

**Gloucester City
Junior-Senior High School**

Technology Integration Project Review

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Table of Contents

Opening Statement	1
Executive Summary	2
Planning Process Document	3
Technology Standards Documentation	10
New Jersey 8.1 and 8.2 Revised	
NETS·S – National Educational Standards for Students	
NETS·T – National Educational Standards for Teachers	
NETS·A – National Educational Standards for Administrators	
Results of Staff Technology Survey – Spring 2009	33
Narrative from 2010-2013 Three-Year Technology Plan	
Data Charts	
Professional Development	38
Workshops and Training Sessions	
High Schools that Work Sessions	
Staff training using Moodle Online Learning Environment	
Classroom visits and modeling activities	
Student Centered Integration Activities	40
Public Service Announcements	
Podcasting	
Geometers Sketchpad	
Moodle	
TurnItIn	
Technology Management	42
Preparing for Implementation	
Asset Management	
Security and Safety	
Peripheral Services	
Open Source	
Student Artifacts	
Appendix A – National Education Technology Plan – 2010 Draft	
Appendix B – District Technology Use Policy	
Appendix C – Netbook Use Agreement	

This I Believe (Thank you Public Television and especially Martha Graham)

“Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers” (Article 19 of the United Nations Universal Declaration of Human Rights). When this was written in 1948, the tools of choice were newspaper and radio. Over sixty years later, the freedom is the same, the need for literacy is the same – only the tools have changed.

Tools and technology have changed the way we think and communicate for centuries. The Gutenberg printing press changed the way information was stored and shared and had global implications. In our own time, we have seen the rise of telephone, telegraph, radio and television – all game changers in the way we store and share information. Once again, we find ourselves at a pivotal moment in time when the rise of digital communication and the internet make storing and sharing information a global process that is almost instant and available to many of the worlds’ citizens. The rise of Web 2.0 has added a layer of interaction to the process that allows participants to create their own content and move from passive consumers of information to active partners in the creation of new information. The ability to navigate through technology and information is the critical skill our students must learn to become active, successful participants in the 21st Century.

Our frontier is one where people who have access may choose to be constantly connected to the grid. They can instantly access information in the palm of their hands. They can create, share and store information in the blink of an eye. Our obligation as educators is clear. We must always have one foot in tomorrow – the world we send our children out into will not be our world, but one that we must prepare them to learn how to navigate through nonetheless. We must also keep one foot in yesterday – teach them the basic skills of language, mathematics and citizenship that will prepare them to navigate any new frontier they may encounter. The goal for today should be to teach them to stay current. We should provide them with the tools necessary to learn skills that are transferrable to any technology. 10 years ago, internet access was dependent on a desktop computer connected to a wire that went somewhere. Today, we can access the internet on our cell phones anywhere, anytime. 10 years ago, the internet was a passive place – one-way communication for the delivery of information managed by programmers with a specific skill set. Today, we can create, share and collaborate on all manner of projects – all we need is an internet connection and the desire to participate. What will we be doing in 10 years? What technology will be widely available for the second grade student today who will be a college freshman in 2020? How do we prepare them to greet this new technology without fear but with enthusiasm and the expectation that they will be successful?

The tool has changed many times since 1948, but the goal is the same, we humans continue “to seek, receive and impart information and ideas through any media and regardless of frontiers”

Executive Summary

In January 2005, the U.S. Department of Education released the **National Education Technology Plan*** entitled, *Toward a New Golden Age in American Education: How the Internet, the Law and Today's Students are Revolutionizing Expectations*. The report concluded that “there is no dispute over the need for America’s students to have the knowledge and competence to compete in an increasingly technology-driven world economy. This need demands new models of education facilitated by educational technology. In the realm of technology, the educational community is playing catch-up. Industry is far ahead of education and tech-savvy high school students often are far ahead of their teachers. This “digital disconnect” is a major cause of frustration among today’s students. Public schools that do not adapt to the technology needs of students risk becoming increasingly irrelevant. Students will seek other options”

In an effort to close the “digital disconnect” and make education less frustrating and more relevant for today’s students, Gloucester City Public Schools has planned and is implementing a comprehensive technology integration project. This project will give our students access to current technology products and provide instruction on technology skills as outlined in the National Educational Technology Plan, The New Jersey Core Content Standards and the NETS·S (National Educational Technology Standards for Students). Critical to the success of the project will be the district’s commitment to providing equipment and programs that will allow students to have daily access to technology in all content areas.

This report traces the steps taken in the planning process that began one full year before the delivery and distribution of laptops to senior students. It contains a review of the results of a staff survey that indicated that we were ready to move from more teacher centered to more student centered technology activities. The survey also showed a clear belief that a barrier to student technology use was the availability of equipment. The report outlines the professional development activities that were provided for staff to successfully implement the project including modeling activities and strong support for focused activities that were language based and appropriate for all content areas. There are references to the background support for the project including safety, security and technology support. The report concludes with student artifacts collected during the course of the process and anecdotal comments and reviews from staff and students.

*The draft of the 2010 National Education Technology Plan is attached as Appendix A

Working Document

GCPS High School Technology Integration Project Work Plan

2009-2012

2008-2009 School Year			
ACTIONS	PERSON(S) RESPONSIBLE	TIMELINE	EVIDENCE OF COMPLETION
Create instructional project proposal	Superintendent Director of Curriculum	9/2008	Completion of document
Review of network capability and capacity to support laptops	Director of Technology Technology Coordinator	9/2008	Report to superintendent
Creation of wireless access point plan	Director of Technology Technology Coordinator	9/2008	Report to superintendent
Vendor surveys and scope of work discovery	Director of Technology Technology Coordinator	9/2008	Report to superintendent
Application for e-rate funds to secure project	Business Administrator Director of Technology	10/2008 INITIAL 1/2009 SUBMISSION	Completed 470/471
Research – appropriate end user equipment	Director of Technology Technology Coordinator	1/2009	Quote and produce comparison documents
Student pilot with netbooks	Director of Technology Technology Coordinator	1/2009	Student feedback at end of pilot
Staff survey for readiness	Director of Curriculum Director of Technology	4/2009	Survey results
Coordination of purchasing	Business Administrator Director of Technology Technology Coordinator	4/2009	Completed purchase order process documents
Coordination of wireless project (summer)	Director of Technology Technology Coordinator	7/2009 – 9/2009	Inspection of installation Completed SOW
Customization of equipment to integrate into school network (summer)	Director of Technology Technology Coordinator	7/2009 – 9/2009	TrackIt records of asset discovery
Coordination of staff training (summer)	Director of Curriculum Cross Curriculum Coach	7/2009 – 9/2009	Sign-in sheets from workshops

Reflections for 2008-2009 School Year

Wireless Access Point project was undertaken during an e-rate cycle that would allow the district to recoup 80% of the cost of the internal connections portion of the plan. The wireless access point project using CISCO equipment was priced out at approximately \$160,000 – the total cost to the district was \$32,000.

The student pilot with the netbooks involved 6 senior students who were allowed to keep the netbooks from Jan – June to complete class work. Students were asked to supply feedback on the usefulness of the units, the preferred format (netbooks vs laptops) and to supply any other information that would help us make a final decision. The unanimous choice of the students was the netbooks – they were the right size to fit in backpacks and lockers. The students reported that they used the units in all subject areas except Physical Education to take notes, complete assignments and do research.

The annual technology survey of staff indicated that teachers believe that access to equipment is the major barrier to fully integrating technology into all content areas. The availability of wireless carts made it difficult to use technology daily. The identification of this as a barrier to instruction supports the use of student issued machines that could be used in instruction on demand.

All items were completed on time and on budget

Summer training for staff in the use of instructional technology and High Schools that work was well received and teachers reported that they were able to create lesson plans using the skills learned in the sessions

2009-2010 School Year			
ACTIONS	PERSON(S) RESPONSIBLE	TIMELINE	EVIDENCE OF COMPLETION
Creation of netbook borrowing procedure document	Superintendent Director of Technology	9/2009	Final version of document
Delivery of ongoing, sustained professional development	Director of Curriculum Director of Technology	9/2009-6/2010	Sign-In sheets Staff PDP's
Introduction of project to faculty	Principal Director of Technology	9/2009	Meeting Agenda
Introduction of project to students	Principal Director of Technology	9/2009	Meeting Agenda
Introduction of project to parents	Principal Director of Technology	9/2009	Meeting Agenda
Assignment of laptops to students	Director of Technology Technology Coordinator	9/2009	Completed forms TrackIt inventory control docs
Ongoing monitoring and support of equipment	Director of Technology Technology Coordinator	9/2009-6/2010	TrackIt Help Desk records TrackIt inventory control docs
Ongoing monitoring and support of program	Superintendent Director of Curriculum Director of Technology	9/2009-6/2010	TrackIt Help Desk records Training requests and sessions Modeling requests
Review of equipment and repair records	Director of Technology Technology Coordinator	9/2009-6/2010	TrackIt Help Desk records TrackIt inventory control docs
Review of lesson plans and teacher observations	Principal Assistant Principal	9/2009-6/2010	Lesson Plans Observations and Evaluations
Review of school culture and climate related to laptop project	Principal Director of Technology	4/2010	Staff Survey Results Student Survey Results
Collection and review of student artifacts	Director of Technology	9/2009-6/2010	Artifact Portfolio
Collection and review of staff feedback	Director of Technology	4/2010	Staff Survey Results
Planning for project expansion during 2010-2011 school year	Superintendent Principal Director of Curriculum Director of Technology	4/2010 – 6/2010	Planning document for next year

Reflections for 2009-2010 School Year

A committee consisting of the Director of Technology, Superintendent and High School Principal and Vice Principal meet to develop a plan of action of distribution of senior laptops. A netbook use agreement was developed that included provisions for loss recovery and attention to the District Acceptable Use Policy and Discipline Code. A plan was also put in place with a timeline for distribution that including meetings to introduce the program to staff, students and parents with a targeted distribution date to occur after Back To School night.

Ongoing monitoring, maintenance and support for the equipment occurred throughout the year with inventory controlled and audited by TrackIt software. Staff members were given multiple opportunities to participate in professional development activities and share best practices. The High School Principal and Vice Principal monitored lesson plans and observations for effective use of the equipment during instruction. Student feedback was monitored and student artifacts were reviewed and used in classrooms as evidence of effective use of the equipment.

The program ended in June with laptop collection. There were 6 students who reported the laptops missing and were assessed fines which is well below the 10-15% projected loss rate reported as an industry standard for projects of this scope. During the course of the year, 55 laptops were returned to the manufacturer for warranty repairs and placed back into inventory or redistributed to students.

Meetings with staff for feedback included positive anecdotal information about successful projects and also helped identify barriers to more successful use of the laptops in the classroom. One of the most often cited barriers was the difficulty faced by teachers who have multiple grade level classes. Teachers reported that they also frequently had the same issues with class preparedness with the laptops that students have with books, calculators and other supplies. There were also multiple requests for professional development to expand teacher comfort levels with Moodle and other online programs – access to TweenTribune was cited as an example of an online program of interest to multiple staff members.

Projects of Note –

Virtual High School – students participated and variety of courses – several of the laptops had custom software installs to accommodate course requirements

AP Biology – Our AP biology teacher conducted part of the course through Moodle and required students to access course documents using their laptops

English IV – Teacher used the laptops for reading activities and for alternate assessments. She reported that students in the special education population in the course were more engaged when they could use technology to demonstrate what they know and seemed eager to write more frequently using the laptops.

Health IV – The Health teacher made consistent use of the laptops to provide visual support for health topics. Two major projects during the quarter course were completed using the laptops including the production of Public Service Announcements about Sexually Transmitted Diseases.

HSPA Math – The HSPA math teacher used Geometers Sketchpad on the laptops to teach and reinforce skills for the HSPA Math student who needed to retake the test. The availability of the software on a daily basis was critical to the delivery of differentiated instruction.

Planning for the next phase –

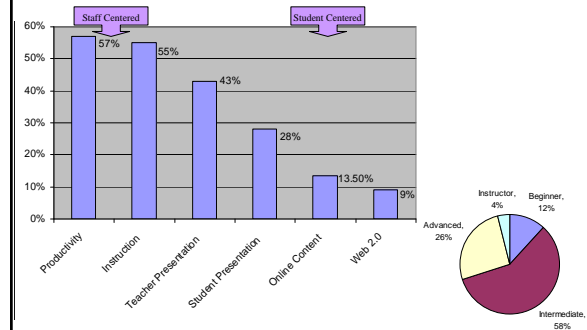
Meetings were held in the summer with the Superintendent, Director of Curriculum, Director of Technology, High School Principal and Vice Principals, Cross Curriculum Coach and several teachers. Distribution of the laptops to the junior class will allow for expansion of the TurnItIn program to support the English Department and the implementation of the new Math program that relies heavily on online activities and differentiated instruction in support of the Math Department. The AP Science and Social Studies teachers have expressed a desire to deliver enrichment work using Moodle and student laptops. The decision was also made to migrate to Open Office after a successful pilot conducted by 6 teachers. The use of Open Office will allow us to trim approximately \$95 from the cost of each unit but more importantly, it will allow us to provide additional opportunities to students who do not have access to Office2003 on their home computers.

So we did a little survey

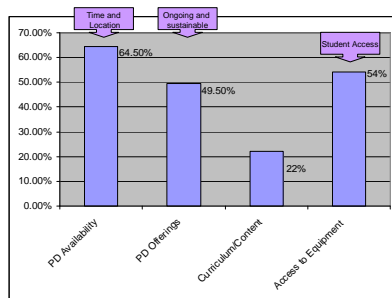
★ Staff Assessment

- Self assessment of technology use
- Self assessment of proficiency levels
- Questions about student use in classroom
- Questions about barriers to student use
- Questions about barriers to staff use
- Requested input on future PD offerings

Technology Use



Barriers



Questions

How can these options be implemented with minimal impact on financial resources?

- Staff costs for trainers
- Program costs – software, vendors
- Equipment costs
- Open Source as an option
- Role of e-rate

Our solution



- Online learning environment
 - Professional Learning Community
 - Technology Projects Series
 - Online Learning Community Series
 - Staff Lounge Support Center
 - Student Learning Community
 - Classroom teachers running their own online community
 - Shift from teacher-centered to student-centered
 - Communication, Collaboration and Citizenship

The Numbers

- ★ Project in place for 6 months and open to 96 staff members during pilot at the high school
- ★ 68 staff members (over 60% are people in the target group) have participated in 9 different series and earned 1020 hours of professional development time (15 hour average) –
- ★ 14 staff members have created student learning communities
- ★ 48 staff members have used podcasting or public service announcement projects
- ★ 12 video cameras are sent to classrooms every day for project production
- ★ 32 podcasting kits in classrooms for project production

We have seen -

- ✦ An increase in participation in instructional technology professional development programs
- ✦ Evidence of application of the skills acquired in instructional technology series
- ✦ Evidence of participation in collaborative communities
- ✦ Evidence of a shift from teacher centered to student centered technology usage

Additional Perks

- ✦ Presented our Moodle Professional Development program at the NJASA TechSpo
- ✦ Invited to present at 4 school districts
- ✦ Our Moodle Podcasting unit has been shared with 6 school districts

Where do we go from here?

- ✦ Continue to build capacity
 - More equipment in the right hands
- ✦ Continue to offer online courses
 - Expand into areas of interest
- ✦ Consider other options
 - Homebound instruction
 - Remediation
 - Enrichment
- ✦ Assess our goals
 - Increasing our professional development opportunities
 - Moving toward more student centered technology activities

Questions ?

2010-2011 School Year			
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Delivery of ongoing, sustained professional development	Director of Curriculum Director of Technology	9/2010-6/2011	Sign-In sheets Staff PDP's
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Reflections for 2010-2011 School Year

New Jersey Core Curriculum Content Standards for Technology

INTRODUCTION

Technology in the 21st Century

Technology is uniquely positioned to transform learning, to foster critical thinking, creativity, and innovation, and to prepare students to thrive in the global economy. As engaged digital learners, students are able to acquire and apply content knowledge and skills through active exploration, interaction, and collaboration with others across the globe, challenging them to *design the future* as envisioned in the statements that follow:

Mission: *Technology enables students to solve real world problems, enhance life, and extend human capability as they meet the challenges of a dynamic global society.*

Vision: The systematic integration of technology across the curriculum and in the teaching and learning process fosters a population that leverages 21st century resources to:

- Apply information-literacy skills to access, manage, and communicate information using a range of emerging technological tools.
- Think critically and creatively to solve problems, synthesize and create new knowledge, and make informed decisions that affect individuals, the world community, and the environment.
- Gain enhanced understanding of global interdependencies as well as multiple cultural perspectives, differing points of view, and diverse values.
- Employ a systemic approach to understand the design process, the designed world, and the interrelationship and impact of technologies.
- Model digital citizenship.

Intent and Spirit of the Technology Standards

All students acquire content area knowledge and skills in: (1) Visual and Performing Arts, (2) Comprehensive Health and Physical Education, (3) Language Arts Literacy, (4) Mathematics, (5) Science, (6) Social Studies, (7) World Languages, (8) Educational Technology, Technology Education, Engineering, and Design, and (9) 21st Century Life and Careers. As they do so, they are supported by the ongoing, transparent, and systematic integration of technology from preschool to grade 12 in preparation for postsecondary education and the workplace.

In **Preschool**, technology offers versatile learning tools that can support children’s development in all domains. For example, electronic storybooks can “read” stories to children in multiple languages; adventure games foster problem-solving skills; story-making programs encourage literacy and creativity; math-related games can help children count and classify; and science activities promote inquiry and an understanding of the world through the eyes of a child. When preschoolers are encouraged to work together with electronic devices and computers, social skills are tapped as children negotiate turn-taking. However, technology should not replace the concrete, real-life experiences that are critical to a young child’s learning; it must always be used in balance with other meaningful activities and routines. Technology should be embedded into children’s learning centers and should enhance their learning and development during choice time as well as in small-group experiences.

In grades **K-2**, students are formally introduced to the basic features and functions of computers and demonstrate understanding that technology enables them to communicate beyond the classroom on a variety of topics. K-2 students are also exposed to elements of the design process, design systems, and a variety of technology resources, and understand the importance of safety when using technological tools.

In grades **3-4**, students understand the purpose of, and are able to use, various computer applications. They continue to develop information-literacy skills and increasingly use technology to communicate with others in support of learning, while also recognizing the need for cyber safety and acceptable use policies. Students in grades 3-4 also investigate the impact of technology systems, understand the design process, and use it for problem solving.

In grades **5-8**, students expand their capacity to use operations and applications, apply information-literacy skills, and select the appropriate tools and resources to accomplish a variety of tasks, as they develop digital citizenship. As students participate in online learning communities, collaborating in the design of products that address local and global issues across the curriculum, they build understanding of the perspectives of learners from other countries. Students at this level can apply the design process in the development of products; understand impact constraints, trade-offs, and resource selection; and solve a design challenge and/or build a prototype using the design process. Students can explain why human-designed systems, products, and environments need to be monitored, maintained, and improved, and they recognize the interdependence of subsystems as parts of a system.

In grades **9-12**, students demonstrate advanced computer operation and application skills by publishing products related to real-world situations (e.g., digital portfolios, digital learning games and simulations), and they understand the impact of unethical use of digital tools. They collaborate adeptly in virtual environments and incorporate global perspectives into problem solving at home, at school,

and in structured learning experiences, with the growing realization that people in the 21st century are interconnected economically, socially, and environmentally and have a shared future.

High School Specialization in technology enables students to design, create, and reverse-engineer technology products or systems, document the application of the design process, and understand its impact—including ethical considerations, costs, trade-offs, risks, benefits, and choice of resources. Students develop products that address local and global issues and challenges, which are disseminated for peer review.

Revised Standards

The 2009 standards provide the foundation for creating local curricula and authentic performance assessments and emulate the philosophy and goals contained in documents produced by national technology organizations, including the Partnership for the 21st Century Skills and the [New Jersey Educational Technology Plan](#). The organization of the strands in standards 8.1 and 8.2, as well as the content and skills within each strand, has been reconceptualized to address emerging technologies and technological applications that are needed for life and work in the global age.

- Standard 8.1, Educational Technology, is aligned to the [International Society for Technology in Education \(ISTE\)](#) standards and the [Partnership for the 21st Century Skills](#) framework.
- Standard 8.2, formerly Technology Education, is renamed Technology Education, Engineering, and Design and is aligned with the goals of the [International Technology Education Association \(ITEA\)](#) and the Partnership for 21st Century Skills framework.

National, International, and State Advocacy

The Partnership for 21st Century Skills, ISTE, and the [American Association of School Libraries \(AASL\)](#) provide leadership and service to improve teaching and learning by advancing the effective use of technology in education. The ITEA promotes technological literacy by supporting the teaching of technology. The [Consortium for School Networking \(CoSN\)](#) is an organization for K-12 technology leaders who use technology strategically to improve learning.

At the state level, the [New Jersey Technology Education Association \(NJTEA\)](#) fosters the development of technological literacy through Technology Education Programs. The [New Jersey Association for Educational Technology \(NJ AET\)](#) and the [New Jersey Educational Computing Cooperative \(NJECC\)](#), Inc., promote and support the integration of technology in education as it applies to student learning, professional development, and instructional planning.

Resources

American Association of School Librarians. (2007). *Standards for the 21st century learner*. Online: <http://www.aasl.org>

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Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		A. Technology Operations and Concepts	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
Preschool	The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.	8.1.P.A.1	Navigate simple menus on screen with a mouse.
		8.1.P.A.2	Type one's own name using the keyboard.
		8.1.P.A.3	Print a document independently.
		8.1.P.A.4	Identify the "power keys" (e.g., ENTER, spacebar) on a keyboard.
		8.1.P.A.5	Recognize that the number keys are in a row on the top of the keyboard.
		8.1.P.A.6	Use basic technology terms in conversations.
		8.1.P.A.7	Turn smart toys on and off.
2	The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.	8.1.2.A.1	Identify the basic features of a computer and explain how to use them effectively.
		8.1.2.A.2	Use technology terms in daily practice.
		8.1.2.A.3	Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages.
		8.1.2.A.4	Create a document with text using a word processing program.
		8.1.2.A.5	Demonstrate the ability to navigate in virtual environments that are developmentally appropriate.
4	The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.	8.1.4.A.1	Demonstrate effective input of text and data using an input device.
		8.1.4.A.2	Create a document with text formatting and graphics using a word processing program.
		8.1.4.A.3	Create and present a multimedia presentation that includes graphics.
		8.1.4.A.4	Create a simple spreadsheet, enter data, and interpret the information.
		8.1.4.A.5	Determine the benefits of a wide range of digital tools by using them to solve problems.
	The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.	8.1.8.A.1	Create professional documents (e.g., newsletter, personalized learning plan, business letter or flyer) using advanced features of a word processing program.
		8.1.8.A.2	Plan and create a simple database, define fields, input data, and produce a

8			report using sort and query.
		8.1.8.A.3	Create a multimedia presentation including sound and images.
		8.1.8.A.4	Generate a spreadsheet to calculate, graph, and present information.
		8.1.8.A.5	Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.
12	The use of technology and digital tools requires knowledge and appropriate use of operations and related applications .	8.1.12.A.1	Construct a spreadsheet, enter data, and use mathematical or logical functions to manipulate data, generate charts and graphs, and interpret the results.
		8.1.12.A.2	Produce and edit a multi-page document for a commercial or professional audience using desktop publishing and/or graphics software.
		8.1.12.A.3	Participate in online courses, learning communities, social networks, or virtual worlds and recognize them as resources for lifelong learning.
		8.1.12.A.4	Create a personalized digital portfolio that contains a résumé, exemplary projects, and activities, which together reflect personal and academic interests, achievements, and career aspirations.

Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		B. Creativity and Innovation	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
Preschool	The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.	8.1.P.B.1	Use a digital camera to take a picture.
2	The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.	8.1.2.B.1	Illustrate and communicate original ideas and stories using digital tools and media-rich resources.
4	The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.	8.1.4.B.1	Produce a media-rich digital story about a significant local event or issue based on first-person interviews.
8	The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.	8.1.8.B.1	Synthesize and publish information about a local or global issue or event on a collaborative, web-based service (also known as a shared hosted service).
12	The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.	8.1.12.B.1	Design and pilot a digital learning game to demonstrate knowledge and skills related to one or more content areas or a real world situation.

Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		C. Communication and Collaboration	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
Preschool	Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	8.1.P.C.1	Operate frequently used, high-quality, interactive games or activities in either screen or toy-based formats.
		8.1.P.C.2	Access materials on a disk, cassette tape, or DVD.
2	Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	8.1.2.C.1	Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools.
4	Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	8.1.4.C.1	Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem or issue.
8	Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	8.1.8.C.1	Participate in an online learning community with learners from other countries to understand their perspectives on a global problem or issue, and propose possible solutions.
12	Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	8.1.12.C.1	Develop an innovative solution to a complex, local or global problem or issue in collaboration with peers and experts, and present ideas for feedback in an online community.

Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		D. Digital Citizenship	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.	8.1.2.D.1	Model legal and ethical behaviors when using both print and non-print information by citing resources.
4	Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.	8.1.4.D.1	Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies.
		8.1.4.D.2	Analyze the need for and use of copyrights.
		8.1.4.D.3	Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology.
8	Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.	8.1.8.D.1	Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics.
		8.1.8.D.2	Summarize the application of fair use and Creative Commons guidelines.
		8.1.8.D.3	Demonstrate how information on a <u>controversial issue</u> may be biased.
12	Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.	8.1.12.D.1	Evaluate policies on unauthorized electronic access (i.e., hacking) and disclosure and on dissemination of personal information.
		8.1.12.D.2	Demonstrate appropriate use of copyrights as well as fair use and Creative Commons guidelines.
		8.1.12.D.3	Compare and contrast international government policies on filters for censorship.
		8.1.12.D.4	Explain the impact of cyber crimes on society.

Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		E. Research and Information Literacy	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
Preschool	Effective use of digital tools assists in gathering and managing information.	8.1.P.E.1	Use the Internet to explore and investigate information with a teacher's support.
2	Effective use of digital tools assists in gathering and managing information.	8.1.2.E.1	Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.
4	Effective use of digital tools assists in gathering and managing information.	8.1.4.E.1	Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all steps.
		8.1.4.E.2	Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.
8	Effective use of digital tools assists in gathering and managing information.	8.1.8.E.1	Gather and analyze findings using data collection technology to produce a possible solution for a content-related or real-world problem.
12	Effective use of digital tools assists in gathering and managing information.	8.1.12.E.1	Develop a systematic plan of investigation with peers and experts from other countries to produce an innovative solution to a state, national, or worldwide problem or issue.
		8.1.12.E.2	Predict the impact on society of unethical use of digital tools, based on research and working with peers and experts in the field.

Content Area		Technology	
Standard		8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.	
Strand		F. Critical Thinking, Problem Solving, and Decision-Making	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
Preschool	Information accessed through the use of digital tools assists in generating solutions and making decisions.	8.1.P.F.1	Navigate the basic functions of a browser, including how to open or close windows and use the “back” key.
2	Information accessed through the use of digital tools assists in generating solutions and making decisions.	8.1.2.F.1	Use mapping tools to plan and choose alternate routes to and from various locations.
4	Information accessed through the use of digital tools assists in generating solutions and making decisions.	8.1.4.F.1	Select and apply digital tools to collect, organize, and analyze data that support a scientific finding.
8	Information accessed through the use of digital tools assists in generating solutions and making decisions.	8.1.8.F.1	Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure.
12	Information accessed through the use of digital tools assists in generating solutions and making decisions.	8.1.12.F.1	Select and use specialized databases for advanced research to solve real-world problems.
		8.1.12.F.2	Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address educational, career, personal, and social needs.

Content Area		Technology	
Standard		8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.	
Strand		A. Nature of Technology: Creativity and Innovation	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Technology products and systems impact every aspect of the world in which we live.	8.2.2.A.1	Describe how technology products, systems, and resources are useful at school, home, and work.
4	Technology products and systems impact every aspect of the world in which we live.	8.2.4.A.1	Investigate factors that influence the development and function of technology products and systems.
		8.2.4.A.2	Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences.
8	Technology products and systems impact every aspect of the world in which we live.	8.2.8.A.1	Explain the impact of globalization on the development of a technological system over time.
12	Technology products and systems impact every aspect of the world in which we live.	8.2.12.A.1	Design and create a technology product or system that improves the quality of life and identify trade-offs, risks, and benefits.

Content Area		Technology	
Standard		8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.	
Strand		B. Design: Critical Thinking, Problem Solving, and Decision-Making	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	The design process is a systematic approach to solving problems.	8.2.2.B.1	Brainstorm and devise a plan to repair a broken toy or tool using the design process.
		8.2.2.B.2	Investigate the influence of a specific technology on the individual, family, community, and environment.
4	The design process is a systemic approach to solving problems.	8.2.4.B.1	Develop a product using an online simulation that explores the design process.
		8.2.4.B.2	Design an alternative use for an existing product.
		8.2.4.B.3	Explain the positive and negative effect of products and systems on humans, other species, and the environment.
		8.2.4.B.4	Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study.
8	The design process is a systemic approach to solving problems.	8.2.8.B.1	Design and create a product that addresses a real-world problem using the design process and working with specific criteria and constraints.
		8.2.8.B.2	Identify the design constraints and trade-offs involved in designing a prototype (i.e., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation.
		8.2.8.B.3	Solve a science-based design challenge and build a prototype using science and math principles throughout the design process.
12	The design process is a systemic approach to solving problems.	8.2.12.B.1	Design and create a product that maximizes conservation and sustainability of a scarce resource, using the design process and entrepreneurial skills throughout the design process.
		8.2.12.B.2	Design and create a prototype for solving a global problem, documenting how the proposed design features affect the feasibility of the prototype through the use of engineering, drawing, and other technical methods of illustration.
		8.2.12.B.3	Analyze the full costs, benefits, trade-offs, and risks related to the use of technologies in a potential career path.

Content Area		Technology	
Standard		8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.	
Strand		C. Technological Citizenship, Ethics, and Society	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.	8.2.2.C.1	Demonstrate how reusing a product affects the local and global environment.
4	Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.	8.2.4.C.1	Explain the impact of disposing of materials in a responsible way.
		8.2.4.C.2	Explain the purpose of trademarks and the impact of trademark infringement on businesses.
		8.2.4.C.3	Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers.
8	Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.	8.2.8.C.1	Explain the need for patents and the process of registering one.
		8.2.8.C.2	Compare and contrast current and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation.
12	Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.	8.2.12.C.1	Analyze the ethical impact of a product, system, or environment, worldwide, and report findings in a web-based publication that elicits further comment and analysis.
		8.2.12.C.2	Evaluate ethical considerations regarding the sustainability of resources that are used for the design, creation, and maintenance of a chosen product.
		8.2.12.C.3	Evaluate the positive and negative impacts in a design by providing a digital overview of a chosen product and suggest potential modifications to address the negative impacts.

Content Area	Technology		
Standard	8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.		
Strand	D. Research and Information Fluency		
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.	8.2.2.D.1	Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions.
4	Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.	8.2.4.D.1	Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses.
8	Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.	8.2.8.D.1	Evaluate the role of ethics and bias on trend analysis and prediction in the development of a product that impacts communities in the United States and/or other countries.
12	Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.	8.2.12.D.1	Reverse-engineer a product to assist in designing a more eco-friendly version, using an analysis of trends and data about renewable and sustainable materials to guide your work.

Content Area	Technology		
Standard	8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.		
Strand	E. Communication and Collaboration		
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Digital tools facilitate local and global communication and collaboration in designing products and systems.	8.2.2.E.1	Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results.
4	Digital tools facilitate local and global communication and collaboration in designing products and systems.	8.2.4.E.1	Work in collaboration with peers to produce and publish a report that explains how technology is or was successfully or unsuccessfully used to address a local or global problem.
8	Digital tools facilitate local and global communication and collaboration in designing products and systems.	8.2.8.E.1	Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle.
12	Digital tools facilitate local and global communication and collaboration in designing products and systems.	8.2.12.E.1	Use the design process to devise a technological product or system that addresses a global issue, and provide documentation through drawings, data, and materials, taking the relevant cultural perspectives into account throughout the design and development process.

Content Area		Technology	
Standard		8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.	
Strand		F. Resources for a Technological World	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	Technological products and systems are created through the application and appropriate use of technological resources.	8.2.2.F.1	Identify the resources needed to create technological products and systems.
4	Technological products and systems are created through the application and appropriate use of technological resources.	8.2.4.F.1	Describe how resources are used in a technological product or system.
		8.2.4.F.2	Explain how resources are processed in order to produce technological products and systems.
8	Technological products and systems are created through the application and appropriate use of technological resources.	8.2.8.F.1	Explain the impact of resource selection and processing in the development of a common technological product or system.
		8.2.8.F.2	Explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment (e.g., by using recycled metals, alternate energy sources) and the economy.
12	Technological products and systems are created through the application and appropriate use of technological resources.	8.2.12.F.1	Determine and use the appropriate application of resources in the design, development, and creation of a technological product or system.
		8.2.12.F.2	Explain how material science impacts the quality of products.
		8.2.12.F.3	Select and utilize resources that have been modified by digital tools (e.g., CNC equipment, CAD software) in the creation of a technological product or system.

Content Area		Technology	
Standard		8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.	
Strand		G. The Designed World	
By the end of grade	Content Statement	CPI #	Cumulative Progress Indicator (CPI)
2	The designed world is the product of a design process that provides the means to convert resources into products and systems.	8.2.2.G.1	Describe how the parts of a common toy or tool interact and work as part of a system.
		8.2.2.G.2	Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose.
4	The designed world is the product of a design process that provides the means to convert resources into products and systems.	8.2.4.G.1	Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product.
		8.2.4.G.2	Explain the functions of a system and subsystems.
		8.2.4.G.3	Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer.
8	The designed world is the product of a design process that provides the means to convert resources into products and systems.	8.2.8.G.1	Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved.
		8.2.8.G.2	Explain the interdependence of a subsystem that operates as part of a system.
12	The designed world is the product of a design process that provides the means to convert resources into products and systems.	8.2.12.G.1	Analyze the interactions among various technologies and collaborate to create a product or system demonstrating their interactivity.

Glossary:

Basic technology terms for preschool: Examples digital camera, battery, screen, computer, Internet, mouse, keyboard, and printer.

Controversial issue: For example, global warming, scarcity of water, alternative energy sources, election campaigns.

Current and emerging technology resources: For example, cell phones, GPS, online communities using wikis, blogs, vlogs, and/or Nings.

Data-collection technology: For example, probes, handheld devices, and geographic mapping systems.

Digital learning game: For example, Alice, Lively.

Developmentally appropriate: Students' developmental levels prescribe the learning environment and activities that are used.

Digital tools for grade 2: For example, computers, digital cameras, software..

Digital tools for grades 4, 8, and 12: For example, computers, digital cameras, probing devices, software, cell phones, GPS, online communities, VOIP, and virtual conferences.

Electronic authoring tools: Software that facilitates online book development (e.g., multimedia electronic book).

Mapping tools: For example, Google earth, Yahoo maps, and Google maps.

Media-rich: Multiple forms of digital applications in one product (e.g., graphic design, word processing, and spreadsheet).

Multimedia presentation: For example, movie, podcast, vlog.

Online discussion: UNICEF, Oracle, i-Earn, blogs, wikis.

Online learning community: For example, i-Earn, Ning, blogs, wikis, Second Life.

Operations and related applications: For example, saving a word processing file to a network drive, printing a spreadsheet.

Reverse engineer: To isolate the components of a completed system.

Shared hosted services: For example, podcasts, videos, or vlogs.

Technologies: Medical, agricultural, and related biotechnologies, energy and power technologies, information and communications technologies, transportation technologies, manufacturing technologies, and construction technologies.

Virtual environments: For example, games, simulations, websites, blogs.

Web-based publication: For example, web pages, wikis, blogs, ezines.

The **ISTE** National Educational Technology Standards (NETS•S) and Performance Indicators for 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.

The ISTE

National Educational Technology Standards (NETS•T) and Performance Indicators for Teachers

Effective teachers model and apply the National Educational Technology Standards for Students (NETS•S) as they design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community. All teachers should meet the following standards and performance indicators. 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

The ISTE

National Educational Technology Standards (NETS•A) and Performance Indicators for 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

Staff Technology Survey Results– Spring 2009

As reported in the Annual Technology Survey and The 2010-2013 Three Year Technology Plan

As part of the Annual Technology Survey required by the state, the district completed a needs assessment for both instructional and administrative staff using the online Survey Monkey service. The goals of the survey were to determine staff comfort level with instructional technology, their current practices and proficiencies and to identify barriers to successful use of technology in the classroom.

The survey results indicate that 48% of our instructional staff consider themselves to be intermediate users of technology who are able to apply tools for instruction, professional growth and research. The survey results also show that 57% of staff use technology tools primarily to enhance productivity in the form of email communication and online grade books. 55% state that they regularly use the internet to provide student activities to support curriculum. 9% report that they regularly use technology to provide curricular activities that include global outreach and collaboration and 13.5% make regular use of video streaming, podcasting and other web 2.0 tools for the delivery of instruction.

The survey also shows that administrative staff have a strong three prong approach to ensuring that teachers are using educational technology tools appropriately in the classroom including monitoring the inclusion of technology in weekly lesson plans, the inclusion of technology in formal classroom observations and the use of technology goals in creating professional development plans.

The results of the survey show that our current educational technology environment is mostly teacher centered and that a major barrier to becoming a more student centered environment is the availability of equipment for student use on a daily basis, this barrier has been identified consistently in the last three years during staff needs assessments. In the 2009-2010 school-year, a 1:1 laptop initiative that provided laptops to each senior was started to remedy this barrier. The district is currently seeking ways to expand this program to additional grade levels during the time frame covered by the 2010-2013 Technology Plan. At the current time, staff report that 53.7% of our students have access to technology on a daily basis. Our goal with the laptop initiative is to significantly increase the percentage of students who have daily access to the technology necessary to support student use of 21st century skills. We will continue to assess the needs of both students and teachers using a variety of means including needs assessment surveys, our informal classroom walk-through program and formal observations of technology use in the classroom.

The district is very committed to providing sustained, ongoing professional development on a wide range of topics including technology. Technology training sessions are offered on-campus, off-campus and online for both instructional staff and administrators. Training has been driven by staff requests and has included sessions on technology productivity tools for both school and classroom management and technology integration tools for teachers in the classroom and for administrators as an evaluation tool. For the 2009-2010 school-year, technology training was offered at full-day, half-day and mini-pd sessions held after school hours. These trainings covered a wide range of topics including the use of laptops in the classroom, creating publishable student work using Web 2.0 tools, using interactive whiteboards with responder units, using digital video in the classroom to create student products and on using classroom management tools to communicate with parents. New during the 2009-2010 school-year was the introduction of a Moodle Online Learning Environment. A staff needs assessment on training delivery identified a need to expand our options to accommodate staff having

additional duties including coaches, tutors and school committee members. We also were responding to the need to introduce Web 2.0 communication and collaboration tools without compromising student safety and remain in compliance with both CIPA and the Protecting Children in the 21st Century Act. We are currently running 3 week sessions on Creating an online student learning community, Public Service Announcements in the Classroom, Podcasting in the Classroom, Web 2.0 tools for Teachers and a Classroll Teachers Lounge. Administrators have been provided with professional development to evaluate the use of Moodle Environments during observations.

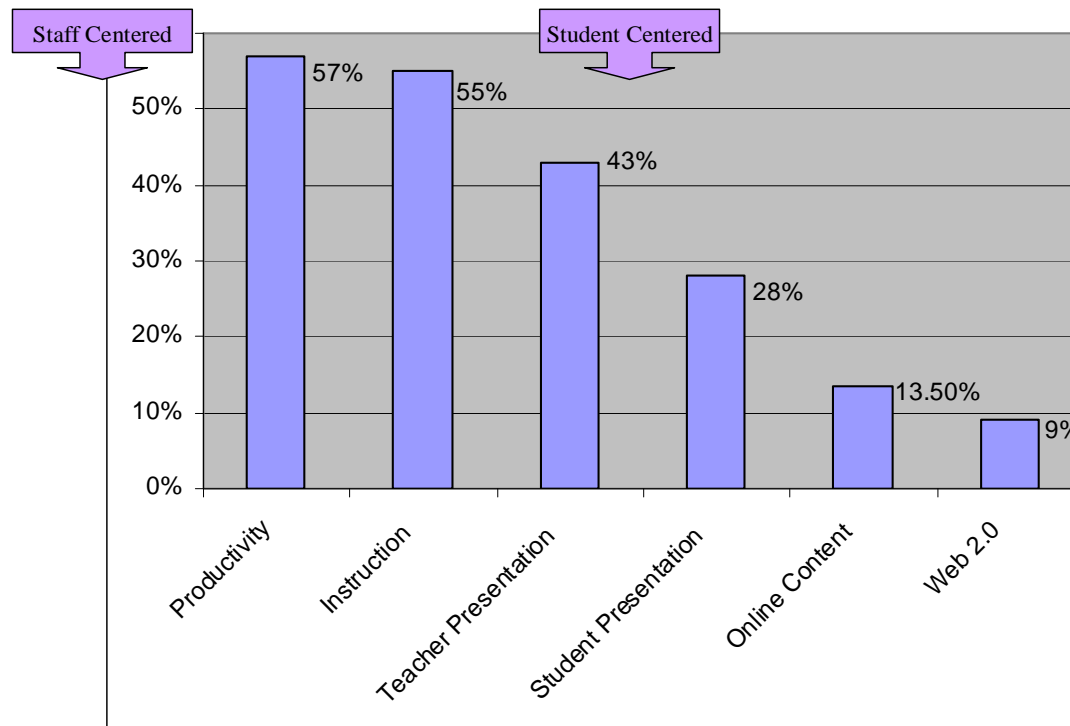
In addition to professional development programs, instructional staff can seek support for the use educational technology from curriculum coaches who help develop lesson plans and model the appropriate use of technology. The Technology Department Help Desk program provides instructional support from highly qualified, trained technology professionals and, at the high school, from students who have been trained to provide support for the hardware and software made available by the district. The online Moodle community also contains a Teachers Lounge area where teachers can communicate and collaborate with staff district wide to share ideas and provide collegial support.

Our needs assessment shows a clear need to provide students with greater access to technology equipment. The results of our successful 1:1 laptop initiative for the senior class has resulted in a strong commitment on the part of the district to provide a laptop to all students so they can communicate, collaborate and learn content in all curriculum areas using the same tools they find outside of school while acquiring the skills necessary to truly become productive citizens in the digital era. In addition to providing access to equipment, the technology department is committed to providing and maintaining the infrastructure necessary to support the use of laptops in an online environment. The curriculum department is equally committed to providing high quality professional development to staff so they can learn to use these new tools effectively and efficiently.

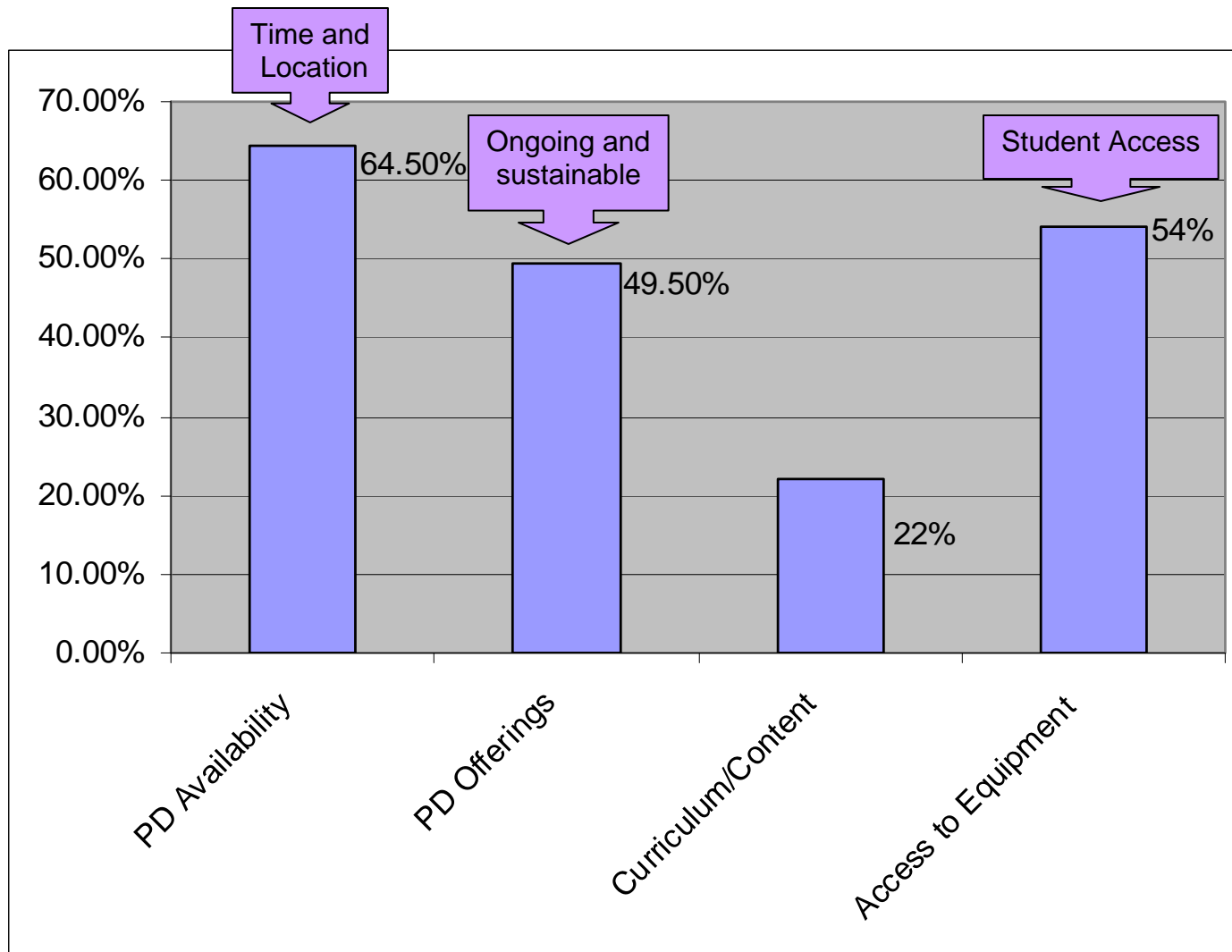
The district has already installed a wireless network at the high school to support the use of laptops in instructional areas without the need to run sufficient data drops to every classroom. The technology department will continue to monitor and maintain the system to accommodate the load required for additional equipment. This infrastructure set-up and maintenance is critical to the success of the program. The Technology Department must also build appropriate infrastructure at the Elementary and Middle School to support additional student workstations and equipment to provide access to student centered instructional tools. The technology department will also aggressively pursue options to reduce the cost of all projects by piloting and implementing Open Source alternatives that will allow the district to reapportion resources to support student centered projects and staff professional development. The final element of the program will be developing and delivering professional development to support teachers as they shift to new ways of delivering content in all curricular areas and for administrators to encourage the use of new technologies methods and provide appropriate feedback to teachers as part of both informal and formal observations.

Each year the state issues survey questions in May for school district's to use when completing the Annual Technology Survey. These issues will be revisited then as part of the process of monitoring progress.

Technology Use



Barriers to Technology Integration



Professional Development Activities

Professional Development activities for staff continue to be provided on a variety of topics including the use of laptops in the classroom, classroom management when laptops are in use and technology integration across all content areas. These workshops started in the summer when a select group of senior teachers, from all content areas, were invited to participate in focused sessions that would help prepare them to create lesson plans using the laptops, to support student use of technology and to learn about authentic assessment using technology projects. This training continues throughout the year with sessions offered by High Schools That Work and through training sessions offered by the Technology Department including the use of the Moodle Online Learning Environment to offer teachers the tools they need to help our students use technology to master content in every area. Classroom visits and modeling support were also available on request and several staff members have asked for assistance using these services. Highlights of the sessions offered this year include –

Ready, Set, Moodle – This three week, very intensive session, was required for all teachers who wished to use the Moodle Online Learning Environment for instruction. The course was required because of the unique safety and security issues surrounding the use of Web 2.0 tools. This series led to the creation of Moodle rooms in every content area that gave teachers and students the opportunity to create learning spaces that used Forums, wikis, file transfer and online collaboration and communication tools to complete assignments, including tests and quizzes, and share information.

Public Service Announcements in the Classroom – This three week session gave teachers the skills necessary to complete lesson plans and deliver assignments with the goal of using student created Public Service Announcements as a student project to assess understanding. The projects could be used stand alone, or the entire course could be converted to a Moodle Public Service Announcement online course. Successful completion of the course was rewarded with a Public Service Announcement classroom kit that contained all of the documents required to present the project to students including online resources and rubrics and a FLIP video camera for classroom use. The first wave of cameras was acquired through our printer cartridge recycling program adding additional value to the project. Evidence of success can be seen by viewing projects created in Health, Social Studies, Math and Business Classes

Podcasting in the Classroom - Similar in format to the Public Service Announcement Course - This three week session gave teachers the skills necessary to complete lesson plans and deliver assignments with the goal of using student created Podcasts as a student project to assess understanding. The projects could be used stand alone, or the entire course could be converted to a Moodle Podcast online course. This project also included instruction on teacher created podcasts of instructions and other content to enhance instruction. Successful completion of the course was rewarded with a Podcast classroom kit that contained all of the documents required to present the project to students including online resources and rubrics, a digital headset for recording and listening to

podcasts and the installation of Audacity software for classroom use. Audacity is an Open Source audio editing program that is widely used in industry and is available at no cost through Creative Commons licensing. Evidence of success can be seen by viewing projects created in Health, Social Studies, ESL, Science and Business Classes.

Web 2.0 for Teachers – Is a self-study course provided free of charge by Teachers Without Borders – this course introduces teachers to a variety of Web 2.0 tools and allows them to view student products created by teachers all over the world including Australia and Mali. The resources in this course are transferrable to any setting.

Podcasting – 2.5 hour boot camp – At the request of the English Department, a 2.5 hour boot camp course on podcasting was offered during teacher in-service days. 22 staff members from the English and Business departments learned to create their podcasts and lesson plans for classroom use.

There were also several requests for lesson modeling activities during the 2009-2010 school year. Visits were made to Science, Math and Health classes to model the effective use of laptops in the classroom. Teaching staff have reported increased levels of student engagement when they are actively producing products on the laptops. A formal staff survey will be completed with the Annual Technology Survey to monitor the use of programs and equipment and to solicit feedback to help with the planning and delivery of future technology professional development.

A conscious decision was made to focus on a few technology project ideas that were language based, could be used in lesson plans for any content area, that provided students with the opportunity to produce a product that could serve as an assessment piece and that would not require additional financial or staff commitments to implement. The use of podcasting and Public Service Announcement projects filled each of these needs. The narrative in the next section will explain and highlight several of the projects that were completed as a result of the focused professional development that was offered to staff.

Student Centered Integration Activities

There are many technology integration activities that will not be mentioned in this report. The 5 projects that are highlighted in this section are here because they were implemented in different content areas or by more than one staff member in a single content area. They also had wide use in senior classrooms where the laptops significantly added to the educational value of the projects by allowing teachers to complete the programs on demand and assign additional activities after school. In no particular order, they are

Public Service Announcements

These short video projects are designed to incorporate the key language arts skills of reading, writing, listening and speaking in one project. The writing part of the project relies heavily on persuasive writing techniques. There is a research component essential to the success of the project. Students learn critical citizenship skills while investigating copyright laws, fair use policies and the place of plagiarism in society. A successful project will be highly organized, follow an established formula and include a message about a topic designed to sway opinions on a critical current topic.

This year, Gloucester High School seniors produced Public Service Announcements on teen pregnancy, birth control, drunk driving in Health class. They produced PSA's about the First Amendment in Social Studies classes. And pieces about technology and personal finance in Business classes. They also used the format to complete PSA formatted video resumes in a Business class. Our students in lower grades have also been exposed to the process and will be ready to complete projects on more intense problems when they become seniors.

Podcasting

A podcast is any spoken message that is recorded digitally and is available for listening and/or downloading online. A podcast is a great way to demonstrate critical listening and speaking skills. The writing portion of the project is a key element to success. A podcast can be any length. The message can be on any topic and while it may be persuasive, it is not a requirement as it is in the Public Service Announcement. Podcasts have been used in classrooms to build vocabulary – including SAT prep. The very popular Grammar Girl series has been listened to and copied in several English classes. Our ESL teacher has created a series of podcasts to help ESL students gain vocabulary and pronunciation skills. Podcasts have even been used in our special education classrooms to help students learn to read Romeo and Juliet.

Geometers Sketchpad

Geometers Sketchpad is a program that has long been used in math classes at the high school. The addition of senior laptops this year made the program easier to use by allowing students to complete the projects and then hand-in their work using the Moodle file sharing service. In the past, each student had the opportunity to solve a problem on the Smart Board when the wireless lab was not available. With the implementation of the senior laptop project, seniors prepping for the HSPA were able to complete each problem

independently and gain additional practice time with the units. They were also able to download additional problems from the Geometers site to provide practice activities after school.

TurnItIn

This popular program is designed to help students understand the process of writing research papers to illustrate the many forms that plagiarism can take in our society. The program is primarily a tool of instruction. It is also used by teachers to scan papers against published works to look for pieces that have been copied from works available on the internet. Our seniors use their laptops to write research based pieces then submit them to TurnItIn for review. The work is marked up and returned for students to review areas where they may have copied or paraphrased a little too aggressively. This process teaches students the skills of reviewing what they write. It also teaches acceptable citation formats. Our English Department has reported a great deal of satisfaction with the program including the ease of use now that all seniors have ready access to the service on their laptops.

Moodle

This Open Source product is the wave of the future of education. It will revolutionize the way we teach. It will help us keep kids connected and avoid the “digital disconnect” problem that we know we must overcome. Available free through Creative Commons licensing, Moodle is an online learning environment that teachers can use to give students practice using the critical skills of communication and collaboration with Web 2.0 tools while allowing us to keep them safe and secure. We can provide these skills and still comply with all federal internet safety standards.

Our Moodle presence has been designed with just two thoughts in mind. How do we create an Online Professional Development Community to give staff the experience and training they need to transform instruction using this new paradigm. And, how do we create an Online Student Learning Community to teach our students how to use Web 2.0 tools and to deliver content in all curriculum areas.

This year, we have active Moodle rooms in every content area and at every grade level at the high school. Of particular interest for this report are the Health courses that have been developed to support the use of Public Service Announcements for assessment pieces for seniors. The Health IV teachers have reported that student engagement using the laptops to research genetics information, use genetic markers to create avatars and then present projects on healthy babies was incredible. The students also created PSA's on Birth Control and Driver Safety issues using the laptops, the internet and the Moodle room set-up by the Health IV teachers. A senior project is currently underway to produce Moodle based SAT prep materials created by students for students.

The GHS Moodle presence has grown faster than anticipated. Our teachers and students have demonstrated that they have the desire to stop the digital disconnect. We have given them the tools to make it happen and must continue to provide the necessary equipment and support to provide this opportunity to all our students.

Technology Management

A project of this scope and importance could not be undertaken without considerable planning, a commitment to resources, professional development and a strong technology support staff to make the process go smoothly. Outside the scope of instruction, but still vitally important are the issues of asset management, security, safety and peripheral services.

Asset Management

The Technology Department is proud of our ability to keep assets functioning properly long after the anticipated End of Life cycle of most products. We do this through diligent inventory control, constant monitoring and an organized maintenance and upgrade schedule. The net books purchased by the district are subject to this same process. All equipment is tagged and registered in our TrackIt inventory control system using the serial number and the BOE number. Each unit is configured to our standards including the use of security software that protects both the unit and our network. All appropriate software is installed and tested. The unit is then placed in the TrackIt asset management system where it is monitored for usage including the introduction of viruses and inappropriate software. Each unit will be subject to a full maintenance routine including ghosting the machine to remove data at the end of each year. The machine will be serviced, cleaned and reconfigured for the next user.

Safety and Security

The safety and security of staff is an important concern for the Technology Department. Our firewall is our first line of defense. We employ network level security as the next layer followed by machine level security for the end unit. We also maintain a secure school filtering box to control the flow of unwanted content and potential threats into the system. Our next level of defense relies on staff who are trained on classroom management when using computers and who in turn instruct students on proper use of equipment, resources and online safety. These layers of protection cover our students, our staff and our assets.

Peripheral Services

A project of this scope will not be successful without planning for peripheral services. Included in this list is the use of print services, scanners, digital still and video cameras, thumb drives and whatever else lurks on the horizon. How do we manage the threat to the system from viruses on student thumb drives? Where do they print when they need to hand in hard copy work? How do we support the variety of programs and devices in use in our classrooms? All of these questions needed to be answered before the laptops were deployed.

We handled the thumb drive issue by building extra scanning capability into our computer images that will scan any new device plugged into the units for virus and other threats before allowing the device to access the system.

We handled the device issue by building drivers for most devices right into the student network where they can be accessed and installed automatically when a device is plugged into the unit.

The printing problem required a little more planning. At the moment, all student laptops are networked to print in the media center where the content and quantity of printed work is monitored by media center staff. As we move toward more networked print services, students will be able to print directly to the teacher shared print file and eliminate the need to retrieve documents from the media center. This new process will also help reduce paper and cartridge costs by eliminating some redundant and unnecessary print jobs.

Open Source

Moving forward, we are investigating the use of a variety of Open Source products that will allow us to reduce our costs by converting to programs like Open Office. We currently use several open source programs that are installed on student laptops including Audacity and GIMP that have significantly reduced the costs of purchasing sound editing and photo editing software. A nice side benefit is the life long lesson to students to investigate options that have value and are cost effective.

Transforming American Education:

Learning

Powered by Technology

DRAFT

National Educational Technology Plan 2010
Executive Summary

March 5, 2010

Office of Educational Technology
U.S. Department of Education

Executive Summary

Education is the key to America's economic growth and prosperity and to our ability to compete in the global economy. It is the path to good jobs and higher earning power for Americans. It is necessary for our democracy to work. It fosters the cross-border, cross-cultural collaboration required to solve the most challenging problems of our time.

Under the Obama administration, education has become an urgent priority driven by two clear goals. By 2020,

- We will raise the proportion of college graduates from where it now stands [39%] so that 60% of our population holds a 2-year or 4-year degree.
- We will close the achievement gap so that all students – regardless of race, income, or neighborhood – graduate from high school ready to succeed in college and careers.

These are aggressive goals and achieving them is a sizable challenge. Add to the challenge the projections of most states and the federal government of reduced revenues for the foreseeable future, and it is clear we need cost-effective and cost-saving strategies that improve learning outcomes and graduation rates for millions of Americans.

Specifically, we must embrace innovation, prompt implementation, regular evaluation, and continuous improvement. The programs and projects that work must be brought to scale so every school has the opportunity to take advantage of that success. Our regulations, policies, actions, and investments must be strategic and coherent.

Transforming American Education

To achieve these goals, the National Educational Technology Plan (NETP) calls for revolutionary transformation rather than evolutionary tinkering. It urges our education system at all levels to

- Be clear about the outcomes we seek.
- Collaborate to redesign structures and processes for effectiveness, efficiency, and flexibility.
- Continually monitor and measure our performance.
- Hold ourselves accountable for progress and results every step of the way.

Just as technology is at the core of virtually every aspect of our daily lives and work, we must leverage it to provide engaging and powerful learning experiences, content, and resources and assessments that measure student achievement in more complete, authentic, and meaningful ways. Technology-based learning and assessment systems will be pivotal in improving student learning and generating data that can be used to continuously improve the education system at all levels. Technology will help us execute collaborative teaching strategies combined with professional learning that better prepare and enhance educators' competencies and expertise over the course of their careers. To shorten our learning curve, we can learn from other kinds of enterprises that have used technology to improve outcomes while increasing productivity.

A 21st Century Model of Learning Powered by Technology

The NETP presents a model of 21st century learning powered by technology, with goals and recommendations in five essential areas: learning, assessment, teaching, infrastructure, and productivity. The plan also identifies far-reaching “grand challenge problems” that should be funded and coordinated at a national level.

The challenging and rapidly changing demands of our global economy tell us what people need to know and who needs to learn. Advances in learning sciences show us how people learn. Technology makes it possible for us to act on this knowledge and understanding.

Learning

The model of 21st century learning described in this plan calls for engaging and empowering learning experiences for all learners. The model asks that we focus what and how we teach to match what people need to know, how they learn, where and when they will learn, and who needs to learn. It brings state-of-the art technology into learning to enable, motivate, and inspire all students, regardless of background, languages, or disabilities, to achieve. It leverages the power of technology to provide personalized learning instead of a one-size-fits-all curriculum, pace of teaching, and instructional practices.

Many students’ lives today are filled with technology that gives them mobile access to information and resources 24/7, enables them to create multimedia content and share it with the world, and allows them to participate in online social networks where people from all over the world share ideas, collaborate, and learn new things. Outside school, students are free to pursue their passions in their own way and at their own pace. The opportunities are limitless, borderless, and instantaneous.

The challenge for our education system is to leverage the learning sciences and modern technology to create engaging, relevant, and personalized learning experiences for all learners that mirror students’ daily lives and the reality of their futures. In contrast to traditional classroom instruction, this requires that we put students at the center and empower them to take control of their own learning by providing flexibility on several dimensions. A core set of standards-based concepts and competencies should form the basis of what all students should learn, but beyond that students and educators should have options for engaging in learning: large groups, small groups, and work tailored to individual goals, needs, interests, and prior experience of each learner. By supporting student learning in areas that are of real concern or particular interest to them, personalized learning adds to its relevance, inspiring higher levels of motivation and achievement.

In addition, technology provides access to more learning resources than are available in classrooms and connections to a wider set of “educators,” including teachers, parents, experts, and mentors outside the classroom. On-demand learning is now within reach, supporting learning that is life-long and life-wide (Bransford et al., 2006).

What and How People Need to Learn

Whether the domain is English language arts, mathematics, sciences, social studies, history, art, or music, 21st century competencies and expertise such as critical thinking, complex problem solving, collaboration, and multimedia communication should be woven into all content areas. These competencies are necessary to become expert learners, which we all must be if we are to adapt to our rapidly changing world over the course of our lives, and that involves developing deep understanding within specific content areas and making the connections between them.

How we need to learn includes using the technology that professionals in various disciplines use. Professionals routinely use the web and tools such as wikis, blogs, and digital content for the research, collaboration, and communication demanded in their jobs. They gather data and analyze it using inquiry and visualization tools. They use graphical and 3D modeling tools for design. For students, using these real-world tools creates learning opportunities that allow them to grapple with real-world problems – opportunities that prepare them to be more productive members of a globally competitive workforce.

Assessment

The model of 21st century learning requires new and better ways to measure what matters, diagnose strengths and weaknesses in the course of learning when there is still time to improve student performance, and involve multiple stakeholders in the process of designing, conducting, and using assessment. In all these activities, technology-based assessments can provide data to drive decisions on the basis of what is best for each and every student and that in aggregate will lead to continuous improvement across our entire education system.

President Obama has called on our nation's governors and state education chiefs to develop standards and assessments that measure 21st century competencies and expertise – critical thinking, complex problem solving, collaboration, and multimedia communication – in all content areas. Technology-based assessments that combine cognitive research and theory about how students think with multimedia, interactivity, and connectivity make it possible to directly assess these types of skills. And we can do so within the context of relevant societal issues and problems that people care about in everyday life.

When combined with learning systems, technology-based assessments can be used formatively to diagnose and modify the conditions of learning and instructional practices while at the same time determining what students have learned for grading and accountability purposes. Both uses are important, but the former can improve student learning in the moment (Black & William, 1998; Black et al., 2004). Furthermore, systems can be designed to capture students' inputs and collect evidence of their knowledge and problem solving abilities as they work. Over time, the system "learns" more about students' abilities and can provide increasingly appropriate support.

Using Data to Drive Continuous Improvement

With assessments in place that assess the full range of expertise and competencies reflected in standards, student learning data can be collected and used to continually improve learning outcomes and productivity. For example, such data could be used to create a system of interconnected feedback for students, educators, parents, school leaders, and district administrators.

For this to work, relevant data must be made available to the right people at the right time and in the right form. Educators and leaders at all levels of our education system also must be provided with support – tools and training – that can help them manage the assessment process, analyze data, and take appropriate action.

Teaching

Just as leveraging technology can help us improve learning and assessment, the model of 21st century learning calls for using technology to help build the capacity of educators by enabling a shift to a model of connected teaching. In such a teaching model, teams of connected educators replace solo practitioners and classrooms are fully connected to provide educators with 24/7 access to data and analytic tools as well as to resources that help them act on the insights the data provide.

The expectation of effective teaching and accountability for professional educators is a critical component of transforming our education system, but equally important is recognizing that we need to strengthen and elevate the teaching profession. This is necessary if we are to attract and retain the most effective educators and achieve the learning outcomes we seek. Just as leveraging technology can help us improve learning and assessment, technology can help us build the capacity of educators by enabling a shift to a model of connected teaching.

In a connected teaching model, connection replaces isolation. Classroom educators are fully connected to learning data and tools for using the data; to content, resources, and systems that empower them to create, manage, and assess engaging and relevant learning experiences; and directly to their students in support of learning both inside and outside school. The same connections give them access to resources and expertise that improve their own instructional practices and guide them in becoming facilitators and collaborators in their students' increasingly self-directed learning.

In connected teaching, teaching is a team activity. Individual educators build online learning communities consisting of their students and their students' peers; fellow educators in their schools, libraries, and afterschool programs; professional experts in various disciplines around the world; members of community organizations that serve students in the hours they are not in school; and parents who desire greater participation in their children's education.

Episodic and ineffective professional development is replaced by professional learning that is collaborative, coherent, and continuous and that blends more effective in-person courses and workshops with the expanded opportunities, immediacy, and convenience enabled by online environments full of resources and opportunities for collaboration. For their part, the colleges of education and other institutions that prepare teachers play an ongoing role in the professional growth of their graduates throughout the entire course of their careers.

Connected teaching enables our education system to provide access to effective teaching and learning resources where they are not otherwise available and provide more options for all learners at all levels. This is accomplished by augmenting the expertise and competencies of specialized and exceptional educators with online learning systems and through on-demand courses and other self-directed learning opportunities. Clearly, more teachers will need to be expert at providing online instruction.

21st Century Resources for Professional Educators

The technology that enables connected teaching is available now, but not all the conditions necessary to leverage it are. Many of our existing educators do not have the same understanding of and ease with using technology that is part of the daily lives of professionals in other sectors. The same can be said of many of the education leaders and policymakers in schools, districts, and states and of the higher education institutions that prepare new educators for the field.

This gap in technology understanding influences program and curriculum development, funding and purchasing decisions about educational and information technology in schools, and pre-service and in-service professional learning. This gap prevents technology from being used in ways that would improve instructional practices and learning outcomes.

Still, we must introduce connected teaching into our education system rapidly, and therefore we need innovation in the organizations that support educators in their profession – schools and districts, colleges of education, professional learning providers, and professional organizations.

Infrastructure

An essential component of the 21st century learning model is a comprehensive infrastructure for learning that provides every student, educator, and level of our education system with the resources they need when and where they are needed. The underlying principle is that infrastructure includes people, processes, learning resources, policies, and sustainable models for continuous improvement in addition to broadband connectivity, servers, software, management systems, and administration tools. Building this infrastructure is a far-reaching project that will demand concerted and coordinated effort.

Although we have adopted technology in many aspects of education today, a comprehensive infrastructure for learning is necessary to move us beyond the traditional model of educators and students in classrooms to a learning model that brings together teaching teams and students in classrooms, labs, libraries, museums, workplaces, and homes – anywhere in the world where people have access devices and an adequate Internet connection.

Over the past 40 years, we have seen unprecedented advances in computing and communications that have led to powerful technology resources and tools for learning. Today, low-cost Internet access devices, easy-to-use digital authoring tools, and the web facilitate access to information and multimedia learning content, communication, and collaboration. They provide the ability to participate in online learning communities that cross disciplines, organizations, international boundaries, and cultures.

Many of these technology resources and tools already are being used within our public education system. We are now, however, at an inflection point for a much bolder transformation of education powered by technology. This revolutionary opportunity for change is driven by the continuing push of emerging technology and the pull of the critical national need to radically improve our education system.

Always-on Learning Resources

Our model of an infrastructure for learning is always on, available to students, educators, and administrators regardless of their location or the time of day. It supports not just access to information, but access to people and participation in online learning communities. It offers a platform on which developers can build and tailor applications.

An infrastructure for learning unleashes new ways of capturing and sharing knowledge based on multimedia that integrate text, still and moving images, audio, and applications that run on a variety of devices. It enables seamless integration of in- and out-of-school learning. It frees learning from a rigid information transfer model (from book or educator to students) and enables a much more motivating intertwine of learning about, learning to do, and learning to be.

On a more operational level, an infrastructure for learning brings together and enables access to data from multiple sources while ensuring appropriate levels of security and privacy. It integrates computer hardware, data and networks, information resources, interoperable software, middleware services and tools, and devices and connects and supports interdisciplinary teams of professionals responsible for its development, maintenance, and management and its use in transformative approaches to teaching and learning.

Productivity

To achieve our goal of transforming American education, we must rethink basic assumptions and redesign our education system. We must apply technology to implement personalized learning and ensure that students are making appropriate progress through our K-16 system so they graduate. These and other initiatives require investment, but tight economic times and basic fiscal responsibility demand that we get more out of each dollar we spend. We must leverage technology to plan, manage, monitor, and report spending to provide decision-makers with a reliable, accurate, and complete view of the financial performance of our education system at all levels. Such visibility is essential to meeting our goals for educational attainment within the budgets we can afford.

Improving productivity is a daily focus of most American organizations in all sectors – both for-profit and nonprofit – and especially so in tight economic times. Education has not, however, incorporated many of the practices other sectors regularly use to improve productivity and manage costs, nor has it leveraged technology to enable or enhance them. We can learn much from the experience in other sectors.

What education can learn from the experience of business is that we need to make the fundamental structural changes that technology enables if we are to see dramatic improvements in productivity. As we do so, we should recognize that although the fundamental purpose of our public education system is the same, the roles and processes of schools, educators, and the system itself should change to reflect the times we live in and our goals as a world leader. Such rethinking applies to learning, assessment, and teaching processes, and to the infrastructure and operational and financial sides of running schools and school systems.

Rethinking Basic Assumptions

One of the most basic assumptions in our education system is time-based or “seat-time” measures of educational attainment. These measures were created in the late 1800s and early 1900s to smooth transitions from K-12 into higher education by translating high school work to college admissions offices (Shedd, 2003) and made their way into higher education when institutions began moving away from standardized curricula.

Another basic assumption is the way we organize students into age-determined groups, structure separate academic disciplines, organize learning into classes of roughly equal size with all the students in a particular class receiving the same content at the same pace, and keep these groups in place all year.

The last decade has seen the emergence of some radically redesigned schools, demonstrating the range of possibilities for structuring education. These include schools that organize around competence rather than seat time and others that enable more flexible

scheduling that fits students' individual needs rather than traditional academic periods and lockstep curriculum pacing. In addition, schools are beginning to incorporate online learning, which gives us the opportunity to extend the learning day, week, or year.

The United States has a long way to go if we are to see every student complete at least a year of higher education or postsecondary career training. There is no way to achieve this target unless we can dramatically reduce the number of students who leave high school without getting a diploma and/or who are unprepared for postsecondary education.

A complex set of personal and academic factors underlie students' decision to leave school or to disengage from learning, but support should start as early as possible, before children enter school, and should become intensified for those students who need it as they move through school. Practices supported with technology can help address the problem, including learning dashboards that keep students on track with their course requirements and earning credits for courses taken online.

Redesigning education in America for improved productivity is a complex challenge that will require all 50 states, the thousands of districts and schools across the country, the federal government, and other education stakeholders in the public and private sector coming together to design and implement innovative solutions. It is a challenge for educators – leaders, teachers, and policymakers committed to learning – as well as technologists, and ideally they will come together to lead the effort.

A Rigorous and Inclusive Process

The NETP, led by the Department of Education's Office of Educational Technology, was developed using a rigorous and inclusive process built on the report of a technical working group of leading education researchers and practitioners.

In keeping with the White House's Open Government Directive, the Department invited extensive public participation in the development of the NETP. Broad outreach efforts and state-of-the-art communications and collaboration technology enabled tens of thousands of individuals to learn about and contribute to the development of the NETP over its 9-month development period.

The Time To Act Is Now

The NETP accepts that we do not have the luxury of time – we must act now and commit to fine-tuning and midcourse corrections as we go. Success will require leadership, collaboration, and investment at all levels of our education system – states, districts, schools, and the federal government – as well as partnerships with higher education institutions, private enterprises, and not-for-profit entities.

In the United States, education is primarily a state and local responsibility. State and local public education institutions must ensure equitable access to learning experiences for all students and especially students in underserved populations – low-income and minority students, students with disabilities, English language learners, preschool-aged children, and others. States and districts need to build capacity for transformation. The Department of Education has a role in identifying effective strategies and implementation practices; encouraging, promoting, and actively supporting innovation in states and districts; and nurturing collaborations that help states and districts leverage resources so the best ideas can be scaled up.

Postsecondary education institutions – community colleges and 4-year colleges and universities – will need to partner more closely with K-12 schools to remove barriers to postsecondary education and put plans of their own in place to decrease dropout rates. Clearly, postsecondary institutions would be key players in the national R&D efforts recommended in this plan.

Education has long relied on the contributions of organizations in both the private and not-for-profit sectors, and this will not change.

As we enter the second decade of the 21st century, there has never been a more pressing need to transform American education and there will never be a better time to act. The NETP is a 5-year action plan that responds to an urgent national priority and a growing understanding of what the United States needs to do to remain competitive in a global economy.

Goals and Recommendations

The NETP presents five goals with recommendations for states, districts, the federal government, and other stakeholders in our education system that address learning, assessment, teaching, infrastructure, and productivity. The plan also identifies far-reaching grand challenge problems that should be funded and coordinated at a national level.

1.0 Learning

All learners will have engaging and empowering learning experiences both in and outside of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society.

To meet this goal, we recommend the following actions:

1.1 Revise, create, and adopt standards and learning objectives for all content areas that reflect 21st century expertise and the power of technology to improve learning.

1.2 Develop and adopt learning resources that use technology to embody design principles from the learning sciences.

1.3 Develop and adopt learning resources that exploit the flexibility and power of technology to reach all learners anytime and anywhere.

1.4 Use advances in the learning sciences and technology to enhance STEM (science, technology, engineering, and mathematics) learning and develop, adopt, and evaluate new methodologies with the potential to enable all learners to excel in STEM.

2.0 Assessment

Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.

To meet this goal, we recommend the following actions:

2.1 Design, develop, and adopt assessments that give students, educators, and other stakeholders timely and actionable feedback about student learning to improve achievement and instructional practices.

2.2 Build the capacity of educators and educational institutions to use technology to improve assessment materials and processes for both formative and summative uses.

2.3 Conduct research and development that explore how gaming technology, simulations, collaboration environments, and virtual worlds can be used in assessments to engage and motivate learners and to assess complex skills and performances embedded in standards.

2.4 Revise practices, policies, and regulations to ensure privacy and information protection while enabling a model of assessment that includes ongoing student learning data gathering and sharing for continuous improvement.

3.0 Teaching

Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all learners.

To meet this goal, we recommend the following actions:

3.1 Design, develop, and adopt technology-based content, resources, and online learning communities that create opportunities for educators to collaborate for more effective teaching, inspire and attract new people into the profession, and encourage our best educators to continue teaching.

3.2 Provide pre-service and in-service educators with preparation and professional learning experiences powered by technology that close the gap between students' and educators' fluencies with technology and promote and enable technology use in ways that improve learning, assessment, and instructional practices.

3.3 Transform the preparation and professional learning of educators and education leaders by leveraging technology to create career-long personal learning networks within and across schools, pre-service preparation and in-service educational institutions, and professional organizations.

3.4 Use technology to provide access to the most effective teaching and learning resources, especially where they are not otherwise available, and to provide more options for all learners at all levels.

3.5 Develop a teaching force skilled in online instruction.

4.0 Infrastructure

All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.

To meet this goal, we recommend the following actions:

4.1 Ensure that students and educators have adequate broadband access to the Internet and adequate wireless connectivity both inside and outside school.

4.2 Ensure that every student and educator has at least one Internet access device and software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school.

4.3 Leverage open educational resources to promote innovative and creative opportunities for all learners and accelerate the development and adoption of new open technology-based learning tools and courses.

4.4 Build state and local education agency capacity for evolving an infrastructure for learning.

4.5 Support "meaningful use" of educational and information technology in states and districts by establishing definitions, goals, and metrics.

5.0 Productivity

Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money, and staff.

To meet this goal, we recommend the following actions:

- 5.1 Develop and adopt a common definition of productivity in education and more relevant and meaningful measures of learning outcomes and costs.
- 5.2 Improve policies and use technology to manage costs including those for procurement.
- 5.3 Fund the development and use of interoperability standards for content, student learning data, and financial data to enable collecting, sharing, and analyzing data to improve decision-making at all levels of our education system.
- 5.4 Rethink basic assumptions in our education system that inhibit leveraging technology to improve learning, starting with our current practice of organizing student and educator learning around seat time instead of the demonstration of competencies.
- 5.5 Design, implement, and evaluate technology-powered programs and interventions to ensure that students progress through our K-16 education system and emerge prepared for the workplace and citizenship.

A New Kind of R&D for Education

To design and implement more efficient and effective education system, this plan calls for an organization with the mission of serving the public good through research and development at the intersection of learning sciences, technology, and education (Pea & Lazowska, 2003).

The Higher Education Act (P.L. 110-315) passed in August 2008 authorizes establishment of the National Center for Research in Advanced Information and Digital Technologies (also called the Digital Promise). Housed in the Department of Education, the center is authorized as a 501(c)3 that would bring together contributions from the public and private sectors to support the R&D needed to transform learning in America. The Digital Promise's intent of involving private sector technology companies in precompetitive R&D with the center can be realized only if the federal government provides the funding that would demonstrate its own commitment to a major program of R&D addressing the complex problems associated with redesigning our education system.

The Defense Advanced Research Projects Agency (DARPA) offers an example of how such a research agency can promote work that builds basic understanding and addresses practical problems. DARPA sponsors high-risk/high-gain research on behalf of Department of Defense agencies, but it is independently managed and staffed by individuals from both industry and academia who are experts in the relevant research areas. DARPA program officers are given considerable discretion, both in defining the research agenda and making decisions about the funding and structuring of research (Cooke-Deegan, 2007).

In a similar manner, the National Center for Research in Advanced Information and Digital Technologies should identify key emerging trends and priorities and recruit and bring together the best minds and organizations to collaborate on high-risk/high-gain R&D projects. It should aim for radical, orders-of-magnitude improvements by envisioning the impact of innovations and then working backward to identify the fundamental breakthroughs required to make them possible.

Grand Challenge Problems

This plan also urges the national research center to focus on grand challenge problems in education research and development. “Grand challenge problems” are important problems that require bringing together a community of scientists and researchers to work toward their solution.

The following grand challenge problems illustrate the kinds of ambitious R&D efforts that should be coordinated at a national level. Notably, although each of these problems is a grand challenge in its own right, they all combine to form the ultimate grand challenge problem in education: establishing an integrated end-to-end real-time system for managing learning outcomes and costs across our entire education system at all levels.

1.0: Design and validate an integrated system that provides real-time access to learning experiences tuned to the levels of difficulty and assistance that optimizes learning for all learners and that incorporates self-improving features that enable it to become increasingly effective through interaction with learners.

2.0: Design and validate an integrated system for designing and implementing valid, reliable, and cost-effective assessments of complex aspects of 21st century expertise and competencies across academic disciplines.

3.0: Design and validate an integrated approach for capturing, aggregating, mining, and sharing content, student learning, and financial data cost-effectively for multiple purposes across many learning platforms and data systems in near real time.

4.0: Identify and validate design principles for efficient and effective online learning systems and combined online and offline learning systems that produce content expertise and competencies equal to or better than those produced by the best conventional instruction in half the time at half the cost.

TECHNOLOGY USE POLICY

6141.4

Internet access is available to students and staff in the Gloucester City School District. We believe it offers valuable and unique resources to both students and staff. Our goal in providing this service is to promote educational excellence in the district.

The purpose of this policy is to ensure that use of the Internet resources is consistent with the district's mission, goals, and objectives. The smooth operation of the network relies upon the proper conduct of the users who must follow strict guidelines. If a Gloucester City School District user violates any of these terms the user account will be closed and future access could be denied.

To gain access to the Internet, all students under the age of 18 must obtain parental permission, which would be legally binding.

Terms and Conditions –

- 1) Users are responsible for good behavior on the school computer networks, just as they are in the classroom, or a school hallway. General rules for behavior apply.
- 2) Internet access is provided for users to conduct research and to communicate with others. Access is given to students who agree to act in a considerate and responsible manner. Access is a privilege – not a right.
- 3) Users are expected to conduct themselves in a responsible, ethical, and polite manner while online.
- 4) Users are not permitted to use the computing resources for commercial purposes, product advertising, political lobbying, or political campaigning.
- 5) Users are not permitted to transmit, receive, submit, or publish any defamatory, inaccurate, abusive, obscene, profane, sexually oriented, threatening, offensive or illegal material.
- 6) Physical or electronic tampering with computer resources is not permitted. Damaging computers, computer systems, or computer networks intentionally will result in cancellation of privileges.
- 7) Users must respect all copyright laws that protect software owners, artists, and writers. Plagiarism will not be tolerated.
- 8) Security on any computer system is a high priority, especially when the system involves many users. If you feel you can identify a security problem in the school's computers, network, or Internet connection, you must notify the system administrator. Do not demonstrate the problem to others. Using someone else's password or trespassing in another person's files without written permission is prohibited. Attempts to logon to the Internet as anyone but yourself may result in a cancellation of user privileges.
- 9) Gloucester City School District makes no guarantees of any kind, whether expressed or implied, for the service it is providing. The district assumes no responsibility or liability for any damage a user may suffer. This includes the loss of data resulting from delays, non-deliveries, mis-deliveries, or service interruptions caused by its own negligence of your errors or omissions. Use of any information obtained via the Internet is at your own risk. The district specifically denies any responsibility for the accuracy or quality of information obtained through its services.
- 10) All communication and information via the computer resources shall be regarded as private property. However, people who operate the system may review files and messages to maintain system integrity and insure that users are using the system responsibly. Messages relating to or in support of illegal activities may be reported to the authorities.
- 11) **Students are not permitted to engage in text messaging during school hours. At no time are any members of the school community to use technology to harass and/or bully others.**
- 12) **Students are not permitted to use cell phones during school hours.**
- 13) **Students are not permitted to connect portable digital storage devices to school technology resources, including portable flash memory or memory sticks, disks or personal music devices such as iPods and MP3 players.**
- 14) **Students are not permitted to access the Internet while on school property or during school hours using cell phones or other personal handheld digital devices.**
- 15) **Students are not permitted to create and/or transmit digital data including emails and digital photos using portable handheld devices including cell phones with cameras and Bluetooth enabled devices on school property or at school sponsored events.**
- 16) **Students are not permitted to access commercial message boards, social networking, peer-to-peer messaging or multi-user role playing sites using school or personal devices on school property or during school hours.**

Any violations may result in a loss of computer access, as well as other disciplinary or legal action. Users are considered subject to all local, state, and federal laws.

GLOUCESTER CITY SCHOOL DISTRICT INTERNET USE AGREEMENT:

STUDENT SECTION: I have read the District Internet Use Agreement. I agree to follow the rules contained in this policy. I understand that if I violate the rules, my account can be terminated, and I may face other disciplinary measures.

User Name:

Grade:

School:

User's Signature:

Date:

TECHNOLOGY USE POLICY, Pg. 2

PARENT OR GUARDIAN SECTION: As the parent or legal guardian of the student signing above, I have read the District Internet Use Agreement and grant permission for my son or daughter to access the Internet. I understand that the district's computing resources are designed for educational purposes. I also understand that it is impossible for the school district to restrict access to all controversial materials and I will not hold them responsible for materials acquired on the Internet. I understand that individuals and families may be held liable for violations. Furthermore, I accept full responsibility for supervision if and when my child's use is not in a school setting.

Parent Signature:

Date:

Parent Name:

Home Address:

Phone:

STAFF SECTION: I, a staff member in the Gloucester City School District, am aware of the significant responsibilities associated with the use of information technology and the Internet. By my signature below, I certify that I have read the following policies, that I understand them and that I agree to be bound by them. Specifically, I agree to:

- 1) Use district Information Technology Resources for educational purposes only.
- 2) Treat with respect and exercise reasonable care in the use of all district computer hardware, software, and communications resources.
- 3) Not reveal to anyone else passwords or other access codes assigned to me so that I may use the Information Technology Resources of the district, not to trespass in another's folders, work or files for any reason.
- 4) Make responsible, cost effective use of district consumable supplies such as paper, electronic media and printer ink and toner.
- 5) Not develop, acquire, display or transmit any material by electronic means or hardcopy that could be considered by a reasonable person in our community as obscene, scatological, racist, abusive, degrading to men or women by gender or demonstrating tolerance or prejudice toward any ethnic or religious group.
- 6) Not use district technology resources to support political or religious causes or support candidates for public, elected office, or to promote personal agendas.
- 7) Not to violate copyright laws.

Unless authorized by the Technology Department:

- 1) Make no attempt to in any way, alter, modify, upgrade, or repair any district hardware, including, but no limited to, computers interface cards, monitors, printers, scanners, modems, wiring, or cabling.
- 2) Make no attempt to damage, modify or upgrade any district software.
- 3) Make no attempt to install software of any kind on any district computer or network or download and install programs of any kind to any district computers.

Technology is a powerful tool that can enhance instruction. Every staff member maintains the responsibility to closely monitor student use of the Internet when that student is assigned to him/her. If a staff member suspects any misuse of technology by a student, the staff member will report that suspicion to the building principal or designee.

Each staff member will:

- 1) Receive an email account that is assigned by the district. Email IS NOT PRIVATE, it is **archived, and may be monitored by** the school district.
- 2) Be given a password to access the computer system. In accepting this password, the staff member agrees to keep it confidential and report any breaches of security to the building principal or designee.
- 3) Contact appropriate supervisors or school administrator if special provisions are needed such as the establishment of individual or group student email accounts that would enhance instruction.
- 4) Report any malfunction or hardware problem to the district Director of Technology via the online reporting system.
- 5) Note: The use of the computer, including the Internet/email connections is closely monitored and IS NOT PRIVATE. Network storage space, called home directories, is provided for every staff member and is treated as lockers. The home directories are closely monitored and may be inspected at anytime if there is reason to believe that there is a difficulty. This means the Network Administrator reviews files and communications contained in the home directories to maintain system integrity and insure that users are using the system consistent with district policy. Users should not expect that files stored on district servers would always be private.
- 6) If a staff member inadvertently accesses an inappropriate site, it must be reported immediately to the Director of Technology.

TECHNOLOGY USE POLICY, Pg. 3

- 7) In general, equipment is not permitted to leave district facilities. Exceptions can be made for instructional purposes. ALL requests to borrow equipment must go through the technology department and will require that the borrower sign a checkout form indicating they have received the listed equipment and are aware of the policies regarding borrowed equipment. Note: Borrowed equipment is the sole responsibility of the person signing the checkout form. Repair or replacement costs for missing or damaged equipment will be assessed to the borrower of record.

Staff Member's Name:

Staff Signature:

Rationale:

School web pages are public documents welcoming the outside world to the school and linking students and staff to outside sources of information. Guidelines are required in the construction of school web pages to ensure that information on the pages is appropriate for any Internet user from around the world to access. Web pages should support the educational goals of Gloucester City Schools.

In producing the web pages the following goals should be considered:

- 1) Introducing outside visitors to the school and its program,
- 2) Sharing the school's successes with the world, and
- 3) Linking internal users to good outside information resources.

Publishing Safeguards:

- 1) Decisions on publishing student names, pictures and audio clips are based on the principal's or web designer's judgment. Written permission by a parent/guardian must be obtained before publishing.
- 2) Permission must be obtained from any staff member prior to displaying his/her photograph.
- 3) Web page documents may not include any information that indicates the physical locations of a student at a given time other than attendance at a particular school or participation in activities.
- 4) Web page documents may include only the first name and the initial of the student's last name unless parental/guardian permission has been granted.
- 5) Documents may not include a student's phone number, address, names of their family members, or names of friends.
- 6) Copyright must be respected. The author of the web page must not use copyrighted materials without permission.

All Web Pages are required to meet Guidelines/Procedures established by the school district.

Equipment

Equipment is primarily intended for use by staff members for instructional purposes. As resources permit, equipment may also be used by staff for other District related functions or by non-staff meeting in school facilities.

In general, equipment is not permitted to leave district facilities. Exceptions can be made, depending upon the event, the equipment requested and the length of time equipment will be unavailable to other users. Examples of possible exemptions are the use of equipment for homebound students or the recording of school activities occurring in other locations. Equipment may not be borrowed for personal use.

Borrowed equipment is the sole responsibility of the person indicated on the checkout form. This individual is responsible for any equipment checked-out under their name, regardless of who may subsequently use the equipment during that particular checkout period. Repair or replacement costs for missing or damaged equipment will be assessed to the borrower of record.

All equipment requests must go through the technology department and will require that the borrower sign the checkout form indicating that they received the listed equipment and that they are aware of the above policies.

Agreement for Use
Gloucester City Public Schools
Notebook Computer Project

I/We agree to have a notebook computer issued to the student named below, and accept the responsibilities associated with acceptance and use of Gloucester City Public Schools computer equipment.

I/We fully understand and agree to abide by the district's Acceptable Use Policy. We also understand that violations of the Acceptable Use Policy may result in loss of computer system privileges and may include other disciplinary actions. I/We understand that the school will monitor the use of this computer system, including the use of internet, downloaded materials and that there will be no expectation of privacy in the use of Gloucester City computer equipment.

I/We fully understand that Gloucester City Public Schools has taken customary precautions to eliminate on-site access to inappropriate materials and that my student has the responsibility to use resources wisely and report any unusual activity to the appropriate school administrator. Each student is responsible for his or her actions on the computer systems. Upon observation of a user exhibiting unacceptable use, including dangerous or abusive actions that impact the safety and welfare of students, staff and the educational environment, disciplinary action may be taken in a series of measures as indicated in the school Discipline Code. These actions may include the following:

1. Notification of violation sent to student, parent and school administrator
2. Notebook computer use suspended until parent conference is conducted
3. Notebook computer use suspended for remainder of school year
4. Suspension from school
5. Possible civil or criminal prosecution

I/We understand that the notebook is the property of Gloucester City Public Schools, and must be returned upon withdrawal from school, at the end of the academic year, or at the request of school officials. We understand that failure to return the notebook computer in good condition may result in fines, criminal prosecution and/or other remedies.

I/We understand that repair costs due to reasonable wear and tear of computer equipment will be covered under the school warranty for accidental, incidental damages. Repair costs for neglect or unreasonable damage, may be charged to the student, including charges for lost equipment including batteries and power cords.

I/We have read this Agreement and the Acceptable Use Policy, and accept the responsibilities associated with acceptance and use of Gloucester City Public Schools computer equipment.

PERMISSION FOR NOTEBOOK COMPUTER

Printed Name of Parent/Guardian

Printed Name of Student

Signature of Parent/Guardian Date

Signature of Student Date