Middletown Public Schools
Strategic Long Range Technology Plan (ED616)

Improving Instruction through Innovation

Prepared by the Educational Technology Committee:
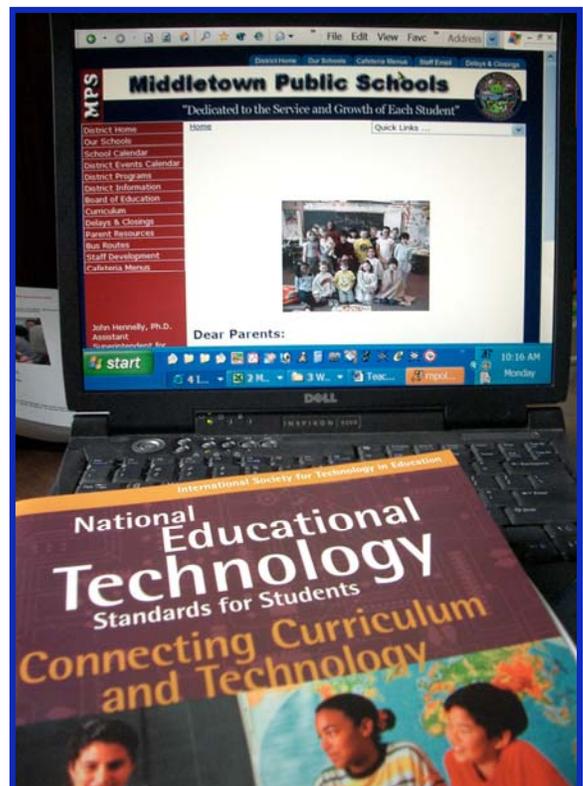
Roberta Avery
Kathleen Bengtson
Brian Boorman
Dalton Bruder
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Julie Greeman
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Gene Nocera, Ph.D.
Robert N. Polselli, Jr., Ph.D.
Martin Skelly
Ashley Walsh
Karen Wesoloski

PLAN TERM: July 1, 2009 through June 30, 2012

Submitted to RESCs for review: March 9, 2009
Submission to MPS BOE: May 12, 2009
Submission to SDE due June 15, 2009

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aces
area cooperative educational services

Middletown Public Schools
Robert N. Polselli
310 Hunting Hill Ave
Middletown, CT 6457

Dear Robert,

Congratulations! An ACES Educational Technology Specialist has reviewed your 2009-2012 Technology Plan and is recommending it for approval. Enclosed please find a completed and signed Technology Plan Review Guide.

Remember that you must now mail an electronic version of your Technology Plan to CSDE on a CD-ROM along with a "hard copy" of your Technology Plan and a copy of the signed Technology Plan Review Guide to CSDE by **June 15, 2009** for final review and state certification. Please make sure that you include the date submitted to the Board of Education and the date approved or anticipated approval by the Board of Education on the cover page. Also, make sure that the superintendent's original signature appears on the cover page, on the LEA Federal Grant Program Compliance Form and on the Children's Internet Protection Act (CIPA) Certification page (which also includes E-rate certification). You also need to include the "Signature of Authorized LEA Agent" on the Technology Plan Preparation Check-Off Page.

Send your district's long range technology plan **by June 15, 2009** to:

Karen Kaplan
Connecticut State Department of Education
165 Capitol Avenue – Room 215
Hartford, CT 06106

Upon review and approval by the CSDE, a letter of approval/state certification will be sent by the CSDE to the Superintendent of Schools with a copy to the educational technology plan contact.

If you have any questions, please call me at ACES at (203)407-4418, or email me at bhaeffner@aces.org . ACES wishes you continued success as you implement your technology plan.

Sincerely,

Barbara A. Haeffner

Barbara Haeffner
Educational Technology Specialist
Area Cooperative Educational Services

cc: Dr. Michael J. Frechette

Professional Development / School Improvement • www.aces.org
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OVERVIEW OF EDUCATIONAL TECHNOLOGY PLANNING

What skills, attitudes and attributes do our students needs to succeed in our 21st. century, information intense society?

> Literacy in the 21st century requires more than the ability to read write and compute. The Middletown Public School District believes that every student must develop strong technological skills and continually use them in order to function adequately in our 21st century world. Administrators and teachers must ensure that technology resources are integrated across the curriculum in preK-12 and become part of the fabric of instruction. Students must use appropriate technologies to access worldwide resources in order to become more productive learners as part of their regular classroom routine. They must be able to use the many forms of technology to access, understand, manage, interpret, evaluate and create information. They also must be able to analyze information for content, relevancy and accuracy and be able to present that information in a variety of formats, including those with technology platforms.
>
> An education that is technologically rich produces high school graduates with the tools, competencies and level of sophistication necessary to be successfully employed in an ever-changing global economy. Such an education enables all students to understand and use current and emerging technologies in their personal, academic and work environments. For many students, especially those with disabilities, technology often provides access to the general curriculum and allows them to perform tasks or demonstrate skills they would otherwise be unable to do. [1]

In order to help students be successful in a technologically rich economy,

- educational leaders must establish a vision for this transformed view of teaching and learning, and they must model this transformation in their own learning and work experiences.
- learners and their families must have equal access to tools that support their learning.
- the focus of control for learning must shift from teacher directed to student directed learning.
- learners must master the information literacy skills to access, investigate, and apply information.
- every classroom in Connecticut must be connected to the statewide network with access to digital resources and curricula.
- learners must demonstrate their understandings and skills relative to measurable performance standards.
- technology must be a vital link among the staff, students, parents, and expanded community. [2]

This technology plan is designed to help every school within our district use technology effectively by addressing: district strategic initiatives, curriculum, professional development, infrastructure, hardware, technical support, and software, community involvement, fiscal planning, data management, monitoring and evaluation as they relate to the teaching and learning process.

High-quality comprehensive educational technology plans must be collaborative and include ideas and suggestions from all members of the educational community. These stakeholders include: faculty, staff, parents, and others. The planning process was a shared activity that not only involved schools and school leaders, but also the community at large. Resources and links have been provided in the appendices to assist in the evaluation of this plan.

Throughout the plan funding projections have been imbedded within the goals. A key has been provided, below, that outlines the funding projections.

Funding Key
$ = sustained funding
$$ = increased funding
$$$ = new funding

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[1] CSDE Board of Education Position Statement on Educational Technology and Information Literacy, 12/4/04
2 CAPSS Technology Position Statement, 12/14/01

Educational Technology Plan Cover Page

District/Agency:	Middletown Public Schools
District Code:	083
Technology Plan Contact:	Robert N. Polselli, Jr., Ph.D.
Phone:	860-638-1461
Fax:	860-347-2112
Email:	polsellir@mps1.org
Address:	310 Hunting Hill Ave., Middletown, CT 06457
Name of Superintendent:	Michael J. Frechette, Ph.D.
Email:	frechettem@mps1.org
Signature of Superintendent:	Date: 9/29/08
Date Submitted to Board of Education:	May 12, 2009

For RESC/SDE Use Only:

RESC Regional Reviewer:	Barbarah Heeffner	Date: 3-12-09
Regional Recommendation for Approval:	(Yes) / no / conditional	Date: 3-12-09
SDE Reviewer:		Date:
SDE Approval:		Date:

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Technology Plan Preparation Check-Off Page

The submitted plan has the following:
- ✓ Cover Page
- ✓ Technology Plan Preparation Check-Off Page
- ✓ LEA Federal Grant Program Compliance Form
- ✓ LEA Profile
- ✓ Technology Planning Committee
- ✓ Vision Statement
- ✓ Needs Assessment
- ✓ Goal 1 – Academic Achievement
- ✓ Goal 2 – Professional Development
- ✓ Goal 3 – Infrastructure, Staffing, and Equipment
- ✓ Goal 4 – Equity & Technology Literacy (by 8th grade)
- ✓ Goal 5 – Evaluation & Accountability
- ✓ Goal 6 – Current and Future Financing Requirements
- ✓ Goal 7 – Telecommunications Services Plan
- ✓ Technology Funding Sources and Costs
- ✓ CIPA Certification

_____   9/28/2008

Signature of Authorized LEA Agent   Date

<u>Middletown Public Schools</u>

Developing a comprehensive technology plan, based on the educational goals of the school system, will ensure that the most appropriate technologies are effectively infused in your instructional and/or administrative programs. Thorough planning also ensures that all parties have equitable access and achieve the greatest benefit from routine use of educational technology. The comprehensive technology plan should demonstrate clear targets for technology use, spell out desired goals for learners, create visions for future directions, build "buy-in" from stakeholders, and demonstrate to those who might provide funding that a district or charter holder is ready to act.

School Districts, Consortia or Charter Schools (LEAs) who apply for technology funding through any Federal grant program, are required to have developed a comprehensive, three-year to five-year plan, which outlines how the agency intends to utilize and integrate educational technology.

The applying agency (check all that apply)

  X   is compliant with the provisions of the Children's Internet Protection Act (CIPA).

       will be CIPA compliant by this date.

  X   has applied for E-Rate Funding for FY 2009.

The LEA's comprehensive technology plan must be approved by the local governing board(s). (The plan must be approved by the local governing board before funds will be released.)

Date the plan was approved: <u>May 12, 2009</u>

OR

Date the plan is to be submitted for board approval:

Certified by:

_____   <u>9/28/2008</u>
Signature of Authorized School System Agent   Date of Signature

<u>Dr. Robert N. Polselli, Jr.</u>
Printed Name and Title

LEA Profile

This information should provide a "snapshot" of your district and help planners and reviewers to understand areas of need. This information will also assist the CSDE to establish priorities in the provision of resources to districts. The CSDE is particularly interested in the capability that each LEA has to access resources that will be placed onto the Connecticut Education Network (CEN). The new questions about technological literacy and professional development are asked as a result of additional federal reporting requirements.

LEA NAME: Middletown Public Schools (093)	
How many Grade 8 students were evaluated for technological literacy, based on your district's standards, during the 2007-08 school year?	370
Based on that evaluation, how many of those students were considered technologically literate?	220
How many hours of technology related professional development were offered to certified educators in 2007-08? *(Include workshop hours that are offered to all of your educators-both teachers and administrators. These sessions may be online and may include full-day or partial-day sessions provided by RESC personnel. Although both mentoring and coaching are considered very effective methods of offering pd, do not include any of those hours.)*	43
How many hours of technology related professional development were offered to administrators in 2007-08? *(Count only those pd hours offered specifically for administrators.)*	16
What fraction of your certified staff in Grades K-8 does your district consider technologically literate? *(Do not reduce the fraction to lowest terms; the fraction's denominator should reflect the actual number of professional K-8 staff. For example, if out of 120 certified staff, 110 are considered technologically literate-the answer would be 110/120.)*	178/299
What fraction of your certified staff in Grades 9-12 does your district consider technologically literate? *(Do not reduce the fraction to lowest term. The fraction's denominator should reflect the actual number of professional 9-12 staff.)*	65/105

When filling out the table below, please consider the following conditions:	
▪ the number and percentage of each grade level of students that can have high-speed internet access at the same time; ▪ that students are grouped in clusters of no more than thirty and no less than ten*; and* ▪ that students remain in their own school.	

Maximum number of Grade 4 students who could be accommodated under the above conditions.
    Bielefield Elementary School **21**   Moody Elementary School **23**
    Farm Hill Elementary School **23**   Snow Elementary School **24**
    Lawrence Elementary School **24**   Spencer Elementary School **22**
    Macdonough Elementary School **27**   Wesley Elementary School 24
	188

Percentage of Grade 4 students who could be accommodated under the above conditions (number accommodated/total number of Grade 4 students).
    Bielefield Elementary School **21/52 (40%)**   Moody Elementary School **23/81 (28%)**
    Farm Hill Elementary School **23/45 (51%)**   Snow Elementary School **24/53 (45%)**
    Lawrence Elementary School **24/44 (55%)**   Spencer Elementary School **22/63 (35%)**
    Macdonough Elementary School **27/39 (69%)**   Wesley Elementary School **24/48 (50%)**
	44%

Maximum number of Grade 6 students who could be accommodated under the above conditions.	49
Percentage of Grade 6 students who could be accommodated under the above conditions (number accommodated/total number of Grade 6 students). **49/378**	13%
Maximum number of Grade 8 students who could be accommodated under these conditions.	171

Percentage of Grade 8 students who could be accommodated under the above conditions (number accommodated/total number of Grade 8 students). **171/357**	48%
Maximum number of Grade 10 students who could be accommodated under the above conditions.	226
Percentage of Grade 10 students who could be accommodated under the above conditions (number accommodated/total number of Grade 10 students). **226/329**	69%
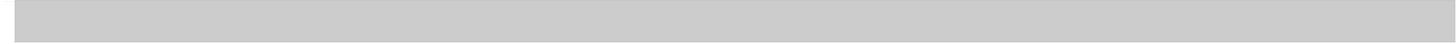
TECHNOLOGY PLANNING COMMITTEE

The Technology Planning Committee should represent all stakeholders. Development of the technology plan and implementation of the plan should enable parents, educators, students and community members to benefit from the investment in technology and all should have representation on the committee.

Middletown Public Schools Technology Committee		
Member	**Title**	**Constituency Represented**
Dr. Robert N. Polselli, Jr.	Director of Technology	District (K-12)
Jared Morin	Student Data Manager	District (K-12)
Naveen Macherla	Network Manager	District (K-12)
Kathleen Bengtson	Administrative Assistant for Central Office Technology	Central Office
Dr. Gene Nocera	Principal	Administration
Kendall Jackson	Director of Facilities	District
Marty Skelly	Grade 4 Teacher	Bielefield Elementary School & Grades 4-5
Roberta Avery	Grade 5 PROBE Teacher	Farm Hill Elementary School, Grades 3-5, & Gifted and Talented
Delores Ford	Grade 5 Teacher	Lawrence Elementary School & Grades 3-5
Ashley Walsh	Grade 1 Teacher	Macdonough Elementary School
Karen Wesoloski	Grade 4 Teacher	Moody Elementary School & Grades 3-5
Sandra Cardella	Grade K Teacher; Parent	Spencer Elementary School & Grades K-2
Brian Boorman	Grade 5 Teacher	Snow Elementary School & Grades 3-5
Julie Greeman	Grade K Teacher	Wesley Elementary School & Grades K-2
Kevin Doran	Grade 6 Math Teacher	Keigwin Middle School, Math, & Grade 6
Ann Lohrand	Grades 6-8 Library Media Specialist & LM Coordinator	Woodrow Wilson Middle School and Grades 7-8
Ann Buchanan	Grades 9-12 Library Media Specialist	Middletown High School & Grades 9-12
Steve Lesiczka*	Community Member	
Dalton Bruder*	MHS Student	Middletown High School
Shaun Gardner*	MHS Student	Middletown High School
Ryan Lydig*	MHS Student	Middletown High School

*Per ACES recommendation, this person has been added to the Committee.

Long-term role of the Committee:

The technology committee will assist in the development, implementation, and evaluation of the technology plan. Through summer and monthly meetings and email correspondence the Tech Plan will be fashioned.

Examples of current technology use, the previous technology plan, and each member's vision of how technology can improve instruction will be the driving forces behind the development of the new plan. As each building is represented on the technology committee and each member serves as his or her school's Educational Technology Specialist (ETS), committee members will be responsible for supporting teachers with the implementation of the plan. Specifically, each ETS will assist teachers develop lessons, build classroom websites, and work toward complete integration of technology as a tool to support learning. The committee will meet 6-8 times during the school year as well as one time during the summer. The summer meeting will be a culminating collaboration focused on assessing the previous year's accomplishments and the upcoming year's goals.

Evaluation Strategies

The evaluation process will be conducted through the use of questionnaires, classroom observation, and analysis of student's proficiency with the use of technology. The first step in assessing educational technology integration is to survey both teachers and students with respect to the specific computer-supported learning activities that are conducting within the classrooms throughout the district. Classroom observations will also be conducted by the director of technology to evaluate the appropriate use of technology within the instructional setting. Finally, student technology assessment data for grade eight will be benchmarked and compared yearly to establish an accurate means of assessing district growth with respect to satisfying students' technology skills needs.

VISION STATEMENT

A vision statement expresses thoughts about what the LEA's future educational environment should look like. It should be written in broad terms and guide the development of the technology plan.

Vision

The vision of educational technology in the Middletown Public Schools is to be a transparent, seamlessly integrated tool for improving instruction. As students, teachers, administrators, and staff become more proficient with computer use, the use of technology will become routine. Online learning will extend the classroom to reach students during evening hours and on weekends. Communication with parents will improve as a result of electronic mail, Honeywell Instant Alert, eNotify, and the district's website. Students in every learning environment will have access to timely resources which will allow them to make informed decisions and prepare appropriate responses to problems. Technology will bridge all subjects and socioeconomic levels and provide a vehicle for students to achieve even higher academic success.

Goal

The goal of the Educational Technology department in the Middletown Public Schools is to enrich the classroom by empowering teachers to infuse technologies that will enhance instruction. As a matter of necessity, each student in Middletown must be prepared to meet the technological challenges of our contemporary society. In order to ensure that we provide the best possible education for our students, we must seamlessly infuse technology at all grade levels. We must also ensure that our graduating seniors have the skills necessary to be successful in today's technology driven work environment.

To this end, we are working diligently to upgrade and maintain our infrastructure and hardware, implement professional development for staff, ensure that students receive both direct and indirect instruction in the use of computer technology, and assess the skill level of student technology use. The State of Connecticut requires each school to prepare children to function in our technology rich society and Middletown Public Schools is ready to meet that challenge.

NEEDS ASSESSMENT

This section describes the Middletown Public Schools' **current technology status** in five categories: curriculum integration, professional development, equitable use of technology, infrastructure and telecommunications services and administrative needs.

Curriculum Integration

Although great strides have been made in the Middletown Public Schools over the past eight years, curriculum integration continues to require attention and must be central to this technology plan. The following is an overview of the current state of curriculum integration of educational technology.

Strengths & Weaknesses

Educational technology is increasingly used in classrooms throughout all grade levels in the district. Observation of classrooms clearly indicates an increase in technology use in contrast to four years ago. However, a concerted effort has not been made to include educational technology as an essential part of every curriculum. Therefore, this plan will address the district's need to incorporate technology as an official component of every curriculum.

Alignment to Standards

With the revision of the Connecticut Information and Technology Curriculum Frameworks comes a shift from classroom instruction of technology to integration of technology. Additionally, courses have been established which will fulfill the need for technology instruction at grades 6, 7, and 8.

Technology that Addresses Curricular Weaknesses

In the past, online curriculum mapping through TechPaths has been used in an attempt to highlight strengths and weaknesses in curriculum. Unfortunately, not all teachers in every department have been involved in the program that was implemented at the middle schools (grades 6-8). The program was finally scrapped after cost became too much for the district to pay. As a result of the CALI initiative and district-wide needs assessment, it is apparent that the need for specialized software for reading instruction is important.

Technology Integration

The integration of technology into classroom instruction for both entire group and small group learning activities has been increasingly successful over the past eight years. However, technology as an assured experience is lacking at nearly all grade levels. In order to meet the needs of all students with respect to technology proficiency and to improve instruction, there must be more clearly defined expectations of teachers' technology use.

Student Technology Use

Many students use technology to enhance their presentations, communications, problem-solving skills, research efforts, and other aspects of their learning. However, not all students are required to use technology and thus there are potential gaps in technology experiences that students could fall through.

Professional Development

Assessing Technology PD for Teachers, Administrators, and Non-Certified Staff

Surveys are conducted after each training session and require participants to indicate what additional training and support they require. Although administration and non-certified staff are included in some training and their input is acquired through the surveys, there has been no formal attempt to collect this data.

Technology Professional Development for Teachers

The most successful aspect of educational technology improvement over the past eight years has been the professional development offerings to teachers. Although workshops were organized prior to 2002, attendance was low and a focus for the workshops was based primarily on teacher interest and presenter comfort level. Training now includes technology training for every teacher (3-6 hours per year), online training, follow up support, and additional workshops based on district-wide initiatives.

Teacher Assessment

Currently, there is no established formula for assessing teacher use or integration of technology except as part of the online training program that required teachers to self assess their integration and turn in both the assessment and the product. Unfortunately, as a result of budget reduction, we were forced to cancel our subscription to HowToMaster.com. Although a performance product has been required in some educational technology workshops, it is not part of every PD experience. In the future, we must make a concerted effort to require a performance product (either an integrated lesson with technology or a final product developed that will be used to enhance instruction or classroom management) from each participant. Unfortunately, fiscal constraints have seriously reduced the number of technology workshops provided by the district.

Equitable Use of Technology

Availability of Technology

Most of the buildings in the district have similar equipment with respect to computers and other technology-related devices. However, several buildings have more PCs and newer computers as a result of building projects. Although all schools require additional hardware in order to replace failing, outdated technology, there is only one building in serious need of immediate attention. Keigwin School, the district's grade six school, is suffering from a severe imbalance of equipment needs versus technology initiatives.

Available Time for Technology Use

With only one computer in most classrooms, there is certainly room for improving the amount of time students and teachers have during the school day to access technology. Laptop carts have been distributed to some schools in an effort to improve student access during the day, but have met with only limited success in areas where a single teacher uses them on a regular basis.

Assistive Technology

Several areas of assistive technology have been implemented throughout the district. Kurzweil Education System's Assistive Technology writing program is being used in some elementary classrooms to assist special education students with writing. Pencil Pete and other assistive software packages have been purchased for students and are installed on district computers. Equipment has been provided to one student at the middle school who, as a result of a physical ailment, is unable to compose using standard pen or pencil. We must investigate further assistive technologies, such as alpha-smart units, to assist our students with disabilities.

The following matrix illustrates the extent technology is available to staff

	Availability of staff access both on and off campus.
Administrators	All administrators have access to a high speed Internet connected computer in their office as well as at home. All administrators have mobile laptops that they can use both at school and at home.
Teachers (pre-school)	All pre-schools have access to a high speed Internet connected computer in their classroom. All preschool classes have at least a PC or Macintosh computer for learning games.
Teachers	All teachers have access to a high speed Internet (T1 Lines) connected computer in their classroom. Many teachers also have access to a new computer and high speed Internet access at home.
Non-certified staff	All non-certified staff has access to a high speed Internet connection in school, although they may not individually have access to their own personal workstation.

The following matrix illustrates the extent technology is available to students.

	Availability in classrooms, the library-media center and all other areas where students have access.
Students (pre-school)	Pre-school students have access to at least 1 computer with high speed Internet connection in the classroom.
Students (elementary)	Elementary students have 1-3 computers in the classroom, primarily used for learning activities and centers. At least one high speed Internet-connected machines is available in each elementary classroom. There is also one computer lab in each elementary school.
Students (middle school)	The middle school is dominated by computer lab access in a larger setting with a single Internet connected PC in the classroom. However, some classrooms have a mini-lab setup and even have complete labs (such as the business and tech ed rooms).
Students (high school)	The high school is likewise dominated by computer lab access in a larger setting, with at least two Internet connected PCs in the classroom. However, some classrooms have a mini-lab setup and even have complete labs (such as the business and tech ed rooms).
Students (with disabilities)	Students with disabilities have been provided assistive technologies and several students have been provided with laptops or alphasmarts in an effort to satisfy their learning needs (and 504 plans). Special software, such as the Kurzweil writing program, has been integrated in some special education classes.

Infrastructure and Telecommunication

Current Status – Network, Internet, and Telecommunications

Our current Network design is based on Star Network Topology. At our central hub site (Woodrow Wilson Middle School) we have a DS3 line and all the individual schools are connected to the central location thru T1 connections. Due to high number of students and PC usage the following schools are connected to the central hub with multiple T1 connections: Middletown High School & Keigwin Middle School. Macdonough School is connected with multiple T1 connections as our District Domain Controller and as well as our Web Servers are located in this School.

Our District uses CEN connection at central hub site for Internet Access and most of the Internet filtering is done using the filters that are provided by CEN. Since the network is based on Star Topology all the other Schools are connected to internet thru the CEN.

Middletown uses CentralLink for Telecommunications, which allows users to connect to other users by dialing just 3 digits.

Effectiveness – Network, Internet, and Telecommunications

The Network configuration has already gone through four major changes, with each change resulting in increased performance for staff and students in Middletown. Since the Educational Technology Department began in late summer of 2003, we have moved from a Frame Relay configuration to a point-to-point T1 figuration to a central multiplexed DS3 configuration. Future plans/considerations:
- In the summer of 2009-10, we are planning to request an additional bandwidth from CEN.
- As part of our network upgrade in the winter of 2009-10, at each School we are planning to add a Comcast High Speed Internet Connection, which will provide a redundant source for internet connection.
- Macdonough School LAN will be upgraded and redesigned to meet current District standards.
- Although our goal was to phase in the Wide Area Network and connect all schools with Fiber by July 2009 (see previous technology plan), the funding and commitment is now in place for this project and the plan will allow us to connect all schools starting July 1, 2009.

In terms of telecommunications, for the first time in Middletown School District history, we are going to upgrade the telecommunications systems at Macdonough Elementary School to VOIP phone system as a test case and in future we are going to upgrade the whole District to VOIP based Telecommunications systems.

E-rate – Current Status

Middletown has used E-rate funding to support upgrades to its Wide Area Network (WAN), to acquire servers for one of its schools, and to supplement web site hosting costs.

Middletown has had a 54-55% discount over the past three years. Middletown used the funds it received back for Internet and Telecommunications to fund the network upgrades listed above under Effectiveness. Because of E-rate, the funds earmarked for phone service in the Board of Education budget have changed very little, yet the network services have improved. We will continue to use the strategy to fund our network over the next three years.

Three years ago, Middletown used Internal Connections E-rate funding to purchase 5 servers for one of its schools. These servers included an exchange/email server, a web server, a domain controller, and 2 other administrative servers. Because of the 93% discount level for this school, the Board of Education was responsible for only 7% of the cost of these servers. We have repeated this strategy for 2009-10 and hope to replace this first batch of servers. Without E-rate funding, this would not be possible. The servers we will replace are now eligible to be used at other schools and will be 4 years older than the servers they replace.

Beginning last year, Middletown applied for website hosting funds from E-rate to support an upgrade to a newer version of webpage-building software. We receive the same 54-55% discount for web site hosting costs. Since we are now receiving this discount, we can afford to move to the latest version of the software. We are paying the same amount out of our Board of Education budget for our website, but we now are able to pay for the optimized software package with the extra funds. We will continue this strategy for the next two years and will re-examine our status in the second year to plan for the third year of this Technology Plan.

Hardware – Current Status

When the Educational Technology Department was founded in late summer of 2002, Middletown had an aging PC and server fleet. Board of Education funding was not sufficient to deal with these large scale problems. Budget limitations only allowed us to fix and replace broken PCs. Over the past 3 ½ years, we have used a number of strategies and funding sources to deal with this problem:

- Leasing PCs: We entered into a 3 year lease of 103 PCs in August of 2007. This lease was used to replace many of the labs in our schools.
- Perkins Grant: Perkins funds were used to build 3 new labs at Middletown High School
- Building Projects: Middletown High School was constructed in September 2009 and houses all new technology equipment including: computers, LCD projectors, document cameras, Mimios, Vbrick Video distribution, Tightrope information system, a video conferencing center, video studio, and state-of-the-art lecture hall.
- Used PCs: off-lease and used PCs and servers have been purchased since spring 2005 to replace the oldest PCs in the district. We are in serious need of replacing multiple servers and approximately 40% of our computers are at least 6-7 years old.

Administrative Needs

Current Status – Administrative Computing

Middletown utilizes a hybrid of commercial database products and internally designed databases using SQL server architecture in order to facilitate all types of data entry and reporting needs for both internal and external stakeholders. Administration uses these systems to track daily enrollment, attendance, discipline, student achievement & demographics.

State Reports – current overview – PSIS, Free and Reduced Lunch, SASIDs

State reports are facilitated via SQL programming that is customized to screen the entire database for both discrepancies and variables that are beyond reasonable tolerance for State reporting. These results are then sent weekly to all school administrators and secretaries so that any anomaly can be corrected prior to data being pulled for State reports, thus minimizing the time required to 'clean' the data. This practice also encourages careful data-entry. State reports are then generated district-wide into the appropriate record layout, and subgroup data is then verified manually by the respective department heads prior to state submission. This includes SPED, ELL, Talented & Gifted, DEAL, homeless, Outpaced and required PreK codes. After the departments verify the data, we proceed with batch submissions on the State site (i.e. PSIS, LasLinks, etc)

For SEDAC we now use IEPDirect, which facilitates all state reporting requirements. For ED166, we use an Access database that is disseminated to each school and tracked at Central Office. Each month ED166 data for that month is due, and we will run reports upon request. In June the databases are compiled and submitted to the State.

For Free/Reduced lunch, we now employ a new system from Horizon Communications. This database processes applications for Free/Reduced lunch and then automatically determines eligibility, based on certain criteria. This data is then synchronized with our Student Information System periodically throughout the year for State Reports, as well as transmitted to lunch terminals/Point-of-Sale equipment where students enter a PIN or use an ID card to buy food. Students who are Free/Reduced eligible have this credit automatically applied at the register.

In addition to the scheduled State reports, we also process enrollment every week with the State for registration, withdrawal and 'change' records between schools within our district. This ensures that our database is as synchronous as possible with the State data and helps keep our SASIDs current.

Additional Student tracking – current overview

This year, a new Student Achievement database went online for our certified staff. This system utilizes SQL servers and web servers in order to provide teachers and administrators with instant access to summative scores from both our local [district] assessments as well as state assessments, ranging from Kindergarten Skills checklists through 10th grade CAPT scores. This data follows the student from year-to-year, so that new teachers can access the system and generate reports from their rosters of not only current scores but also past scores for their students. Administrators have additional features in the system which includes the ability to filter by subgroups. We also have a robust Standards Based Report Card system for all 8 Elementary schools that's entirely web-based, and our secondary schools use the online grade book supplied with Rediker for report cards.

ED525 (Dropouts): this information has been tracked in Rediker since the 2004-05 school year and is reported annually to the State.

Lastly, we implemented a new Alert system called Honeywell Instant Alert that allows administrators and teachers to communicate quickly and efficiently with all parents or staff whenever the need arises. This synchronizes with our student information systems and is currently used for emergency announcements and general announcements (i.e. activities, etc).

Financial and Payroll – current overview

Middletown uses the City of Middletown's Admins program to generate Purchase Orders, to track Personnel, and to generate Payroll information. Local secretaries also input Staff attendance into the Admins program.

Staff CEU tracking – current overview

Middletown discontinued use of CEU EzTraxx and now uses ProTraxx to track teacher workshops, workshop participants, and Staff CEU totals. Each year teachers receive a 'transcript' of their CEU progress.

Certified Staff and Administrative Computing – current overview

All principals have access to both a desktop and laptop computer, and all teachers have at least one computer in their classrooms. All computers are networked for internal and external access. In addition, many classrooms are now equipped or being equipped with interactive whiteboards (Mimeos or SmartBoards) and our new High school is state of the art.

Tracking Student Test Scores – current overview

As mentioned above, all certified staff has access to a secured website database portal for student achievement data. This system allows certified staff to review "global reports" for trends across time between our schools, ranging from state data to internal testing data, and also allows for filtering and sorting by subgroups. Staff is also able to look-up an individual student's "achievement snapshot", which will display all scores for that student since entering Middletown across multiple years. Teachers also utilize this system to enter data for our district-wide assessments. Once this data is entered, a report is instantly made available that even calculates proficiency for them. In addition to this robust resource, a new system was deployed called the "Data Depot"…this system is a dynamic resource for our Data Teams, and includes a variety of templates, rubrics, forms, presentations, tutorials and videos.

Professional Development – current overview

Each building has an "ETS," an Educational Technology Specialist. This is a certified teacher who holds this additional stipend position to assist teachers with the use and integration of technology in the classroom. They also offer regular workshops that are open to anyone in the district after-school. The calendar of tech PD opportunities is readily accessible on our website, and staff can register online.

PLAN IMPLEMENTATION

LEA Technology Goals and Strategies

The LEA technology plan should be aligned to the State Plan and include the State Goals. The LEA may include any additional goals that apply to their technology plan.

Goal 1: Improve student academic achievement through the use of technology in elementary and secondary schools.

Goal 2: Ensure that all educators are proficient in the use and integration of technology and ongoing professional development activities are provided.

Goal 3: Ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations.

Goal 4: Ensure that K-12 resources are available for all students, regardless of race, ethnicity, income, geographical location, or disability, so they can become technologically literate by the end of eighth grade and achieve their academic potential.

Goal 5: Develop a continuous process of evaluation and accountability for the use of educational technology as: a teaching and learning tool, a measurement and analysis tool for student achievement, and a fiscal management tool.

Goal 6: Develop a schema of current and future financing requirements to support the LEA's Technology Plan.

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Goal 7: Develop a telecommunications services plan that will support both instructional needs and administrative requirements.

Goal 1: Improve student academic achievement through the use of technology in elementary and secondary schools.

Objective	Strategy	Accountability Measure	Timeline
All students will have the opportunity to *achieve academic success* as a result of the appropriate integration of technology	Students in the special education program will use different software that was purchased to meet their needs addressed in their IEPs. (Pencil Pete, Kurzweil, Lexia, Read Naturally & Symphony Math.)	Progress monitoring via built-in software assessments	2009-11
$$	More teachers will develop online classrooms (WebPages) using Finalsite in an effort to promote anytime, supported learning for all students.	Increased number of online classrooms that focus on extending/improving student learning	2009-12
	Electronic IEPs will be used to more efficiently assess and share data.	Usage statistics	2009-10
$	State of CT Interim Benchmark assessments will allow teachers to gather both formative and summative data instantly using these computer based assessments.	State of CT Benchmark assessment data	2009-12
	Continued use of BlackBoard online learning to assist in the academic growth of advanced learners	BB usage statistics	2009-10
$	Continued participation in VHS to supplement our curriculum for students seeking courses we do not offer	VHS attendance and grade reports	2009-11
$$$	SmartBoards and Mimeos will be used to provide students of varying learning styles the opportunity to succeed in classroom activities	SmartBoard and Mimeo usage as reported by ETSs	2009-11
Students will demonstrate proficiency with the *CT SDE Student Technology Competency Standards*	Checklists will be distributed to each teacher, outlining the Student Technology Competency Standards	Grade 8 Student Technology Competency Standards will be assessed and entered into a database	2009-11
	Students in grades 9-12 produce a variety of products using the advanced features of personal productivity software.	Completed Assignments	2009-11
	Grade 9-12 Students will use parenthetical documentation and create works cited lists in completing assignments in content areas.	Completed research products with appropriately cited sources	2009-11
	All grade 9 Students will review ethical behaviors section of LMC Orientation Guide & Checklist	Signed acceptance of district Acceptable Use Policy	2009-11
	Grade 9-12 Students will create products that demonstrate their ability to use a variety of information sources and formats; apply evaluative criteria in using print and electronic sources in completing assignments and use a variety of peripherals (e.g. graph links, digital camera, scanners, probes, SmartBoards, etc.)	Completed research products with appropriately cited sources.	2009-11

	All students in Grade 9 World History classes have orientation to library media center, school's network and electronic online resources.	Students complete a checklist verifying they have accessed their folder on the network, reviewed the MHS tech guideline, signed AUP and differentiated Internet search engine, selected and subscription resources.	2009-11
	All students in World History classes apply evaluative criteria in using electronic sources.	All students in World History classes complete an assignment demonstrating their ability to access, evaluate and select online sources to create products.	2009-2011
The Middletown Public Schools will provide **adequate technological resources** that are focused on improving student achievement **$**	Teachers will receive detailed CMT-like data on students through our own Student Achievement Database system	Roster & individual student reports readily available on our internal database system	2009-11
	Middle school and high school students will be involved in the use of the Geometer Sketchpad program on both laptops and regular computers. Students will learn about shapes and their characteristics.	Observation	2009-11
	All students, teachers, staff and administrators grades 6-12 have access to electronic subscription services at school through school web pages and outside school with remote access codes.	N/A	2009-11
$$	Shared network drives are available to all students grades 6-12 – allowing students to save and edit their work more efficiently (teachers have access to these drives in order to electronically assess student work)	Shared network drives on the servers	2009-11
$	Teacher websites will provide support for academic initiatives by providing 24/7 access to classroom materials, resources, and procedures.	Site statistics and examination of web content	2009-11
Middletown Public Schools will encourage the development and utilization of **innovative strategies for the delivery of specialized instruction** through the use of technology	BlackBoard courses will promote learning outside of the scope of a traditional classroom and prepare students to be lifelong learners.	The number and focus of BB courses	2009-11
	Online classrooms (teachers' WebPages) will continue to provide anywhere/anytime differentiated instructional support for students.	An increase in teacher websites and materials posted online.	2009-11
$$$ 6-12k/yr	Virtual High School (VHS) courses will promote student skills in online learning and provide courses and scheduling flexibility that would not be available at MHS.	VHS participation and grade reports	2009-11
$$ (more LCDs)	(K-8) Art assessment will be available online	Art website	2009-11
	MHS students will have access to streaming media using our new V-Brick system	Usage statistics	2009-12
$$	High School students at will be engaged in Technology Team as part of their A+ class participation grade. These student will be used to work on computer at MHS and Keigwin and 2 of the best students will be hired each year to work after school (work study).	Tech Team Participation	2009-12

Goal 2: Ensure that quality teachers, staff, and administrators are involved in Connecticut educational institutions and that they are proficient in the use and integration of technology through professional development activities.

Objective	Strategy	Accountability Measure	Timeline
Incentives will be provided for all teachers, non-instructional staff, principals, and administrators.	Technology will be used as the primary form of communication, curriculum development, and evaluation throughout the district.	Paper distribution of documents will no longer be provided.	2009-12
	School newsletters are distributed electronically via email and on the school's webpage and via eNotify (no longer distributed in paper format).	All schools produce electronic newsletters	2009-12
	Curriculum will be developed using MS Word "Lesson Plans.	Examination of the less plans	2009-12
$	GradeQuick will continue to be used at the middle and high school as the primary form of assessment date collection.	All teachers will use GQ	2009-12
Research-based PD will be provided for all teachers as well as non-instructional staff, principals, and administrators.	Custodial Staff use of email – training provided	Participation (survey) data from PD sessions.	2009-10
$ (Teacher/trainer pay)	At least one professional development activity will be provided for all teachers during district-sanctioned professional development days. (This will satisfy the district's responsibility for providing 1.5 CEUs in technology to every teacher.)	Participation (survey) data from PD sessions.	2009-12
$$ (up to 10k)	HowToMaster online training is available for all employees throughout the district, further augmenting the educational technology professional development options provided for teachers.	Participation data from HowToMaster software; Printed certificates from the online system	2009-12
	Specialized training will be provided, such as Mimio software training for all teachers as well as IEP direct.	Participation (survey) data from PD sessions.	2009-12
Middletown Public Schools will **meet the technology literacy needs of staff** by examining the needs assessment and providing workshops based on the assessment results.	A needs assessment will be conducted to benchmark teachers technology literacy. ACES will be leveraged to support PD initiatives.	Needs Assessment report will be written by the Student Data Manager	2009-10
	Workshops will be developed and deployed based on the results of the needs assessment.	Online workshop catalog will be developed by the Educational Technology Department.	2009-11
	HowToMaster online learning will be provided for staff in an effort to differentiate instruction and improve technology literacy.	Increased enrollment and completion of HowToMaster online learning.	2009-12
	Workshops will be offered during district-sanctioned PD days in an effort to provide staff with technology instruction that they require.	Inclusion of tech workshops during PD days.	2009-12
Student Achievement will be incorporated into **all Ed. Tech. professional development opportunities** for teachers.	Students will be assessed with their technology proficiency.	Student assessment data from Simple Assessment	2009-10

	Educational Technology courses will be offered at grades 6-8 to focus on student technology proficiency.	Simple Assessment results	2009-12
$$$ (up to 100k)	Teachers will be trained to use the Classroom Performance Systems (clickers) to acquire immediate formative and summative assessment data.	CPS Data	2009-12

Goal 3: Ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations.

Objective	Strategy	Accountability Measure	Timeline
All facilities meet minimum standards of technology infrastructure and provide connectivity to the Connecticut Education Network (CEN) **$**	Continue to utilize DS3 connection to WMS with T1 connections to other 10 schools. Continue with multiple connections to MHS, Keigwin, and Macdonough schools.	Circuits up, provide reliable (99% up) connections to Internet and other schools.	2009-10
$$$	Upgrade WAN backbone to Gigabit from Infrastructure Grant	Check to make sure the speed between each school is upgraded to Gigabit from 1.54Mbps – perform a speed test.	2009-12
$$	Upgrade all closets (MDFs) and switch infrastructure at each School with funds from Infrastructure Grant to gigabit switches	Ed Tech Dept produces cost comparisons, advantages/disadvantages of strategies for upgrading speed to the desktop	2009-10
$$	Middletown implements speed upgrade to the desktop level if this is determined feasible during 2009-10 examination	Dependent on examination, would be implementation of upgrade	2009-10
	Maintain connection to CEN	CEN provides internet access	2009-12
	Request additional Bandwidth at Central Hub location (WMS)	Internet speed at all schools would increase at the desktop level	2010-11
$$	Complete upgrade of Macdonough School Network with new switches, WAP and routers.	All equipment & infrastructure is more than 10 year old. Would see significant increase in user & staff efficiency.	2009-10
$	Upgrade existing servers at Macdonough Elementary School.	New servers acquired through E-rate installed in Winter 2009-10	2009-10
The educational technology department will ensure *continued maintenance and support* of existing infrastructure and end user technology **$**	Replace oldest switches at schools as repair is needed and add switches where schools have run out of room on panels.	Oldest/slowest switches are replaced; additional switches are added at schools that are past current capacity.	2009-12
	Continue to send Network Manager, Data Manager, and Technicians to training / Professional Development related to hardware and software support / configuration.	Ed Tech staff continues to attend training.	2009-12
$	Enter into new PC lease 100 PCs) to replace the PC labs that were outfitted in August 2005 lease, move current lab PCs out into the classrooms. Rollout in summer 2009.	All PCs from original lease replaced, original lease PCs moved to classrooms.	2010-12
$$$ - 55k	Reinstate a technician – return level of technician staffing to 3 for district	New technician hired.	2010-11

$$	Review district's copier agreements, models. Move toward consistency and centralized management.	New copier agreements managed and negotiated by Central Office.	2009-12
	Phone services: review current CentralLink phone service during 2009-10 to see if it meets the needs of Middletown Staff.	Current phone service reviewed during 2008-09 by Technology Committee and school reps. Investigate costs of voice over IP. New	2009-10
$$	Upgrade phone system at Macdonough School to VOIP based phones if Erate funding is approved	Make sure the new system meets needs of staff and improve efficiency	2009-12
	Web hosting: continue in 3 year agreement with Final Site – began contract in 2005-06, will continue through 2007-08. During 2008-09, review status and decide upon plans for 09-10	Continue to use FinalSite as website host, re-evaluate in 2011-12.	2009-12
$$$ - 62k	Administrative Assistant – As a result of the every increasing demands of the technology department, the Director of Technology is in dire need of an administrative assistant. This person would save the department time and money and would improve service.	New Admin Assistant hired.	2010-11

Goal 4: Ensure that all K-12 resources are available for all students, regardless of race, ethnicity, income, geographical location, or disability, so they can become technologically literate by the end of eighth grade and achieve their academic potential.

Objective	Strategy	Accountability Measure	Timeline
Students **with special needs will have those needs addressed** through technology. **$$$ (sped funds?)**	Special needs students in grades 9-12 have access to audio books and cassette players.	Usage statistics	2009-12
$$$	Specialized software will be included in the instruction of all special needs students (as needed).	Software audit	2009-12
$$$	Online IEPs will give teachers, counselors, and administration the information they need in a more timely fashion. (IEP Direct)	Data audit	2009-12
	Data driven instruction will provide focused support for special needs students. Specifically, the ongoing development of the Student Data Portal (link 19) will provide invaluable data on student achievement.	Data reporting	2009-12
	Personal and laptop computer usage provided when required.	Usage statistics	2009-12
	Communication assistive devices (button devices, etc.) will be provided on a needs basis.	Usage statistics	2009-12
	FM Field audio systems will be used for hearing impaired students.		2009-12
$$$ - SB/LCD	Mimios and Online classrooms will be used to augment instruction and provide a scaffold support structure for all students, with particular attention paid to special needs students through differentiated instructional practices.	Observation	2009-12
Innovative practices will support equity. **$$$**	Virtual High School will provide courses for students who would not have had such opportunities at MHS.	VHS participation data	2009-12
$ (BP funds)	Building project funds will be used to outfit schools with computer equipment as each building comes up for renovation.	Building project financial reports	2009-12
$$$	The infusion of laptops and NComputing labs at schools will decrease the student-to-computer ratio without impacting the physical building constraints and maximizing funding sources.	Observation	2009-12
All **students will become technologically literate by the end of eighth grade** and all students will maintain or increase their technology literacy and achieve their academic potential **$$$**	Simple Assessment will replace the ePortfolio as the primary means by which 8th grade students are evaluated with respect to technology proficiency.	Assessment data	2009-12

$$$ - 160k	Hire 4 technology integration specialists/Library Media Specialists to work with teachers to develop technology rich lessons and integrate the lessons into the curriculum.	Staffing records	2010-12
	Grades 6-8 students will participate in Educational Technology coursework, including Keyboarding and all other Information Literacy and Technology Standards as outlined by the CT SDE.	Program continuation	2009-12
Ensure *equal access* to all students, teachers, staff and administrators.	All students, teachers, staff and administrators grades 6-12 have access to electronic subscription services at school through school web pages and outside school with remote access codes.	Usage statistics	2009-12
$$$	Increase the availability of after-school computer use to ensure that students without Internet access at home can benefit from the resources they are currently unable to use.	After school program analysis	2009-12
$$$ (lease)	More computers will be acquired and old machines replaced in order to provide equitable access to students throughout the district.	Inventory	2009-12
$$	More Interactive classrooms will be developed, including Classroom Performance Systems, Mimios, LCD Projectors, and Document Cameras.	Purchasing data/IT Project list	2009-12
$$	The purchase of NComputing (Virtualization) will be implemented to ensure higher-end computers are accessible to students and that the workload for technicians is reduced.	Purchasing data/IT Project list	2009-12
$$	Special efforts will be made to provide enhanced technology access to those schools that have a higher than district average FRN.	IT Project list	2009-12

Goal 5: Develop a continuous process of evaluation and accountability for the use of educational technology as: a teaching and learning tool, a measurement and analysis tool for student achievement, and a fiscal management tool.

Objective	Strategy	Accountability Measure	Timeline
The educational technology *plan will be evaluated* and updated on a yearly basis	Monthly progress will be discussed at Technology Committee Meetings	Each member of the committee will be responsible for providing input and implementing proposed changes to the plan during scheduled monthly meetings	2009-11
$$ (teacher stipends - $2500/yr)	Yearly update meetings will be held over the summer to amend the plan as required	Plan updates will be published yearly as a result of the technology committee review	2009-11
Students will have access to take *online tests and quizzes*	The new CT Benchmark system will be utilized for interim assessments of reading and math in grades 3 through 8 each Fall, Winter and Spring	CT Benchmark reports	2009-11
	Online tests in BlackBoard (Grades 6, 9-12) will prepare students for an online high stakes test.	Online test data	2009-12
	Students will take online assessments through the VHS (BlackBoard) courses	VHS course enrollment	2009-12
Teachers will be able to use *CMT/CAPT and classroom assessment data to improve instruction*	Using our Student Achievement Database teachers will be able to generate a variety of reports for their rosters that include CMT, CAPT and local summative assessment scores.	Usage statistics, data team minutes	2009-11
	Gradequick (6-12) – provides progress reports for students and parents monthly	Progress report data	2009-12
Middletown Public Schools will develop more effective ways to deliver electronic data to the CT SDE **$**	Elementary online report cards – continue to offer Electronic Report Cards online to all K-5 staff, modify database based on user requests/suggestions	Report cards utilized by all K-5 staff	2009-12
	PSIS info – Database Manager continues to manage Rediker databases to meet expanding needs of State Reporting including PSIS, integration of PCI, Register/Unregister of students. Tech Facilitator provides tools (Access databases, SQL database modifications) to assist Central Office Staff in delivery of data to State Dept of Education.	Database Manager responds to needs of State Dept, modifies Rediker database as needed and provides development tools for staff.	2009-12
Middletown Public Schools will implement technology initiatives to *improve student achievement*	CT Benchmark assessments, local DRP, DRA, DAW, HM Benchmarks and Kindergarten Skills checklist assessments will continue to be administered and data entered into our system	Data entry on our student achievement database system	2009-12
Middletown Public Schools Administrative Staff will use technology to manage Finances and Personnel	Business Office Staff and school secretaries will continue to use the Admins software for Purchase Orders, Payroll, and Attendance	Staff use Admins for financial and personnel functions	2009-12
	Modifications will be made in Admins program that will allow local schools to handle their own bill-paying. In current program, local schools must notify the Business Office when Purchase Orders can be paid. BO then pays bills.	Local schools pay own bills through Admins program.	2009-12

	ProTraxx will continue to be utilized by Personnel Department. to enter and track CEUs for staff	CEU transcript reports	2009-12
	Central office and school administration will continue to use our new online application system: AppliTrak, to review applicants that apply for our openings.	Usage statistics	2009-12
	Central office and school administration will continue to use our new communications tool, Honeywell Instant Alert, to instantly contact staff and parents with general and urgent announcements.	Usage statistics	2009-11

Goal 6: Develop a schema of current and future financing requirements to support the LEA's Technology Plan.

Objective	Strategy	Accountability Measure	Timeline
Current and future funding requirements are required to support plan implementation.	See budget summary spreadsheets (Appendix H).		2009-12
Policies and procedures will be developed related to maintenance of hardware, software, infrastructure and security	The Internet Acceptable Use Policy (AUP) has been Revised and will no longer require parental signature nor will it allow for a parent to deny their child Internet access while at school.	Revised policy	2009-12
	Create official board policy for hardware purchases – all purchases reviewed by Ed Tech department.	Revised policy	2009-12
	Continue current procedure for maintenance support: work orders submitted to helpdesk@mps1.org, techs scheduled at buildings each week based on the number of PCs/users at each building. Special Projects will also be scheduled on an as-needed basis.	Maintain current procedure	2009-12
Current and future *funding requirements* are required in order to *keep the technology updated*	See budget details in Annual Budget Summaries.		2009-12

Goal 7: Develop a telecommunications services plan that will support both instructional needs and administrative requirements.

Items that need to be addressed to qualify for participation in E-Rate Program:

- o *Clear goals and a realistic strategy for using telecommunications and information technology to improve education or library services;*
- See goal 1,
  - o *A professional development strategy to ensure that staff know how to use these new technologies to improve education or library services;*
- Professional Development: see items listed under goal 2.
  - o *An assessment of the telecommunications services, hardware, software and other services that will be needed to improve education or library services;*
- Telecommunications: see Goal 3. District Tech Committee will review current phone service during 2009-10 and make decisions as to changes for 10-12. Based on the Tech Committee assessment, we are going to upgrade Macdonough School phone system to VOIP based system; this would be a test case for VOIP solution. Later on based on cost/benefit/efficiency factors VOIP based phones would replace the old traditional phone system.
- Hardware: see goal 3. In preparing the budget for 2009-10, the computers, servers, switches, and routers in the district were reviewed. Budget requests were made based on needs and age of equipment. As a result, recommendations were made by the Educational Technology Dept to replace at least 4 servers and 100 PCs. As of 3/31/2009, those PC replacements (through the lease mentioned above) will not be made due to budget cuts. It is yet to be seen as to how many servers will be purchased with the 2009-10 funds, as Budget reviews are not yet complete. As has happened for the past 3 years, those needs will be pushed to the following year's (2009-10) budget requests pending approval. Macdonough Elementary school has applied for 2 servers through USF funds. If funded by Schools and Libraries, the approximately 7% that is to be covered by the district will be taken out of the Educational Technology budget. For info on USF server request, see under Goal 3 and Budget Summary.
- Software and other services: district will continue to use Final Site for web hosting services. This company hosts the Middletown Public Schools' website and is partially funded with USF funds. See Goal 3.
  - o *A sufficient budget to acquire and support the non-discounted elements of the plan: the hardware, software, professional development, and other services that will be needed to implement the strategy; and*
- As of this writing, March 2009, the Educational Technology budget for 2009-10 is far off the amounts requested by the Educational Technology Director in its' initial budget submission. Yes, we will have the funds necessary to support Telecommunications, WAN circuits, and Internet access, but we will not be able to purchase a sufficient number of computers to maintain a healthy PC fleet. We will continue to purchase (off-lease) PCs to replace the slowest PCs and non-functioning PCs, but capital funds alone will not support PC replacements to even approach the 20-25% replacement level recommended by the State. The department will need to focus more on grants to replace the oldest of our PCs, although historically grant writing has been too time consuming and as a result of losing several competitive grants, the technology department must focus time and energy on simply keeping the equipment functioning.
  - o *An evaluation process that enables the school or library to monitor progress toward the specific goals (of the eligible entity) and make mid-course corrections in response to new developments and opportunities as they arise.*
- See individual assessments listed in Goals 1-6 above. In addition, the Department and the Technology Plan Committee will review the Technology Plan yearly, make adjustments as needed, and evaluate progress.

(As you look at the above list, you will note that a number of these items should have already been addressed in Goals 1-6. If so, please reference your page numbers for those items. For those items not already discussed, please use the space below.)

Additionally, in broad terms using the table below describe where you are now and where you want to be in three years

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Objectives/Activities/Strategies	Monitoring and Evaluation Procedure
2009-10 **Telecom:** currently utilizing CentralLink phone service for all district buildings. Will continue to use this technology for 2009-10. Based on the results of using VOIP at Macdonough School, we will possible implement the same at other locations based on funding availability and infrastructure grants. **Network/Circuits:** currently utilizing DS3 connection to WMS with at least one T1 to each school. Already looked into fiber connections to all schools, other possibilities include T3s, Fractional T3s, increasing the number of T1 lines, and DS3. Will evaluate cost. **Internal Connections:** Purchase 2 servers for Macdonough Elementary School through USF funding. Pay balance out of BOE 546 Computer Equipment funds. Utilize current Macdonough servers in other district locations. Hardwire computer lab at Macdonough and run fiber from new IDF in computer lab to MDF. Add cat5e runs to new IDF from classrooms on 2nd floor. Explore possibility of adding additional cat5e runs / network jacks in Macdonough classrooms to reduce prevalence of desktop switches.	**Telecom:** Tech committee opens dialogue with Telecom vendors during summer 2009-10, decide on possible changes by end of summer. Committee will coordinate with City to explore options. Tech Facilitator posts related USF 470 for 2009-10. **Network/Circuits:** Tech committee opens dialogue with Telecom vendors during summer 2009-10, decide on possible changes by end of summer. Committee will coordinate with City to explore options. Tech Facilitator posts related USF 470 for 2009-10. **Internal Connections:** 2 new servers will be installed and configured at Macdonough during 2009-10. Lab is wired, new IDF added, new cat5e runs installed. Tech Facilitator post 470 for additional cat5e runs at Macdonough school.
2010-2011 **Telecom:** Dependent on review of Macdonough School VOIP system in 2009-10. May experiment with IP telephony at one or more locations, may continue with CentralLink, may move to different telephone technology. **Network/Circuits:** Dependent funding by USF. May move to addition of T1s or change of network technology at one or more locations. **Internal Connections:** Pay for warranty service for 5 Macdonough servers. Install additional cat5e runs at Macdonough school.	**Telecom:** New contract for phones signed. **Network/Circuits:** New agreement for circuits signed. **Internal Connections:** Additional cat5e runs installed at Macdonough school. Tech facilitator post 470 for any additional circuit/internal connections needs for Macdonough school.
2011-2012 **Telecom:** Dependent on review in 010-11. Will continue status quo of 11-12. **Network/Circuits:** Dependent on review in 10-11. Will continue status quo of 11-12. **Internal Connections:** Pay for warranty service for 5 Macdonough servers. Install additional cat5e runs at Macdonough school if any additional needed.	**Telecom:** review current satisfaction with phone agreement / service. **Network/Circuits:** review current satisfaction with circuits agreement / service. **Internal Connections:** Additional cat5e runs installed at Macdonough school. Tech facilitator post 470 for any additional circuit/internal connections needs for Macdonough school.

Technology Funding Sources and Costs

2009-2010 Budget Summary

Acquired Technologies and Professional Development	Ed Tech Competitive / Title II-D	Ed Tech Formula / Title II-D	State Bon Funds	Capital	Line	Erate	NCLB /other than Title II-D	Other	Total
CentralLink phone service at 11 schools plus Central Office				$ 41,249.66	Facilities	$ 54,679.78			**$ 95,929.44**
Fiber optic Wide Area Network (Optiman)				$ 144,000.00	Facilities	$ 144,000.00			**$ 288,000.00**
Cellular Phone service				$ 1,246.68	Facilities	$ 1,246.68			**$ 2,493.35**
Macdonough Infrastructure Project				$ 17,142.30	Facilities	$ 154,280.70			**$ 171,423.00**
Finalsite Web Site Hosting (www.middletownschools.org)				$ 12,000.00	310	$ 10,670.40			**$ 22,980.40**
ACES Technical Support - Level 1/2				$ 10,700.00	310				**$ 11,010.00**
ACES PD Support				$ 7,233.00	310				**$ 7,543.00**
Specialized Technical Support - Technical Consultants for Higher-end Network problems				$ 13,000.00	310				**$ 13,310.00**
Deep Freeze software maintenance (protects PCs against unauthorized configuration changes)				$ 7,000.00	310				**$ 7,310.00**
Track It Support Fee				$ 2,900.00	310				**$ 3,210.00**
Arcserve Brightstor backup software maintenance				$ 7,000.00	310				**$ 7,310.00**
Lightspeed Virus/Spam protection and Internet filtering support package				$ 24,700.00	310				**$ 25,010.00**
Shavlic Net Protect / Operating System Windows Update / Patching Software maintenance/support				$ 7,700.00	310				**$ 8,010.00**
Rediker Software Support for Board of Ed account				$ 1,425.00	310				**$ 1,735.00**
Tools4Ever User Management Software (for creation of student and staff network user accounts)				$ 700.00	310				**$ 1,010.00**
Enchanted Learning				$ 75.00	310				**$ 385.00**
Undelete				$ 2,000.00	310				**$ 2,310.00**
Dell Server Maintenance				$ 8,000.00	310				**$ 8,310.00**
HP Server Maintenance (Mac, WWMS - Head end)				$ 5,000.00	310				**$ 5,310.00**
SQL Server Maintenance				$ 2,000.00	310				**$ 2,310.00**
How to Master online training				$ 6,500.00	310				**$ 6,810.00**
Student work-study program (A+)				$ -	310				**$ 310.00**

Description				Amount					Total
3rd year payment for lease of PC and monitor, includes 3 year warranty.				$ 27,346.00	330				$ 27,676.00
Travel				$ 9,800.00	332				$ 10,132.00
Printing				$ 675.00	360				$ 1,035.00
Copying				$ 6,000.00	361				$ 6,361.00
Upgrade district PC Operating Systems from Windows 2000 to Windows XP				$ 2,100.00	410				$ 2,510.00
Office 2003 (or newest version) upgrade licenses				$ 5,000.00	410				$ 5,410.00
New Educational Software and Updates of Existing for Compatibility with Windows XP				$ 12,900.00	410				$ 13,310.00
Paper, pens, binders, labels, etc.				$ 800.00	490				$ 1,290.00
Replacement parts for repair of old PCs, monitors, LCD projectors, network equipment				$ 25,000.00	542				$ 25,542.00
Infrastructure: labor and materials for network cable wiring per school to begin to eliminate desktop switches				$ 50,000.00	542				$ 50,542.00
Advanced Learning Center II (Projector, Mimio, Laptop)				$ 44,750.00	546				$ 45,296.00
CPS Data pads				$ 35,000.00	546				$ 35,546.00
Color, Networked Laser Printer				$ 4,000.00	546				$ 4,546.00
Wireless Access Points (POE)				$ 9,000.00	546				$ 9,546.00
LCD monitors to replace 20% of old CRT monitors				$ 10,500.00	546				$ 11,046.00
Ncomputing Virtual PCs				$ 21,750.00	546				$ 22,296.00

$ 964,113.00

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Technology Funding Sources and Costs

2010-2011 Budget Summary

Acquired Technologies and Professional Development	Ed Tech Competitive / Title II-D	Ed Tech Formula / Title II-D	State Bon Funds	Capital	Line	Erate	NCLB /other than Title II-D	Other	Total
CentralLink phone service at 11 schools plus Central Office				$ 41,249.66	Facilities	$ 54,679.78			$ 95,929.44
Fiber optic Wide Area Network (Optiman)				$ 144,000.00	Facilities	$ 144,000.00			$ 288,000.00
Cellular Phone service				$ 1,246.68	Facilities	$ 1,246.68			$ 2,493.35
Finalsite Web Site Hosting (www.middletownschools.org)				$ 12,000.00	310	$ 10,670.40			$ 22,980.40
ACES Technical Support - Level 1/2				$ 10,700.00	310				$ 11,010.00
ACES PD Support				$ 7,233.00	310				$ 7,543.00
Specialized Technical Support - Technical Consultants for Higher-end Network problems				$ 13,000.00	310				$ 13,310.00
Deep Freeze software maintenance (protects PCs against unauthorized configuration changes)				$ 7,000.00	310				$ 7,310.00
Track It Support Fee				$ 2,900.00	310				$ 3,210.00
Arcserve Brightstor backup software maintenance				$ 7,000.00	310				$ 7,310.00
Lightspeed Virus/Spam protection and Internet filtering support package				$ 24,700.00	310				$ 25,010.00
Shavlic Net Protect / Operating System Windows Update / Patching Software maintenance/support				$ 7,700.00	310				$ 8,010.00
Rediker Software Support for Board of Ed account				$ 1,425.00	310				$ 1,735.00
Tools4Ever User Management Software (for creation of student and staff network user accounts)				$ 700.00	310				$ 1,010.00
Enchanted Learning				$ 75.00	310				$ 385.00
Undelete				$ 2,000.00	310				$ 2,310.00
Dell Server Maintenance				$ 8,000.00	310				$ 8,310.00
HP Server Maintenance (Mac, WWMS - Head end)				$ 5,000.00	310				$ 5,310.00
SQL Server Maintenance				$ 2,000.00	310				$ 2,310.00
How to Master online training				$ 6,500.00	310				$ 6,810.00
Student work-study program (A+)				$ -	310				$ 310.00
3rd year payment for lease of PC and monitor, includes 3 year warranty.				$ 27,346.00	330				$ 27,676.00

35

Travel				$	9,800.00	332			$ 10,132.00
Printing				$	675.00	360			$ 1,035.00
Copying				$	6,000.00	361			$ 6,361.00
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CPS Data pads				$	35,000.00	546			$ 35,546.00
Color, Networked Laser Printer				$	4,000.00	546			$ 4,546.00
Wireless Access Points (POE)				$	9,000.00	546			$ 9,546.00
LCD monitors to replace 20% of old CRT monitors				$	10,500.00	546			$ 11,046.00
Ncomputing Virtual PCs				$	21,750.00	546			$ 22,296.00

$ 792,690.00

2011-2012 Budget Summary

Acquired Technologies and Professional Development	Ed Tech Competitive / Title II-D	Ed Tech Formula / Title II-D	State Bon Funds	Capital	Line	Erate	NCLB /other than Title II-D	Other	Total
CentralLink phone service at 11 schools plus Central Office				$ 41,249.66	Facilities	$ 54,679.78			**$ 95,929.44**
Fiber optic Wide Area Network (Optiman)				$ 144,000.00	Facilities	$ 144,000.00			**$ 288,000.00**
Cellular Phone service				$ 1,246.68	Facilities	$ 1,246.68			**$ 2,493.35**
Finalsite Web Site Hosting (www.middletownschools.org)				$ 12,000.00	310	$ 10,670.40			**$ 22,980.40**
ACES Technical Support - Level 1/2				$ 10,700.00	310				**$ 11,010.00**
ACES PD Support				$ 7,233.00	310				**$ 7,543.00**
Specialized Technical Support - Technical Consultants for Higher-end Network problems				$ 13,000.00	310				**$ 13,310.00**
Deep Freeze software maintenance (protects PCs against unauthorrized configuration changes)				$ 7,000.00	310				**$ 7,310.00**
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Description				Cost	Code				Total
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Advanced Learning Center II (Projector, Mimio, Laptop)				$ 44,750.00	546				$ 45,296.00
CPS Data pads				$ 70,000.00	546				$ 70,546.00
Color, Networked Laser Printer				$ 4,000.00	546				$ 4,546.00
Wireless Access Points (POE)				$ 9,000.00	546				$ 9,546.00
Ncomputing Virtual PCs				$ 21,750.00	546				$ 22,296.00

$814,234.00

CHILDREN'S INTERNET PROTECTION ACT (CIPA) CERTIFICATION

Schools and libraries that plan on receiving E-rate discounts on Internet access and/or internal connection services after July 1, 2002, need to be in compliance with the CIPA. CIPA compliance means that schools and libraries are filtering their Internet services and have implemented formal Internet safety policies (also frequently known as Acceptable Use Policies). Information on the CIPA requirements is located at http://e-ratecentral.com/CIPA/cipa_policy_primer.pdf

I, <u>Michael J. Frechette, Ph.D.,</u> certify that one of the following conditions (as indicated below) exists in
   Superintendent

<u>Middletown Public Schools</u>
        LEA

   X   My district/agency is e-rate compliant; or
        My district/agency is not e-rate compliant (check one additional box below):

	Every "applicable school*" has complied with the CIPA requirements in subpart 4 of Part D of Title II of the ESEA**.
	Not all "applicable schools*" have yet complied with the requirements in subpart 4 of Part D of Title II of the ESEA**. However, the LEA has received a one-year waiver from the U.S. Secretary of Education under section 2441(b)(2)(C) of the ESEA for those applicable schools not yet in compliance.
	The CIPA requirements in the ESEA do not apply because no funds made available under the program are being used to purchase computers to access the Internet, or to pay for direct costs associated with accessing the Internet, for elementary and secondary schools that do not receive e-rate services under the Communications Act of 1934, as amended.

*An applicable school is an elementary or secondary school that does *not* receive e-rate discounts and for which Ed Tech funds are used to purchase computers used to access the Internet or to pay the direct costs associated with accessing the Internet.

**http://www.ed.gov/legislation/ESEA02/pg37.html

                                                         9/28/2008

Michael J. Frechette, Ph.D., Superintendent   Signature   Date

APPENDICIES

Appendix A: Educational Technology Planning Resources

It is recommended that the following companion documents be utilized when developing local educational technology plans:

Educational Technology Planning	Site
CSDE Position Statement on Educational Technology	http://www.state.ct.us/sde/board/ed_technology.pdf
National Educational Technology Plan	http://www.nationaledtechplan.org/default.asp
CT Educational Technology BLOG	http://cteducationaltechnology.blogspot.com/
CT Administrator Technology Standards	http://www.state.ct.us/sde/dtl/technology/CATSv2.pdf
CT Teacher Technology Competencies	http://www.state.ct.us/sde/dtl/technology/CTTCt.pdf
CT PreK-12 Computer Technology Competency Standards for Students	http://www.state.ct.us/sde/dtl/technology/StudentCompv2.pdf
CT Education Network (CEN)	http://www.ct.gov/cen/site/default.asp
CT Commission for Educational Technology (CET)	http://www.ct.gov/ctedtech/site/default.asp?cenPNavCtr=|#30930
SETDA Toolkit contains resources for eLearning, 8th. Grade Technology Literacy Assessment and technology embedded curriculum development.	http://www.setda.org/Toolkit2004/evaluation_07_resources_readings.htm#assessment
CAPSS E-Learning Position Statement	http://www.capss.org/E-learningpositionpaper.doc
CAPSS Educational Technology Position Statement	http://www.capss.org/CAPSStechnologypositionstatement2.pdf
E-rate Central	http://e-ratecentral.com
A GUIDE FOR ASSESSING TECHNOLOGY	http://nces.ed.gov/pubs2003/2003313.pdf
A Critical Issue: Developing a School or District Technology Plan	http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te300.htm
Educational Technology Planning	http://www.tcet.unt.edu/tek-plan.htm
NCrtec; Leadership and Learning with Technology	http://www.ncrtec.org/pd/llwt/
Southwest Educational Development Laboratory	http://www.sedl.org/pubs/tec26/flash.html
Profiler; free online technology assessment tool and tutorial	http://profiler.hprtec.org/
enGauge; a framework for effective technology use and planning	http://www.ncrel.org/engauge/
ICT Literacy Skill maps	http://www.21stcenturyskills.org/index.php?option=com_content&task=view&id=31&Itemid=33
Interactive School Technology and Readiness Assessment	http://www.iste.org/inhouse/starchart/index.cfm?Section=STaRChart&CFID=1752780&CFTOKEN=91033516

Appendix B – Review Guide

Technology Plan Review Guide

Reviewer *B. Haeffner*   LEA *Middletown*

	Complete? (Y/N)	additional information required/comments
LEA Profile	Y	
Technology Committee	Y	committee should represent all stakeholders – community, parents and students
Needs Assessment	Y	
Goal 1	Y	
Goal 2	Y	
Goal 3	Y	
Goal 4	Y	
Goal 5	Y	
Goal 6	Y	
Goal 7	Y	
Goal 8		
Technology Funding Sources	Y	

I *Barbara Haeffner* verify that *Middletown* has successfully completed all of the requirements as stated in the

Signature of Reviewer   Name of LEA   *Public Schools*

technology plan template.   23
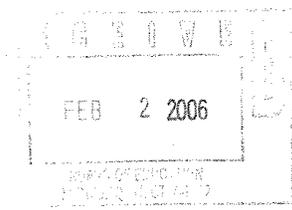
Appendix C – CT ITLC Letter

STATE OF CONNECTICUT
STATE BOARD OF EDUCATION

FEB 2 2006

To: Superintendents of Schools

From: Dr. Betty J. Sternberg
         Commissioner of Education

Date: January 27, 2006

Subject: Connecticut Information and Technology Literacy Curriculum Framework

Enclosed is the *Connecticut Information and Technology Literacy Curriculum Framework* adopted by the State Board of Education on January 11, 2006. It is a resource for educators in all settings.

The *Connecticut Information and Technology Literacy Framework* is aligned with national goals, standards and principles for student learning. The student performance standards for Grades 4, 8, and 12 provide additional guidance and specificity to assist local districts in developing a PreK-12 curriculum that will demonstrate the interrelated nature of information and technology skills and competencies across all PreK-12 curricular areas.

It is recommended that the concepts and skills in this framework be integrated into curriculum in all content areas. Many of the concepts and skills in this framework are directly aligned to the concepts and skills taught in the library media center. It is highly recommended that your library media specialist be the leader in the implementation of this framework.

The framework can be found at http://www.state.ct.us/sde/dtl/curriculum/currlibm.htm.

If you have additional questions, please contact:

> Arthur Skerker
> Educational Technology/Learning Resources Consultant
> 860-713-6553
> arthur.skerker@po.state.ct.us

BJS:ajs
Enclosure

cc: Elementary School Principals
       Middle School Principals
       High School Principals

Box 2219 • Hartford, Connecticut 06145
An Equal Opportunity Employer

Appendix D – CT ITLC Frameworks

http://www.state.ct.us/sde/dtl/curriculum/currlibm.htm

Appendix E – ISTE NETS for students

National Technology Foundation Standards for Students

1. Basic operations and concepts
   - Students demonstrate a sound understanding of the nature and operation of technology systems.
   - Students are proficient in the use of technology.

2. Social, ethical, and human issues
   - Students understand the ethical, cultural, and societal issues related to technology.
   - Students practice responsible use of technology systems, information, and software.
   - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

3. Technology productivity tools
   - Students use technology tools to enhance learning, increase productivity, and promote creativity.
   - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

4. Technology communications tools
   - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
   - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

5. Technology research tools
   - Students use technology to locate, evaluate, and collect information from a variety of sources.
   - Students use technology tools to process data and report results.
   - Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

6. Technology problem-solving and decision-making tools
   - Students use technology resources for solving problems and making informed decisions.
   - Students employ technology in the development of strategies for solving problems in the real world.

Appendix F – ISTE NETS for Administrators

National Educational Technology Standards and Performance Indicators for Administrators

I. **LEADERSHIP AND VISION.**
Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision. Educational leaders:
   A. facilitate the shared development by all stakeholders of a vision for technology use and widely communicate that vision.
   B. maintain an inclusive and cohesive process to develop, implement, and monitor a dynamic, long-range, and systemic technology plan to achieve the vision.
   C. foster and nurture a culture of responsible risk-taking and advocate policies promoting continuous innovation with technology.
   D. use data in making leadership decisions.
   E. advocate for research-based effective practices in use of technology.
   F. advocate on the state and national levels for policies, programs, and funding opportunities that support implementation of the district technology plan.

II. **LEARNING AND TEACHING.**
Educational leaders ensure that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching. Educational leaders:

   A. identify, use, evaluate, and promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.
   B. facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning.
   C. provide for learner-centered environments that use technology to meet the individual and diverse needs of learners.
   D. facilitate the use of technologies to support and enhance instructional methods that develop higher-level thinking, decision-making, and problem-solving skills.
   E. provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.

III. **PRODUCTIVITY AND PROFESSIONAL PRACTICE.**
Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others. Educational leaders:

   A. model the routine, intentional, and effective use of technology.
   B. employ technology for communication and collaboration among colleagues, staff, parents, students, and the larger community.
   C. create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity.
   D. engage in sustained, job-related professional learning using technology resources.
   E. maintain awareness of emerging technologies and their potential uses in education.
   F. use technology to advance organizational improvement.

IV.   **SUPPORT, MANAGEMENT, AND OPERATIONS.**
Educational leaders ensure the integration of technology to support productive systems for learning and administration. Educational leaders:

    A. develop, implement, and monitor policies and guidelines to ensure compatibility of technologies.
    B. implement and use integrated technology-based management and operations systems.
    C. allocate financial and human resources to ensure complete and sustained implementation of the technology plan.
    D. integrate strategic plans, technology plans, and other improvement plans and policies to align efforts and leverage resources.
    E. implement procedures to drive continuous improvement of technology systems and to support technology replacement cycles.

V.   **ASSESSMENT AND EVALUATION.**
Educational leaders use technology to plan and implement comprehensive systems of effective assessment and evaluation. Educational leaders:

    A. use multiple methods to assess and evaluate appropriate uses of technology resources for learning, communication, and productivity.
    B. use technology to collect and analyze data, interpret results, and communicate findings to improve instructional practice and student learning.
    C. assess staff knowledge, skills, and performance in using technology and use results to facilitate quality professional development and to inform personnel decisions.
    D. use technology to assess, evaluate, and manage administrative and operational systems.

VI.   **SOCIAL, LEGAL, AND ETHICAL ISSUES.**
Educational leaders understand the social, legal, and ethical issues related to technology and model responsible decision-making related to these issues. Educational leaders:

    A. ensure equity of access to technology resources that enable and empower all learners and educators.
    B. identify, communicate, model, and enforce social, legal, and ethical practices to promote responsible use of technology.
    C. promote and enforce privacy, security, and online safety related to the use of technology.
    D. promote and enforce environmentally safe and healthy practices in the use of technology.
    E. participate in the development of policies that clearly enforce copyright law and assign ownership of intellectual property developed with district resources.

Appendix G – NETS for Teachers

Building on the NETS for Students, the ISTE NETS for Teachers (NETS•T), which focus on pre-service teacher education, define the fundamental concepts, knowledge, skills, and attitudes for applying technology in educational settings. All candidates seeking certification or endorsements in teacher preparation should meet these educational technology standards. It is the responsibility of faculty across the university and at cooperating schools to provide opportunities for teacher candidates to meet these standards.

The six standards areas with performance indicators listed below are designed to be general enough to be customized to fit state, university, or district guidelines and yet specific enough to define the scope of the topic. Performance indicators for each standard provide specific outcomes to be measured when developing a set of assessment tools. The standards and the performance indicators also provide guidelines for teachers currently in the classroom.

I. **TECHNOLOGY OPERATIONS AND CONCEPTS.**
   Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:
   A. demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students)
   B. demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

II. **PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.**
   Teachers plan and design effective learning environments and experiences supported by technology. Teachers:

   A. design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
   B. apply current research on teaching and learning with technology when planning learning environments and experiences.
   C. identify and locate technology resources and evaluate them for accuracy and suitability.
   D. plan for the management of technology resources within the context of learning activities.
   E. plan strategies to manage student learning in a technology-enhanced environment.

III. **TEACHING, LEARNING, AND THE CURRICULUM.**
   Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning. Teachers:

   A. facilitate technology-enhanced experiences that address content standards and student technology standards.
   B. use technology to support learner-centered strategies that address the diverse needs of students.
   C. apply technology to develop students' higher order skills and creativity.
   D. manage student learning activities in a technology-enhanced environment.

IV. **ASSESSMENT AND EVALUATION.**
   Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

A. apply technology in assessing student learning of subject matter using a variety of assessment techniques.
B. use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
C. apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

V.   PRODUCTIVITY AND PROFESSIONAL PRACTICE.

Teachers use technology to enhance their productivity and professional practice. Teachers:

A. use technology resources to engage in ongoing professional development and lifelong learning.
B. continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
C. apply technology to increase productivity.
D. use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

VI.   SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES.

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice. Teachers:

A. model and teach legal and ethical practice related to technology use.
B. apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
C. identify and use technology resources that affirm diversity
D. promote safe and healthy use of technology resources.
E. facilitate equitable access to technology resources for all students.