

***The Duanesburg Central School District Technology Plan:  
2010-2011***

**VISION & RELATED GOAL STATEMENTS**

***Vision*** - Duanesburg Central School District will become a model for smaller school districts in New York State. Instructional excellence will be the bedrock of the district characterized by a strong academic core, technology integration and a challenging and stimulating curriculum. Our educational program will include enrichment, interdisciplinary teaching and active roles for students. All students will be challenged and supported to achieve their highest abilities. The district will value its students and staff. The community will value and participate in our mission. Our facilities will promote our mission.

***Goals*** – The goal of the Duanesburg Central School District’s Board of Education is to represent and serve students, district residents, faculty, staff, administrators and district volunteers through policy development, thoughtful planning of academic programming, facilities management and fiscal responsibility to ensure the highest level of achievement and preparation of our student body.

The International Society for Technology in Education will guide the district in planning professional development for its work force. The integration of technology into instruction is the primary goal of the Technology Plan. The plan provides an overview of the basic operations and concepts; social, ethical and human issues; technology productivity tools; technology communication tools; technology research tools; and technology problem-solving and decision making tools that students need to learn to fully apply technology in school. It corresponds closely to the New York State Learning Standards.

The technology plan checklist is being used as a guide in framing this update. In April 2009, the Tech Users Group reviewed and updated and the Technology Plan. Italicized notes will be used to indicate the location of each of the checklist items.

***Goals for the 2010-2011 School Year***

- Utilize experienced NERIC staff to train the teachers about Internet safety and security on a Staff Development day in Sept. 2010
- Replace Project Lead The Way computers with latest models to meet Autodesk software requirements

- Implement more physically interactive input devices throughout school district to aid in creating more engaging lesson plans for teachers. (ex. Interactive whiteboards and “buzz-in” remotes for students)
- Implement a computer recycling policy with goals for the long term replacement of computer hardware
- Continue to make flex labs in both ES and MS/HS buildings more available to technology-driven teachers through better scheduling and alternative lesson plans for others
- Expand on E-school Data offerings to teachers and staff through additional training hosted in-house by staff as well as NERIC professionals
- Further research additional funding for hardware to be made available district-wide by means of grants and other financial aid
- Work to further meld art classes with technology to create more advanced methods for students to express artistic talents
- Research and review possible benefits of upgrading workstations from Windows XP to Windows 7. Windows Vista was found to not be a beneficial upgrade

### **Long Range Goals**

- Implement a Cyber Café or Lounge for Students and Staff in the Middle School/High School Building
- Migrate both the Elementary and Middle School/High School buildings towards completely wireless classrooms
- Develop a set of standards for achievement in “Words Per Minute” for students using the Type to Learn program
- Expand the use of Blackboard technology through faculty training and awareness

### **Accomplishments and Improvements for the 2008-2009 school year included the following:**

- Curriculum map K-12 ISTE standards to district curriculum. Align middle school technology courses (6-8) with ISTE Standards and informally begin process of K-8 curriculum map.

- Keying is introduced at 2<sup>nd</sup> grade level. Continue to improve speed and accuracy through lab for all grades, K-6.
- Continue to add Smartboards/Mimios to HS/MS/ES classrooms to better facilitate an atmosphere conducive to hands-on learning.
- Improve the elementary school building's wired/wireless infrastructure to better handle data transfer. *Still in progress*
- Continue to work on district-wide computer replacement schedule.
- Establish tech camp during last week of June as a possible activity for professional development. *Completed June 29-July 2 2009*
- Clarified the point of entry participants and the procedures for Data Warehousing by hiring a full time Chief Information Officer.
- Make ES computer labs accessible for teachers to bring their classes to reinforce the ongoing tech skills of the district technology plan.
- Replaced all MAC workstations in the ES CAI Lab with new Windows workstations.
- Added a new Windows server in the ES for file and printer sharing.
- Added Mobile Laptop Cart for HS Special ED Department.

### **INTEGRATE THE MOST APPROPRIATE AND EFFECTIVE TECHNOLOGY AND DIGITAL CONTENT**

The NYSED has added the category listed above to the Technology Plan. Some of the initiatives the district has undertaken that can be classified in this area include the following:

SMART Board technology was added to all grade 5 classes in 2005 and teachers participated in training. SMART Boards were also installed in the following locations – ES media center, grade 3 (portable) and secondary media center (portable).

- Virtual field trips conducted as part of a grant program.
- On-line learning added at the HS for a select number of courses.
- Distance learning classes have been a mainstay of the district through the BOCES distance-learning network for over 10 years.
- Both schools conduct live on air TV networks for morning news.
- Gig-E Service through Time Warner/BOCES serves the district. We need to improve connectivity by upgrading routers and other equipment.
- Group Wise email will continue to improve district communications.

- District web page had undergone upgrades in the last three years.
- Upgrade to Success Maker will improve **remedial** education delivery system.
- IEP Direct added in the district during the 2006-2007 school year. The transition went well.
- Project Lead the Way was certified during the 2006-2007 school year.
- The business office upgrades to Finance Manager in 2005.
- Mobile learning labs are used extensively in both buildings with student exposure to web quests.

### **ACCESS FOR ALL LEARNERS**

All students have regular access to the district labs in a number of ways. The media centers in both buildings are equipped with current hardware and are extremely busy. The library is open to 5 PM daily which allows full access after school to secondary students. Highlights include the following:

- Open ES lab (30 Windows Workstations); secondary library (approximately 15 PCs) and ES library (several Macs and PCs).
- Every classroom has at least one computer and many have several.
- Updated science classroom completed in 2006 with computers this past year as part of a capital project. All science classrooms equipped with projectors and a computer.
- The secondary campus received 75 current computers for its three labs and library with a lease purchase during the 2006-2007 school year.
- Every lab and computer is networked and Internet accessible.
- Computers purchased for special education rooms are targeted for special needs learners.
- Software purchases completed in 2005-2006 to insure that all lab computers equipped with current Microsoft package and XP platform.
- Mobile labs will require updates sometime after the 2008-2009 school year.
- \$1.4 million capital project includes upgrades to video surveillance systems, reconstruction to secondary technology lab classroom (including TV studio); upgrades to boiler system with web based management system.

### **THREE-YEAR PROJECTION OF THE TELECOMMUNICATIONS SERVICE (AND PROVIDERS TO BE ACQUIRED)**

The district has adopted an Acceptable Use and Internet Safety policies (attached). Copies are provided in teacher manuals that are provided at the beginning of each school year. Codes of conduct include basic summaries of Internet usage guidelines. Every student and each parent are provided copies annually at the elementary school and once upon entry into the secondary school. In the 2007-2008 school year that practice will change at the secondary level and will be updated annually with a parent sign off. Filters are maintained and systems administrator checks regularly for violations. Principals are notified when offenders are caught.

In the 2006-2007 school year, the district had doubled its bandwidth by changing our T1 line to 2 bonded T1 lines. The ES had some difficulty with traffic because of the routing pattern. The secondary campus

works well, but at times was slow because of network traffic. We were purchasing our T1 lines through a partnership with BOCES who partners with Verizon. In the 2007-2008 school year, we switched over to Gig-E service offered by Time Warner/BOCES. The district moved its phone lines to PAETEC in 2006-2007 and increased the quality of service and lowered its cost. We have installed new switches last summer at the ES building. By moving to E-school Data (student information system) we will also be increasing our network/internet traffic. We will be actively looking for a VOIP (Voice Over IP) solution in the 2008-2009 school year as another means to lower our communication costs.

The Media Centers (Libraries) have developed excellent publications that describe the databases that are maintained and available on line. Subscriptions for New York On Line for NOVEL Databases are purchased through an agreement with the Capital District BOCES and are accessible to all district students.

### **PROVIDE ON-GOING PROFESSIONAL DEVELOPMENT**

The Duanesburg Central School District recognizes that without on-going teacher training and staff development its technology plan will be minimally successful. Staffs are surveyed annually at the building level to identify interest areas for technology training. Faculty and staff enroll in a variety of professional development opportunities through BOCES Model Schools, area colleges and universities, and district tech camp. In addition, informal training and support options include on site support from computer aides, BOCES IT, and our district IT professionals. There are many teachers in the district who are willing to share their technology skills with colleagues.

The district staff development committee will work with the Capital District BOCES, the Regional Information Center, and other appropriate groups (such as the Schenectady County Consortium) to promote staff development activities within the district.

Faculty and staff at both the elementary and secondary campuses have access to the Internet in their buildings through the school libraries and in their classroom. In the fall of 2005 the district began exploring developing its own email accounts through access to a contracted third party site. For many reasons the district provides email accounts and email management services through GroupWise (supported by BOCES) which started during the 2007-2008 school year and continues to be a very valuable communication tool used by most of the district's staff members.

### **"In-class" Professional Development & Training - Modeling**

An essential element to the success of educational technology programs is a sustained, systematic approach to professional development that reflects current research on adult learning and professional development. Lack of professional development for technology use is one of the most serious obstacles to fully integrating technology into the curriculum. Traditional single session workshops have not been effective in making teachers comfortable with using technology or adept at integrating it into their lesson plans. Instead, a well-planned, ongoing professional development program that is tied to the school's curriculum goals, designed with built-in evaluation,

and sustained by adequate financial and staff support is essential if teachers are to use technology appropriately to promote learning for all students in the classroom.

Teaching strategies for the effective infusion of technologies in curricula are also essential in building capacity to promote educational technology. As teachers are the key in determining the impact technology has on student learning, staff adoption of effective technology instructional strategies is essential for technology to have an impact on student achievement. Research demonstrates that immediate access to technology in the classroom changes the way teachers teach and learners learn. New patterns of teaching and learning emerge. Traditional teaching methods are gradually replaced with engaging, student-oriented activities, moving from competitive to collaborative work patterns. In these environments, technology is a tool to actively engage learners with resources and learning context to construct new knowledge and skills.

The district will need to build capacity among the staff to assist our teachers with shifting from their present mode of instruction toward this improved educational system and continue to utilize our Library Media Specialists and Technology Aides, as well as the IT (Information Technology) support staff to support technology at the building level. The district's IT support Staff and Library Media Specialists will integrate with classroom teachers a three-tiered classroom support program. Through this program, the Library Media Specialists, IT support staff, IT Aides and the classroom teacher(s) will collaborate to develop and implement technology integrated lessons into classroom curriculum based on the applied learning standards, including scheduled planning and reflection sessions. The three-tiers include:

- Tier One: Modeling by the IT staff and Library Media Specialists within classroom
- Tier Two: Team teaching between Library Media Specialists and classroom teacher
- Tier Three: Classroom teacher leading lessons with IT staff offering support.

A robust library media program is one of the crucial elements of successful information and technology programs in school districts. Library Media Specialists are educators as well as information specialists who empower both students and teachers in their efforts toward increasing student achievement.

### **Access Plan and the Impact of Technology**

The district has established a Tech User's Committee composed of any interested district staff and chaired by the district technology department chair. The group includes the technology support staff, computer aides, superintendent, principals, and teachers who actively use technology. The first district technology plan was developed with input from this group. During the 2006-2007 school year the committee reviewed the current plan and changed the format to reflect the new SED plan. A school Board member who is employed as a network specialist has provided considerable assistance to the district both through ideas and "hands-on" assistance. In the 2007-2008 school year, Joe O'Neill and Chris Crowley updated the plan during the summer months based on the feedback provided by the Technology Users Committee.

### **ENSURE ADEQUATE FUNDING**

Equipment updates have been budgeted through a 4-year lease purchase of approximately \$30 K per year. This lease/purchase ends during the 2008/2009 school year. Beginning in the 2009-2010 school year, the district will be going through BOCES/Adirondack Cabling for a 3 year purchase plan that will replace the

vast majority of the Category 5/5e wiring with all new Category 6 to help meet both the current and future networking demands of the district. We will have to pick up with our computer replacement schedule the year following with an estimated \$30 K per year for another 4-year hardware lease purchase during the 2010-2011 school year to upgrade our mobile and stationary computer labs. The district adopted an Evergreen Policy, which describes the replacement schedule. The annual technology budget for software and hardware is approximately \$40 K per year for general maintenance, equipment, hardware and software updates for the entire district. We are looking to increase this number for future years to come.

### **Involving Key Stakeholders in Developing and Updating the Plan**

The primary tool for involving key stakeholders in the development of the Technology Plan and its updates has been the technology user's group chaired by the district's technology chair. The group is an open group and all school staff can participate. We have not engaged parents and students in this process as of yet. We do have a Project Lead the Way Advisory Committee, which includes parents and other key community members as well as staff.

The user group has met dozens of times throughout the 2006-2009 school years and has provided feedback concerning the plan which influenced this current year's plan update. The tech user's group elicits feedback to the general staff and faculty through departmental and general faculty meetings.

### **Computer Hardware Assessment**

The district, while working with NERIC and Adirondack Cabling, completed an infrastructure plan during the summer months of 2009. The plan included various items such as the complete re-cabling of classrooms to include as many as 6 network drops per room, network switch re-location from the boiler rooms in both the HS and ES building, and the centralization of servers in a new office space located in the basement (currently being completed).

This will be an ongoing relationship with NERIC and will most likely include the planning and implementation of a corporate grade wireless network throughout the district. This will take the place of the currently strategically placed inexpensive wireless access points currently located around the buildings.

The following is a recent assessment of the districts computer hardware inventory, excluding mission critical servers.

#### **Middle School/High School:**

##### **Room 108 Lab**

-15 Intel Core Duo PCs with enhanced graphics cards

##### **Room 109 Lab**

-24 Intel Core Duo PCs

##### **Room 203 Open Lab**

-24 Intel Core Duo PCs

**Room 101 Lab**

-25 Intel Core 2 Duo PCs

**Library**

-12 Intel Core Duo PCs

**Mobile Cart**

-25 Intel Centrino Laptops

**Classrooms**

-At least 1 PC in every classroom

**Music Room**

-4 Intel Core 2 Duo PCs

**Art Annex**

-16 Intel Core 2 Centrino Laptops

**Rooms 120 and 304**

-2 carts with 10 netbooks each for remedial enhancement/IEP compliance

**Total # of Computers in MS/HS: 200+**

**Elementary School:**

**Open Lab**

-30 Core 2 Duo PCs

**Mobile Cart**

-2, each with 15 netbooks

**Classrooms**

-At least 2 or more PCs and or Macs (including several of the older Macs taken from the lab upgrade)

**Library**

-2 Mac Minis

-5 Intel Pentium 4 PCs

**Total # of Computers in ES: 140+**

## K – 8 Curriculum Maps for Technology

### Curriculum Map for Technology: Grade   K

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI	Vocabulary	Learn vocabulary of the parts of the computer	Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI	Computer parts	Identify parts of the computer and apply use of vocabulary	To begin to use the computer  Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI	Letters  Numbers/  Eye hand coordination	Find letter and number keys	To begin to use the computer  Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	

**Curriculum Map for Technology: Grade 1**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI	Vocabulary	Identify the vocabulary of the parts of the computer and keys to the keyboard	Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI	Typing	Type a simple sentence with punctuation	To begin to use the computer and Standard 2  Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	Students will create a simple typed sentence with punctuation.
Ongoing in CAI	Letters  Numbers/  Eye hand coordination	Locate letters on the keyboard	To begin to use the computer and Standard 2  Standard 5 modified- students will apply tech knowledge	Teacher/aide observation of students' verbal responses and following directions	

**Curriculum Map for Technology: Grade 2**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI, library or special project	Typing	Introduce paragraph typing, including changing font	Standard 5 and 2	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI, library or special project	Printing	Print their typed sentences	Standard 5 and 2	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI, library or special project	Saving	Save their typed sentences	Standard 5 and 2	Teacher/aide observation of students' verbal responses and following directions	
Ongoing in CAI, library or special project	Typing	Type 1-3 complete sentences with punctuation	Standard 5 and 2	Teacher/aide observation of students' verbal responses and following directions	Students will create 1-3 simple typed sentences with punctuation.

**Curriculum Map for Technology: Grade 3**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI, library or special project	Paragraph typing	Type 1-2 proficient paragraphs for ELA work	Standards 5 and 2	Student ELA written then typed pieces	Teachers evaluate student progress with their independent use of the computer to type 1 and 2 paragraphs.
and at various times of the year	Internet research	Use the internet to research a topic	Standards 5 and 2	Students will complete internet research task	Teachers evaluate student progress through but not limited to oral and written assessment
	Typing	Use Type to Learn as a program for learning to type at your own pace.	Standards 5 and 2	6 formative assessments placed throughout lessons. Assessments analyze student's accuracy and speed, setting and adjusting achievement goals as the student improves.	Record keeping includes progress graphs and reports on lessons, activities and assessments. Teachers can analyze student errors by hand and key to pinpoint problem areas.
	PowerPoint (time permitting)	Introduction to PowerPoint presentation	Standards 5 and 2	Observations of student comprehension and verbal response to questions. This does not have to be in homeroom classrooms, this can be in CAI, Library instruction, and other.	Preparation and beginner readiness for 4th grade.

**Curriculum Map for Technology: Grade 4**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI, library or special project	Paragraph typing	Type 3 proficient paragraphs for ELA work	Standards 5 and 2	Student ELA written then typed pieces	Teachers evaluate student progress with their independent use of the computer to type 3 paragraphs.
and at various times of the year	Internet research	Use the internet to research a topic using Web Quest	Standards 5 and 2	Students will complete internet research task	Teachers evaluate student progress through but not limited to oral and written assessment
	Typing	Learn to type using Type to Learn program.	Standards 5 and 2	6 formative assessments placed throughout lessons. Assessments analyze student's accuracy and speed, setting and adjusting achievement goals as the student improves.	Record keeping includes progress graphs and reports on lessons, activities and assessments. Teachers can analyze student errors by hand and key to pinpoint problem areas.
	PowerPoint  (time permitting)	Create a PowerPoint presentation	Standards 5 and 2	PowerPoint presentation	PowerPoint presentation rubric

**Curriculum Map for Technology: Grade 5**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strands</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students towards skill attainment.</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skills.</b>
Ongoing in CAI, library or special project	Paragraph typing	Type 5 proficient paragraphs	Standard 5 and 2	Core subject written then typed pieces	Teachers evaluate student progress with their independent use of the computer to type 5 paragraphs.
and in the latter part of the year	Internet research	Use the internet to research a topic with minimal teacher direction	Standard 5 and 2	Students will complete internet research task related to a core subject writing integrated with ELA	Teachers evaluate student progress through projects and/or PowerPoint presentation
	PowerPoint Presentation	Use PowerPoint to present research	Standard 5 and 2	Core subject presentation integrated with ELA	Teacher evaluates student progress through PowerPoint presentation and oral presentation.
	Typing	Learn to type using Type to Learn program	Standard 5 and 2	6 formative assessments placed throughout lessons. Assessments analyze student's accuracy and speed, setting and adjusting achievement goals as the student improves.	Record keeping includes progress graphs and reports on lessons, activities and assessments. Teachers can analyze student errors by hand and key to pinpoint problem areas.

**Curriculum Map for Technology: Grade   6**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strand.</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students toward skill attainment</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skill</b>
September	What is an Internet Agreement	Understand what an Internet Agreement is and why it is necessary	NYS Standard 2, ISTE Standard 2	Observation of students' responses to questions during class session	
September and October	Microsoft Word review, what is a network, what are "accounts"	Basic review of Microsoft word skills, using student accounts (h-drive)	NYS Standard 2 Information Systems, ISTE Standard 2	Observation of students' using network account, including saving and opening saved document	
Throughout the year	Research using the Internet	Internet research project using the Internet, including a bibliography	NYS Standard 2, ISTE Standard 5, ELA Standard 1		Students will write a research paper on a chosen topic complete with bibliography and source cards
Throughout the year	Creating PowerPoint presentations	Students will create slideshows for content area courses		Students will complete individual assignments displaying skills with PowerPoint	Students will complete a slide how presentation using animations and transitions

**Curriculum Map for Technology: Grade 7**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strand.</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students toward skill attainment</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skill</b>
2 - 3 Weeks	Use the Internet for research	Use the Internet to research an Invention to write about	NYS Standards 2, 5, ELA Standard 1, ISTE Standards 1, 2,5	Observation of students working on research using the Internet. Source cards will be used	Students will complete and turn in research sheets or cards showing research found
1 -2 Weeks	Using Microsoft Word	Write a research paper using Microsoft Word, including a bibliography	NYS Standards 2, 5, ELA Standard 1, ISTE Standards 1, 2,5	Students will turn in rough drafts of research paper on specific deadlines for evaluation	Students will write a research paper On a specific topic complete with a bibliography
1 – 2 Weeks	Using Microsoft Excel	Create invoices, budget spreadsheets, and orders, using and inserting formulas. Graphing	NYS Standards 2, 5, ELA Standard 1, ISTE Standards 1, 2,5	Observation and evaluation of students working in class on specific assignments	Students will complete activities on making invoices and orders. Also students will complete a graphing activity using different types of graphs
Throughout the year	Creating slideshows	Create a PowerPoint slideshow for content area courses	NYS Standards 2, 5, ELA Standard 1, ISTE Standards 1, 2,5	Students will complete individual assignments demonstrating skills in PowerPoint	Students will complete a slideshow using animations and transitions.

**Curriculum Map for Technology: Grade 8**

<b>Time</b>	<b>Content</b>	<b>Skills</b>	<b>Standards</b>	<b>Formative Assessments</b>	<b>Summative Assessments</b>
<b>Month and Number of Days for the Unit.</b>	<b>Major Unit Concepts.</b>	<b>Unit Objectives: The student will be able to...</b>	<b>Connect Skills to the Content Strand.</b>	<b>List manipulatives, readings, writing projects, data projects, review sheets, homework and quizzes that move students toward skill attainment</b>	<b>Test design will include questions that measure conceptual understanding of, procedural fluency with, and problem solving using the unit skill</b>
3- 4 Weeks	Using Microsoft Excel	Use Microsoft Excel to create a budget spreadsheet	NYS Standards 2, 5,  ELA Standard 1,  ISTE Standards 1, 2,5	Observation of students using skills to complete a budget sheet and invoices	Students will complete a budget sheet complete with formulas and proper attributes
2 – 3 Weeks	Using Microsoft Word and the Internet	Research and write a position paper using the Internet, databases, and Microsoft Word	NYS Standards 2, 5,  ELA Standard 1,  ISTE Standards 1, 2,5	Observation and evaluating of rough drafts of papers on predetermined deadlines.	Students will turn in a research paper complete with bibliography and source cards
Throughout the year	Using PowerPoint	Create a slideshow for content area courses, including sounds and transitions	NYS Standards 2, 5,  ELA Standard 1,  ISTE Standards 1, 2,5	Observation of student work during class time on their slideshows	Completion of required slideshow complete with animations and transitions

## Secondary Student Needs

Another essential component of building capacity to promote educational technology is the effective use of technology by all students that supports the attainment of district goals for student achievement. The American Association of School Administrators published a report in 1998 which states that schools in the 21<sup>st</sup> century “will be laced with a project-based curriculum for life” aimed at engaging students “in addressing real-world problems, issues important to humanity, and questions that matter.” The 21<sup>st</sup> century learners are those who know how what they are learning is preparing them for life in the real world, are curious as this is a fundamental to lifelong learning, and excited to become even more resourceful so that they will continue to learn outside the formal school day.

For students to gain the technology competencies, it is essential that they have access to technology during the school day in all grade levels. Instruction should provide opportunities for students to gain and demonstrate technology skills that build primary through grade 12. The natural progression will be for classroom teachers to integrate technology related benchmark skills across their curriculum. The district will continue to establish benchmarks for students in grades 9-12. Research clearly shows that technology used in experiential learning environments has a great impact on student learning. The district’s administrators will work with curriculum planning teams to incorporate technology into ALL grade level curriculum plans. Additionally, the District will develop a plan for the acquisition of technology to support specialty areas, such as music, art, and physical education.

Throughout high school, students continue to develop and demonstrate the skills gained from primary, intermediate and middle grade levels. The technology program of studies at the high level includes more opportunities for students to apply technology in their course work, thus becoming more adept in using technology. As the high school curriculum demands more complicated learning tasks, students discover more advanced capabilities in applications. Students will develop an appreciation for the capabilities of technology resources and an understanding of how these can be used for career and lifelong learning. By the end of high school, students will apply technology across all curriculum areas and demonstrate competencies needed for high school graduation.

## Computer Replacement Policy

### **Purpose:**

To establish a plan for purchase, deployment, and replacement of District-wide personal computers (PCs and Macs), including desktop and laptop machines.

### **Scope:**

This Policy is effective District-wide and represents the minimum requirements and specifications that must be met. Individual areas, such as the Central Office, and Main Office(s) that have computers and networks may have additional controls and security, but they are in addition to this Policy.

## **Overall Rationale for the PC Replacement Plan:**

In compliance with standards issued by the NYS Education Department, the District has scheduled a perpetual four-year personal computer replacement cycle beginning with the 2010-2011 academic year. By entering into a centralized and managed replacement program, the District targets the ability to negotiate better pricing, establish uniform standards, improve installation and service times, offer enhanced security features, and better track District hardware, software, and peripherals.

## **Computer Tiers:**

All District computers will be assigned to one of the following equipment tiers: Tier 1 Standard PC, Tier 1 Standard Mac, Tier 2 PC or Tier 2 Mac.

All computers in the Replacement Plan will be either Tier 1 Standard PC machines (i.e. Administrative Workstations, Teacher Classroom Workstations, Computer Labs, and Mobile Laptop Cart Workstations) or Tier 1 Macs (i.e. CAI Lab computers which run MAC OS). Tier 1 machines are manufactured by and purchased from a single computer manufacturer (commonly Dell or Mac computers), determined annually by the Purchasing and IT Departments.

A Tier designation will be assigned to each computer when it becomes eligible for replacement. The Purchasing and IT Departments will collaboratively determine the accurate and appropriate tier assignment for each machine entering the replacement cycle.

## **Tier 1 Computers**

### **Standard PCs:**

Tier 1 Standard PCs are those that meet the Districts standard for hardware configuration. Tier 1 Standard PCs are automatically entered into the Districts PC replacement cycle and are eligible to be supported by the IT Staff.

**Example:** Standard Windows PC with a standard hardware configuration).

Tier 1 Standard PCs can be enhanced. These PCs are District standard Windows machines that may have enhanced hardware features. These PCs are eligible to receive support from the IT Staff. These machines are included in the replacement cycle as Tier 1 Standard PCs. Departments seeking to add hardware extending beyond the standard hardware configuration are financially and administratively responsible for these additions for each new or replacement machine.

**Example:** District standard Windows machine with added enhancements, such as, but not limited to, added memory, increased storage, or higher performance graphics cards which extend beyond the standard hardware configuration.

### **Standard Macs:**

Tier 1 Standard Macs are manufactured by the Apple Computer Company, run the Mac Operating System, meet the minimum hardware requirement as defined annually by the District, Purchasing, and IT Staff, and have been approved through the exception process. Tier 1 Standard Macs are eligible for IT Staff support, and are eligible for inclusion in the four-year replacement cycle. Departments seeking to add hardware extending beyond the standard configuration are financially and administratively responsible for these additions to each machine.

### **Tier 2 Computers**

Tier 2 computers are all other computers with hardware and/or operating system software that differs from the Tier 1 hardware and/or operating system software configuration. Tier 2 machines are generally classroom or student workstations or miscellaneous staff workstations (PC or MAC).

**Example:** A Windows based PC located in the CSE office for use by part-time CSE Staff.

**Example:** Any Macs (regardless of configuration) that reside in the Elementary or Middle/High School classrooms or surrounding areas.

### **Standard Hardware and Base Image Configurations**

**Standard Hardware Configuration:** (see District Systems Coordinator) for a complete description of the standard hardware configuration)

The District has established a standard hardware configuration for new and replacement PCs and Mac computers to be eligible for hardware and software support. All PCs and Mac computers (i.e., Tier 1 Standard PC or Tier 1 Standard Mac machines) that meet this standard are eligible for support by the Districts IT Staff.

The standard hardware configuration is intended for general office productivity, such as word processing, spreadsheets, electronic messaging, and Web browsing, and should provide sufficient capability to support basic computing needs. The standard is determined by the District, with the assistance of IT Staff, and will be updated annually.

Departments with hardware needs that extend beyond the standard hardware configuration are financially and administratively responsible for these additions for each new or replacement machine.

**Base Image Configuration:** (see District Systems Coordinator for a complete description of the standard image configuration)

There is a base image configuration for both Windows and Mac computers. This image configuration consists of a core set of desktop software that faculty and staff use to accomplish everyday work activities. Applications include the operating system, office productivity suite, antivirus software, and other standard applications needed to perform routine work activities. This image is determined by the IT Staff and will be loaded by the IT Staff on all new and replacement machines.

## **Exceptions**

Departments wishing to replace any computer which is not a Tier 1 Standard PC must apply for an exception. This includes all Tier 1 Standard Macs and all Tier 2 PC and Mac computers.

Exceptions to the Replacement Plan are permitted, and the mechanism for exception is outlined below. All Tier 1 Standard PC and Mac computers four years or older will be scheduled into the replacement cycle and will be replaced every four years. Note: Designation as a Tier 1 Standard Mac requires gaining approval through the exception process each time a new Mac is requested or due for replacement.

### **Purchase of other than Tier 1 Standard PC computers will be made only in cases where:**

- the standard hardware configuration is inadequate to meet the needs of personnel, and
- no comparable product is available via the District's designated computer vendors.

### **Steps to be taken by Departments seeking to purchase other than a Tier 1 Standard PC (including Tier 1 Standard Macs):**

- Departments must complete and submit the *Computer Purchase Exception Form* for review and approval by their appropriate Administrator.
- The Administration will forward the completed and approved *Computer Purchase Exception Form* to the Systems Coordinator.
- Departments will be notified by their Building Principal regarding the purchasing decision.

## **Extended Use Machines**

Tier 1 computers four years and older automatically will be entered into the replacement cycle. In extreme cases (with appropriate justification), a machine may be held back from inclusion in the replacement cycle.

**Example:** A faculty member conducting research tied to a specific computer up for replacement could request that this computer be held back from the replacement cycle until the research was completed.

### **Steps to be taken by Departments seeking to extend the use of a Tier 1 Standard PC or a Tier 1 Standard Mac:**

- Departments must complete and submit the *Computer Extended Use Form* for review and approval by their appropriate Building Principal.
- Departments will be notified by their Building Principal regarding the extended use decision.

All Tier I computers will be entered into the replacement cycle at the conclusion of their extended use (unless use is further extended by a repeat of the above process). Departments seeking to extend the use of a computer must make the extended use request annually.