2. The Winchester Public Schools educational community has the necessary and sustainable professional development to utilize technology to support differentiated teaching and learning.
3. The Winchester Public Schools educational community provides staffing that fully supports the integration of technology into (teaching and learning) the classroom.
4. The Winchester Public Schools will continue to have a strong partnership with the greater community to foster support for Winchester Public School’s technology initiative

## Action Plans

### Student Outcomes

|  |
| --- |
| GOAL -- *Establish clear expectations of student technology skills connected to the academic curriculum.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Establish a committee with representation from each school and grade level for the purpose of developing a K-12 student technology curriculum map by grade level. | September | ?? |  | Curriculum Supervisor |
| 1 | Gather and compile a list of existing curriculum maps or scope and sequence charts (e.g., the Massachusetts Technology Literacy Standards and Expectations frameworks) to establish what has been previously used or developed by the district.  | September | October | No Cost | Curriculum Supervisor with support from instructional technology teachers |
| 1 | Create a survey for all staff in which input is gathered regarding what technology skills they see as necessary for their subject matter and grade level. This should include special projects, presentations, or activities. | October | November | No Cost | Curriculum Supervisor with support from ITT |
| 1 | Share completed technology curriculum map with all staff and post on the web for parents to view. | January | May |  | Curriculum Supervisor |
| 1 and ongoing | Create a sample authentic projects for grades 5, 8 and 12 that utilize technology as a catalyst and tool for creation, critical thinking, collaboration, and problem-solving to assess student skills. | March | Ongoing? | No Cost | ITS, LMS, in conjunction with core teachers |

|  |
| --- |
| GOAL: *All students will participate in project-based learning that incorporates technology to support the development of skills in the 4C’s -- collaboration, communication, critical thinking and creativity.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost/Time** | **Lead Role**  |
| 1 | Create document with current technology available to teachers, that has all relevant information (usernames, passwords, etc) | Sept. | On-going |  | ITS/Tech dept. |
| 1 | Establish professional development and PLCs around best practices in project based learning that incorporates technology at each school/team/dept that will report back to faculty with their findings | January |  |  | Administration/Teachers, ITS, LMS |
| 1 | Establish a variety of assessment tools for project-based learning. (Eg. rubrics, student portfolios, observation, student interviews, student response systems, Edline and other online tools for ongoing feedback). | January |  |  | ITS staff and teachers |
| 1 | Grade level, departments, and specialists will work together on cross curricular projects. Common planning time will be given to this end. | Sept. | On-going |  | Teachers, ITS, LMS |
| 1 | K-5 committee and 6-12 committee investigate and evaluate web based tools and/or software that students can use for project based learning. Tool needs to be accessible for all students. (including students who struggle with reading and writing) Committee chooses a tool and teachers are provided training.  | January |  |  | ITS staff, tech department and teachers |
| 3 | Connect evaluation system and professional dev to project based learning that incorporates technology. Requirements need to be established as part of district policy and future curriculum development. | January | On-going |  | Curriculum Supervisor, Principals |
| 2, 3 | Utilize Edline to showcase student work. |  | on-going |  | ITS and teachers |

|  |
| --- |
| GOAL -- *All students will have opportunities to (develop and) apply digital citizenship practices, information (literacy), and media literacy skills across the curriculum.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Current digital citizenship practices and information literacy skills curriculum and delivery need to be developed, examined, and evaluated. Include skills in k-12 curriculum map.  | Sept. |  |  | ITS/Computer Teachers/LMS/classroom teachers |
| 2 | Policies and standards with regard to excusal from this instruction need to be made and agreed upon in conjunction with the director of special education. | January | June | No Cost | Curriculum Supervisor/Director of Special Education |
| 1 | ITS and LMS will work with teachers to identify current student opportunities within the curriculum for developing digital citizenship skills and information literacy skills. |  |  |  | ITS, LMS, Teachers |
| 1 | Adopt and implement a K-12 inquiry model that gives students and teachers a common language when creating inquiry learning experiences that include the development of information literacy skills. Include info lit skills in the k-12 curriculum map. Note: refer to the MSLA recommended information literacy standards. |  |  |  | LMS, ITS, Teachers |
| 1, 2, 3 | Parent involvement? presentation to the parents concerning digital citizenship??At each school level, elementary, middle, and high school, conduct a parent assembly that focuses on age-appropriate digital citizenship expectations and the home connection. Creation of document to share? | November\*Should yr. 1 be in March? | Annually |  | ITS/Computer Teachers\*Perhaps in conjunction with local safety officer. |
| 1 | Elementary and Middle School Library Media Specialists will collaborate with 4th, 5th, 6th, 7th, and 8th grade teachers to identify, co-plan, and co-teach at least one History, Science, or English curriculum topic in which students will learn and develop information literacy skills | Oct 2013 | Annually | none | Building Principal, LMS; Library Media Center needs a flexible schedule (or some flexiblity) for students to use it for research with guidance and teaching by LMS. |

### Teacher Skills

|  |
| --- |
| GOAL -- *Teachers will continuously improve their practice by participating in professional development and promoting and demonstrating the effective use of digital tools and resources.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Develop survey (or other method?) to identify the specific technology staff is currently using and the level at which they are using to provide information about what professional development is needed.  | Fall 2013 |  |  | Tech Committee |
| 1 | Based on survey, create a prioritized P.D. plan to ensure all teachers have baseline knowledge of tech integration. | Fall 2013 |  |  | Tech Committee with PD Committee?  |
| 1 | Specify and decide upon a learning management system | Winter? 2013 |  |  | Administration |
| 2-3 | Implement P.D. with fidelity | 2014-2016 |  |  | Administration |
| 2 | Participate in PLC’s or professionals development to explore and incorporate technology toimprove student learning and create student centered learning. | 14-15 |  |  | Administration |
| 2-3 | Participate in leading a professional development session either within school or within district to train and share ideas with co-workers. | 14-16 |  |  | Teachers |

|  |
| --- |
| GOAL -- *Teachers will establish a student-centered atmosphere in which students learn to think critically, problem-solve, communicate, and collaborate about real world experiences.*  |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Teachers will familiarize themselves with the technology that is available in the district that they can incorporate these resources in their classrooms. | 13-14 |  |  | Department Heads/Teachers |
| 1 | Teachers will be given time within the school day to meet with ITS in order to create lesson plans incorporating technology they are interested in using. | 13-14 |  |  | Principals, ITS Staff |
| 2-3 | Teachers will attend PD geared toward establishing student-centered classrooms | ongoing |  |  | Tech Committee, PD Committee, Administration, Teachers |
| 1 | Teachers will have the ability to receive tech support in a timely manner in order to troubleshoot problems effectively without losing instruction time. | 13 |  |  | ITS Staff/Administration |

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| GOAL -- *Teachers will use their knowledge of subject matter, teaching and learning, and technology to facilitate differentiated experiences that advance student learning, creativity and innovation.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Differentiated Instruction Committee will research ways to use technology for differentiation and what model classrooms could look like.  | Summer 2013 |  |  | D.I. Committee |
| 1-2 | Teachers will work with grade level teams to plan for differentiation.  |  |  |  | Teachers |
| 1-3 | Teachers will participate in differentiated instruction professional development that will familiarize teachers with innovative teaching tools that will promote student learning and creativity. | 13-14 | ongoing |  | Administration |
| 2-3 | Teachers will share ideas and lessons in order to train co-workers and generate ideas that can be used in the classroom. |  |  |  |  |

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| GOAL -- *Teachers will develop and implement opportunities for students to apply digital citizenship practices.*  |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Information is shared with teachers about what digital citizenship is. ` |  |  |  | ITS, Administration |
| 1-2 | Teachers work with ITS and grade level teams to develop appropriate lessons about digital citizenship.  |  |  |  | ITS, Teachers |
| 1-2 | Teachers work with ITS and grade level teams to develop learning opportunities in which students apply digital citizenship appropriately. |  |  |  | ITS, Teachers |
| 2 | Develop lessons that will promote cultural awareness by engaging with students in other cultures by using digital communications. | 14-15 |  |  | Department Heads |
| 2 | Collaborate with ITS to ensure all aspects of digital citizenship is being covered as well as develop grade level lesson plans. | 14-15 |  |  | ITS/Teachers |

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| GOAL -- *PD for Administrators* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
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### Technology Infrastructure and Support

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| GOAL -- *Create synergy between all stakeholders that leads to seamless, effective and efficient management of educational technology*  |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
|  | Create a district-wide technology advisory committee with representation from all buildings and stakeholders. | ASAP | Ongoing | Marginal if anything |  |
|  | Analyze and make recommendations regarding the creation of a leadership position (e.g., District Technology Coordinator) \*\*\* say to Jeff that we think that this should belong to all groups \*\*\* |  |  |  |  |

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| GOAL -- *Create systems that make the management of teaching and learning more efficient (including school-home communication)* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
|  | Learning management system specification and deployment* Create short pilot programs for different LSM
* Pilot programs meet to discuss pros and cons
 |  |  |  |  |
|  | Clarify – and improve as necessary – the district’s ability to provide effective technical and network support (including issues related to passwords and security) to all users. | Clarify 2013Improvements 2013 | Spring 2014Spring 2016 | Could be extensive if personnel is included | Tech Advisory CommitteeJohn, Jen, and administration |
|  | Improve web hosting capability: Investigate alternatives to Edline  |  |  |  |  |
|  | Procedures for (implementing new) technology | 2013 | spring 2014 | Marginal if anything | Tech Advisory Committee Recommendations |
|  | Integrate all student services information under one student management system | 2013 | spring 2015 | Marginal if anything | John and Jen |
|  | Improve email and calendar system: Investigate alternative to First Class (e.g., Google Apps for Education) | 2013 | spring 2014 | possibly budget neutral | Jen and John |

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| GOAL -- *Ensure the equitable access to all technology resources and infrastructure* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
|  | Develop a “minimum expectation” (including target student-computer ratio) for all classrooms (across buildings) by grade level and the long-range funding plan for implementing this expectation. | 2013 | ongoing |  |  |
|  | Implement the infrastructure upgrade plan |  |  |  |  |
|  | Effectively Utilize Personnel....not done* + - Develop and expand the ITS positions to focus on instructional support versus direct student instruction.
		- Define role of Library Media Specialist vis a vis technology
		- Analyze and make recommendations for tech support
		- Define roles for ITS, tech staff, etc.
 | 2013 | Spring 2015 |  |  |

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| GOAL -- *Facilitate and improve curriculum planning by using an online tool such as Understanding by Design* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
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### District Policy and Community Engagement

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| GOAL -- *The (students and staff of the) Winchester Public Schools educational community has(have) equal access to technology to support teaching, learning and administrative functions by forming a Technology Oversight Committee.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Create a Technology Oversight Committee | Summer 2013 | Summer 2013 |  | Assistant Superintendent/Jeff Sun, consultant |
| 1 | Define the standard for technology tools *(including network drops, electricity*) for all classrooms (and library media centers)(across buildings ) by grade and subject. | Sept. 2013 | Nov. 2013 |  | Standard developed by level by the Instructional Technology Specialists (elementary & high) and middle school computer teachers (and library media specialists) |
| 1 | Develop the long-range funding plan to support defined technology standard defined at each level (elementary, middle and high) | Nov. 2013 | Jan. 2014 |  | Director of Finance |
| 1 | Form a district-wide technology committee to oversee and provide continual guidance for equality of resources. | Sept. 2013 | Nov. 2013 |  | Assist. Superintendent of Curriculum and Director of Finance |

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| GOAL -- *The Winchester Public Schools educational community has the necessary and sustainable professional development to utilize technology to support differentiated teaching and learning.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Research and agree upon a learning management system that will support both face-to-face and online learning opportunities | Oct. 2013 | Feb. 2014 |  | Assistant Superintendent of Schools |
| 2 | Provide funding to implement the designated learning management system. | Feb. 2014 | June 2014 |  | Director of Finance |
| 1 | Create several blended learning opportunities that support designated curriculum units by grade level and/or discipline. | Oct. 2013 | June 2014 |  | Assistant Superintendent with support of ITS |
| 1 | Organize 4-day summer tech camp to support designated curriculum units by grade level and/or discipline. | Feb. 2014 | June 2014 |  | Assistant Superintendent with support of ITS |
| 1 | Create tech moments at faculty meetings or school-based professional development opportunities related to best practices in technlogy | Sept. 2013 | June 2014 |  | Assistant Superintendent with support of ITS and school-based technology teams. |

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| GOAL -- *The Winchester Public Schools educational community provides staffing that fully supports the integration of technology into (teaching and learning) the classroom.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Create the position of instructional technology specialist at McCall Middle School | Dec. 2013 | Sept. 2014 | $50, 000 | Principal-McCall |
| 1 | Create the position of a K-12 Instructional Technology Specialist whose primary responsibility is to implement the defined action plans developed in Winchester’s three-year plan. | Dec. 2013 | Sept. 2014 | $50, 000 | Assistant Superintendent of Curriculum |
| 1 | Create school-based technology teams to support the implementation needs of each school. | Sept. 2013 | Oct. 2013 |  | School principals |
| 2-3 | Create full time instructional technology specialists at each elementary school. | Sept. 2014 or Sept. 2015 |  | $100,000 | Elementary principals/Superintendent |

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| GOAL -- *The Winchester Public Schools will continue to have a strong partnership with the greater community to foster support for Winchester Public School’s technology initiative.* |
| Year | **Action Item** | **Start Date** | **Completion Date** | **Anticipated****Cost** | **Lead Person**  |
| 1 | Form a district-wide technology committee to oversee and provide continual guidance for equality of resources. Ensure that this representative team has parents, community leaders and members of town-based committees (such as finance or appropriations) | Sept. 2013 | Nov. 2013 |  | Assist. Superintendent of Curriculum and Director of Finance |
| 1-3 | Gather support for a long-term funding plan to support the implementation of up-to-date technology in the schools by posting a blog or frequent articles about the state of tech in the Winchester Public School district.  | Sept. 2013 | ongoing |  | Assistant Superintendent of schools and school principals |

# 4. Evaluation and Assessment for Technology

## Evaluation Design

Winchester 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 Winchester. 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, Winchester will be in a position to monitor the impact of Territorial and 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, Winchester will apply a uniform data collection process across the district, using a standardized set of evaluation tools that have been specifically mapped to the plan’s goals and objectives. These tools include teacher, student, and parent online survey instruments, classroom observation protocol, and interview/focus group questions for teachers and administrators. Winchester will initiate a data collection effort – managed by outside, independent, evaluators – in the spring of each school year that collects data at the classroom level in every school in the district. Aggregated annually at the district level, information collected in this manner will create a uniform dataset to be used to determine the district’s progress toward meeting the 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.

## Evaluation and Technology Plan Updates: 2013 – 2016

The following table describes the main activities associated with technology plan evaluation and technology plan updating between Fall 2013 and Summer 2016. Evaluation and plan revision/updating will start at the beginning of the 2014 – 2015 school year (plan Year 2).

| **Date** | **Activity** | **Responsibility** | **Product/Outcome** |
| --- | --- | --- | --- |
| 2014 | Fall(October/November) | Review data collection instruments | Outside EvaluatorDistrict Staff | Data collection instruments properly mapped to technology plan indicators and other Winchester initiatives as necessary |
| 2015 | Spring(March) | Data Review (2013 data) with schools | District StaffSchool Staff | Updated technology-related goals/actions for School Improvement Plans |
| Spring (May/June) | Data Collection – Surveys, Focus Groups, Observations | Outside Evaluator |  |
| Summer | Data Analysis and Reporting | Outside EvaluatorDistrict StaffSchool Staff | Data reports and data review meeting with District and School Staff |
| Fall | Technology Plan Update | District StaffSchool Staff | Updated District Plan and Updated School Technology Plans |
| 2016 | Spring(March) | Data Review (2013 data) with schools | District StaffSchool Staff | Updated technology-related goals/actions for April, 2014 School Improvement Plans |
| Spring(May/June) | Data Collection – Surveys, Focus Groups, Observations | Outside Evaluator |  |
| Summer | Data Analysis and Reporting | Outside EvaluatorDistrict StaffSchool Staff | Data reports and data review meeting with District and School Staff |
| Fall | Technology Plan Update | District StaffSchool Staff | Updated District Plan and Updated School Technology Plans |

# Budget/Funding

This multi-year living plan will be implemented from September 2013 through June 2016. It is Winchester’s intent 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; use of retained earnings; grants and private funding; and establishment of community partnerships. These funding strategies are discussed in more detail below

1. Allocating funds within our Operating Budget

Each year funds will be requested through the annual budget process. The amount requested will vary based on the aggressiveness determined to implement the action items in a timely manner. The proposed FY13 Budget includes $XXXXXX for the purpose of replacing aging computers. This amount is spread out by school/program and is based on replacing computers on a five-year ? cycle.

1. Community partnerships

Winchester schools have a long and productive relationship with the Winchester Foundation for Education Excellence (WFEE). While the Foundation cannot be responsible for supporting the bulk of the various goals and actions in this technology plan, it is possible for WFEE to strategically support specific and targeted initiatives *in line with the overall strategic direction* of this plan. WFEE is a partner in the development of the technology plan and looks forward to continuing its support, where possible, to Winchester’s instructional technology efforts.

# Winchester’s Technology Infrastructure

(NOTE – Everything in the rest of this chapter is BOILERPLATE from another district’s plan…but it’s intended to illustrate what Winchester needs to create in order to describe and sum-up its technology infrastructure…both in terms of current description and planned changes)

This chapter takes the various technology requirements from the Action Plans and organizes it into a singular picture of how Lakota’s technology infrastructure will be created, upgraded, and maintained to support the district’s instructional technology goals.

## Summary of Major Infrastructure Initiatives

**State Online Assessment Preparation**

Lakota continues to participate in the Ohio Department of Education Technology Readiness Program. This program is an ongoing outreach that asks districts to provide information in specific technical areas to be analyzed against benchmarks that will be released periodically until August of 2014. The Readiness Program produces a gap analysis for each benchmark established by ODE and its assessment vendor, PARCC. Lakota will use these gap analysis reports for long range planning so as to ensure that the district meets all online assessment requirements.

### Computing Devices

#### *Student:*

Ohio will be implementing computing device-based assessments for grades 3-11 beginning in the 2014-2015 school year. By then, over 80% of our computer fleet will be 7-9 years old. To ensure the reliability of the instructional technology tools available for learning and testing, replacement computing devices are required. While Ohio does not currently provide a recommended ratio of student to device, Louisiana, another state in the same device-based assessment consortium, recommends a 7:1 minimal ratio for the tests, as well as a 5:1 – 1:1 ratio for learning. Therefore, we are recommending a 5:1 target ratio for Lakota Local Schools.

Device specifications from the Technology Readiness Program referenced above, along with instructional goals, grade-based BYOT requirements, expansion, possible student technology fees and funding will be monitored closely as this will affect Lakota’s realistic ratio as well as the devices ultimately recommended.

#### *Teachers:*

In order implement the various instructional activities described in this Strategic Technology Plan, all Lakota teachers will require a mobile computing device to create instructional content, participate in on demand and online professional learning, collaborate with staff, facilitate instruction and model instructional technology best practice with their students. The District will therefore need to supply a core device that will allow teachers to create curricular content, access high-bandwidth network resources (e.g., Web 2.0 resources), interface with existing technology devices (e.g., 3M boards), and effectively communicate with various online systems and networks (e.g., cloud-based collaborative environments, and online learning systems). Staff are encouraged to supplement their district supplied device with grant funded or self-funded complimentary peripherals that further promote the initiatives of this plan at the classroom level.

#### Device Management

Existing and replacement computing devices will require up-to-date device management tools that allow for management, maintenance and ensure efficient operations and security. Lakota will be pursuing such a device management solution.

### Network Infrastructure

Lakota’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.

Web 2.0 and learning resources aligned with instruction goals should be accessible, while ensuring filtering regulations and student safety. Therefore, the district will aggressively upgrade its network bandwidth over the next three years to meet state and national guidelines for educational networks. Furthermore, Ohio online/PARCC assessments require a stable, secure and accessible network foundation. This requires the retirement of legacy network hardware still in place. The district will also need to upgrade its network filters so as to enable expanded security and more flexible accessibility for learning.

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.

The following figure represents Lakota’s current (12/2012) physical network infrastructure.



The following represents the current wireless network infrastructure:



#### Data Center

Five years ago, the district initiated a virtualization project intended to streamline management, energy, space and hardware costs. At this time, the initiative requires refreshed capabilities and expansion to further expand long term savings. In addition, the district will also replace core data center systems – such as the power backup system, core hardware, and monitoring solutions – which are currently at the end of their life cycle.

#### Cloud

While virtualization improves efficiency of data center operations, certain cloud solutions can provide improved return on investment and total cost of ownership for district technology offering. The total cost of ownership of cloud-based solutions will be evaluated as part of every new purchase this plan calls for to ensure project goals are met with the most efficient and cost effective solution.

#### Printing

Lakota will continue to investigate ways that District Printing Services can be further streamlined with managed services and electronic solutions as alternatives to paper-based printing. Printing devices should be consolidated based on instructional and operational needs, as the District’s reliance on paper further decrease as a result of these initiatives.

#### 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 cloud-based cross-platform solutions – many available at little or no cost to the district – to enable staff to access full messaging and groupware functions from district devices as well as personal mobile devices. These solutions will integrate productivity tools as well as collaboration. Likewise, the district will explore an internal social networking solution to allow staff to work collaboratively across buildings to engage in professional learning, curriculum development and student centered discussions.

Student groups will also be 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. It is noted that implementation of these new tools for students will require individual accounts for students.

The district will implement technology-based assessment solutions that allow our 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

As existing devices such as interactive whiteboards, document cameras, student response systems etc., begin to age and approach end of life, new solutions are required when these devices fail and cannot be repaired or the cost of the repair is comparable to the value a new device. The district will support and replace these devices to ensure learning environments are complete.

The district will explore the implementation of a cloud-based learning management system that allows for digital content collaboration, parent portal, blended and full online course development, professional learning, curriculum sharing and several more features aligned with the initiatives of this plan. Lakota will determine all instructional needs and consider a district-lead, consortium-lead, or state-lead solution. As this plan was being finalized, Ohio officially announced plans for an Instructional Improvement System, an initiative in which they have partnered with Massachusetts to provide to Ohio’s K-12 schools. Features of this new Instructional Improvement System include:

* Online access to curriculum and standards
* Curriculum customization
* Easy to use paper, online and clicker test administration options that teachers can use to determine what progress students have made and what help they need
* Data analysis and reporting capabilities as well as a portfolio of every students’ work

Blended learning options to supplement face to face instruction are also slated to be part of the package. Ohio will incorporate iLearnOhio.org, a one-stop home for high quality K-12 content that is aligned with the state’s new learning standards. This will not be available to Lakota until after all participating districts that are part of the Federal Race to the Top program have been integrated, projected to be by the spring of 2014.

### Online Courses

Lakota will continue to evaluate possible solutions for additional online course offerings that will meet the initiatives of this plan. The district’s infrastructure will provide the required access for students to continue to participate in current online courses as well as grow to meet the technical needs of future offerings.

### Purchasing

All district technology purchases should be submitted to and reviewed by the Executive Director of Technology, regardless of funding source.

All approved hardware and software will be standardized and advertised to all buildings.

#### Replacement Plan

Finally, we note that while the creation of this strategic technology plan takes place at a time when the district needs to invest in several infrastructure upgrades, including completely new student and teacher computing devices (due to the advanced age of the existing workstations as of Spring 2013), it is essential that *future* technology plans take into account the need for a hardware replacement cycle focused on meeting the instructional technology vision. As referenced on page 5, by partnering with the community on a permanent improvement levy, the district could fund a consistent annual infrastructure improvement program, with 20% of the annual hardware purchasing budget allocation to future replacements. Such a funding arrangement would allow for payment opportunities such as leasing and allow for larger investments to be spread over multiple years. This would also allow for long range financial planning, thereby preventing technology deficits and instability in the district’s instructional technology program.

# Technology Inventory

This section provides a detailed technology device inventory, as required by E-Rate. (including this in the plan is optional…you just need to be sure that there IS an inventory somewhere available since this is a current eRate requirement)

# Appendix I: Winchester’s Technology Indicators

***Student Skills and Outcomes***

Winchester Public School students are life-long learners who utilize instructional technology as a catalyst and tool for critical thinking and engagement in authentic, curriculum-centered, learning experiences. These experiences promote discovery, exploration, investigation, risk taking, and perseverance. Students are engaged in collaborative learning opportunities to encourage global and local communication and foster a culturally enriched perspective. Our students are responsible and safe digital citizens who are able to select and utilize appropriate tools and applications, troubleshoot problems and formulate solutions.

***Teacher Skills/Pedagogy***

Winchester Public School teachers utilize technology to design, implement, and assess student-centered learning experiences, focused on the development of higher-order thinking skills that address students’ diverse learning styles, working strategies, and abilities. In order to support student success and innovation, Winchester teachers communicate with students, peers, families, and community members using digital tools and resources. Teachers are proficient in the use of existing technology tools and resources and participate in a variety of professional learning experiences to enrich and expand their knowledge of technology infused pedagogy. Winchester teachers collaborate to design, implement, and assess lessons that infuse technology to assist students in meeting identified learning goals.

***Administration and District Policy***

Winchester Public Schools administrators effectively communicate to all stakeholders the need to create and support a culture for the meaningful use of technology to aid and enrich student learning. The district takes a lead in crafting and implementing a vision for technology centered on its use as an essential tool for teaching and learning. Teachers, administrators, and parents across the district understand and know their role in the implementation of this vision.

The district establishes and funds equitable access for all students to the digital tools and resources appropriate to their learning needs. Administrators consistently model responsible, innovative use of technology to serve district goals and actively seek professional development opportunities to facilitate staff’s ability to learn about and share best practices in and outside the district. The district, through the work of its administrators and via district policy, provides the necessary professional development resources for teachers so that they may collaboratively develop and share strategies for enriching and improving student learning.

# Appendix II: Standards

## NETS-S (Students)

1. Creativity and Innovation -- Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

a. apply existing knowledge to generate new ideas, products, or processes.

b. create original works as a means of personal or group expression.

c. use models and simulations to explore complex systems and issues.

d. 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. Students:

a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.

b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

c. develop cultural understanding and global awareness by engaging with learners of other cultures.

d. 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. Students:

a. plan strategies to guide inquiry.

b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.

d. 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. Students:

a. identify and define authentic problems and significant questions for investigation.

b. plan and manage activities to develop a solution or complete a project.

c. collect and analyze data to identify solutions and/or make informed decisions.

d. 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. Students:

a. advocate and practice safe, legal, and responsible use of information and technology.

b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

c. demonstrate personal responsibility for lifelong learning.

d. exhibit leadership for digital citizenship.

6. Technology Operations and Concepts -- Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

a. understand and use technology systems.

b. select and use applications effectively and productively.

c. troubleshoot systems and applications.

d. 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. Teachers:

a. promote, support, and model creative and innovative thinking and inventiveness

b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources

c. promote student reflection using collaborative tools to reveal and clarify students’ conceptual understanding and thinking, planning, and creative processes

d. 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 assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S. Teachers:

a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity

b. 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

c. customize and personalize learning activities to address students’ diverse learning styles, working strategies, and abilities using digital tools and resources

d. 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. Teachers:

a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations

b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation

c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats

d. 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. Teachers:

a. 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

b. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources

c. promote and model digital etiquette and responsible social interactions related to the use of technology and information d. 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. Teachers:

a. participate in local and global learning communities to explore creative applications of technology to improve student learning

b. 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

c. 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

d. 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. Educational Administrators:

a. 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

b. engage in an ongoing process to develop, implement, and communicate technology-infused strategic plans aligned with a shared vision c. 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. Educational Administrators:

a. ensure instructional innovation focused on continuous improvement of digital-age learning

b. model and promote the frequent and effective use of technology for learning

c. provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners

d. ensure effective practice in the study of technology and its infusion across the curriculum

e. 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. Educational Administrators:

a. allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration

b. facilitate and participate in learning communities that stimulate, nurture, and support administrators, faculty, and staff in the study and use of technology

c. promote and model effective communication and collaboration among stakeholders using digital-age tools

d. 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. Educational Administrators:

a. lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources

b. collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning

c. recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals

d. establish and leverage strategic partnerships to support systemic improvement e. 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. Educational Administrators:

a. ensure equitable access to appropriate digital tools and resources to meet the needs of all learners

b. promote, model, and establish policies for safe, legal, and ethical use of digital information and technology

c. promote and model responsible social interactions related to the use of technology and information

d. 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. MA DESE STaR Chart [↑](#footnote-ref-1)
2. Examples of such mappings are the ISTE NETS Profiles for Technology Literate Students - <http://www.iste.org/docs/pdfs/nets-s-2007-student-profiles-en.pdf?sfvrsn=4> (also reproduced in the Appendix of this report) - and the Vermont Transformation and Technology Classroom Scenarios - <http://transformation-technology.wikispaces.com/> . Neither of these examples are of course specific to Winchester’s or Massachusetts’ curriculum frameworks, but both stand as examples and good starting points for Winchester to develop its own mapping. Other similar examples can be found online. [↑](#footnote-ref-2)