

The Technology Plan

New Paltz Central School District

Plan Period

July 2010 – June 2013

April, 2010

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Executive Summary

Introduction

The District Technology Plan presented here covers the plan period July 2010 – June 2013. This Plan reflects the District’s 2009 Vision and Goals. The plan also incorporates the current elements of the District Educational Master Plan.

This Plan document links directly to the goals and plan elements in the NY State Education Technology Plan ([Appendix A](#)).

The core requirements for E-rate funding are described in the [Plan Elements – Reference Sheet](#) section of this document and include highlighted and electronic links to supporting elements within this Plan document.

New Paltz Central School District Vision Statement

(Approved by the Board of Education on August 2, 2006):

Our school community – students, staff, families and community members – are citizens of the world, passionate about learning and empowered to achieve their dreams.

Citizens of the world: responsible, ethical, contributing, participating members of local, national and global communities who value all peoples and care about each other; they respect the environment, work to improve the society in which we live, and understand their role in it.

Passionate about learning: confident and reflective, curious, nimble thinkers whose knowledge of the past makes them capable of questioning, analyzing and assimilating new information. They are technologically creative and able to imagine alternatives to what is and what is yet to be. They also dare to be risk takers in crafting their futures.

Empowered: they are well prepared to be self-directed and expressive, to develop and use their personal skills and abilities, to be comfortable with change, achieve deep understanding, make informed and wise decisions, and to cooperate, collaborate and compete. They live a healthy life style, are creative, and are empowered to achieve their dreams.

New Paltz Central School District 2009 Goals

(Adopted by the Board of Education on Aug. 2, 2006; Amended on Oct. 6, 2006)

1. Focus on learning and success for all.
2. Create a cohesive and inclusive culture PK-12, across buildings and departments.
3. Empower and create success for disengaged and disenfranchised students.

Education Master Plan

The outline of the District’s Educational Master Plan identifies fourteen educational standards that represent the scaffolding for the District’s growth.. These standards provided the guidance for the development of the Technology Plan presented in this document ([Appendix B](#)).

Technology Plan Summary

The purpose of this plan is to provide a clear vision for uses of information and communication technologies for teaching and learning throughout the New Paltz Central School District. The top priority was to consider what critical elements were needed to create an optimal learning environment for all students and to build a more collaborative community for all. This plan also reflects the necessity of reshaping some traditional methods of education to meet the new needs and new roles of all learners in the school community.

Due to the adverse economic outlook and the subsequent impact on the District's budget at the start of this plan period, and the likelihood that it will persist perhaps through the entire plan period, many of the plan strategies and actions will require early and frequent adjustments. Specifically, the District's year one technology budget plan is not yet approved and will likely have significant modifications from what is presented herein. Even so, the overall objectives of the plan should remain intact and adjustments are expected to only address timing, resources and degree of achievement, and will not impact the goals of the plan.

Technology should be used to improve student performance by assisting and enabling staff to rethink and restructure teaching and learning so as to meet State Standards and District goals and prepare students for productive and fulfilling lives. This plan also addresses the need to:

- Identify the technology-related skills and knowledge that all students should exhibit at various stages and at the completion of their formal K-12 education.
- Incorporate identified technology-related skills and knowledge into all curriculum documents developed in the District.
- Incorporate technology into all District/school improvement plans.
- Use technology to support effective classroom strategies including cooperative learning, group investigation, problem-based learning, simulation, independent research, and presentation and contribution to a wider community.

The District Technology Steering Committee believes that the vision and recommendations outlined in this plan support the District's Student Outcomes. In order to more fully define the skills and knowledge needed by students, teachers and administrators to realize the vision and outcomes, the Committee developed two additional documents: *The Outcomes for Students in a Technological Society* and *The Teacher/Administrator Outcomes* ([Appendix C](#)).

Our District's educators continue to be guided by the following beliefs about learning in the information-age school:

- Students are active architects of their own learning experiences
- Learning is a social activity and is enhanced by working in cooperative, collaborative environments
- Educators' roles expand: they are facilitators, innovators, collaborators, researchers, electronic publishers, learners and role models
- The community actively participates in the teaching and learning process
- Children learn best when they are provided with opportunities to apply knowledge in meaningful and creative ways to solve problems they identify in real life

They are also guided by the following beliefs about the purpose of technology in the information-age school:

- Technology is a means, not an end. It is not the technology in and of itself but the way in which the technology is used that is likely to influence student outcomes. Technology is seen predominantly as a tool to advance teaching and learning rather than as a separate subject to be taught. Educational rationale should guide technology decisions.
- Technology empowers its users.
- Technology fosters intellectual curiosity, achievement, and a pattern of self-directed, independent, life-long learning.
- Technology use should take advantage of real-life application opportunities whenever possible so as to put learning skills and strategies in the context of authentic, real-life experiences.
- Technology is not merely another reform idea: it will force a reconsideration of the very nature of schooling.
- Technology cannot effortlessly transform education. Productive reform will require sustained attention to curricular and instructional change and to technology solidly grounded in effective theories of action.

The 2010-2013 Technology Plan contains three major sections:

1. Technology Goals, Strategies and Plans
2. Telecommunications Strategies
3. Professional Development Strategies

Technology Goals, Strategies and Plans

Technology Planning

Technology planning must be considered a process, not an event. In order to ensure implementation and continuous improvement there must be on-going dialogue with users within and across buildings. In order to implement this process, the District formed the District Technology Steering Committee, and a Building Technology Committee for each building. The District Director of Information and Communications Technology will be responsible for the administration of these committees.

District Technology Steering Committee

The District Technology Steering Committee is a standing committee that serves as a forum for continued discussion regarding teaching and learning with technology across the District as well as developing, implementing and evaluating the District Technology Plan. In order to maximize communication between buildings, at least one representative of each Building Technology Committee also serves on the District Technology Steering Committee. The Steering Committee is charged with the following responsibilities:

- Develops the District Technology Plan
- Communicate the vision, goals and recommendations of the District Technology Plan within the District and to the New Paltz community
- Assist building technology committees with the development of school level plans and review plans for articulation and coordination K-12
- Provide a forum to discuss issues related to teaching and learning with technology across the District
- Participate in activities as designated in the action plans
- Monitor and evaluate the implementation of the District Technology Plan

Building Technology Committee

The goal of each Building Technology Committee will be to develop a school level plan to ensure the realization of the Student Learning Outcomes and Teacher/Administrator Outcomes as defined in the District Technology Plan. The school plan should be consistent with the District Vision and should become an integral part of all school improvement plans. The building plan will allow teachers the opportunity to collaboratively construct new forms of teaching and learning. The Building Technology Plan shall include:

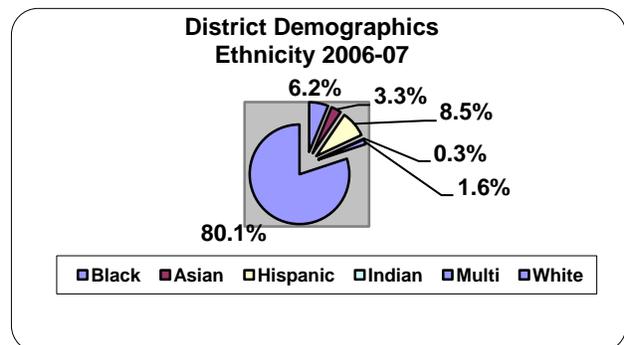
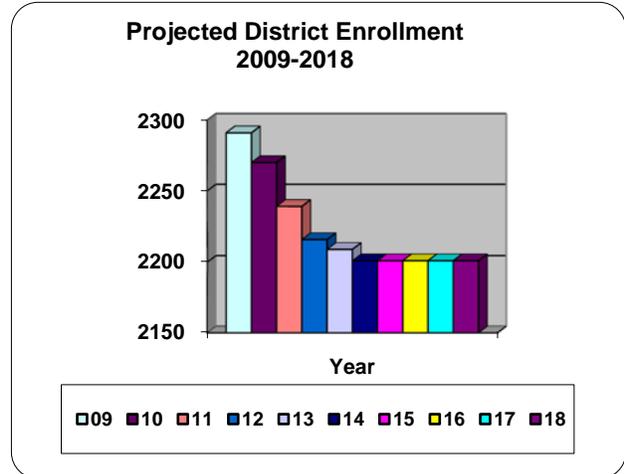
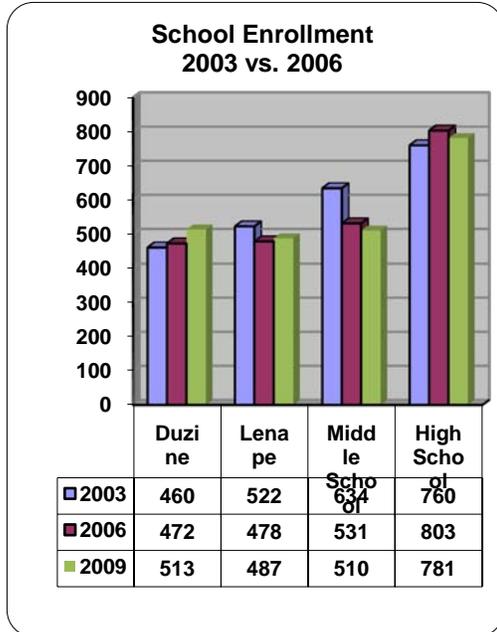
- A rationale that describes how the plan speaks to the District Vision and how it will align with and expand District and State curriculum and instructional objectives
- A plan for curriculum and technology integration that defines student outcomes in each course/subject/grade level, i.e., what technological capabilities must students have and be able to demonstrate?
- Procedures for identifying and recommending additional hardware and software purchases that will enable students to meet desired learning outcomes

- A rationale for and description of how the allocated equipment and building level technical support will be configured to enable students and teachers to achieve the identified learning outcomes
- A specific professional development plan (which includes both technology applications and curriculum, instruction and assessment practices) that will prepare staff to ensure that students achieve desired outcomes
- A description of how the plan will ensure equity for all students and may provide access to parents and the larger community
- A plan for monitoring, evaluating and continuously improving technology planning and implementation in the building

Current Assessments

Demographics

The New Paltz Central School District comprises the Town and the incorporated Village of New Paltz and small parts of six surrounding towns. The student enrollment for the 2009-2010 school year is 2291. There are four buildings: a preK-2 primary school; a 3-5 intermediate school, a 6-8 middle school; and a 9-12 high school. Approximately 6.2% of the District's students are black; 3.3% are Asian, 8.5% are Hispanic, 0.3% are Indian, 1.6% are Multiracial and 84% are White. 18.6% of the District's students receive free or reduced lunch. Over 83% of the graduating class attends post-secondary education programs.



Computer Equipment Inventory

District Inventory March 2010		
	COMPUTERS	PRINTERS
HIGH SCHOOL	392	45
MIDDLE SCHOOL	298	75
LENAPE	261	24
DUZINE	128	10
District Office	67	40
TOTAL	1146	194

Technology Goals for 2010-2013

These Technology Goals support the District Goals and are based on the [ISTE National Educational Technology Standards](#) included in [Appendix D](#).

Our Technology Goals are grouped into four major areas:

1. Student 21st Century Learning

- Goal: Increase academic performance across the curriculum through technology.
 - Increase ways for students to collaborate with other students, teachers and others.
 - Provide ways to extend the student learning beyond the school day
 - Provide remote learning connections
 - Support enrichment programs, advanced courses and academic intervention

Strategies:

Collaboration: Email, Blogs, web servers, Moodle, SharePoint, chat rooms

Extended day: Remote access to computers and data 24hrs/day, 7 days/week

Remote learning: Video conferencing, virtual field trips; Develop and conduct a comprehensive parent survey to establish and monitor the technology capacity available for learning from home.

Enrichment and advanced programs: Project Lead The Way, Web-based enrichment offerings, BOCES Model Schools' offerings, BOCES Library Automation CoSer offerings; Integrate technology into Academic Intervention programs; online intervention programs.

Technology Integration: Use Educational Technologist to facilitate implementation of educational software into the curricula

- Goal: Increase students' technology proficiencies.
 - Provide students exposure to all media types
 - Provide leading-edge technology

Strategies:

Exposure to multi-media: In-district TV station, Web radio station, High quality color printing, web page development, video editing

Remote learning: Video conferencing, virtual field trips, Moodle

Contemporary Technology: Laptops, Smart Boards, handhelds, Wireless, high-speed networks, remote response units

Student/Computer Ratio: Maintain a 3:1 or better ratio

Educational Technologist: Assist teachers in developing student technology literacy

2. Professional Development

- Goal: Support teachers in applying 21st Century Learning by increasing teachers' effectiveness in using technology. Provide professional development for integrating technology into teaching and learning, instructional management, and administration.
 - Support formal and non-formal assessments of student and school performance
 - Provide teachers with curriculum specific technology
 - Provide teachers and administrators with quality data and effective analysis tools
 - Provide technology-rich professional development for staff and faculty
 - Provide teachers with technology to improve their productivity

Strategies:

Assessments: Provide teachers and administrators data analysis of all testing data, item analysis, on-line testing, and on-line test preparation. Professional Development Plans: Encourage and support Technology related PDP activities.

Training: Provide a District Instructional Technologist for on-site support, for training, and to lead teachers in integrating technology into their curriculum.

Training: Provide On-line, anytime and anywhere training

Productivity: Provide classroom technology to assist in delivery of education, and to increase interactivity with students.

Software: Provide curriculum-based applications

Administration: Maintain a robust Student Mgmt. System

Administration: Provide Document Management tools and processes.

3. Parental and Community Involvement

- Goal: Provide and maintain an infrastructure for communications with parents and community members, including access to news and information from the Board of Education, District and schools; educational resources, data, and personnel.

Strategies:

Parental involvement:

- Provide programs and/or speakers to help parents understand how important it is for their children to be competent in technology use.
 - Focus efforts to diminish parents' misconceptions, strengthen their technological awareness, and at the same time allow them to discover the potential of technology resources for their own uses.
 - Make teachers and administrators more accessible to parents: Use *PowerSchool ParentPortal*, automatic phone calling, web surveys, and voice-mail technology to improve two-way communication between home and school. Use E-mail and Internet school web-sites to enhance communication between parents and teachers as well.
 - Provide opportunities for parents to provide input to the technology planning process. Invite parents to participate in technology surveys, attend discussions sponsored by PTA's and other parent/school organizations.
 - Develop and conduct a comprehensive parent survey to establish and monitor the technology capacity available for learning from home.
- Goal: Build community support through collaborative planning, education, public information, and other means.

Strategies:

- Utilize focus groups with PTAs, and community members to identify needs and concerns related to technology in the schools.
- Utilize Public Access TV and District TV (NPZ-TV).

4. Technology Resources

- Goal: Provide and maintain adequate resources to support the technology targets and the District's Technology vision and goals.

Strategies:

- Minimize acquisition costs by using off-lease, thin-client, and/or equipment modifications to satisfy needs.
- Extend life-cycle of equipment where possible
- Introduce new equipment only where necessary
- Extend life of software licenses where possible

- Goal: Continuously evaluate the effectiveness of plans to support the Technology goals

Strategies:

- Convene periodic building Technology Committee meeting
- Hold periodic Technology Staff and Technology Steering Committee meetings to review plan
- Conduct surveys with teachers, students, parents, and administrators to help assess plans

- Utilize analysis tools to better understand and manage resources
- Goal: Maintain a technology infrastructure that achieves the following capabilities:
 - Capability of access including robust, routed connections to the Internet;
 - Integrated voice, video and data networks
 - Connected workstations that provide access to local and global systems, resources, and people;
 - Capacity that allows the use of images, voice, video, and text data;
 - Expansion potential that is scaleable, flexible, and sustainable;
 - Potential for community expansion;
 - Flexibility to use a variety of applications including the World Wide Web;
 - Costs including installation, training, and operating costs;
 - Security including several layers of protection and encryption;
 - Controls to reduce unacceptable site access by students; and
 - Guarantees of capacity, priority use, and access during peak time.
 - Improve technology infrastructure for Middle School consistent with the objectives for maintaining the facility.

Strategies:

- Maintain a pro-active approach to anticipate technology needs.
- Ensure technology staff, including building Sysops, maintains a high skill level in all appropriate areas.
- Maintain a budget that sustains currency of infrastructure and allows for growth and replacements.
- Utilize appropriate tools to support security and access to all infrastructure components, including Internet filtering and virus protection
- Identify and implement the options for updating the Middle School infrastructure to be compatible with future building repairs, renovations and improvements.

Objectives and Plans 2010-2013

The District Technology Plan's Objectives for the period 2010-2013 are listed below.

Equipment and Services

- Continual upgrades to classroom and lab computers.
- Installation of TV distribution capability at Lenape
- Implement a TV network to support TV distribution throughout the district
- Expand wireless capability in all buildings
- Deploy Netbooks, thin-clients, nComputing devices, to reduce equipment costs
- Continue deployment of Smartboards and tablet devices for classrooms
- Introduction of 3-D printing and presentation devices
- Continual expansion of virtualization technology to servers and desktops
- Expansion of security technologies
- Upgrade of phone service provider and internal phone system
- Expansion of data storage system and backup/recovery system

- Upgrade of data network bandwidth

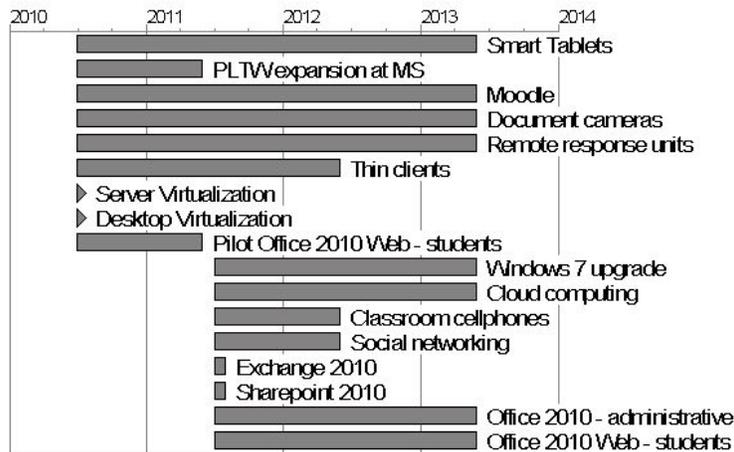
Programs

The major technology program initiatives during this plan period are listed below:

- Implement a Technology Curriculum integrated with current curriculum
- Expansion of Project Lead The Way (PLTW) courses at High School and Middle School
- Continual upgrade to application and system software.
- Migrate to Windows 7 for instructional and administrative computers
- Incorporate Cloud Computing technologies with existing infrastructure
- Expansion of Moodle usage for distance learning and collaboration
- Provide for access to social networking applications
- Provide for classroom use of cell phones and other personal wireless devices

Deployment Schedule

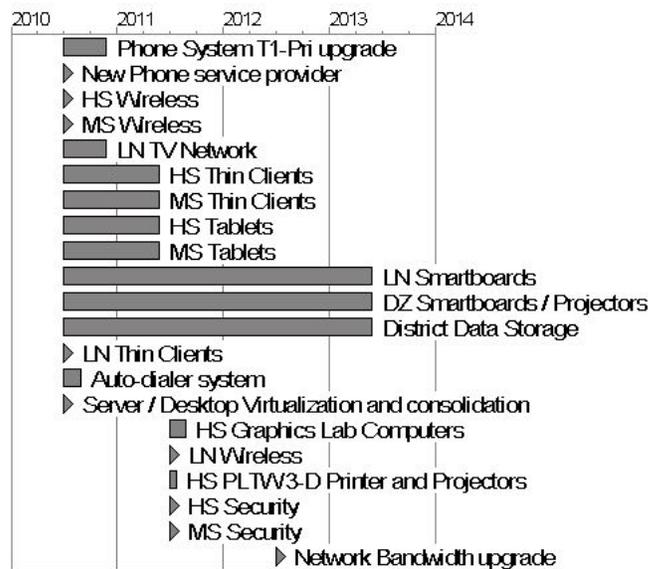
The timeframe for these objectives is described in the following chart.



Plan Acquisitions and Budgeting

Major Acquisitions

The following chart timelines the major acquisitions and upgrades planned for the 2010-2013 plan period.



Budget

The table below details the Technology (Computer Assisted Instruction) budget for the

current school year 2009-2010. Also shown are portions of the School Library & Audio Visual budget and the Educational Television budget.

The Computer Assisted Instruction budget includes in addition to the Technology Staff salaries, the salary costs for the Teaching Assistants that manage the computer labs at each school.

The School Library & Audio Visual budget covers the cost of online subscription databases, online videos and Audio/Visual equipment repair costs. New and additional A/V equipment costs are carried in the Computer Assisted Instruction budget.

Description

School Library & Audio Visual	2009-10
CONTRACTUAL - LIBRARY AUTOMATION	\$29500
EDUC MEDIA – ONLINE VIDEOES	10500
CONTRACTUAL - AV/ LIBRARY REPAIR	\$8000
Subtotal School Library & Audio Visual	\$48000
Educational Television	
Contractual – Ed TV	1000
Repairs & Supplies – Ed TV	3000
Computer Assisted Instruction	
SALARIES, COMP. TEACHING ASS'TS	\$146,000
HOURLY, COMPUTER REPAIR WORK	\$12,000
TECHNOLOGY SALARIES, OTHER	\$175,900
TECHNOLOGY SALARIES, DIRECTOR	\$102,000
COMPUTER HARDWARE DIST.	\$50,000
TECH CONTRACTUAL	\$8,000
TECH REF/SUBSCRIPTION	\$400
CONTRACTUAL – Student Mgmt. System	\$20,000
CONTRACTUAL - HARDWARE REPAIR	\$30,000
CONTRACTUAL - PHONE MAINT	\$30,000
TECH STAFF DEVELOPMENT	\$1,500
TECH DUES	\$500
TECH MILEAGE REIMBURSEMENT	\$100
MATERIALS & SUPPLIES	\$60,000
SOFTWARE	\$65,000
BOCES - TECHNOLOGY	\$194,000
BOCES – TECHNOLOGY STAFF	\$306,000
Subtotal Computer Assisted Instr.	\$1,201,400

The current and projected technology budgets are shown in consolidated form in the following table. The district’s budget process ensures that the technology budget reflects changes in curriculum, staffing and capital projects.

Budget Area	2009-2010	2010-2011	2011-2012	2012-2013
Salaries	435,900	284,400	299,800	309,000
Software	65,000	65,000	65,000	60,000
Hardware	50,000	50,000	50,000	45,000
Supplies	60,000	60,000	60,000	52,600
Contractual	28,000	18,400	18,400	18,400
BOCES	500,000	609,300	625,900	643,000
Technology Staff Development	2,500	2,500	2,500	2,500
Maintenance	60,000	60,000	60,000	60,000
TOTAL	1,201,400	1,149,600	1,181,600	1,190,500

Internet Safety Strategy

The New Paltz CSD Internet safety policy addresses the following as required by CIPA: access by minors to inappropriate matter on the Internet and World Wide Web; the safety and security of minors when using electronic mail, chat rooms and other forms of direct electronic communications; unauthorized access, including so-called “hacking” and other unlawful activities by minors online; and unauthorized disclosure, use and dissemination of personal information regarding minors; measures designed to restrict minors’ access to materials harmful to minors and educating minors about appropriate online behavior including interacting with other individual on social networking web sites and in chat rooms, and cyber bullying awareness and response.

Following the ISTE Standards for Students, Teachers and Administrators, we strive to maintain proficiency of Digital Citizenship for all students. We expect students to advocate and practice safe, legal and responsible use of information technology. Our teachers must exhibit legal and ethical behavior in their professional practices and 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. Our Administrators must model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture and promote, model and establish policies for safe, legal, and ethical use of digital information and technology.

The recent passage of the New York State Education Law on Internet Safety and Appropriate Use ([Ed Law Section 814](#)) requires a better education of students for safe and appropriate use of Internet technology and resources. This legislation was an outgrowth of the federal Children’s Internet Protection Act (CIPA) enacted by Congress in December 2000 to address concerns about offensive content over the Internet on school and library computers.

Ethical use and Internet safety are important topics to include in our district technology plan. This plan calls for:

- Providing teachers, staff, students and parents' equitable access to appropriate training and materials.

Our district has access to both synchronous and asynchronous training on Internet safety. Some of the providers of Internet safety courses include, but are not limited to: Ulster BOCES, NYS Center for School Safety, NYS Model Schools, NYS Law Enforcement, and The Teacher Center. The NYS Model Schools online Internet Safety class is available to all teachers and staff. Teachers are trained within the school to be "turnkey trainers" to assist and support all stakeholders. Training for parents and students is also available through these regional partners.

The district has also identified appropriate online resources that are both traditional and online. The online resources are linked on the districts website and available to our entire educational community.

- Providing up-to-date information on the newest forms of technology so the instructional materials are relevant for today's cyber students

The technology committee will continue to explore new technologies, application of technology in the classroom, and the impact technology has on students learning. This information will regularly be shared with all stakeholders and action plans will be adjusted as needed.

- Identifying and implementing student activities and outcomes

The district will identify grade appropriate activities at each grade that fit into the current curriculum and work with teachers to develop content to support Internet safety strategies.

- Convening stakeholder groups with diverse school and community representation to review and establish district policies concerning filtering, acceptable use policy, legal and ethical responsibilities towards all learners and guidelines for online resources.
- Updating teacher responsibilities for advocating, modeling, and teaching safe, legal and ethical use of technology and information, including copyright, privacy issues, and cyberbullying, and security of systems and equipment, data and information.
- Providing media specialist with professional development to update their digital citizenship skills and techniques for delivering this information to students and teachers.
- Updating district website information on Internet safety, acceptable use policy, and links to other related information.
- Updating all appropriate system controls necessary to maintain CIPA and District policies compliance.

Professional Development Strategy

The research is clear with regard to the significance of professional development for improving student learning with technology. It is not the technology of itself but the way in which the technology is used that is likely to influence student outcomes. One cannot separate the effects of technology from the quality of the curriculum and instruction in which it is embedded. Evaluations by the federal government and numerous national educational organizations report that technology is drastically underutilized in many schools. The underlying reason for this is consistently cited as lack of sufficient professional development, especially with regard to the use of technology to support new ways of teaching and learning.

The goal of staff development is to provide opportunities for educators to acquire, refine, and update their skills in areas of curriculum and pedagogy in ways that incorporate educational technology as a natural tool. While some technology specific staff development is required, in general all technology-based instruction should be viewed in the larger context of the educational vision of the site. Technology has a large role to play in the reinvention of schools, but the implementation of computers, instructional video, and telecommunication links will be meaningless unless they are designed into a curriculum and are chosen to support pedagogical models designed to insure maximum learning opportunities for all students. Technology, alone, cannot drive reform. If technology is brought into classrooms without revisiting the curricular and pedagogical issues, it risks being used to implement the educational strategies of the past. We will, in effect, have placed a gas engine in a horse, rather than designed an automobile.
(Technology Planning for the Communication Age)

The essential first task of staff development is to assist teachers in developing a vision of how schools can make use of technology.

The following will serve as guiding principles for District technology staff development:

- Ultimate goals for student learning must lead the way. Technology should be considered a “tool kit” that helps educators reach those goals - not an end in itself.
- Staff development must engage teachers in ongoing conversation and reflection about their practice and their students. Technology staff development must include discussion of how technology will change curriculum, assessment, classroom organization, and instructional practice.
- Learning opportunities for teachers, like those for students, need to be authentic and collaborative. Staff development should assist teachers in developing units, lessons, or technology-based projects.
- Teachers must have access to information technology tools. Consistent availability is essential if teachers are to have opportunities to practice, explore, and try out the projects they have designed.
- Use technology to broaden and expand opportunities for professional development (e.g., compressed video, internet as a vehicle for teacher to teacher collaboration).

- Provide time - for workshops, collaborative design, discussion, exploration, and practice - and recognize that technology staff development is an ongoing activity, not a single event.
- Continuously evaluate and improve all staff development plans.

This Plan calls for:

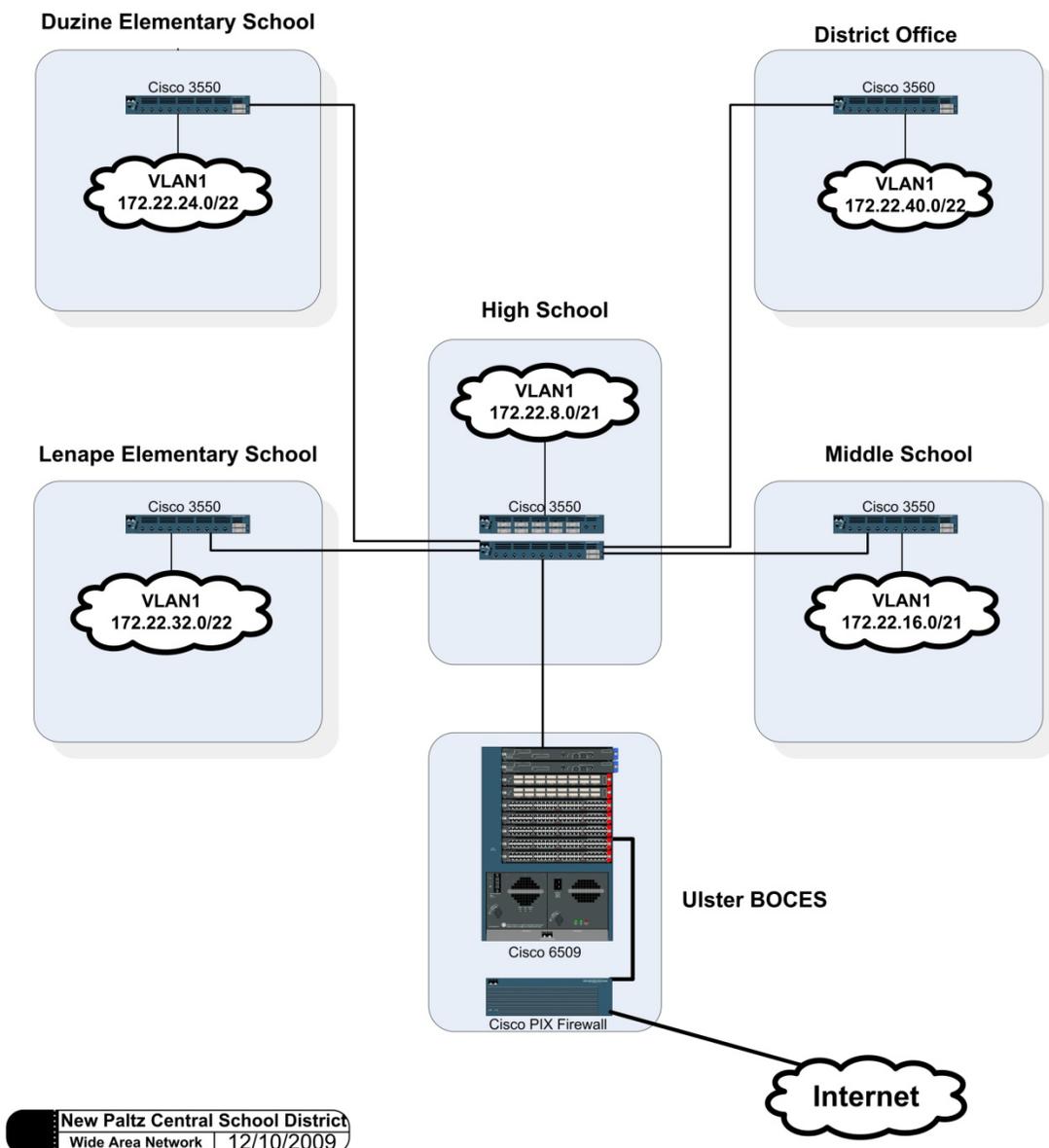
- Development of District and building level professional development plans which reflect the Teacher/Administrator Outcomes and the Outcomes for Students in a Technological Society. Plans should:
 - focus on the development of teachers who are not just technologically skilled but teachers who understand how, when, and why to use technology to support their teaching and their students' learning
 - be well-organized, on-going, and systematic
 - offer many different options for differing learning styles and levels of development
 - mirror the kinds of instructional strategies advocated by the vision
- Providing the time and funds required to sustain increased professional development.
- Including technological proficiencies in the hiring criteria for all professional positions in the District.
- Develop policies and procedures to ensure accountability for the use of technology in teaching and learning (e.g., incorporate technological proficiency and use in evaluation instruments, etc.).
- Developing annually a needs analysis report for professional development which includes self-assessment/reflection and accounts for new hardware and software acquisitions and changes in district needs and goals.
- Working with local pre-service education providers to ensure alignment with District needs and share expertise and resources.

Teachers need a choice of technology training options. There is support among teachers to use Superintendent In-service Days and in-school classes to provide teacher training in technology. Technology training plans will be developed with teacher input.

Telecommunications Strategy

Current Telecommunications Assessment

The diagram below shows a high level view of the District network infrastructure. BOCES recently completed an infrastructure upgrade further improving bandwidth to the District network, including a one-gigabit backbone within each school and 100mbs to the workstations. Not shown is the phone network that uses T1 emulated circuits over the OC3 connections to each building. Also, not shown is an external cable modem access to each building used for Internet backup. An Internet filter device is provided at BOCES.



Our Telecommunications strategy is to maintain a network infrastructure that is sufficiently robust not to present constraints to any options the district may want to pursue in the Plan timeframe. This strategy is taken because of the long lead-time required to implement major network upgrades. The District currently connects to the BOCES infrastructure which provides voice, video and data services as well as Internet access and regional connectivity. Our Internet connectivity in Ulster County has continued to increase in capacity and speed since its inception in 2001. The District will continue to participate with BOCES to develop the most cost effective network solutions.

This Plan calls for:

- Expanding wireless coverage in the Middle School and High School in order to minimize the logistics of setup for mobile laptop carts.
- In year three of this Plan, the wireless coverage will expand to all District locations, including outside of buildings, to support personal wireless devices which will become commonplace in this time period.
- The Middle School building data network will be redesigned to accommodate anticipated classroom layout changes resulting from repair and renovation projects that will be approved for the aging facility.
- Gigabit bandwidth will be extended as needed in each building.
- Upgrades and replacement of key phone switches will be made as equipment reaches end-of-life.

Our internal phone system is aging and upgrades will be required over the plan period. The NEC phone switches (PBXs) at each school are reaching end-of-life and service/maintenance will be provided by the vendor on an as-available basis for parts. However, the system has been maintained and serviced on a regular basis and is currently in good operating condition. Used parts continue to be readily available.

A new lower cost phone service (dial tone) provider contract has been negotiated and is scheduled for provisioning on July, 2010. Included in the new contract is an upgrade of the primary T1 connection to a T1-PRI circuit. This will provide the capability for expanded outgoing call channels and for caller-ID data to be received at the NEC High School switch. An upgrade to the NEC switch to accommodate this T1-PRI is also scheduled for installation on July, 2010.

We currently use radios to communicate among administrators and with our bus drivers. This is an aging system and the equipment will require upgrading in order to expand and to provide coverage in dead areas.

Our administrators and specific employees with critical responsibilities use District provided cell phones. It is expected that the number of cell phones will remain stable over the plan period.

Administration and Evaluation of Plan

The administration and evaluation of the District Technology Plan must occur on multiple levels. At minimum, evaluation must address the following:

- Was the Technology Plan implemented?
- Have the expected results on student learning, teaching and administrative processes been achieved?

This Plan calls for:

- The District Technology Steering Committee to complete, on an annual basis, a Technology Plan Implementation Checklist. The Committee will use data and information gathered from the District Director of Technology and from Building Technology Committees to determine whether, and to what extent, the recommendations made in this Plan have been implemented.
- The District Technology Steering Committee, in collaboration with Building Technology Committees, to develop a model to assess the impact of technology at the classroom/program level. The Committee will develop indicators and rubrics that can be used to evaluate progress and provide feedback which can be used for continuous improvement.
- The District Technology Steering Committee to implement a process for continually monitoring a set of Success indicators for determining:
 1. The degree of effectiveness of the instructional technologies currently in place
 2. Recommendations for future use of all instructional resources and technologies
 3. The degree of coherence and alignment between the provided technology and the curriculum
 4. The costs and resources to instruct all faculty and staff to use the technology appropriately and effectively to assure enhanced student learning
- The District Technology Steering Committee to complete an inventory of parents' home technology capacity to support student learning from home.

Technology Plan Elements – Reference Sheet

The **E-Rate Technology Plan Reference Sheet** below provides the references and linkage to the required plan components. The **Required Elements of an Educational Technology Plan** outlined below compliment and expands on these core E-Rate requirements and encompasses the No Child Left Behind Act of 2001 requirements. These requirements are also referenced and linked to the pertinent topics in the Plan.

	NCLB Legislation	FCC e-rate Discount	Page(s) Where Required Element is found
INTRODUCTORY MATERIAL			
An introductory section is needed to provide reviewers and other readers with background information and plan context. (See section Executive Summary).			<u>3</u>
VISION AND GOALS			
List broad general district goals in this section. A vision and goals section is required to provide clarity for the overall direction of the technology program. Detailed goals may appear as part of other required sections. (See sections New Paltz School District Vision Statement and New Paltz School District 2006-2007 Goals)			<u>3</u>
I. CURRICULUM			
A. Goals and strategies, aligned with challenging State standards, for using telecommunications and technology to improve teaching and learning (See section Technology Goals for 2010-2013)	X	X	<u>8</u>
B. Strategies that are based in research and that integrate technology into curricula and instruction for purposes of improving student academic achievement and a timeline for this integration (See section Student Performance)	X		<u>8</u>
C. Strategies for the delivery of specialized or rigorous courses and curricula through the use of technology, including distance learning technologies (See section Student Performance)	X		<u>8</u>
D. Strategies to promote parental involvement and to increase communication with parents, including a description of how parents will be informed of the technology to be used with students (new) (See section Parental and Community Involvement)	X		<u>9</u>
E. Strategies for developing the program, where applicable, in collaboration with adult literacy service providers and public libraries (See section Student Performance)	X		<u>8</u>
F. Age appropriate Internet Safety curriculum and strategies for delivering (See section Internet Safety Strategy)	X		<u>15</u>
II. PROFESSIONAL DEVELOPMENT			
G. Strategies for providing ongoing, sustained professional development for teachers, principals, administrators and school library media personnel to ensure that staff know how to use the new technologies to improve education or library services (See section Professional Development Strategy)	X	X	<u>16</u>
H. Strategies and supporting resources such as services, software, other electronically delivered learning materials and print resources that will be acquired to ensure successful and effective uses of technology (See section Professional Development Strategy)	X	X	<u>16</u>
III. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT AND SOFTWARE			
I. Strategies to identify the need for telecommunication services, hardware, software and other services to improve education or library services, and strategies to determine interoperability among the components of technologies to be acquired (See section Technology Resources)	X	X	<u>10</u>
▪ Inventory (See Computer Equipment Inventory)		X	<u>8</u>
J. Strategies to increase access to technology for all students and all teachers (See section Technology Resources)	X		<u>10</u>
IV. FUNDING AND BUDGET			
K. Timeline and budget covering the acquisition, implementation, interoperability provisions, maintenance and professional development related to the use of technology to improve student academic achievement including support resources, such as services, software, print resources, and digital curricula (See section Plan Acquisitions and Budgeting)	X	X	<u>13</u>
L. Strategies that will be employed to coordinate available state and local resources to implement activities and acquisitions prescribed in the technology plan (See section Plan Acquisitions and Budgeting)	X		<u>13</u>
V. MONITORING AND EVALUATION			
M. Strategies that the district will use to evaluate the extent to which activities are effective in integrating technology into curricula and instruction, increasing the ability of teachers to teach, and enabling students to reach challenging State academic standards – including teachers involvement in all aspects of the plan (See section Administration and Evaluation of Plan)	X	X	<u>19</u>
N. Strategies are in place to develop and monitor district's policy's for staff and student use of the technologies including Acceptable Use Policy (See section Administration and Evaluation of Plan)	X	X	<u>19</u>

Appendices

A. NY State Education Technology Plan

NEW YORK STATE BOARD OF REGENTS STATEWIDE LEARNING TECHNOLOGY PLAN

MISSION

The education technology mission of the Board of Regents is to develop policies, recommend practices, advocate for resources, and create incentives for action that turn our vision into reality. Our mission, through the University of the State of New York (USNY)*, is to provide a user-friendly and seamless technology-enhanced learning environment that serves the increasing needs of our citizens.

VISION OF TECHNOLOGY FOR TEACHING AND LEARNING

The Regents have an urgent need to raise the knowledge, skill and opportunity of all the people of the State of New York. New technologies have created powerful new learning tools which will transform the learning environment for students of all ages. Learning technologies will be seamlessly integrated into teaching and learning to increase student achievement. USNY will use technology to measure performance and communicate results to learners, teachers, leaders, and citizens. Through USNY, New York citizens will benefit from technology that brings information and knowledge to improve their lives.

USNY will provide learning technologies that change how students learn, what they learn, and why they learn. Students will access information to broaden and deepen knowledge about subjects in ways unimagined by prior generations.

All students will access learning materials in electronic form, including video, text, and other digital content related to the school curriculum. Students will create work, define and solve problems, and research and evaluate information using technology. Students will manage the flow of information and use technology to work with others from diverse backgrounds and locations. Our students will develop innovative approaches to communicate and collaborate.

Multiple environments will exist for teaching and learning, unbound by place, time, income, language or disability. The classroom, gymnasium, laboratory, library, theater, and museum will be a workspace for teachers and learners but will not always be a physical space. Students will access learning resources anywhere, anytime through the use of technology.

Technology is a path for teaching and learning, but it is also a body of practices, skill, and knowledge to be learned. All New York State learners will develop technological literacy to enter college, become productive members of the workforce, and succeed as citizens. Students, teachers, and leaders will have clear standards for what students should know and be able to do with technology; when various elements of technology will be taught; and how to embed technology in learning throughout the curriculum. These standards will be visible to the public to drive the standards even higher.

**The University of the State of New York (USNY) is the most complete, interconnected system of educational services in the United States. USNY includes 7,000 public and private elementary and secondary schools; 248 colleges and universities; 251 for-profit schools; nearly 7,000 libraries; 750 museums; the State Archives, Library and Museum; vocational rehabilitation services for adults with disabilities; State schools for the blind and for the deaf; 25 public broadcasting facilities; and more than half a million licensed professionals.*

THE GOALS

1. DIGITAL CONTENT – Standards-based, accessible digital content supports all curricula for all learners.
2. DIGITAL USE – Learners, teachers, and administrators are proficient in the use of technology for learning.
3. DIGITAL CAPACITY AND ACCESS – New York’s technology infrastructure supports learning and teaching in all environments.
4. LEADERSHIP – USNY institutions are united in realizing the vision.
5. ACCOUNTABILITY – Information is easy to obtain and understand about the results achieved by New Yorkers in their efforts to build knowledge, master skills, and grasp opportunities for a better life.
6. FUNDING – Adequate funding is coordinated, equitably distributed, and sustainable.

FOUNDATIONAL CHANGE PHASE (2010 – 2012)

THE ACTIONS	ADVANCES GOAL(S)					
	1	2	3	4	5	6
1. Engage all of USNY to implement the plan, ensure achievement of its goals, monitor successes, and make recommendations for improvement to prepare students for college, the global economy, 21 st century citizenship, and lifelong learning.	●	●	●	●	●	●
2. Analyze regulations, policies, and systems to eliminate barriers, and provide effective guidance and support for ongoing collaboration among school districts, families, policymakers, and the public.	●	●	●	●	●	●
3. Establish standards for desired knowledge, skills, and performance in the use of technology, which are interconnected and aligned to other standards developed by and implemented throughout USNY.	●	●	●	●	●	
4. Provide policies, standards, and guidance on quality digital content development and delivery; accessibility; information literacy; and ongoing, sustained professional development in pre-service and in-service education.	●	●	●			
5. Analyze all existing funding streams for learning technology. Recommend specific improvements and alignment with statewide learning technology priorities.						●
6. Develop a performance measurement, determine current capacities, and explore ways to ensure the reliability of a digital technology infrastructure. Implement a process to track technical support for technology integration.			●		●	
7. Develop and/or revise Commissioner's Regulations and Department policies to promote sustained support for the delivery of quality instruction for all learners through digital means.	●	●	●			
8. Determine and continuously review the benchmarks for USNY institutions to demonstrate how they are achieving the actions of each goal, and the degree to which they meet the respective standards in technical support for technology integration.	●	●	●	●	●	●
9. Identify and/or develop incentives for the expansion of digital learning across USNY.	●	●	●			●
10. Promote and enable effective technical supports to implement the plan, and advocate as necessary to ensure that all learners have access to equitable and sustainable resources.		●	●		●	●

THE ACTIONS	ADVANCES GOAL(S)					
	1	2	3	4	5	6
11. Develop USNY.net as an information access tool to provide rich data that facilitates decision-making at the classroom, school, district, and state policy levels. This tool will be a place to share resources and promising practices for quality digital content, sustained digital use, accountability, and effective funding.	●	●	●	●	●	●
12. Determine future actions for the <i>connective</i> and <i>systemic</i> levels of change.	●	●	●	●	●	●

B. New Paltz Central School District Educational Standards

Program Coherence:

Standard 1.0 : All programs, curricula, and instructional strategies employed within the district are learner focused and advance all learners to the level of understanding.

Standard 2.0 : All curricula within the district are coherent, directly reflective and derived from the New York learning standards and based upon the concepts, skills, and dispositions of the disciplines.

Standard 3.0: All curricula in the district are articulated between grade levels and promote learner construction of understanding, knowledge and love of learning.

Standard 4.0: All curricula in the district provide the learners with the knowledge, skills, and dispositions that are expected of the citizen of the future.

Standard 5.0 All programs, curricula, and instructional strategies employed within the district are founded on strategies that lead learners to the highest levels of understanding, empathy, and self-knowledge; and empower learners to be curious, self-directed, responsible, ethical, and confident and reflective learners.

Teacher Skill and Competency Area:

Standard 6.0: All teachers in the district demonstrate an understanding of the content area they teach, and current learning theories and principles.

Standard 7.0: All teachers in the district demonstrate an understanding of and have proficiency in conducting, guiding, and assessing the teaching and learning process.

Standard 8.0: Throughout the district, student learning and achievement is continuously assessed, using both formal and informal means, to measure student learning achievement and the degree of understanding, and to ensure a positive, safe, healthy, and enriched learning environment.

Learning Environment:

Standard 9.0 People from multiple constituencies at all levels collaboratively and continually work together in reflective dialogue, conducting conversations about students, teaching and learning, and identifying related issues and problems.

Standard 10.0 A safe and supportive learning community is sustained throughout the district to promote inquiry and learning and to assure that staff can confidently apply new ideas and information to problem solving and create new conditions for successful student learning.

Leadership Capacity

Standard 11.0 Leadership within the district is collaborative and shared, through inviting staff input in collegial inquiry and decision making.

Standard 12.0 Leadership within the district facilitates the emergence of new ideas, knowledge, skills, and patterns of operation and incorporates the best of them to improve student learning.

Resources

Standard 13.0 The district assures that all resources, technical and human, are appropriate to all aspects of the school and are allocated and provided equitably, effectively, efficiently, and in a timely fashion.

Standard 14.0 The district is a resource within the community offering services and learning opportunities to all.

C. Outcomes for students in a technological society

An ISTE Crosswalk by Six Major Categories

**International Society of Technology for Education's
Education Technology Learning Standards and Performance Indicators*****
associated with suggested
New York State Learning Standards and Performance Indicators
by ISTE's Six Major Categories

New York State Education Department staff and educators from across New York State share these beliefs:
(<http://www.nysed.gov/ciai>)

- ✓ All students are able to achieve competency in the presence of skilled instruction, adequate time for learning, varied and/or specialized resources, and additional support as needed
- ✓ Recognizes that equity in and access to technology and other resources must be ensured at State, regional, and local levels and enhances the development of critical literacy competencies
- ✓ Recognizes that teachers in all content areas share responsibility for the development of reading, writing, listening and speaking competencies

** A learning standard is an established level or degree of quantity, value, or quality. New York State learning standards are defined as the knowledge, skills, and understandings that individuals can, and do, habitually demonstrate over time—as a result of instruction and experience.*

***Performance indicators are defined as what students need to know and be able to do as a result of skilled instruction.*

This crosswalk and all New York State Learning Standards respect the tradition of local choice in New York State that empowers educators to select texts, identify products, and use a rich array of instructional strategies and activities to meet student learning needs. This crosswalk is designed to provide assistance, while allowing for creativity, in the development of local instructional materials.

ISTE NETS for students – Common Understanding and performance Indicators	NYS Learning Standards – Technology related Performance Indicators
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The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

1. Creativity and Innovation

<p>Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group extension. Use models and simulations to explore complex systems, and issues. Identify trends and forecast possibilities.</p> <p>Prior to the completion of Grade 2, students will:</p> <ul style="list-style-type: none"> • Illustrate and communicate original ideas and stories using digital tools and media-rich resources. (1, 2) • Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution. (1, 3, 4) • Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals. (1, 3, 4) 	<p>ELA Standard 1: Kindergarten Reading</p> <ul style="list-style-type: none"> • Locate and use classroom and library media Center resources to acquire information, with assistance. <p>ELA Standard 1: Pre-kindergarten Reading</p> <ul style="list-style-type: none"> • Read familiar informational texts with repetitive language and simple illustrations to begin to collect data, facts, and ideas, with assistance. • Interpret information represented in pictures and illustrations. <p>ELA Standard 2: Grade 2 Listening</p> <ul style="list-style-type: none"> • Identify elements of character, plot, and setting to understand the author’s message, with assistance. • Connect literary texts to previous life experiences to enhance understanding. • Use note taking and graphic organizers to record and organize information and ideas recalled from stories read aloud, with assistance. <p>Math Standard 3: Grades K-2 Reasoning and Proof Strand:</p> <ul style="list-style-type: none"> • Recognize reasoning and proof as fundamental aspects of mathematics; • Make and investigate mathematical conjectures;
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<p>Prior to the completion of Grade 5, students will:</p> <ul style="list-style-type: none"> • Produce a media-rich digital story about a significant local event based on first-person interviews. (1, 2, 3, 4) • Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1, 2,6) <p>Prior to the completion of grade 8, students will:</p> <ul style="list-style-type: none"> • Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software. (1, 2) • Create original animations or videos documenting school, community, or local 	<ul style="list-style-type: none"> • Develop and evaluate mathematical arguments and proofs; • Elect and use various types of reasoning and methods of proof. <p>ELA Standard 1: Grade 5 Speaking</p> <ul style="list-style-type: none"> • Interview peers. <p>ELA Standard 3: Grade 5 Writing</p> <ul style="list-style-type: none"> • Analyze the impact of an event or issue from personal, peer group, and school community perspectives. <p>ELA Standard 1: Grade 6 Reading</p> <ul style="list-style-type: none"> • Distinguish between fact and opinion; • Identify information that is implied rather than stated. <p>Math Standard 3: <i>Grades 3-5</i> Reasoning and Proof Strand</p> <ul style="list-style-type: none"> • Recognize reasoning and proof as fundamental aspects of mathematics; • Make and investigate mathematical conjectures; • Develop and evaluate mathematical arguments and proofs; +• Elect and use various types of reasoning and methods of proof. <p>Math Standard 3: <i>Grades 5-8</i> Reasoning and Proof Strand</p> <ul style="list-style-type: none"> • Recognize reasoning and proof as fundamental aspects of mathematics; • Make and investigate mathematical conjectures; • Develop and evaluate mathematical arguments and proofs; • Elect and use various types of reasoning and methods of proof. <p>MST Standard 1: Analysis, Inquiry and Design Intermediate</p> <ul style="list-style-type: none"> • Locate and utilize a range of printed, electronic, and human information resources to obtain ideas. <p>MST: Standard 2: Information Systems Intermediate</p> <ul style="list-style-type: none"> • Use a range of equipment and software to integrate several forms of information. • Use spreadsheets and data-base software, electronic data bases and on-line services.
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<p>events. (1, 2, 6)</p> <ul style="list-style-type: none"> • Gather data, examine patterns, and apply information for decision making using digital tools and resources. (1, 4) • Integrate a variety of file types to create and illustrate a document or presentation. (1, 6) 	<ul style="list-style-type: none"> • Obtain accurate and relevant information from a range of sources. • Collect data from probes to measure events and phenomena use simple modeling programs to make predictions. <p>The Arts: Standard 2 Intermediate (Dance)</p> <ul style="list-style-type: none"> • Demonstrate knowledge of sources for understanding dance technologies: live, print, video, computer, etc. <p>Intermediate (Music)</p> <ul style="list-style-type: none"> • Use traditional or nontraditional sound sources, including electronic ones, in composing and performing simple pieces. • Use current technology to create, produce and record/playback music. <p>Intermediate (Visual Arts)</p> <ul style="list-style-type: none"> • Use the computer and electronic media as designing tools and to communicate visual ideas. <p>MST Standard 5: Technology Intermediate</p> <ul style="list-style-type: none"> • Assemble a complete computer system use a computer system to acquire information from the Internet. • Use computer hardware and software to create prototypical designs and models . • Use a computer system to monitor and control external events and/or systems. <p>ELA Standard 3: Grade 9 Speaking</p> <ul style="list-style-type: none"> • Express opinions or make judgments about ideas, information, experiences, and issues in literary and historical articles. <p>ELA Standard 3: Grade 9 Reading</p> <ul style="list-style-type: none"> • Analyze and evaluate nonfiction texts. <p>ELA Standard 3: Grade 10 Writing</p> <ul style="list-style-type: none"> • Develop critiques from more than one perspective, such as historical and cultural. <p>ELA Standard 3: Grade 11 Speaking</p> <ul style="list-style-type: none"> • Modify content and presentation strategies on the basis of audience response during presentation.
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<p>Prior to the completion of grade 12, students will:</p> <ul style="list-style-type: none"> • Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content. (1, 4) • Create and publish an online art gallery with examples and commentary that demonstrate an understanding of different historical periods, cultures, and countries. (1, 2) • Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources. (1, 5) 	<p>ELA Standard 1: Grade 11 Reading</p> <ul style="list-style-type: none"> • Analyze and synthesize information from different sources, making connections and showing relationships to other texts, ideas, subjects and to the world at large. <p>ELA Standard 1: Grade 11 Speaking</p> <ul style="list-style-type: none"> • Prepare and give presentations on a range of informational topics. <p>ELA Standard 1: Grade 12 Listening</p> <ul style="list-style-type: none"> • Interpret and analyze information from media presentations, such as documentary films, news broadcasts, taped interviews, and debates. <p>Math Standard 3: <i>Grades 9-12</i> Reasoning and Proof Strand</p> <ul style="list-style-type: none"> • Recognize reasoning and proof as fundamental aspects of mathematics; • Make and investigate mathematical conjectures; • Develop and evaluate mathematical arguments and proofs; • Elect and use various types of reasoning and methods of proof.
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2. Communication and Collaboration

- 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 a 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**

Prior to the completion of grade 2, students will:

- Engage in learning activities with learners from multiple cultures through e-mail and other electronic means. (2, 6)
- In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area (1, 2, 6)

Prior to the completion of grade 5, students will:

- Produce a media-rich digital story about a significant local event based on first-person interviews. (1, 2, 3, 4)
- Use digital-imaging technology to modify or create works of art for use in a digital

ELA Standard 4: Kindergarten Writing

- Share writings and drawings with peers or adults; for example, write/draw with a partner or in a cooperative group.
- Respect the age, gender, and culture of the recipient, with assistance.
- Write friendly letters to others.
- Maintain a portfolio of writings and drawings for social interaction, with assistance.

Math Standard 3: Grades K-2

Communications Strand

- Organize and consolidate their mathematical thinking through communication; Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely.

ELA Standard 1: Grade 3

Writing

- Produce clear, well-organized reports and accounts that demonstrate understanding of a topic.

Math Standard 3: Grades 3-5

presentation. (1, 2, 6)

Prior to the completion of Grade 8, students will:

- Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software. (1, 2)
- Create original animations or videos documenting school, community, or local events. (1, 2, 6)
- Gather data, examine patterns, and apply information for decision making using digital tools and resources. (1, 4)
- Participate in a cooperative learning project in an online learning community. (2)
- Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)

Communications Strand

- Organize and consolidate their mathematical thinking through communication;
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely.

ELA Standard 3: Grade 7

Writing

- Present a subject from more than one perspective by using various resources.

ELA Standard 4: Grade 7

Writing

- Respect the age, gender, social position, and cultural.

Math Standard 3: Grades 6-8

Communications Strand

- Organize and consolidate their mathematical thinking through communication;
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely.

MST Standard 2: Information Systems

Intermediate

- Use a range of equipment and software to integrate several forms of information.
- Use spreadsheets and data-base software, electronic data bases and on-line services.
- Obtain accurate and relevant information from a range of sources collect data from probes to measure events and phenomena use simple modeling programs to make predictions.

MST Standard 2: Information Systems

Intermediate

- Use a range of equipment and software to integrate several forms of information.
- Use spreadsheets and data-base software,

<p>Prior to the completion of grade 12, students will:</p> <ul style="list-style-type: none"> • Create and publish an online art gallery with examples and commentary that demonstrate an understanding of different historical periods, cultures, and countries. (1, 2) • Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1, 2, 3, 4) 	<p>electronic data bases and on-line services.</p> <ul style="list-style-type: none"> • Obtain accurate and relevant information from a range of sources collect data from probes to measure events and phenomena use simple modeling programs to make predictions. <p>MST Standard 5: Technology Intermediate</p> <ul style="list-style-type: none"> • Assemble a complete computer system. • Use a computer system to acquire information from the Internet. • Use computer hardware and software to create prototypical designs and models. • Use a computer system to monitor and control external events and/or systems. <p>CDOS Standard 3a Intermediate</p> <ul style="list-style-type: none"> • Select and use appropriate technology to complete a task. • Select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia). <p>Health, Phys. Ed. And FACS Standard 3 Intermediate (Health)</p> <ul style="list-style-type: none"> • Analyze how media and technology influence the selection of health information, products and services. <p>ELA Standard 3: Grade 9 Speaking</p> <ul style="list-style-type: none"> • Present content that is clearly organized and based on knowledge of audience needs and interests. • Present arguments from different perspectives. <p>ELA Standard 1: Grade 9 Writing</p> <ul style="list-style-type: none"> • Use charts, graphs, or diagrams to illustrate informational texts. <p>ELA Standard 2: Grade 10 Reading</p> <ul style="list-style-type: none"> • Read, view, and respond independently to literary works that represent a wide range of social, historical, and cultural perspectives.
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ELA Standard 1: Grade 10

Writing

- Use charts, graphs, or diagrams to illustrate informational texts.

ELA Standard 1: Grade 10

Speaking

- Prepare and give presentations to a variety of audiences on a range of informational topics.

ELA Standard 1: Grade 11

Writing

- Analyze and integrate data, facts, and ideas to communicate information.

ELA Standard 4: Grade 11

Speaking

- Respect the age, gender, and cultural traditions of the listener.

ELA Standard 4: Grade 12

Speaking

- Respect the age, gender, social position, and cultural traditions of the listener.

ELA Standard 4: Grade 12

Listening

- Respect the age, gender, social position, and cultural traditions of the listener.

Math Standard 3: Grades 9-12

Communications Strand

- Organize and consolidate their mathematical thinking through communication;
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely.

3. Research and Information Fluency

<p>A. Plan strategies to guide inquiries.</p> <p>B. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.</p> <p>C. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.</p> <p>D. Process data and report results.</p> <p>Prior to the completion of grade 2, students will:</p> <ul style="list-style-type: none"> • Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution. (1, 3, 4) • Find and evaluate information related to a current or historical person or event using digital resources. (3) • Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals. (1, 3, 4) <p>Prior to the completion of grade 5, students will:</p> <ul style="list-style-type: none"> • Produce a media-rich digital story about a significant local event based on first-person interviews. (1, 2, 3, 4) • Recognize bias in digital resources while researching an environmental issue with guidance from the teacher. (3, 4) • Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (3, 4, 6) 	<p>ELA Standard 3: Grade 1 Reading</p> <ul style="list-style-type: none"> • Identify, explain, and evaluate ideas, themes, and experiences from texts and performances. <p>ELA Standard 1: Grade 1 Speaking</p> <ul style="list-style-type: none"> • Report information to peers and familiar adults. <p>Math Standard 3: Grade K-2 Connections Strand</p> <ul style="list-style-type: none"> • Recognize and use connections among mathematical ideas; • Understand how mathematical ideas interconnect and build on one another to produce a coherent whole; • Recognize and apply mathematics in contexts outside of mathematics. <p>ELA Standard 1: Grade 3 Writing</p> <ul style="list-style-type: none"> • Produce clear, well-organized reports and accounts that demonstrate understanding of a topic. <p>ELA Standard 3: Grade 3 Reading</p> <ul style="list-style-type: none"> • Evaluate the content by identifying <ul style="list-style-type: none"> - the author’s purpose - statements of fact, opinion, and exaggeration, with assistance. <p>Math Standard 3: Grade 3-5 Connections Strand</p> <ul style="list-style-type: none"> • Recognize and use connections among mathematical ideas; • Understand how mathematical ideas interconnect and build on one another to
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Prior to the completion of grade 8, students will:

- Evaluate digital resources to determine the credibility of the author and publisher and the timeliness and accuracy of the content. (3)
- Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3, 4, 6)
- Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3, 4, 6)
- Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)

- produce a coherent whole;
- Recognize and apply mathematics in contexts outside of mathematics.

ELA Standard 1: Grade 5

Reading

- Read to collect and interpret data, facts, and ideas from multiple sources.

ELA Standard 1: Grade 8

Reading

- Distinguish between relevant and irrelevant Information.

ELA Standard 3: Grade 8

Writing

- Present clear analyses, using examples, details, and reasons from text.

ELA Standard 4: Grade 8

Writing

- Share the process of writing with peers and adults.

Social Studies Standard 4

Intermediate

- Identify and collect economic information from....computer databases...
- Present economic information by using media...

CDOS Standard 3a

Intermediate

- Select and use appropriate technology to complete a task.
- Select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia).

MST Standard 2: Information Systems

Intermediate

- Use a range of equipment and software to integrate several forms of information.
- Use spreadsheets and data-base software, electronic data bases and on-line services.
- Obtain accurate and relevant information from a range of sources.
- Collect data from probes to measure events and phenomena use simple modeling programs to make predictions.

Health, Phys. Ed. And FACS Standard 3

Intermediate (Health)

<p>Prior to the completion of grade 12, students will:</p> <ul style="list-style-type: none"> • Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness. (3, 6) • Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1, 2, 3, 4) • Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources. (3, 5) 	<ul style="list-style-type: none"> • Analyze how media and technology influence the selection of health information, products and services. <p>Math Standard 3: Grade 6-8</p> <p>Connections Strand</p> <ul style="list-style-type: none"> • Recognize and use connections among mathematical ideas; • Understand how mathematical ideas interconnect and build on one another to produce a coherent whole; • Recognize and apply mathematics in contexts outside of mathematics <p>ELA Standard 1: Grade 9</p> <p>Reading</p> <ul style="list-style-type: none"> • Locate and use school and public library resources for information and research. <p>ELA Standard 3: Grade 9</p> <p>Speaking</p> <ul style="list-style-type: none"> • Present content that is clearly organized and based on knowledge of audience needs and interests. <p>ELA Standard 3: Grade 9</p> <p>Speaking</p> <ul style="list-style-type: none"> • Present arguments from different perspectives. <p>ELA Standard 1: Grade 10</p> <p>Reading</p> <ul style="list-style-type: none"> • Analyze information from different sources, making connections and showing relationships to other texts, ideas, and subjects. <p>ELA Standard 3: Grade 11</p> <p>Writing</p> <ul style="list-style-type: none"> • Analyze a wide range of texts using resources such as recognized experts, knowledge from school subjects, and reading, and personal knowledge. <p>ELA Standard 1: Grade 12</p> <p>Reading</p> <ul style="list-style-type: none"> • Locate and use school, public, academic, and special library resources for information and research. <p>Math Standard 3: Grade 9-12</p> <p>Connections Strand</p> <ul style="list-style-type: none"> • Recognize and use connections among
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	<p>mathematical ideas;</p> <ul style="list-style-type: none"> • Understand how mathematical ideas interconnect and build on one another to produce a coherent whole; • Recognize and apply mathematics in contexts outside of mathematics <p>CDOS Standard 2 Commencement</p> <ul style="list-style-type: none"> • Research, interpret, analyze, and evaluate information and experiences as related to academic knowledge and technical skills when completing a career plan. <p>Social Studies Standard 3 Commencement-</p> <ul style="list-style-type: none"> • Plan, organize, and present geographic research projects. • Analyze geographic information by developing and testing inferences and hypotheses, and formulating conclusions from a variety of sources.
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4. Critical Thinking, Problem –Solving & Decision-Making

- 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.**

Prior to the completion of grade 2, students will:

- identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution. (1, 3, 4)
- Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals. (1, 3, 4)
- Independently apply digital tools and resources to address a variety of tasks and problems. (4, 6)

Prior to the completion of grade 5, students will:

- Produce a media-rich digital story about a significant local event based on first-person

ELA Standard 2: Grade 1

Writing

- Write to respond to text to
 - express feelings about characters or events in one or more stories.
 - describe characters, settings, or events.
 - list a sequence of events in a story
 - retell a story, using words.
 - identify the problem and solution in a simple story.

ELA Standard 2: Grade 2

Reading

- Use graphic organizers to record significant details to compare and contrast characters and events in stories, with assistance.

Math Standard 3: Grade K-2

Problem Solving strand

- recognize reasoning and proof as fundamental aspects of mathematics;
- make and investigate mathematical conjectures;
- develop and evaluate mathematical arguments and proofs;
- select and use various types of reasoning and methods of proof.

ELA Standard 1: Grade 3

Writing

- Produce clear, well-organized reports and accounts that demonstrate understanding of a topic.

ELA Standard 3: Grade 3

Reading

interviews. (1, 2, 3, 4)

- Recognize bias in digital resources while researching an environmental issue with guidance from the teacher. (3, 4)
- Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (3, 4, 6)
- Identify and investigate a global issue and generate possible solutions using digital tools and resources. (3, 4)
- Conduct science experiments using digital instruments and measurement devices. (4, 6)
- Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support. (4, 6)

Prior to the completion of grade 8, students will:

- Gather data, examine patterns, and apply information for decision making using digital tools and resources. (1, 4)
- Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)
- Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems.
- Select and use the appropriate tools and digital resources to accomplish a variety of

- Evaluate the content by identifying
 - the author's purpose.
 - statements of fact, opinion, and exaggeration, with assistance.

ELA Standard 3: Grade 3

Writing

- Use a variety of prewriting tools to organize ideas and information.

ELA Standard 1: Grade 5

Reading

- Read to collect and interpret data, facts, and ideas from multiple sources.

Math Standard 3: Grade 3-5

Problem Solving strand

- recognize reasoning and proof as fundamental aspects of mathematics;
- make and investigate mathematical conjectures;
- develop and evaluate mathematical arguments and proofs;
- select and use various types of reasoning and methods of proof .

ELA Standard 1: Grade 6

Writing

- Take notes and organize relevant data, facts and ideas.

ELA Standard 1: Grade 7

Listening

- Make, confirm or revise predictions by distinguishing between relevant and irrelevant oral information.

Math Standard 3: Grade 6-8

Problem Solving strand

- recognize reasoning and proof as fundamental aspects of mathematics;
- make and investigate mathematical conjectures;
- develop and evaluate mathematical arguments and proofs;
- select and use various types of reasoning and

<p>tasks and to solve problems. (3, 4, 6)</p> <ul style="list-style-type: none"> • Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5) • Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4, 6) 	<p>methods of proof</p> <p>MST Standard 1: Analysis, Inquiry and Design Intermediate</p> <ul style="list-style-type: none"> • Locate and utilize a range of printed, electronic, and human information resources to obtain ideas. <p>MST Standard 2: Information Systems Intermediate</p> <ul style="list-style-type: none"> • Use a range of equipment and software to integrate several forms of information. • Use spreadsheets and data-base software, electronic data bases and on-line services. • Obtain accurate and relevant information from a range of sources. • Collect data from probes to measure events and phenomena using simple modeling programs to make predictions. <p>The Arts Standard 2 Intermediate (Dance)</p> <ul style="list-style-type: none"> • Demonstrate knowledge of sources for understanding dance technologies: live, print, video, computer, etc. <p>Intermediate (Music)</p> <ul style="list-style-type: none"> • Use traditional or nontraditional sound sources, including electronic ones, in composing and performing simple pieces. • Use current technology to create, produce and record/playback music. <p>Intermediate (Visual Arts)</p> <ul style="list-style-type: none"> • Use the computer and electronic media as designing tools and to communicate visual ideas. <p>MST Standard 5: Technology Intermediate</p> <ul style="list-style-type: none"> • Assemble a complete computer system. • Use a computer system to acquire information from the Internet. • Use computer hardware and software to create prototypical designs and models. • Use a computer system to monitor and control external events and/or systems. <p>ELA Standard 1: Grade 9 Writing</p> <ul style="list-style-type: none"> • Use a range of organizational strategies to present information. <p>ELA Standard 3: Grade 10</p>
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Prior to the completion of grade 12, students will:

- Employ curriculum-specific simulations to practice critical-thinking processes. (1, 4)
- Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1, 2, 3, 4)
- Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. (4, 5, 6)
- Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity. (4, 6)

Speaking

- Present reasons, examples, and details from sources cited to defend opinions and judgments.

ELA Standard 3: Grade 11

Writing

- Analyze a wide range of texts using resources such as recognized experts, knowledge from school subjects and reading, and personal experience.

ELA Standard 1: Grade 11

Reading

- Analyze and synthesize information from different sources, making connections and showing relationships to other texts, ideas, and subjects and to the world at large.

ELA Standard 1: Grade 12

Speaking

- Prepare and give presentations to a variety of audiences on a range of informational topics, using a variety of techniques, such as multimedia, group presentations, and dramatic approaches.

Math Standard 3: Grade 9-12

Problem Solving strand

- recognize reasoning and proof as fundamental aspects of mathematics;
- make and investigate mathematical conjectures;
- develop and evaluate mathematical arguments and proofs;
- select and use various types of reasoning and methods of proof.

Social Studies Standard 3:

Commencement

- Develop and test generalizations and conclusions and pose analytical questions based on results of geographic inquiries.

CDOS Standard 3a:

Commencement

- Use a combination of techniques to read or listen to complex information and analyze what has been said and convey information confidently and coherently in written or oral form; analyze and solve mathematical

	problems requiring use of multiple computational skills.
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5. Digital Citizenship

<p>A. Advocate and practice safe legal, and responsible use of information and technology.</p> <p>B. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.</p> <p>C. Demonstrate personal responsibility for life long learning.</p> <p>D. Exhibit leadership for digital citizenship.</p> <p>Prior to the completion of grade 2, students will:</p> <ul style="list-style-type: none"> • Demonstrate the safe and cooperative use of technology. (5) <p>Prior to the completion of grade 5, students will:</p> <ul style="list-style-type: none"> • Practice injury prevention by applying a variety of ergonomic strategies when using technology. (5) • Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5, 6) <p>Prior to the completion of grade 8, students will:</p> <ul style="list-style-type: none"> • Use collaborative electronic authoring tools 	<p>ELA Standard 1: Pre-kindergarten Reading</p> <ul style="list-style-type: none"> • Locate and use classroom and library media center resources to acquire information, with assistance. <p>ELA Standard 1: Grade 2 Speaking</p> <ul style="list-style-type: none"> • Present a short oral report, using at least one source of information, such as a person, book, magazine article, television program or electronic text. <p>ELA Standard 3: Grade 3 Speaking</p> <ul style="list-style-type: none"> • Express an opinion about school and community issues. • Analyze and evaluate new ideas by using personal experiences and knowledge. • Express an opinion, supporting it with text, about the accuracy of the content of literary works. • Speak with appropriate rate and volume for the audience. • Take turns speaking in a group. <p>ELA Standard 4: Grade 4 Speaking</p> <ul style="list-style-type: none"> • Use the rules of conversation, such as avoid interrupting and respond respectfully. <p>ELA Standard 3: Grade 7 Writing</p> <ul style="list-style-type: none"> • Present a subject from more than one perspective using various resources. <p>ELA Standard 3: Grade 8 Speaking</p> <ul style="list-style-type: none"> • Contribute to group discussions by offering comments to clarify and interpret ideas and
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<p>to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)</p> <p>Prior to the completion of grade 12, students will:</p>	<p>information.</p> <p>MST Standard 2: Information Systems Intermediate</p> <ul style="list-style-type: none"> • Use a range of equipment and software to integrate several forms of information. • Use spreadsheets and data-base software, electronic data bases and on-line services. • Obtain accurate and relevant information from a range of sources. • Collect data from probes to measure events and phenomena use simple modeling programs to make predictions. <p>MST Standard 5: Technology Intermediate</p> <ul style="list-style-type: none"> • Use a computer system to acquire information from the Internet . • Use computer hardware and software to create prototypical designs and models. • Use a computer system to monitor and control external events and/or systems. <p>CDOS Standard 3a Intermediate</p> <ul style="list-style-type: none"> • Select and use appropriate technology to complete a task. • Select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia). <p>Health, Phys. Ed. And FACS Standard 3 Intermediate (Health)</p> <ul style="list-style-type: none"> • Analyze how media and technology influence the selection of health information, products and services. <p>ELA Standard 1: Grade 9 Reading</p> <ul style="list-style-type: none"> • Locate and use school and public library resources for information and research. <p>ELA Standard 4: Grade 10 Listening</p> <ul style="list-style-type: none"> • Respect the age, gender, social position, and cultural traditions of the speaker. <p>ELA Standard 1: Grade 11 Speaking</p> <ul style="list-style-type: none"> • Prepare and give presentations on a range of informational topics.
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<ul style="list-style-type: none"> • Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. (4, 5, 6) • Design a Web site that meets accessibility requirements. (1, 5) • Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources. (3, 5) • Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources. (1, 5) 	<p>ELA Standard 2: Grade 12</p> <p>Writing</p> <ul style="list-style-type: none"> • Use resources such as personal experience, knowledge from other content areas, and independent reading to create literary, interpretative, and responsive text.
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6. Technology Operations and Concepts

<p>A. Understand and use technology systems.</p> <p>B. Select and use applications effectively and productively.</p> <p>C. Troubleshoot systems and applications.</p> <p>D. Transfer current knowledge to learning of new technologies.</p> <p>Prior to the completion of grade 2, students will:</p> <ul style="list-style-type: none"> • Engage in learning activities with learners from multiple cultures through e-mail and other electronic means. (2, 6) • In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area. (1, 2, 6) • Independently apply digital tools and resources to address a variety of tasks and problems. (4, 6) • Communicate about technology using developmentally appropriate and accurate terminology. (6) • Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and Web sites. (6) <p>Prior to the completion of grade 5, students will:</p> <ul style="list-style-type: none"> • Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1, 2, 6) • Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (3, 4, 6) • Conceptualize, guide, and manage individual or group learning projects using 	<p>ELA Standard 1: Grade 2 Writing</p> <ul style="list-style-type: none"> • Use spelling resources, such as dictionaries, word walls, and/or computer software to spell correctly. <p>ELA Standard 2: Grade 2 Writing</p> <ul style="list-style-type: none"> • Use a computer to create, research and interpret literary texts. <p>ELA Standard 2: Grade 2 Reading</p> <ul style="list-style-type: none"> • Read print-based and electronic literary texts silently on a daily basis for enjoyment. <p>Math Standard 3: Grades K-2 Representation Strand</p> <ul style="list-style-type: none"> • Create and use representations to organize, record, and communicate mathematical ideas • Select, apply, and translate among mathematical representations to solve problems. • Use representations to model and interpret physical, social, and mathematical phenomena. <p>ELA Standard 3: Grade 3 Speaking</p> <ul style="list-style-type: none"> • Express an opinion about school and community issues. • Analyze and evaluate new ideas by using personal experiences and knowledge. • Express an opinion, supporting it with text, about the accuracy of the content of literary works. • Speak with appropriate rate and volume for the audience • Take turns speaking in a group. <p>ELA Standard 4: Grade 4 Speaking</p> <ul style="list-style-type: none"> • Use the rules of conversation, such as avoid interrupting and respond respectfully.
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digital planning tools with teacher support. (4, 6)

- Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5, 6)
- Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems. (4, 6)

Prior to the completion of grade 8, students will:

- Create original animations or videos documenting school, community, or local events. (1, 2, 6)
- Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3, 4, 6)
- Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3, 4, 6)
- Integrate a variety of file types to create and illustrate a document or presentation. (1, 6)
- Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4, 6)

ELA Standard 1: Grade 5

Reading

- Read to collect and interpret data, facts, and ideas from multiple sources.

Math Standard 3: Grades 3-5

Representation Strand

- Create and use representations to organize, record, and communicate mathematical ideas.
- Select, apply, and translate among mathematical representations to solve problems.
- Use representations to model and interpret physical, social, and mathematical phenomena.

ELA Standard 1: Grade 8

Speaking

- Present examples, definitions, analogies, and direct references to the text in support of ideas

ELA Standard 3: Grade 8

Speaking

- State a hypothesis and predict possible outcomes from more than one perspective

Math Standard 3: Grades 6-8

Representation Strand

- Create and use representations to organize, record, and communicate mathematical ideas
- Select, apply, and translate among mathematical representations to solve problems
- Use representations to model and interpret physical, social, and mathematical phenomena

MST Standard 2: Information Systems

Intermediate

- Use a range of equipment and software to integrate several forms of information.
- Use spreadsheets and data-base software, electronic data bases and on-line services.
- Obtain accurate and relevant information from a range of sources.
- Collect data from probes to measure events and phenomena use simple modeling programs to make predictions.

MST Standard 5: Technology

Intermediate

- Assemble a complete computer system System.

<p>Prior to the completion of grade 12, students will:</p> <ul style="list-style-type: none"> • Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness. (3, 6) 	<ul style="list-style-type: none"> • Use a computer system to acquire information from the Internet. • Use computer hardware and software to create prototypical designs and models. • Use a computer system to monitor and control external events and/or systems. <p>MST Standard 7: Access and Analysis Intermediate</p> <ul style="list-style-type: none"> • Access information from printed media, electronic databases, and community resources. • Use the information to develop a definition of the problem and to research possible solutions. <p>CDOS Standard 3a Intermediate</p> <ul style="list-style-type: none"> • Select and use appropriate technology to complete a task. • Select and communicate information in an appropriate format (e.g., oral, written, graphic, pictorial, multimedia). <p>ELA Standard 3: Grade 9 Reading</p> <ul style="list-style-type: none"> • Analyze and evaluate nonfiction texts; determine the significance and reliability of information. <p>ELA Standard 1: Grade 10 Reading</p> <ul style="list-style-type: none"> • Analyze information from different sources, making connections and showing relationships to other texts, ideas, and subjects. <p>ELA Standard 3: Grade 11 Reading</p> <ul style="list-style-type: none"> • Select, reject, and reconcile ideas and information in light of biases. <p>ELA Standard 1: Grade 12 Reading</p> <ul style="list-style-type: none"> • Analyze and synthesize information from different sources by making connections and showing relationships to other texts, ideas, subjects, and the world at large. <p>Math Standard 3: Grades 9-12 Representation Strand</p> <ul style="list-style-type: none"> • Create and use representations to organize, record, and communicate mathematical
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<ul style="list-style-type: none"> • Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. (4, 5, 6) • Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity. (4, 6) 	<p>ideas</p> <ul style="list-style-type: none"> • Select, apply, and translate among mathematical representations to solve problems • Use representations to model and interpret physical, social, and mathematical phenomena <p>MST Standard 6: Interconnectedness Models</p> <p>Commencement</p> <ul style="list-style-type: none"> • Incorporate new design feature in a CAD drawing • Use a computer simulation to create a model of system under stress.
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D. ISTE National Educational Technology Standards

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

Global Learning in the Digital Age

As foundational ICT skills penetrate throughout our society, students will be expected to apply the basics in authentic, integrated ways to solve problems, complete projects, and creatively extend their abilities. ISTE's National Educational Technology Standards for Students (2007) help students prepare to work, live, and contribute to the social and civic fabric of their communities.

The new standards identify several higher-order thinking skills and digital citizenship as critical for students to learn effectively for a lifetime and live productively in our emerging global society.

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.

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

Supporting Digital Age Learners

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

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

Transforming Education

Administrators play a pivotal role in determining how well technology is used in our schools. The NETS for Administrators enable us to define what administrators need to know and be able to do in order to discharge their responsibility as leaders in the effective use of technology in our schools.

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.

E. Equity and Access

Technology today offers the opportunity to link schools with the larger community in unprecedented ways. The potential exists for all students, staff, parents and other learners to interact with and learn from a diverse group of people in the community and beyond as well as to contribute to the global community. As technology connects learning environments and homes, it becomes increasingly important that differences in socioeconomic status not create an electronic form of school segregation between the technological haves and have-nots. One way to make technology accessible to all is to make school equipment available beyond the regular school day. The goal is to build and maintain productive coalitions for learning throughout the wider community and create systems that maximize student, staff, parent and community access and communication.

This Plan calls for:

- Employment of a District Homepage which contains a central database of information including, but not limited to, a calendar of District and School activities, meetings and events, minutes from Board of Education and committee meetings, Board policies, etc.
- Maintenance of a voice-mail capacity for all staff to allow for a greater communication between parents, teachers and administrators.
- Providing opportunities for after-hours use of technology (including computer labs and distance learning facilities) by students, parents, and other members of the community.
- Expansion of a capability for remote access to resources on the District's network for students, parents and the community.
- Employment of an Internet filtering tool that is compliant with the Children's Internet Protection Act.