

Technology Plan

New Lebanon Central School District

2008-2011

Introduction

The New Lebanon CSD Technology Committee developed a Technology Plan for the District in 1997. This plan served as a road map for technology integration in the school district and guided the development of the current infrastructure. It was the committee's decision at that time to revisit the plan and revise it every three years, due to the continual and rapid changes in technology. This current plan represents our vision, current assessment, and future goals for technology in the district, more specifically our goals for September 2008 – June 2011.

This revised plan focuses on using the technology already in place to its full potential to support our educational mission. It also ensures that we maintain, upgrade and protect the investment the district and community has already made.

Mission Statement

In partnership with the community, we are committed to providing educational experiences that nurture growth, cultivate interests, and develop talents to enable all students to become successful, responsible, life-long learners in a changing world.

Belief Statement

- Classroom instruction and information management can be strengthened through the effective use of technology.
- Skillful use of technology supports the development of process skills such as flexibility, adaptability, critical thinking, problem solving and collaboration, which are essential to success in our rapidly changing information age.
- Technology allows us to better serve the diverse learning styles of our students and provide more individualized instruction for a wider range of intelligence.
- The use of technology where appropriate will help us meet or exceed all New York State Learning Standards.
- Technology should be a tool used to increase student achievement.
- The appropriate integration of technology may necessitate a change in curriculum and instructional delivery.
- Students need to be able to use a wide variety of technological tools to enhance their future success as students and workers.

Vision

The New Lebanon Central School District's vision is to develop life-long learners who are confident in using technology in a variety of ways. More specifically the district believes that:

- Technology is a tool for education to support learners in solving problems, developing critical thinking skills, communicating ideas, and working collaboratively on multi-disciplinary projects.
- Professional development for educators is imperative if technology is to be effectively used in the teaching/learning process.
- Learning is a constructivist process where students create their own knowledge through active participation in complex, meaningful tasks.
- Recognizing the critical role our schools play in bringing our community together, the technology should serve the public, not just during school hours, but after hours. Our computer/technology labs should function as vital community centers, places for recreation, learning and gathering places for young people and adults alike. Our vision is that children, adults, families and the whole community will benefit as the school provides access to technology and provides a safe, friendly and enriching environment.

A Vision for Students

Our vision for New Lebanon Central School District students is:

- That they become self directed learners who set priorities, use appropriate technology to access information and reach goals, and evaluate and manage their own progress toward their goals.
- That they become complex thinkers who identify, analyze, integrate and apply information, utilize multiple frames of reference, and are able to solve complex problems.
- That they become cooperative workers who participate in collaborative problem solving, evaluate and manage their own behavior as a group member, and are connected to others through a world wide network.
- That they become effective communicators who use technology to navigate through information, communicate in a variety of situations, and apply information to problem solving.
- That they become innovative and quality producers who create original quality educational products and use appropriate up-to-date technology.

To achieve this vision, the district must adopt four agendas for reform. **Firstly**, the district's curriculum aligned with New York State Standards has been restructured to allow students to focus on carefully selected objectives, themes and concepts, which are reinforced through the integrated use of technology. **Secondly**, students are active learners in constructing their own knowledge and understanding. Such learning takes place through interaction and support of people and tools. **Thirdly**, students must be

challenged to demonstrate their newly constructed knowledge through inquiry-based projects, which require the application of skills from all curriculum areas. **Fourthly**, varied technologies shall be incorporated into the curriculum as tools to support the teaching and learning capabilities of students with different learning styles and educational needs.

Student Technology Learning Goals

The following broad goals reflect the desired outcomes of students graduating from the New Lebanon Junior/Senior High School. In order for students to successfully complete these goals, technology can no longer be viewed as an extra or spare time activity and will have to be integrated into each classroom beginning in the primary grades. Key categories for student goals presented in this document are communication, information processing, and productivity. A broad overview of K-12 goals is presented in each category.

Communication

- Students will use technology to communicate effectively and creatively.
- Students will communicate through application software by creating documents, spreadsheets and databases.
- Students will communicate visually, graphically and artistically using multimedia presentations. They will use a variety of technologies such as computers, projectors, scanners, copiers, digital cameras, video and audio equipment and other emerging technologies.
- Students will have the opportunity to communicate using video conferencing.

Information Processing

- Students will use technology to access, retrieve, interpret and evaluate visual and auditory information.
- Students will use search strategies to retrieve information.
- Students will use on-site electronic resources (encyclopedias, catalogs and hand held learning tools).
- Students will use the school's network to access information such as on-line databases, libraries and electronic bulletin boards.
- Students will learn to use telephones and the Internet to send and retrieve information.

Productivity

- Students will use technology and its applications to maximize productivity and skill development.
- Students will use technology to develop learning and workplace skills.
- Students will use technology to support the development of process skills in all content areas.
- Students will use technology to develop strategies for problem solving and critical and creative thinking.
- Students will create quality multi-media products.
- Students will develop creativity and innovation through the use of technology.

- Students will select and access technology appropriate to their needs.
- Students will use correct logging on and logging off procedures.
- Students will develop keyboarding skills.
- Students will operate peripheral devices.
- Students will use technology independently and cooperatively.
- Students will use technology safely and ethically.

K-4th Grade learning goals for Communications, Information Processing and Productivity

Students leaving 4th grade will meet the goals outlined below.

K-4th Grade Communications Learning Goals

- Create written documents using word processing skills, writing process steps and publishing programs.
- Use electronic spell checker/thesaurus.
- Create simple graphics.

K-4th Grade Information Processing Learning Goals

- Use search strategies such as keywords.
- Use electronic encyclopedias, Internet and library catalogs.
- Cite sources.

K-4th Grade Productivity Learning Goals

- Select and use technology appropriate to needs and use software for computer-assisted instruction.
- Use an expanded technology vocabulary.
- Demonstrate basic file and print management techniques.
- Use technology independently and cooperatively.
- Develop keyboarding skills at 8-10 wpm with hands on home row keys at least 80% of the time.
- Demonstrate respect for others' files/work.
- Sign and abide by user agreement.
- Take proper care of equipment and use it safely with attention to head, arm, hand, and feet position.

Grades 5 and 6 learning goals for Communications, Information Processing and Productivity

Students leaving 6th grade will meet the goals outlined below.

5th and 6th Grade Communication Learning Goals

- Use computer graphics programs.
- Produce a document using word processing incorporating both text and graphics and following the writing process steps.
- Communicate through spreadsheets by entering data, setting up formulas and creating graphs and charts to visually represent data.
- Collect, manipulate and interpret data.

- Use publishing software to produce page layouts.
- Create multimedia presentations which link various media including video and audio.

5th and 6th Grade Information Processing Learning Goals

- Back up any electronic work.
- Use proper media maintenance.
- Use search strategies such as keywords to search for information.
- Use electronic encyclopedias, almanacs, indexes, Internet and electronic library catalogs.
- Formally cite sources.
- Develop awareness of validity of resources.

5th and 6th Grade Productivity Learning Goals

- Use software to learn new concepts.
- Select and use technology appropriate to needs.
- Develop keyboarding skills at 10-16 wpm with correct body posture and fingering position on all keys using touch-typing at least 80% of the time.
- Operate peripheral devices.
- Use applications to create quality products.
- Develop creativity and innovation through the use of technology.
- Care for software and use it safely.
- Understand the basic capabilities and limitations of technology's hardware and software.
- Use technology vocabulary and knowledge.
- Use technology independently and cooperatively.
- Use preventative maintenance (troubleshooting) skills.

Grades 7 through 12 learning goals for Information Processing and Productivity

Students leaving the 12th grade will be able to complete all the previous technology learning goals and the following specific tasks:

- Follow fair use and copyright guidelines.
- Understand copyright laws and other ethical issues pertaining to the use of technology in society.
- Understand the social implications of technology in society.
- Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal lifelong learning and workplace needs.
- Make informed choices among technology systems, resources, and services.
- Analyze the advantages and disadvantages of wide spread use and reliance on technology in the workplace and in society as a whole.
- Demonstrate and advocate for legal and ethical behaviors among peers, family and community regarding the use of technology and information.
- Use technology tools and resources for managing and communicating personal/professional information (e.g. finances, schedules, addresses, purchases, correspondence).

- Evaluate technology-based options, including distance and distributed education, for lifelong learning.
- Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications and productivity.
- Select and apply technology tools for research, information analysis, problem solving and decision making in content learning.
- Investigate and apply expert systems, intelligent agents, and simulations in real world situations.
- Collaborate with peers, experts and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce and disseminate information, models and other creative works.

Administrative Technology Goals

Goal 1: Administration and Management

All administrative staff will have the capacity to use appropriate technology in order to acquire information and to coordinate the connecting and sharing of all educational resources among all district buildings and personnel, thereby improving administrative and management effectiveness.

Goal 2: Communication and Information Access

Up-to-date hardware and software will be acquired that will enable all faculty and staff, students, parents and community members to utilize the full dimension and benefits of the latest in communication and information access technology within the district.

Goal 3: Professional Development

Ongoing staff training will be provided to all faculty and staff so that technology can be used to emphasize, promote and enhance teaching competencies as well as improve administrative efficiencies.

Goal 4: Funding Resources

Funding mechanisms will be researched and produced that will allow for the acquisition, development, support and maintenance of current and future technologies.

Goal 5: Community Connections

A school-to-community link will be encouraged that will allow the entire community to benefit from the technology in the schools.

Software Selection and Use Guidelines

The selection and use of software and electronic media will seek to:

- Provide an exploratory environment that encourages risk taking, leading to an appreciation of life-long learning.
- Provide opportunities for problem solving and development of organizational skills.
- Develop and promote independence and appropriate social skills.
- Provide motivation and/or an alternative means of learning and processing information.

- Reduce the gap between those who have computers at home and those who do not have computers at home.
- Provide opportunities for cooperative learning.
- Promote respect and proper use of equipment.
- Provide the opportunity to learn and apply strategies using current methods and materials.
- Establish a positive outlet for students' inquisitive nature, capturing motivation and self-confidence at critical points of their development.

Technology Plan Implementation

The technology plan will continue to be implemented with integrated district-wide and site-based delivery priorities. The first priority has been to establish a basic core of technology common to all buildings and work sites and the second priority has been to generate site-based delivery options to allow each location to address the unique mix of students and staff at that building.

Basic Core of Technology:

The purpose of this component is to provide a basic computer and telecommunications network that allows for maximum communications, connecting rooms within the building, buildings within the district, as well as universal access to network resources throughout the state and the world. This component consists of the following items:

Equipment and Software Overview

- Every building is wired to the district's voice and data network standard thereby allowing for access to the network from any classroom and/or workstation in the district.
- Walter B. Howard Elementary School will have at least one computer in every classroom that is connected to the network, one mini-computer lab located in the library and a computer lab consisting of 22 PC's located adjacent to the library in room 23.
- The Jr./Sr. High School will have at least one computer in every classroom that is connected to the network, a mini lab in each science room, the technology room and the library. The Jr./Sr. High School will also have a 22-station business lab for scheduled classroom instruction on application software and a 24-station library lab for flexible and/or spontaneous instruction that is integrated with the core curriculum.

Training and Professional Development Strategy

New Lebanon Central School district will implement a variety of staff development strategies to insure that teachers have the knowledge to integrate technology into their classes.

1. School technology team members will continue to be trained in software to provide leadership and technical training.

2. Staff members will be provided with fifteen (15) hours of training in Introduction to Networked Systems and Using Basic Network Software.
3. School Library Media Specialists will serve as technology coordinators at each school. They will receive on-going training.
4. District will implement the train-the-trainer model in which selected staff will receive advanced training in various applications. They will then train other staff both formally and informally, in large and small group settings and one-on-one where necessary.
5. District will provide after school and summer workshops to teachers to integrate technology into their curriculum.
6. District will provide training to district staff for administration/management application software.
7. District will encourage attendance of teachers at technology related workshops and conferences.
8. District will provide Superintendent's Conference Day workshops for staff in the computer labs.
9. The District will post workshop materials on its Intranet to allow users access to workshop material for independent learning and for review purposes.

Current Technology Assessment/Goals 2008-2011

Table 8-1

School	Total Number of Computers in Rooms for Students	Total Number of Rooms	Total Number of Lab Computers	Total Number of Faculty and Administration Computers *	Total Number of Computers in Each Building
New Lebanon Jr./Sr. High School	59	30	67	15	141
Walter B. Howard Elementary School	60	17	32	9	101
Bus Garage				2	2

*The breakdown for administration PC's is as follows:

High School	Number of PC's
Main Office	3
Library Media Specialists and Circulation Desks	2
District and Business Office	4
Guidance Suite	4
Nurse	1
Dean of Students	1

Elementary School	Number of PC's
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Main Office	3
Library Media Specialists and Circulation Desks	2
CSE	2
Nurse	1
Chief Information Officer	1

Bus Garage	Number of PC's
Transportation	1 PC; 1 laptop

Table 9-1

Location	Goal	Current Status	Current Needs
New Lebanon Jr./Sr High School			
Business Lab	22 PC's (4 years old or less)	22 PC's 2007 models	None
18 Rooms (except science)	1 PC for each room (4 years old or less)	18 1-2 year old models	None
Library	6 research PC's (4 years old or less)	6 2006 models	None
Library Lab	24 instructional PC's (4 years old or less)	20 2005 models 4 2007 models	None
4 Science Labs	4 instructional PC's per room	21 2001 models 1 4-6 year old models	1 updated PC*
Technology Lab	16 instructional PC's	10 2005 models 6 2007 models	None
ISS	1 computer	1 computer	Printer
Walter B. Howard Elementary School			
Library-mini-computer lab	10 instructional PC's (4 years old or less)	10 2006 models	None
14 Regular Ed Rooms	3 PC's per room = 42	40 post 2000	Need 2-PC's
3 Special Ed Rooms	3 PC's per room = 9	4-2002 3-2007	Need 2-PC'S
Computer Lab	22 PC's (4 years old or less)	10 2000 models 12 2002 models	22 PC's
AIS	2 PC's	1 2000 1 2002	None
Speech	2 PC's	1 2000 1 2002	None
Occupational Therapy	1 PC	1 2002	None
Psychology	1 PC	1 2000	None
Early Intervention	1 PC	1 2006	None

Master spreadsheets will be developed each containing the District's inventory of PC's, servers, printers, and other peripheral equipment. These spreadsheets will be maintained regularly to forecast future hardware needs.

Additional Peripherals

Digital Cameras: 11

Camcorder: 1

Scanners: 5

Printers: 56

Multi-media Projectors: 19

Laptops: 4

Alpha Smarts: 7

Video conferencing system – rented from Questar

Pro Writers: 2

Smartboards: 11

Symposium: 1

Detailed inventories of district hardware and software are available upon request.

Assessment of Jr./Sr. High School Instructional Computers

Business Lab - 22 computers

Library – 6 computers

Library Lab – 24 Computers

Four science classrooms have mini computer labs containing:

- Guimarra 7-computers
- Garrigan 5-computers
- LaSalvia 5-computers
- Long 4-computers

Technology Lab Classroom has a mini lab of 16 computers.

Thirty Jr./Sr. High rooms have at least one network computer each.

Goals at JSHS:

- Each teacher should have at least one computer in his/her classroom for administrative and instructional use.
- Library/library lab should have 30 computers for flexible and spontaneous small and large group instruction emphasizing curriculum integration.
- Business lab should have 22 computers for classroom instruction in application programs such as Microsoft Office.
- Technology lab should have 16 computers equipped with Auto CAD for classroom instruction.
- Each science lab should have a minimum of four computers for integrating technology into the science curriculum as required by the N.Y.S. Math, Science and Technology Standards.
- The District will continue to research web-based applications for assessment and supplemental learning; examples include Vantage Learning and Online Thesaurus.
- Each classroom and workstation will be provided with one computer connected to the network. Each network computer will be equipped with Internet access, e-mail, word processing, network printer and student database applications as needed.

New computers will go into the business lab/libraries and the computers there will be moved into other areas on an as needed basis.

Assessment of W.B.H. Elementary School Instructional Computers

All regular education classrooms at WBH have mini-labs consisting of 2 to 3 network computers.

The library has a mini-computer lab of 10 computers.

The Computer Lab has a total of 22 computers.

Goals at WBH:

- Each regular ed. classroom K-6 should have 3 computers to support the integration of technology into classroom instruction.
- Other special education and special area teachers should have one computer for administrative and instructional use.
- The District will continue to research web-based applications for assessment and supplemental learning, examples include Vantage Learning and Online Thesaurus.
- To have an updated functioning learning lab with 22 PC's containing various computer skills development programs.
- Each classroom and workstation will be provided with at least three computers connected to the network. Each network computer will be equipped with Internet access, e-mail, word processing, network printer and student database applications as needed.

Assessment of Administrative Needs

We currently have 24 PC's used for administrative purposes. Computers will need to be replaced on an as needed basis to accommodate our increased reliance on E-School Data software and Clear Track to meet state requirements in the areas of attendance reporting and special education reporting.

Current Network Infrastructure Assessment

The network has been migrated from a Windows NT 4.0 network to Windows 2003. There are still four legacy servers with Windows NT 4.0, including the e-mail server, which will be phased out. Clients are running Windows XP, with a few Windows 2000 clients that are being replaced. Connectivity is achieved using a 1000 MB/s fiber optic backbone connected by 100 MB/s Cisco Catalyst switches. The Windows 2003 domain is named newlebanoncsd.org and is backwards compatible to the previous name, NLCSDCURR. It contains three global catalog servers, which also provide DHCP (Dynamic Host Configuration Protocol) automating the IP addressing for clients. These servers also provide DNS for internal name resolution, and route requests to NERIC for external name resolution. Four member servers allow additional storage for special projects, such as the yearbook, and allow capacity for disaster recovery. Applications are

split between buildings with the exception of E-mail and the Spectrum Library Catalog by Follett.

Goals for Network Infrastructure over the course of this three-year plan

- Complete the migration to Windows 2003 and retire remaining IBM servers.
- Utilize Active Directory to ease client management overhead.
- Migrate to a currently supported version of Microsoft Exchange mail server.
- Evaluate existing connectivity equipment and update as required for growth.
- Develop a disaster recovery/Data archive plan.

Software Assessment

All post 2000 computers are equipped with Windows 2000 or newer and Microsoft Office 2000.

All computers in the technology lab have Auto CAD software installed.

The library lab has C++ and Java.

Our special education software is presently web-based.

Our administrative software program is E-school Data. This is used for automated scheduling, attendance, health records, discipline records and report cards.

Our library catalog software is currently Spectrum by Follett.

To comply with the Children's Internet Protection Act (CIPA) the district has purchased filtering hardware and software.

The district will continue to upgrade its Norton Anti Virus software program.

Software Upgrade plans:

- Norton Anti Virus (ongoing updates)
- Windows 2000 to Windows XP
- E-School Data (ongoing updates)
- Microsoft Office 2000 (ongoing updates)
- Windows 2003 active directory (ongoing updates)
- Implement pinpoint for Spectrum to allow Internet access of our library catalogue.

Internet Safety/CIPA

In compliance with the Children's Internet Protection Act the district is in the process of acquiring and installing filtering software on all computers in the district that can access the Internet. This software will ensure that all visual depictions are blocked if they are obscene, child pornography or harmful to minors. All students using networked computers that access the Internet are required to read and sign and have a parent or guardian read and sign our acceptable use policy. If students are 18 years of age or older they are required to sign the A.U.P. but do not need a parent's or guardian's signature. A teacher or classroom aide also monitors students while they are on the Internet or accessing the District's network. Students may not use a computer connected to the Internet unless there is an adult present.

(A copy of the District's AUP is available upon request.)

Servers: Future Needs:

Our servers need to be upgraded every four to five years to accommodate expanding network use and to ensure that our network runs reliably and efficiently.

The district will continue to purchase battery backups for each server to prevent network down time and long term damage to servers caused by power outages.

A file back-up system will be included with the purchase of all new servers.

Wiring:

All classrooms and administrative areas are wired and connected to the network. There are no current wiring needs at this time and there are extra drops in each room to allow for future expansion.

Telecommunications:

The district contracts with Questar III through the Instructional Technology Coser to receive its Internet access and video conferencing capabilities/system.

NERIC is our Internet service provider. Fair Point Communications will host our web site, which is maintained by in-district staff.

Staffing/network support

- The district has contracted with Questar III for the services of a Network Systems Engineer to come to the district three days a week to maintain and troubleshoot our network and computer systems and to provide help desk support for users.
- Technology Coordinators serve on the technology committee, coordinates professional/staff development, maintains web page and works with teachers on technology integration in curriculum.
- The District's technology committee consists of administrators, teachers, library media specialists, technical support personnel and community members. The committee meets monthly to determine needs, policies and planning for technology needs of the district.

Evaluation:

The District's Technology Committee will evaluate and monitor the impact of technology on teaching and learning in the context of New York State Learning Standards to ensure that its investment in technology is maximized.

This evaluation process will address such issues as:

- The degree to which technology has been incorporated into the curriculum in various subject areas.
- Which applications of technology have had the most or least effect on student learning.
- The correlation between the use of technology and improved assessment results.

- The impact of staff development on the use of technology in the classroom.

Evaluation tools will include:

- Surveys that assess technology literacy skills of staff and extent of integration of those skills into curriculum and classroom management tasks.
- Computer training session exit surveys.
- Assessments of students’ skills in using technology.
- Annual self-assessment surveys of students’ computer skills.
- Assessment of computer-related student projects.
- Degree of student use of technology.
- State tests.
- Standardized tests.

The information gathered will identify areas that need further attention as well as those that produce intended results and may be continued and/or expanded.

Technology Budget 2008/2011

PC replacement plan

	2008/2009	2009/2010	2010/2011
Workstations	25PCs @ \$700 = \$17,500	25 PCs @ \$700= \$17,500	25 PCs @ \$700= \$17,500
Servers	1 server @ \$5,000	1 server @\$5,000	1 server @ \$5,000
Peripherals	To be determined	To be determined	To be determined

Long Term Server/Network Replacement Recommendations

The committee recommends that servers be replaced every four to five years to ensure that the network is operating reliably and efficiently. We currently have 12 servers managing our network and will need to replace 1-2 of those per year to ensure that the cost of replacement is distributed over the years.

Long Term Software Replacement Recommendations

The committee recommends that workstation operating system software, network software and application suite software be upgraded every four years to ensure that our students are learning with current software that they will encounter when they go on to work or college. Software will be purchased on an as needed basis to meet all updated requirements.

Software:

When integrating technology into the curriculum, the teachers are encouraged to use Microsoft Office products such as PowerPoint, Word, Excel, Publisher, etc. These are the products the students will be using outside of school. However, there are times when other educational software may be necessary to provide a tool for remediation or

enrichment. We recommend having a fund of \$16,000 to cover the cost of subject/curriculum software needs, transportation software and updated operating system software.

Budget Options 2008 to 2011	
Annual Costs	
25 PCs \$700/unit	\$17,500
1 Server \$5,000/unit	\$5,000
Software Curriculum software, databases, on-line programs	\$16,000
Peripherals Scanners, projectors, Smartboards, printers, digital cameras, memory cards, VGA extenders, camcorders	\$12,500
Total	\$56,000

Server Name	Server Description	Server Function	Status
Winschool	Dell PE800	2k3	active
Curr-hs1	IBM N3000	NT4.0	to be retired
nl2k3	Dell PE2850	2k3	active
Sagebrush	Dell PE2850	2k3	active
dc2	Dell PE1950	2k3	active
Ybook	IBM N3000	2k3	active
Mail	Dell PE2600	NT4.0	to be retired
nlcsd-owa	Dell PE2600	2000	active
nlcsdhsappnt2k	Dell PE2550	2k3	active
dc0	Dell PE1950	2k3	active
dc1	Dell PE2550	2k3	active
nlfs4	Dell PE2850	2k3	active
nlcsd-org	IBM X235	2k3	to be retired
NLES Security	Compaq EVO4K	2000	active
Security evo	Compaq EVO4K	2000	active
nlcsdcurr1	IBM N3000	NT4.0	to be retired