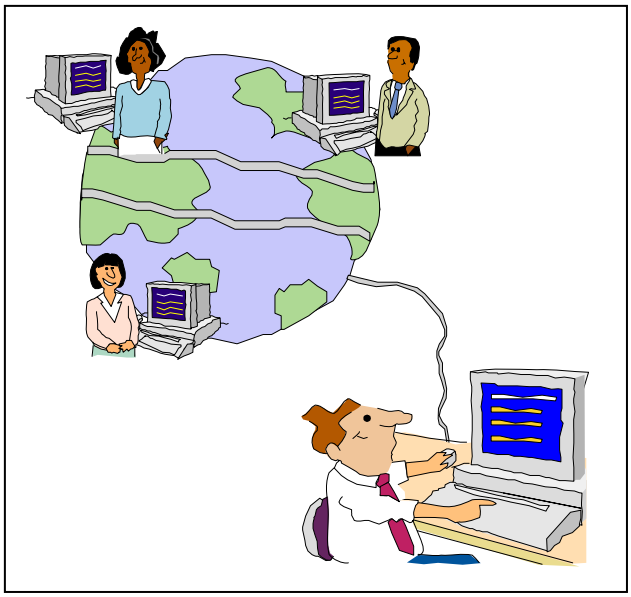
# MILLBROOK

## CENTRAL SCHOOL DISTRICT



# *2007-2010*

# *TECHNOLOGY PLAN*

Millbrook Central School District
PO Box AA
Millbrook, New York 12545
www.millbrookcsd.org

3/19/07 Draft Copy: For Board of Education Approval

# Table of Contents

# Millbrook Central School District

## ***Administration***

Dr. R. Lloyd Jaeger, Superintendent of Schools
Kurt Robb, Business Administrator
Karen Fitzgerald, Elm Drive Elementary School Principal
Thomas Libka, Alden Place Elementary School Principal
Brian Fried, Millbrook Middle School Principal
Dr. Jeffrey Matteson, Millbrook High School Principal
Cynthia Van Vliet, Director of Pupil Personnel Services

## ***Board of Education***

Thomas M. Hurley, President
Edward A Lindsay, Vice President
Dawn Blackburn
Philip Campbell
Joseph Forte
James Ross
John Rudy

# ***District Technology Task Force (DTTF)***
## ***Committee Members***

Alicia Dorsman, Teacher, Elm Drive Elementary School

Brian Fried, Principal, Millbrook Middle School

Jessica Furnari, Teacher, Elm Drive Elementary School

Corinne Goerlich, Teacher, Alden Place Elementary School

Dawn Harkenrider, Parent; Teacher, Millbrook Middle School

Georgia Herring, Teacher, Millbrook High School

R. Lloyd Jaeger, Superintendent of Schools, Millbrook Central School District

Kenneth McPherson, Teacher, Millbrook High School

Diane Morey, Technology Director, Millbrook Central School District

Cathie Morton, Library Media Specialist, Millbrook Central School District

Kyle Shoemaker, Parent; Teacher, Millbrook Middle School

William Yager, Teacher, Alden Place Elementary School

The committee was given eight specific tasks:

1. Develop a District Technology Mission Statement which identifies the role of technology in meeting the District's current and future classroom and administrative needs.
2. Gather and analyze broad based data regarding the District's current technology problems, needs, and status, including an inventory.
3. Develop strategies and solutions that are necessary to address the District's needs and problems and to fulfill the District's technology mission.
4. Determine what hardware and software are best suited to implement the strategies and solutions.
5. Develop an implementation process which includes a cost analysis, a recommended series of steps or phases for implementation (including a time line), and a recommendation for the staff training that will be necessary.
6. Develop a means to measure the success of the plan.
7. Explore possible alternative methods of funding.
8. Present the long range technology plan to the Board of Education at a public meeting.

## DEMOGRAPHIC PROFILE

The Millbrook Central School District is located in the geographical center of Dutchess County. It has an area of 80 square miles in a rural/suburban setting. The district is comprised of approximately 1200 students who are housed in four buildings: Elm Drive Elementary School, Grades K-2; Alden Place Elementary School, Grades 3-5; Millbrook Middle School, Grades 6-8; and Millbrook High School, Grades 9-12.

| | | |
|---|---|---|
| District-Wide | Administrators | 7 |
| | Students | 1,182 |
| | Teachers | 93 |
| | Support Staff | 72 |
| | | |
| Ethnic Statistics | Black | 28 |
| | Asian or Pacific Islander | 21 |
| | Hispanic | 67 |
| | White | 1066 |
| | | |
| Annual Budget for 2006-2007 | | $20,732,929 |
| | | |
| Millbrook High School | Students (Grade 9-12) | 398 |
| | Teachers | 27 |
| Millbrook Middle School | Students (Grade 6-8) | 285 |
| | Teachers | 24 |
| Alden Place Elementary | Students (Grade 3-5) | 263 |
| | Teachers | 20 |
| Elm Drive Elementary | Students ( Grade K-2) | 236 |
| | Teachers | 21 |

## District Mission Statement

"It is our mission to prepare our students to deal effectively with the challenge of an ever-changing society, and to guide them in becoming humane critical thinkers, decision makers and problem solvers."

## Board Of Education Technology Goals (2006-07)

Update the District's K – 12 Technology Plan to support students and staff in the effective use of our emerging and existing technology resources.

To achieve these purposes, our focus and priorities for 2006-2007 include:
• Adopt a renewed K – 12 technology plan in compliance with State regulations by mid- March 2007.
• Continue to upgrade and expand the use of the district's website as a communications tool.
• Incorporate recognized international standards for student and teacher use of technology resources in the district's technology plan.
• Support students and staff with strong professional development related to technology resources.

## Technology Vision Statement

Provide every student with access to a computer device and connectivity to enable them to utilize a full range of educational technology tools to develop higher-order thinking skills (problem solving, critical and creative thinking, decision making).

Identify, use, evaluate, and promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.

Create a culture that promotes the use of technology such that the following instructional strategies are valued and implemented: incorporation of real-life applications and career standards; encouragement of exploration and discovery learning methods; and engagement of students in project-oriented, student-centered learning.

Provide on-going, technology-based, interactive learning opportunities for students, teachers, and administrators that can be accessed anytime and anywhere; encouraging strategies for instructional delivery that routinely utilize available and emerging technology.

# Goals/Action Steps

I. **Utilize technology resources to differentiate instruction (i.e., to provide students with the appropriate remediation and/or enrichment to achieve individual academic excellence).**

- I.1 Select and use appropriate software for students eligible for AIS services and other remediation programs.
- I.2 Select and use appropriate software for student enrichment programs.
- I.3 Purchase hardware as needed (SmartBoards, laptops, projectors, etc.)
- I.4 Purchase assistive technology devices as needed to comply with individualized education program (IEP) requirements.

II. **Actively seek out and implement technology based instructional tools that enrich learning experiences.**

- II.1 Implement Project Lead The Way (PLTW) Program.
- II.2 Automate library circulation using Follett/Destiny software.
- II.3 Expand videoconferencing program offerings.
- II.4 Add Information Literacy Programs at appropriate grade levels.
- II.5 Create or adopt Internet Safety Programs for students and parents.
- II.6 Train teachers in use of software (Moodle) to support student participation in polls and surveys (e.g., Election Day, public opinion).

III. **Encourage strategies for instructional delivery that make use of emerging technology.**

- III.1 Investigate and evaluate Web 2.0 for instructional use.
- III.2 Explore interactive and collaborative software (Moodle, wikis, 2nd Life) to determine feasibility for use by students, and/or as an opportunity for teachers to engage in dialogue and virtual mentoring relationships with colleagues.
- III.3 Consider podcasting (audio) as a method for creating student work..
- III.4 Utilize audio/video streaming as a tool for administration and instruction.
- III.5 Develop electronic student portfolios to organize/present/archive student work.

IV. **District staff who have leadership roles will participate in and create opportunities for all students and staff to increase the understanding of technology necessary for life-long learning and success.**

- IV.1 Allocate funds for appropriate training opportunities.
- IV.2 Utilize e-mail for internal memos.
- IV.3 Publish teacher email addresses to facilitate communication with parents.
- IV.4 Review *Acceptable Use Policy* for student and staff Internet use.

V. **Support and expand professional development for teachers by providing training that satisfies a range of technological competencies, and by the use of a wide variety of delivery methods.**

- V.1 Create additional programs and materials for teacher and staff training (before/after school, summer sessions).

V.2 Identify teachers and staff with advanced skills to be trainers, leaders, and/or mentors.
V.3 Identify and evaluate opportunities to bring in experts to provide higher level training (Model Schools, Technology Integration Teachers, Vendors).
V.4 Research alternative methods of providing support for teachers (GenYes, online courses, self-study packages, education conferences, online resources).

VI. **Increase the use of technology tools that allow learning to take place anytime, anywhere.**
VI.1 Videoconferencing/Distance Learning.
VI.2 Online learning for students and teachers.
VI.3 Use of web-based software.

VII. **Provide access to digital content information resources to enhance curriculum beyond the physical limits of existing facilities.**
VII.1 Remote access to district resources for students and parents (full text encyclopedia/print media subscription databases, education based search engines).
VII.2 Purchase web-based software whenever available to satisfy curriculum needs.
VII.3 Purchase textbooks with online or digital access whenever possible.
VII.4 Review and publish a list of recommended web sites for homework help, study tips, course related material, etc.).

VIII. **Provide assessment tools that will give teachers and administrators the ability to use data to make decisions that will improve teaching and learning.**
VIII.1 Data Driven Decision Making: Make data/statistics available to teachers & administrators for use in assessing/revising programs, disaggregated by building, grade level, course, teacher, and/or student as needed.

IX. **Improve communication between the District and our community to enhance the community's knowledge of our programs and of our use of technology.**
IX.1 Use web-based applications to allow teachers and administrators to build relationships with parents and community members
IX.2 Conduct surveys and polls to solicit community feedback.
IX.3 Offer parents the opportunity to access web-based information about their children's learning environment, climate, and outcomes, as well as a wide range of student activities that can help them to monitor and reinforce the instruction their child receives at school.

X. **Establish standards for hardware, software, and required technology skills (for students, teachers, administrators) as appropriate for district, building, and grade/department levels:**
X.1 Evaluate current hardware distribution and recommend purchases as needed to maintain equity and to ensure that planned program expansion will take place.
X.2 Make broad software recommendations and purchases based on curriculum requirements by grade level, building, and/or department, after identifying areas of need (including general purpose, remediation, enrichment, independent study).

X.3 Purchase site licenses for reviewed/approved software when possible, to reduce installation and maintenance costs, and to ensure access for all students.

XI. **Integrate technology at all levels (K-12) in support of NYS Content Standards.**

XI.1 Students will engage in teacher facilitated, technology-dependent learning that is project-based, using open-ended questions and higher order thinking skills.

XI.2 Teachers will encourage students to select from a variety of technology to organize and to summarize material (e.g., Office Suite, Inspiration, wikis).

XI.3 Students will select appropriate tools and electronic devices to gather, organize, analyze, and display real time data.

XI.4 Students will communicate ideas through a variety of media, including video, images, and collaboration software tools.

XI.5 Teachers will develop their own electronic resources and lessons for students (Moodle, webquests).

XI.6 Teachers will instruct students on evaluation of electronic resources and encourage use of all appropriate resources to solve authentic problems.

XI.7 Teachers will "demo" successful uses of technology to grade level or building groups, in order to encourage and expand the use of these applications.

XII **Provide equitable access to, and distribution of, appropriate technology for the entire school district and community.**

XII.1 Promote the installation and use of open source software.

XII.2 Open computer labs/libraries for student and/or community use when school is not in session.

XII.3 Research equipment discount programs, make available to parents and staff.

XII.4 Investigate the possibility of donating computers to students, parents, community (public libraries, youth centers) instead of surplusing.

XIII. **Enhance the efficiency and effective use of administrative software (scheduling, grades, attendance, financial, Special Education, etc.).**

XIII.1 Software will be integrated, or processes created for transfer of data between systems whenever possible.

XIII.2 Administrators will use student management software to cull information for completion of state and federally mandated reports (e.g., BEDS, VADIR, Civil Rights Surveys) and any other report requiring demographic data.

XIII.3 Staff will use a standard set of software tools for efficient sharing of information (e-mail, calendar, resource scheduler, word processing, spreadsheet, e-mail archive server).

XIII.4 Periodic review and update of district procedures and policies in order to maintain compliance with state/federal reporting and data retention requirements.

XIV. **Monitor and upgrade network infrastructure, and ensure adequate levels of technical support as the demand increases.**

XIV.1 Respond to network growth needs with increased capacity (Internet bandwidth, internal network speeds, video streaming requirements)

XIV.2 Survey all rooms to make sure there is adequate power for using computer equipment and all other required electronic devices.

XIV.3 Monitor and maintain hardware infrastructure (servers, switches, routers, and management devices) to provide adequate access to the network.

XIV.4 Identify ways to increase technical support staffing levels in order to decrease down time of equipment, reduce wait time for teachers, and maximize use of the computer labs, libraries, and specialized equipment.

XIV.5 Periodically upgrade server and workstation operating systems, security software, and other tools (MS-Office, anti-virus, plugins- Flash, QuickTime, Media Player, etc.) as needed to maintain a properly functioning infrastructure.

XIV.6 Expand wireless infrastructure to full building coverage for all district buildings.

XIV.7 Install and use software that will allow computer technicians to provide remote support (VNC, Network Streaming, Windows RDP, Zenworks- for mass deployment of updates), to reduce the manpower needed to support existing hardware and software.

XIV.8 Purchase and install security devices (internal/external cameras, building code/card access systems).

XIV.9 Explore feasibility of purchasing integrated phone/intercom systems as old systems are phased out.

## Implementation Timeline

**Project Lead The Way (PLTW):**

| | |
|---|---|
| 2007-08 | Implement PLTW at High School level. |
| 2008-09 | Implement PLTW at Middle School level. |
| 2009-10 | Expand course offerings at High School level. |

**Library Automation (Follett/Destiny):**

| | |
|---|---|
| 2007-08 | Elm/Alden (convert from manual card catalog system). |
| 2007-08 | Middle School/High School (convert from Dynix system). |

**Online Learning:**

| | |
|---|---|
| 2007-08 | Increase the number of teachers using Moodle to support existing courses (publish course syllabus, class handouts, homework/project information & due dates). |
| 2007-08 | Broaden opportunities for district staff and any qualified students to enroll in courses through Greystone (Marist). |
| 2008-09 | Research other potential resources for online learning (PBS Teacher Line, AccelerateU). |
| 2008-09 | Investigate logistics of offering entire high school course online. |

**Curriculum Planning:**

| | |
|---|---|
| 2007-08 | Revise/adapt ISTE NETS for students to apply by grade level and department. |
| 2008-09 | Create lesson plans by area or grade level that use technology to support curriculum. Make lesson plan repository available to all teachers. |

**Information Literacy:**

| | |
|---|---|
| 2007-08 | Prepare and deliver lessons for grades K-5 |
| 2008-09 | Prepare and deliver lessons for grades 6-8 |
| 2009-10 | Hire additional library media specialist to develop and teach information literacy skills for K-12 students. |
| 2009-10 | Prepare and deliver lessons for grades 9-12 |

**Internet Safety:**

| | |
|---|---|
| 2007-08 | Required ¼-year course for all grade 6 students: Keyboarding, I-Safe program, Basic Tools (Word, Excel, Powerpoint) |
| 2008-09 | Internet Safety Presentations for Parents |
| 2008-09 | Publish a recommended list of Online Internet Safety Resources |

**Communication:**

| | |
|---|---|
| 2007-08 | Appoint and train staff at building and department levels to update their respective areas of the MCSD website and online calendar. Post District printed materials (publications, presentations, letters to parents or community members) on the website. |

2007-08 Create topic based listservs, and encourage parents/community members to sign up for automatic e-mail notifications in any area that interests them (cancellations.com, MCSD web calendar, building announcements, etc.)

2007-08 Post contact information on all teacher web pages (teacher e-mail address, phone number & extension, times available for parent meetings, extra help for students),

2008-09 Purchase or subscribe to phone notification system for contacting parents in cases of emergency, or to announce significant information.

**Community:**

2007-08 Offer use of labs/libraries and topic specific training sessions to senior citizens and other community members when resources are not in use by students and staff.

**Data Reporting/Records Retention:**

2007-08 Make state assessment data (nySTART- NYS Data Warehouse) available to District administrators in electronic format.

2007-08 Evaluate Performance Pathways and other software that would aid in electronic storage/sharing of lesson plans that have correlations to NYS Learning Standards.

2007-08 Purchase and install AISM to track students receiving AIS services.

2008-09 Review and revise district procedures to ensure compliance with state and federal data reporting requirements (NYS Data Warehouse, NCLB, etc.)

2008-09 Make assessment data available to administrators and teachers using Data Mentor or a similar tool.

2009-10 Develop surveys and local assessments for ongoing review of student progress.

**Videoconferencing:**

2007-08 Purchase videoconference hardware. Research available virtual field trips for all grade levels and schedule as appropriate.

2008-09 Set up collaborative instructional projects with students from other districts.

2008-09 Set up inter-building conferences to facilitate collaborative instructional projects that may involve a mentoring component.

**Multimedia:**

2007-08 Website link for video on demand presentation of Board of Education Meetings.

2008-09 Website link for video on demand viewing of public presentations (speakers, concerts, plays).

2008-09 Develop electronic student portfolios to organize/display student work. Purchase digital cameras, scanners, color printers.

2009-10 TV/video production & broadcasting for student instruction, and for use by school sponsored clubs.

**Professional Development:**

2007-08: Launch Training Academy during the summer. Potential topics: MS-Word, Excel, Powerpoint, PowerMediaPlus, SmartBoard, Building Level Standard Software, Library Databases, Teacher Web Pages (Moodle), Editing Pictures, E-Mail, Class Attendance, Integrade Pro. Offer different levels of training for each

topic. Publish the content of each session (brochure/booklet, memo, postings). Secure adequate trainers (DC BOCES, Technology Director, Millbrook teachers, Millbrook support staff/administrators).

2008-09 Implement a mentor program where skilled staff are assigned to help novice users in specific areas throughout the school year.

2008-09: Locate, review and organize/present online resources for teachers: samples of effective curricula and lesson plans aligned with New York State Learning Standards; samples of student work and assessments; student learning data disaggregated to the individual, classroom, school or district level.

**Infrastructure:**

2007-08: Remove Pegasus e-mail software and data. Implement Groupwise resource allocation modules for room and equipment utilization.

2007-08: Replace obsolete switches at Middle School, Alden and Elm.

2007-08: Increase total Internet bandwidth available for District use.

2007-08: Replace Visual Casel desktop security software with newer, supported package.

2007-08: Purchase wireless AP controller to provide extra ports needed for wireless connectivity at Middle School and Elm.

2007-08: Purchase and install wireless access points for building wide wireless network connection at Middle School.

2008-09: Purchase and install wireless access points for building wide wireless network connection at Elm.

2008-09: Replace fiber cabling and obsolete wiring closet hardware at Elm, Alden and Middle School.

2008-09: Purchase and install equipment required to support searchable e-mail archive system.

2008-09: Purchase and install equipment required to support mass updates (Windows, MS-Office, anti-virus, applications).

**Technology Support:**

2007-08: Request professional staff services through DC BOCES to assist teachers with technology integration.

2007-08: Hire staff or redeploy and train current staff to assist teachers with technology integration, assist with routine operation of computers and peripheral devices, attend vendor training/software demos in order to preview/evaluate software.

2008-09: Increase shared network technician through DC BOCES from 0.4 FTE to 0.6 FTE, or hire full-time network technician.

2008-09: Install software that will allow remote support for users and remote installation/upgrades for software. (e.g., Windows Remote Desktop, Network Streaming, Zenworks)

## Public Library Collaboration

Current Status:
Our Elm Drive Elementary School students periodically visit the Millbrook Free Library (MFL), ranging anywhere from four visits per school year to monthly visits. The children's librarian does a literature-based program with the students, and students are then allowed to check out books.

The public and school librarians exchange information concerning programming. They also work together to promote New York State's annual summer reading program.

Plans for the Future:
Access to the Millbrook Central School District's new library automation system will be available from any computer with an Internet browser, including those at the Millbrook Free Library.

The Millbrook Free Library will be added as an MCSD courier stop, to allow inter-library loan of materials between the school district and public library, as well as to increase resources available to school staff and teachers through the Mid-Hudson Library System.

Collaborative efforts between school and public librarians will be increased to raise awareness of programming at both sites, as well as programs developed in conjunction with one another.

News from each library will be included in a monthly newsletter made available to the public via library websites and print sources.

## Assessment of Current Resources

Support Staff:

1.0 FTE Technology Coordinator (Millbrook employee)
0.4 FTE Network Technician (DC BOCES Shared Service)

Current Course Offerings:

| | |
|---|---|
| Grades K-2: | Basic Skills (letters, mouse, passwords, file management) |
| Grade 5: | Robotics/Basic Programming Skills (pilot for 2006-07) |
| Grade 6: | Keyboarding (required course) |
| Grade 7: | Technology (required course) |
| Grade 8: | Technology (required course) |
| Grades 9-12: | CAD (elective course) |
| Grades 9-12: | Art (elective course) |

## Ongoing Evaluation Process

The DTTF will meet periodically to review progress on the technology plan implementation and will revise/update the technology plan as warranted.

Surveys will be distributed to teachers and appropriate staff to evaluate status of programs, to determine additional needs, and to identify further professional development goals.

Administrators will collect and analyze data (student use of electronic resources, workshop attendance, etc.) to make recommendations about program revisions or expansion.

The DTTF will further investigate tools to evaluate whether learning is enhanced through technology use.

## Budget/Funding

The District will participate in various BOCES CoSers. Membership in these CoSers allows for participation in county-wide technology purchases in the area of infrastructure, hardware, software and staff development.

Approximately $75,000 annually will be budgeted for educational technology hardware purchases for new and replacement equipment. Supplemental funds for administrative technology will be provided annually on an as needed basis.

The District will continue to assess the option of hardware expenditures from the general fund that would be eligible for partial reimbursement through NYS aid to public schools.

Approximately $18,000 is budgeted annually for instructional software purchases. This amount is reimbursed fully each year by NYS aid. These funds will be distributed at the district or building level each year as a result of identifying and prioritizing program needs during the budgeting process, then selecting software to meet those needs.

$18,750 will be budgeted annually for professional development.

The District will file an annual application through Dutchess County BOCES to take advantage of any discounts available through the federal E-Rate program.

The District will continue to work closely with the Millbrook Educational Foundation, an organization that has generously provided funds for many projects that are vital to our operation and contribute to the success of our students.

The District will explore additional opportunities to form community partnerships and/or secure grant funding and/or donations from businesses and organizations (NYS Senator Saland, Tribute Gardens, Dyson, IBM, Marist College, IES-Institute of Ecosystem Studies, and our PTO).

The District will research and apply for any grants that might result in additional funding for the support of technology in education. Hiring a grant writer (either part-time or as a consultant) to research and apply for technology related grants will likely result in generating additional funds to support our technology program.

## Plan Development

The revised Technology Plan for 2007-10 was created by the District Technology Task Force (DTTF), comprised of teachers, administrators, and support staff, along with input from the Board of Education and the Superintendent of Schools.

During the 2006-07 school year, the committee developed and administered a "Technology Self-Assessment" survey to all teachers (see Appendix G). The results of this survey were used to formulate a large part of the professional development offerings for teachers that are included in this technology plan.

The DTTF and the District will encourage and solicit volunteers from the community to be part of the implementation of the plan, and the ongoing evaluation process. Parents, community members, and local business owners will be welcome to contribute. School newsletters, District newsletters, the Millbrook Roundtable, the Poughkeepsie Journal, and the MCSD Website will be used as tools for distributing information.

## Appendix A - Hardware Inventory – March 2007

### Elm Drive:

| | |
|---|---|
| Computers | 93 |
| Laptops | 3 |
| Printers | 28 |
| SmartBoards | 1 |
| Projectors | 4 |
| Digital Cameras | 4 |
| Digital Video Cameras | 0 |

### Alden Place:

| | |
|---|---|
| Computers | 123 |
| Laptops | 30 |
| Printers | 38 |
| SmartBoards | 5 |
| Projectors | 17 |
| Digital Cameras | 6 |
| Digital Video Cameras | 1 |

### Middle School:

| | |
|---|---|
| Computers | 107 |
| Laptops | 7 |
| Printers | 40 |
| SmartBoards | 3 |
| Projectors | 6 |
| Digital Cameras | 3 |
| Digital Video Cameras | 0 |

### High School:

| | |
|---|---|
| Computers | 145 |
| Laptops | 55 |
| Printers | 33 |
| SmartBoards | 6 |
| Projectors | 7 |
| Digital Cameras | 0 |
| TV/Multimedia | 30 |

## Appendix A - Hardware Inventory – March 2007

### District Offices:

| | |
|---|---|
| Computers | 10 |
| Laptops | 3 |
| Printers | 10 |
| SmartBoards | 0 |
| Projectors | 1 |
| Digital Cameras | 1 |
| Digital Video Cameras | 0 |

### Infrastructure:

| | |
|---|---|
| Servers | 10 |
| Management Workstations | 3 |

# Appendix B
## Standard Software – March 2007

All Buildings:

1. Microsoft Office Professional – Word, Excel, Powerpoint, Access
2. Groupwise – Electronic Mail, Calendar, Resource Scheduling
3. eTrust – Anti-virus
4. Visual Casel – Desktop Security (classrooms)
5. Deep Freeze – Desktop Security (labs & libraries)
6. Novell Netware – Network Operating System
7. Windows 2003 Server – Network Operating System
8. Citrix Presentation Server – Application Delivery System

Elm:

1. Student Writing Center (The Learning Company)
2. Bernie's Typing Travels V1.01
3. 2Type (2Simple)
4. Accelerated Reader V6.3 (Renaissance Learning)
5. TLC Math 1/2 V3.1.0 (Bright Blue Software)
6. Alphabet Soup (2Simple)
7. 2Create a Story (2Simple)
8. Early Learning Toolkit (2Simple) containing titles:
    a. 2Paint
    b. 2Publish
    c. 2Count
    d. 2Go
    e. 2Graph
    f. 2Question
9. Kid Works Deluxe
10. Rainbow Readers Interactive Pack
11. Clock Faces
12. Penny Panda's Sticker Store

Alden:

1. Student Writing Center (The Learning Company)
2. Bernie's Typing Travels V1.01
3. Mavis Beacon Teaches Typing Deluxe V16
4. Timeliner V5.0
5. Inspiration V7.6
6. Accelerated Reader V6.3 (Renaissance Learning)
7. Accelerated Math V2.2 (Renaissance Learning)
8. Star Math V2.0 (Renaissance Learning)
9. TLC Math 3/4 V3.1.0 (Bright Blue Software)
10. TLC Math 5/6 V3.1.0 (Bright Blue Software)
11. GAMCO – (5 titles)
12. GAMCO Paws & Pyramids

13. ThinkAnalogy Level A
14. Math Munchers
15. Mindstorms Robolab V2.9

Middle School:

1. AutoCAD Lite
2. 2Animate (2Simple)
3. Photoshop (Adobe)
4. Student Writing Center

High School:

1. Project Lead The Way (CAD)
2. Photoshop (Adobe)
3. Pagemaker (Adobe)
4. Creative Suite (Adobe)
5. Automated Accounting V8.0
6. Electronic Auditor V8.0
7. Boxer Introductory Algebra
8. Boxer Intermediate Algebra
9. EMC Keyboarding
10. Geometer's Sketchpad V3.10
11. Student Writing Center

Administrative:

1. SASIxp – Student Scheduling, Attendance, Grades, Progress Reports, NYS Data Warehouse
2. Integrade Pro – Gradebook, Grade Reporting
3. IEP Direct – Student Management for Classified & 504 students, AIS Services
4. Finance Manager – Payroll, Accounts Payable, Accounts Receivable, Budgeting
5. InfoTax

# Appendix C
## Technology Coordinator
## Job Description

Organizationally, the Technology Coordinator will report directly to the Superintendent of Schools. Functionally, within each school, the Technology Coordinator will report to the Building Principal.

**General Responsibilities**

1. Work cooperatively with administrators and staff to implement the District Master Plan for School Improvement and the District Technology Plan.

2. Advise and assist Principals in the development of their school technology budgets.

3. Advise the administration and teachers in the selection and purchase of technology equipment, material, and supplies for the District's instructional program.

4. Work as a resource person regarding technology for District staff.

**Specific Responsibilities**

1. Correlate computer materials and equipment with K-12 instructional programs.

2. Participate with administrators and school technology committees in the implementation of the Technology Plan.

3. Encourage staff and students in the use of technology.

4. Assist staff, students, and administrative personnel in identifying resources appropriate to their instructional and non-instructional needs.

5. Inform staff and administrators of appropriate materials, equipment, innovations, and current developments and research in the field of technology.

6. Attend conferences, when appropriate, to assist in keeping current with developing technology.

7. Prepare purchase orders for administrative approval.

8. Plan, coordinate, and offer staff development and training.

# Appendix D

## NETS for Students

### Technology Foundation Standards for All Students

The technology foundation standards for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking performance indicators within the Profiles for Technology Literate Students to the standards. Teachers can use these standards and profiles as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

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 E - NETS for Teachers

**Educational Technology Standards and Performance Indicators for All Teachers**

Building on the NETS for Students, the ISTE NETS for Teachers (NETS•T), which focus on preservice 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.

1 TECHNOLOGY OPERATIONS AND CONCEPTS.
*Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:*

- demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students)
- demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

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

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

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

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

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

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

# Appendix E

## NETS for Teachers

5 PRODUCTIVITY AND PROFESSIONAL PRACTICE.

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

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

6 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:*

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

## USE OF COMPUTERS AND NETWORKED INFORMATION RESOURCES (INTERNET USE)

The Millbrook Central School District is committed to the optimization of student learning and teaching and therefore encourages the use of computers and networked resources, including the Internet (a global network made up of smaller contributing networks). The District encourages computer network use as an integral part of the curriculum. Through software applications, on-line databases, bulletin boards and electronic mail, the network will enhance educational experience and provide statewide, national, and global communication opportunities for staff and students.

Technology protection measures (i.e. filtering software) have been installed on networked computers with access to the Internet in order to protect against user access to images and materials that are obscure and child pornography (as those terms are defined under federal law), and in the case of users who are under age 17, additionally protect against access to images and materials that are harmful to minors as the term is defined under federal law. When access is needed for bona fide research or other lawful purposes, these technology protection measures may be disabled.

The use of school computers, software, network resources and/or the Internet for non-educational purposes such as for profit activity, personal business or illegal activity is prohibited.

Each student or staff member who wishes to use a school's network must establish a user (ID) account in order to assure the integrity of the network and Internet in the District. Each account holder must agree to act responsibly and to comply with this policy and the administrative procedures promulgated by the Superintendent of Schools regarding access to and use of computers and networked information resources. Therefore, prior to establishing a user account, each student and staff member must sign a user agreement. In the case of students, the student's parent or legal guardian must also sign the user agreement.

Any account user who, after due process has been afforded, is determined to have used the District's computers, networked information resources and/or the Internet in violation of this policy and its administrative procedures may have his/her user account suspended and/or revoked. Also, a breach of the terms of this policy and administrative procedures may result in disciplinary action consistent with applicable laws and regulations, the Student Code of Conduct and collective bargaining agreements. A breach of the terms of this policy and administrative procedures may further result in a referral to appropriate law enforcement officials where the breach involves suspected illegal or criminal activities.

Users acknowledge that in the course of using the Internet, there may occur interruptions in service, which may result in the loss of data, information or files. The District disclaims any and all responsibility for loss of data, information or files caused by such service interruptions.

Users shall not use the Internet for any purpose that would violate any District policy and/or regulation, or that would violate any State or Federal law or regulation.

Adoption Date: November 3, 1997
Revised: November 5, 2001

# USE OF COMPUTERS AND NETWORKED INFORMATION RESOURCES (INTERNET USE) REGULATION

*General*

A user account issued pursuant to District policy and these administrative regulations may be suspended or revoked in the event of a breach of any of the provisions set forth below. A breach of the terms of the District policy and these administrative regulations may also result in disciplinary action against the user consistent with the Student Code of Conduct, any applicable collective bargaining agreement, and State and Federal laws and regulations, and where the breach is suspected to be illegal, referral to appropriate law enforcement officials.

*Responsibility*

An individual user is not permitted to damage, tamper with or hack into computers, computer systems, networks that are accessible over the Millbrook Central School District computer network, or other users' folders, work or files. Due to the wide availability of services and information on the Internet, some of which may be potentially offensive to certain groups of users, the individual user must be responsible for his/her actions in navigating the network.

*Privacy*

Users possess no reasonable expectation of privacy rights with respect to their on-line activities and acknowledge that the network administrator may periodically review users on-line activities during the course of performing routine maintenance of the system. Users further acknowledge that if they are suspected of having violated this policy or any other District policy, rule and/or regulation, or any law, in any manner, the network administrator and/or appropriate school official may access the users' files. The District and/or any of its agents and employees who review on-line activities of account holders suspected of having violated this policy, shall not be subject to any claims arising out of such review of on-line activities.

*Security*

Security on any computer system is a high priority, especially when the network involves many users. Anyone suspecting a security problem on the Internet must notify a network administrator.

*Network Etiquette (Etiquette)*

Users are expected to abide by the generally accepted rules of network etiquette. These include, but are not limited to: being polite; not being abusive in messages to others; using appropriate language; not swearing or using vulgarities. Illegal activities are strictly forbidden.

*Copyright*

Users must respect all copyright issues regarding software and attributions of authoring. The unauthorized copying or transfer of copyrighted materials may result in the suspension or revocation of a user's account.

*Improper Use*

Users shall not post, send, transmit, publish, download, upload, copy, print or otherwise disseminate information containing any advertising or solicitation of other members to use goods and services that are not for school-related purposes. Users shall not use an account to conduct business or activity which is prohibited by law. The District shall not be responsible for any financial obligation that may arise from a user's unauthorized use of the network/Internet.

*Communicating*

When using the District's computers and networked information resources, all users should use language appropriate in the school context. Profanity, obscenity, vulgar or sexually offensive language is prohibited. The unauthorized disclosure, use or dissemination of any personally identifiable information regarding any minor is prohibited.

Users must respect the rights of others and be mindful of the age and maturity of those with whom they are communicating.

*Information on Other Systems on the Internet*

Some systems contain information that contains defamatory, abusive, obscene, profane, pornographic, age-inappropriate and otherwise offensive, threatening, inflammatory, hate-promoting, violence-promoting, anti-social, or illegal materials. The Millbrook Central School District does not condone or permit the use of such materials in the school environment. Users and parents/guardians of student users should be aware of the existence of such materials. Users who bring such materials into the school environment may have their account suspended or revoked, may be subject to school disciplinary action, consistent with the Student Code of Conduct, applicable collective bargaining agreements, and State and Federal laws and regulations and may be referred to appropriate law enforcement officials where such activities are suspected to be illegal.

*Use of Network for Illegal Activities*

Users shall not tamper with, hack into, vandalize, read, modify, edit, delete or otherwise engage in unauthorized use of any computer files, including other users, that are accessible over the network.

*Safety*

Any user who receives obscene, child-pornographic, violent, harassing, threatening, or unwelcome content shall immediately bring them to the attention of the supervising teacher or administrator.

*Due Process*

Any student user who is suspected of using the Internet in a manner that would violate this policy or any other District policy, rule and/or regulation, or would violate any State or Federal law or regulation, will be notified of the alleged violation and provided with an opportunity to respond to and discuss the allegation.

Any staff user who is suspected of using the Internet in a manner that would violate this policy or any other District policy, rule and/or regulation, or would violate any State or Federal law or regulation, will be notified of the alleged violation and provided with an opportunity to respond to and discuss the allegation in a manner consistent with the applicable collective bargaining agreement.

Adoption Date: November 3, 1997
Revised: November 5, 2001

# USE OF COMPUTERS AND NETWORKED INFORMATION RESOURCES (INTERNET USE) EXHIBIT

Student User Agreement and
Parent Permission Form

As a user of the Millbrook Central School District's computers and networked information resources (including the Internet), I hereby agree to comply with the stated rules for communicating over the network in a reliable fashion while honoring all relevant laws and restrictions. If I violate any of the provisions of the District's policy and administrative procedures, I understand that my network access may be suspended or revoked; that I may be subject to school-related disciplinary action consistent with the District's Student Code of Conduct and State and Federal laws and regulations; and that, if I engage in suspected illegal activities, I may be referred to appropriate law enforcement agencies.

_____ _____
Student Signature Date

(If you are under the age of 18, a parent or guardian must also read and sign this policy.)

As the parent or legal guardian of the minor student signing above, I grant my permission for my son or daughter to use District computers and to access networked computer resources including electronic mail and the Internet. I have read the attached regulations and understand that the individual student may be held liable for violations. I understand that some materials on the Internet may be objectionable, but I accept responsibility for setting and conveying strictly educational standards for my son or daughter to follow when selecting, sharing or exploring information and media. I also recognize that it is impossible for the Millbrook Central School District to restrict access to all controversial materials, and I will not hold it responsible for materials my child may acquire on the network. Therefore, I release the Millbrook Central School District, its officers, employees, agents and successors, and hold them harmless from any and all claims, demands, actions, causes of action, suits, damages and judgments as a result of my child's use of the District's networked computer resources, including but not limited to the Internet.

_____ _____
Parent Signature Date

Please print the following information:

Name of Student _____

Name of School_____ Grade _____

Your Street Address _____

Town/State _____

Home Phone _____ Work Place _____

Adoption Date: November 3, 1997

## USE OF COMPUTERS AND NETWORKED INFORMATION RESOURCES (INTERNET USE) EXHIBIT

Staff User Agreement

As a user of the Millbrook Central School District's computers and networked information resources (including the Internet), I have read and understand the attached District policy and administrative procedures. I agree to comply with the attached policy and procedures for communicating over the network in a reliable fashion while honoring all relevant laws and restrictions. If I violate any of the provisions of the policy and/or procedures, I understand that I may have my network access suspended or revoked; that I may be subject to disciplinary action consistent with the applicable collective bargaining agreement; and that if I engage in a suspected illegal or criminal activity while using the network, I may be referred to the appropriate law enforcement agencies. I further understand that some materials on the Internet may be objectionable and not appropriate for educational purposes. I accept responsibility for using the Internet for strictly educational purposes and conveying these standards of use to my students when selecting, sharing or exploring information and media.

_____ _____

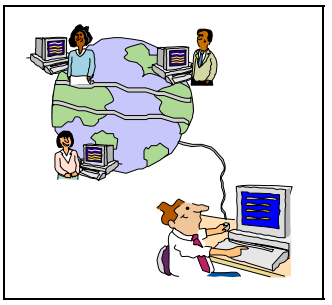
Staff Signature Date

Print Name _____

School _____

Adoption Date: November 3, 1997

# Millbrook Central School District



## Self-Assessment* for Staff Use of Technology

*This scale has been modified from the original Mankato (MN) Schools Scale and in association with Imperial Software consultants.

Please use the rubric within each category below to make an assessment of your level of use and/or personal competencies. **Check off the highest number which best reflects your current level of skill attainment and/or use, assuming that all of the lower numbers are also true.** (Be honest, but be kind to yourself!) This rubric/tool will help you to identify areas where you would benefit from continued learning and/or practice. Generally speaking, Level 3 is a desirable competence level for personal use. Level 4 represents the district's goal for professional use because you demonstrate the ability to exceed personal proficiency and use the technology resource with your students.

**I. Basic Computer Operation and File Management**

_____ Level 1 - I do not use a computer and/or I do not know how to save any documents.
_____ Level 2 - I can use a computer to run a few specific, pre-loaded programs. It has little effect on either my work or home life. I save documents but I cannot choose where they are saved. I do not back-up my files.
_____ Level 3 - I can load software, print, and use most of the operating system tools like the scrapbook, clock, notepad, find command, and trash can. I have a system for organizing my files, and can locate files quickly and reliably. I backup files to floppy disk on a regular basis.
_____ Level 4 - I regularly run a disk-optimizer on my hard drive, deleting files I do not need on a regular basis. I have a system for archiving important files. I feel confident enough to teach others some basic operations.

**II. Word Processing**

_____ Level 1- I do not use a word processor.
_____ Level 2 - I occasionally use the word processor for simple documents which I know I will modify and use again. I generally find it easier to hand write or type most written work I do.
_____ Level 3 - I use the word processor for nearly all written professional work: memos, tests, worksheets, and home communication. I can edit, spell check, and reformat documents. I feel my work looks professional.
_____ Level 4 - I have used a word processor with my students as part of their assigned work.

**III. Spreadsheet Use**

_____ Level 1 - I do not use a spreadsheet.
_____ Level 2 - I understand the use of a spreadsheet and can navigate within one. I can create a simple spreadsheet which adds a column of numbers.
_____ Level 3 - I use a spreadsheet for several applications. These spreadsheets use labels, formulas and cell references. I can change the format of the spreadsheets by changing column widths and text style. I can use the spreadsheet to make a simple graph or chart.
_____ Level 4 - I have used a spreadsheet with my students and assessed their data keeping and analysis skills.

**IV. Database Use**

_____ Level 1 - I do not use a database.
_____ Level 2 - I understand the use of a database and can locate information within one which has been pre-made. I can add or delete data in a database.
_____ Level 3 - I use databases to collect and analyze data. I can create a database from scratch – defining fields and creating layouts to support inquiry. I can sort and print information in layouts which are useful to me.
_____ Level 4 - I have used databases with my students to help them gather and analyze data to explore research questions. My students can convert database information into spreadsheets in order to conduct further analysis, including charts and tables.

**V. Multimedia Use**

_____ Level 1 - I do not know how to use multimedia presentation software.

_____ Level 2 - I know how to use a multimedia program and can import graphics, sounds, pictures, and video with appropriate transitions from slide to slide. I can download or "clip" information from the Internet for use in my multimedia presentation. I can print these slides in single or multi-slide formats.

_____ Level 3 - I can add tables, charts, graphs and other data rich elements to my multimedia slides. I can use a scanner, digital camera and other input devices to save and incorporate visual elements into my multimedia presentations. I have made a multimedia presentation to my school, my class or another audience.

_____ Level 4 - My students use multimedia software to demonstrate what they have learned. Their work includes many of the inputs listed in Levels 2 and 3 above. I have assessed the extent to which their use of this technology resource demonstrates they have achieved recognized International Technology Standards.

**VI. The Internet**

_____ Level 1- I do not use the Internet.

_____ Level 2 - I can use a web browser to find basic information on the Internet, but I spend little time doing so.

_____ Level 3 - I am able to make efficient and productive use of web searching software, and can focus my use of the internet to explore professional resources and educational links related to my teaching assignment(s).

_____ Level 4 - I know how to create a teacher web page, update it, provide links to my site's visitors, and provide both an individual and collaborative calendar.

**VII. Telecommunications Use**

_____ Level 1- I do not use electronic mail (e-mail).

_____ Level 2 - I understand that there is a large amount of information available to me as a teacher which can be accessed with electronic mail. I send occasional requests for information and messages using e-mail - mostly to friends, family and district colleagues.

_____ Level 3 - I check my e-mail account on a regular basis. I can create and use distribution lists as part of my e-mail correspondence process. I use e-mail to access professional information from listservs and/or participate in "threaded discussions" as part of message boards or websites.

_____ Level 4 - I can develop assignments or extended messages using a word processor, attach them to an e-mail, distribute them to my colleagues and students and create parent-student email newsletters.

**VIII. Use of Emerging/New Technologies (e.g., Digital Media, SmartBoards, Podcasts, Video Conferencing)**

_____ Level 1 - I have not explored the use of new technologies into my classroom learning activities.

_____ Level 2 - I would like to blend the use of new technologies into my classroom learning activities, but I need more help understanding what strategies will work and how to do it.

_____ Level 3 - I sometimes encourage my students to employ new technologies to support communicating, data analysis, and problem solving. ( List examples: _____)

_____ Level 4 - I frequently encourage my students to employ new technologies to support communicating, data analysis, and problem solving. My classes have moved dramatically toward student-centered classroom activities in which student learning is assessed through their technology embedded or technology enhanced projects.

Please feel free to attach any additional comments. Thank you.

# Millbrook Central School District

## Self-Assessment* Rubric for Staff Use of Technology

*This scale has been modified from the original Mankato (MN) Schools Scale and in association with Imperial Software consultants.

# Self-Scoring & Personal Goal Setting

| **Self Assessment Scoring**<br>Level 1 = 1 points Level 2 = 2 points Level 3 = 3 points Level to have routine opportunities to enhance their learning with technology. 4 = 4 points | |
|---|---|
| Less Than 16 Points | Your average score is 2 or less in all 8 categories. Developing a personal learning plan and/or participating in district sponsored inservice is necessary in order to enable your students to have routine opportunities to enhance their learning with technology. |
| Between 16 and 24 Points | Your average score is 3 or less in each of the 8 categories. Strong personal use is evident with some technology tools. Additional professional learning with a concentration on use with students is highly recommended. Engage in continued personal learning and/or select appropriate inservice courses. |
| Between 24 and 28 Points | Your average score varies from 2 to 4 in each of the 8 categories. Personal mastery of many technology tools can be demonstrated, with selective integration of some resources into classroom lessons and as means of assessing student learning. Your professional goals may include: (1) diversifying and improving your use of technology resources in all of the eight categories above, and/or (2) concentrating on specific assessment of the extent to which your students to have routine opportunities to enhance and demonstrate their learning with technology. |
| Between 28 and 32 Points | Your average score is approaching 4 in all 8 categories. Effective use of technology is is evident among you and your students in many aspects of your lessons. Your professional goals may include: (1) concentrating on specific assessment of the extent to which your students are meeting particular learning standards as a result of their use of technology resources, and/or (2) becoming a district inservice trainer to assist other colleagues with their progress. |

**My Current Strengths as a Technology User Include:**

1. _____

2. _____

3. _____

**My Next Professional Goals Pertaining to Technology Use in My Program Include:**

1. _____

2. _____

3. _____

# Information Literacy Standards for Student Learning

## Standards and Indicators

Prepared by the
American Association of School Librarians
Association for Educational Communications and Technology

Excerpt from Information Literacy Standards for Student Learning, published by the American Library Association. The full publication includes a chapter on the philosophy and the mission and goals of the information literacy standards, along with the following supporting material to illustrate how standards and indicators can be applied.

- *Levels of Proficiency* items for the indicators within each standard
- *Standards in Action* that provide examples of potential situations requiring information literacy for each standard
- *Examples of Content-Area Standards* for each standard

Information Power: Building Partnerships for Learning includes the full content of Information Literacy Standards for Student Learning with additional content designed to guide and support library media specialists' efforts in three major areas: learning and teaching, information access, and program administration. It also shows how skills and strategies in collaboration, leadership, and technology support these efforts.

# Introduction

I*nformation Literacy Standards for Student Learning* provides a conceptual framework and broad guidelines for describing the information-literate student. The standards consist of three categories, nine standards, and twenty-nine indicators. The core learning outcomes that are most directly related to the services provided by school library media programs are found in the three standards and thirteen indicators in the "information literacy" category. The other two categories—three standards and seven indicators for "independent learning" and three standards and nine indicators for "social responsibility"—are grounded in information literacy but describe more general aspects of student learning to which school library media programs also make important contributions. Taken together, the categories, standards, and indicators describe the content and processes related to information that students must master to be considered information literate.

The standards and indicators are written at a general level so that library media specialists and others in individual states, districts, and sites can tailor the statements to meet local needs. These educators are the ones who know their student populations; their role is to apply these general statements in light of the developmental, cultural, and learning needs of all the students they serve. By offering broad guidelines for describing the information-literate student, *Information Literacy Standards for Student Learning* provides a conceptual framework and supporting material for local efforts.

# Information Literacy Standards For Student Learning

## INFORMATION LITERACY STANDARDS

**Standard 1 The student who is information literate accesses information efficiently and effectively.**

The student who is information literate recognizes that having good information is central to meeting the opportunities and challenges of day-to-day living. That student knows when to seek information beyond his or her personal knowledge, how to frame questions that

will lead to the appropriate information, and where to seek that information. The student knows how to structure a search across a variety of sources and formats to locate the best information to meet a particular need.

### *Indicators*

**Indicator 1.** Recognizes the need for information

**Indicator 2.** Recognizes that accurate and comprehensive information is the basis for intelligent decision making

**Indicator 3.** Formulates questions based on information needs

**Indicator 4.** Identifies a variety of potential sources of information

**Indicator 5.** Develops and uses successful strategies for locating information

---

**Standard 2 The student who is information literate evaluates information critically and competently.**

The student who is information literate weighs information carefully and wisely to determine its quality. That student understands traditional and emerging principles for assessing the accuracy, validity, relevance, completeness, and impartiality of information. The student applies these principles insightfully across information sources and formats and uses logic and informed judgment to accept, reject, or replace information to meet a particular need.

### *Indicators*

**Indicator 1.** Determines accuracy, relevance, and comprehensiveness

**Indicator 2.** Distinguishes among fact, point of view, and opinion

**Indicator 3.** Identifies inaccurate and misleading information

**Indicator 4.** Selects information appropriate to the problem or question at hand

---

**Standard 3 The student who is information literate uses information accurately and creatively.**

The student who is information literate manages information skillfully and effectively in a variety of contexts. That student organizes and integrates information from a range of sources and formats in order to apply it to decision making, problem solving, critical thinking, and creative expression. The student communicates information and ideas for a variety of purposes, both scholarly and creative; to a range of audiences, both in school and beyond; and in print, nonprint, and electronic formats. This Standard promotes the design and execution of authentic products that involve critical and creative thinking and that reflect real world situations. The indicators under this Standard therefore deviate from the traditional definition of use. Rather than suggesting that students simply insert researched information into a perfunctory product, the indicators emphasize the thinking processes involved when students use information to draw conclusions and develop new understandings.

### *Indicators*

**Indicator 1.** Organizes information for practical application

**Indicator 2.** Integrates new information into one's own knowledge

**Indicator 3.** Applies information in critical thinking and problem solving

**Indicator 4.** Produces and communicates information and ideas in appropriate formats

## INDEPENDENT LEARNING STANDARDS

**Standard 4 The student who is an independent learner is information literate and pursues information related to personal interests.**

The student who is an independent learner applies the principles of information literacy to access, evaluate, and use information about issues and situations of personal interest. That student actively and independently seeks information to enrich understanding of career,

community, health, leisure, and other personal situations. The student constructs meaningful personal knowledge based on that information and communicates that knowledge accurately and creatively across the range of information formats.

### *Indicators*

**Indicator 1.** Seeks information related to various dimensions of personal well-being, such as career interests, community involvement, health matters, and recreational pursuits

**Indicator 2.** Designs, develops, and evaluates information products and solutions related to personal interests

**Standard 5 The student who is an independent learner is information literate and appreciates literature and other creative expressions of information.**

The student who is an independent learner applies the principles of information literacy to access, evaluate, enjoy, value, and create artistic products. That student actively and independently seeks to master the principles, conventions, and criteria of literature in print, nonprint, and electronic formats. The student is able both to understand and enjoy creative works presented in all formats and to create products that capitalize on each format's particular strengths.

### *Indicators*

**Indicator 1.** Is a competent and self-motivated reader

**Indicator 2.** Derives meaning from information presented creatively in a variety of formats

**Indicator 3.** Develops creative products in a variety of formats

**Standard 6 The student who is an independent learner is information literate and strives for excellence in information seeking and knowledge generation.**

The student who is an independent learner applies the principles of information literacy to evaluate and use his or her own information

processes and products as well as those developed by others. That student actively and independently reflects on and critiques personal thought processes and individually created information products. The student recognizes when these efforts are successful and unsuccessful and develops strategies for revising and improving them in light of changing information.

### *Indicators*

**Indicator 1.** Assesses the quality of the process and products of personal information seeking

**Indicator 2.** Devises strategies for revising, improving, and updating self-generated knowledge

## SOCIAL RESPONSIBILITY STANDARDS

**Standard 7 The student who contributes positively to the learning community and to society is information literate and recognizes the importance of information to a democratic society.**

The student who is socially responsible with regard to information understands that access to information is basic to the functioning of a democracy. That student seeks out information from a diversity of viewpoints, scholarly traditions, and cultural perspectives in an attempt to arrive at a reasoned and informed understanding of issues. The student realizes that equitable access to information from a range of sources and in all formats is a fundamental right in a democracy.

### *Indicators*

**Indicator 1.** Seeks information from diverse sources, contexts, disciplines, and cultures

**Indicator 2.** Respects the principle of equitable access to information

**Standard 8 The student who contributes positively to the learning community and to society is information literate and practices ethical behavior in regard to information and information technology.**

The student who is socially responsible with regard to information applies principles and practices that reflect high ethical standards for accessing, evaluating, and using information. That student recognizes the importance of equitable access to information in a democratic society and respects the principles of intellectual freedom and the rights of producers of intellectual property. The student applies these principles across the range of information formats—print, nonprint, and electronic.

### *Indicators*

**Indicator 1.** Respects the principles of intellectual freedom

**Indicator 2.** Respects intellectual property rights

**Indicator 3.** Uses information technology responsibly

**Standard 9 The student who contributes positively to the learning community and to society is information literate and participates effectively in groups to pursue and generate information.**

The student who is socially responsible with regard to information works successfully—both locally and through the variety of technologies that link the learning community—to access, evaluate, and use information. That student seeks and shares information and ideas across a range of sources and perspectives and acknowledges the insights and contributions of a variety of cultures and disciplines. The student collaborates with diverse individuals to identify information problems, to seek their solutions, and to communicate these solutions accurately and creatively.

### *Indicators*

**Indicator 1.** Shares knowledge and information with others

**Indicator 2.** Respects others' ideas and backgrounds and acknowledges their contributions

**Indicator 3.** Collaborates with others, both in person and through technologies, to identify information problems and to seek their solutions

**Indicator 4.** Collaborates with others, both in person and through technologies, to design, develop, and evaluate information products and solutions