HILL VIEW MONTESSORI
CHARTER Public School

Technology Plan 2009-2011

Background

Hill View Montessori Charter Public School (HVM) was founded in 2003 and opened in 2004 to 122 students in grades K-3. Each year an additional grade has been added. FY09 enrollment was 244 K-6 students; by 2010 there will be approximately 300 students in grades K-8.

Since its inception the school has occupied a 100-year old building in Haverhill that had previously been used as one of the city's elementary schools. As an older building it has tremendous limitations in its general use as well as its suitability for technology use and integration. During the 2009-2010 school year, HVM expects to move into a new facility. Planning and fundraising are under way to support this initiative. With the pending move, improvement in technology infrastructure and application at the current school site is being limited to investments that are transportable to the new site.

Mission Statement

The mission of the Hill View Montessori Charter Public School is to provide a grade K-8 public education that promotes academic excellence using the Montessori philosophy. In partnership with teachers and parents, children attain high levels of academic, personal and social achievement and so prepared, become constructive contributors to our community.

Benchmark 1: Technology Vision and Implementation Strategy

As a Montessori school, the theory and vision for technology usage is one of complete and seamless integration. At HVM, technology is viewed and used as a tool to make the learning environment more effective for the entire school community – teachers, students and the greater HVM community. The goal for the use of technology in the classroom by teachers and students is to enhance the students' learning experience, to aid in the educational process and to augment the students' knowledge base. In circumstances that technology can be used to support continuous learning outside of the school environment and generally strengthen the school, technology will be further leveraged.

A. Technology Goals and Implementation Strategies

Teachers

HVM teachers will be able to teach their students about the technologies needed to succeed in our technological society. Teachers will also use technology as a tool to make knowledge more accessible, the learning environment fuller and communications more effective. All staff will use information technology and other technology resources to continuously improve instruction as well as help the school run more effectively as a whole.

Goals for staff members' use and integration of technology in the classroom and throughout the school include:

- ✓ Develop students' ability to think critically, creatively and analytically and to work collaboratively.

- ✓ Develop students' ability to research topics using the information available in the worldwide web.
- ✓ Develop students' ability to use productivity tools.
- ✓ Use technology to better monitor student achievement and identify areas in which students individually and as a group have additional instructional needs.
- ✓ Expand students' vision of the world by connecting them to the world outside their classrooms.
- ✓ Prepare students to be constructive contributors in the technology-advanced 21st century global society.

Strategies to ensure teachers can achieve these goals include the following:

- Learn and understand computer terminology.
- Learn to use productivity software programs including Word for word processing, Excel for creating spreadsheets and PowerPoint for creating presentations.
- Identify websites for student research.
- Plan for effective use of technology resources.
- Design and provide a learning environment that promotes skill development and practice with technology.
- Teach basic computer terminology, basic skill development, application programs, and productivity software use.
- Teach good ergonomic practices to provide a safe environment in which to learn technology.
- Teach students about using technology resources ethically and responsibly.
- Teach students how to use data and technology in decision-making and problem solving.
- Use technology for student goal setting and assessment.
- Use technology to analyze results of assessment and identify areas of improvement to maximize student learning.
- Use technology resources such as the Internet and email to communicate with parents, peers and students.
- Facilitate equitable access to technology resources for all students.
- Learn how to access and use MassONE.

Students

HVM students will learn and apply technological skills and concepts to research concepts, communicate ideas, solve problems and make decisions. HVM students will learn about and use a variety of technologies including computers, calculators, educational as well as productivity software, and various multimedia devices such as DVD/CD players, TV/VCR, digital and video cameras to support the acquisition and demonstration of learning. Technology will be used further to communicate ideas, solve problems and make informed decisions.

Strategies to ensure students learn and apply technology in their learning include the following:

- Understand and pledge to follow the school's Acceptable Use Policies for technology.
- Learn keyboarding skills.
- Learn about responsible and effective use of technology resources.
- Learn about ergonomic factors associated with using technology resources.
- Learn about internet websites; their validity and their use as part of the research process.
- Use technology as a means of accessing knowledge and presenting learning.
- Learn and use productivity software programs.

Greater HVM Community

Technology will be used to communicate with parents and the greater HVM community so they can better understand and support the school, their children and the classroom learning environment.

- Digital presentations will be used to communicate with prospective parents, legislators and other community members.
- HVM's website will provide critical information about the school including enrollment and school activities and will be a resource for parents and other HVM community members.
- Email will be used to communicate with parents and the community.
- HVM's website will also be used to advertise job openings to the larger community.

B. Technology Task Force

HVM will have a standing Technology Task Force comprised of representative stakeholders including board, staff and parents. The Executive Director will also be a part of the Technology Task Force as well as the Data and Development Director.

When the HVM middle school is well established, consideration will be given to including middle school student representatives to participate in a limited number of Technology Task Force meetings. Student involvement will occur where deemed relevant and appropriate so that students will increasingly take ownership and direct the role of technology at their school. Students will be invited to provide relevant input as well as serve as ambassadors to their classmates (helping classmates understand the role of, and their responsibilities related to, technology at HVM).

The Technology Task Force is charged with oversight of the school's Technology Plan. As such, the task force will revisit the goals, their effectiveness and the implementation of the plan at least three times per year. Further, the task force will convene on a regular basis, at least bi-monthly, to discuss and provide input on technology related issues.

C. Technology Needs Assessment

Current Resources & Future Needs

In the area of technology-related staffing, HVM had employed an onsite Technology Specialist whose technology role and responsibilities increased over the years of the school's existence such that during FY09 he was working .75FTE on technology exclusively. This included teacher and student support; network administration and on-site trouble shooting.

In September of 2008, the position of Data and Development Director was created to oversee the Technology Specialist and all aspects of the school that related to data and the application of technology. During the spring of 2009, the Data and Development Director reviewed the effectiveness and efficiency of the technology staffing model in place at HVM and recommended that HVM transition to a different technology support model. It was suggested that technology funding would better invested in technology infrastructure to create a network that would require less onsite day-to-day maintenance. This would redirect ongoing "re-active" investment in technology to a more proactive approach and allow for a more strategic use of technology going forward. In June 2009, HVM formally committed to this new model.

Also during the school year 2008-2009, a new student information system and a special education software program were piloted and the school's website was reviewed and reconfigured. Finally, HVM made a commitment to becoming a data-driven organization and launched an initiative to begin planning for cultural and infrastructural changes needed to make this happen.

The school recently entered into a contractual agreement for two major data-related initiatives. During the summer of 2009 an audit will be completed by an external consulting firm that specializes in data driven instruction. The audit will include a complete assessment of current systems in place that capture and analyze student data. It will also assess staff members' comfort, competency and skills in the area of data use. Beginning August 2009, teachers will receive at least four hours per month of regular, ongoing professional development and coaching to provide the skills necessary to use student assessment data to improve instruction.

During the summer of 2009, an improved technology infrastructure will be created (through the generous donations of state-of-the-art used hardware from an HVM parent volunteer) and consult from a technology networking specialist. Then, beginning with the school year September 2009, HVM will outsource network administration to an outside consulting organization. The outsourced solution will ensure continual offsite back-up, monitoring and maintenance of the HVM infrastructure. A currently employed and skilled administrative assistant who has previous experience as a Technology Support Specialist will assume responsibility for day-to-day technological troubleshooting beginning July 2009. With an improved technological infrastructure and this new model in place, the Data and Development Director will be freed-up to focus on the strategic use of technology rather than attending to the day-to-day challenges of a currently "patch worked" network.

A consultant has been retained, and will begin in July 2009, to prepare a complete assessment of current resources and future needs. Plans for this are as follows:

Time Frame	Task	Anticipated Cost
July 2009	Complete physical inventory* Diagram Bartlett school wiring Create Network diagram Create Trouble Ticket System Build new network system to industry standards: firewall, secure zones, windows domain, virus protection, exchange server, daily snapshots for backup insurance	$1,500 (hw, sw) $2,500 consult
August 2009	Extend network Institute security measures (students vs. staff vs. administration, etc.) Design system to ensure proactive monitoring Institute backup system Ensure consistency in student platforms Design new site network map Start new site wiring	$2,500 (hw, sw) $2,500 consult
* HVM currently has a mismanaged inventory of (mostly donated) computers and peripherals. All computers and components have been collected, are being accounted for, cleaned and reloaded to reflect the school's commitment to industry-standard network administration. There are 15 student laptops and 10 student desktops. There are 20 employee desktops, 12 laptops and 20 printers.		

In addition to the physical technology changes needed at HVM, there is also a need for current non-teaching staff members to better leverage the powerful software systems that have recently been put in place at HVM. Plans for extensive professional development in this area are underway.

Technology Planning Beyond FY10

Beyond this summer's physical inventory and accounting of all computers and peripherals and the technology infrastructural improvements being made at the current site during July and August 2009 and staff-level training, there will be additional technology needs identified and planned related to HVM's move to its new facility. The Technology Task Force has scheduled ongoing, regular meetings to address these planning needs.

Members of the Technology Task Force and the new building Project Manager have met and are currently in the process of mapping out the new site technology infrastructure. Plans are being made to begin work on the physical technological infrastructure (wiring, etc.) immediately and to be completed by late fall 2009. Identification of hardware and software purchase needs are being identified and prioritized. Grants and donations will be sought to help support these needs.

D. Internet Safety/Acceptable Use Policy

HVM has a board-approved Acceptable Use Policy (AUP) regarding internet and network use. The policy is updated as needed to help ensure safe and ethical use of resources by teachers and students. The policy is shared with parents and students annually as well as included in the Family Handbook. Every student/parent is required to sign-off on the Acceptable Use policy each year

before students will be allowed to use computer technology. A copy of the current HVM Acceptable Use Policy is included in the appendix.

HVM currently has Technology Protection Measures in place to filter internet content. Going forward and prior to the start of the school year 2009, HVM will revisit its Technology Protection Measures to ensure they are CIPA compliant. This is planned to occur as part of the 2009 summer network reconfiguration. Security measures will be put in place such that internet access and downloads are limited by user group.

Additional documentation that clearly outlines how HVM addresses the specific CIPA requirements will be drafted during the summer of 2009 and submitted to the Technology Task Force for its approval. A public meeting (with reasonable public notice) to address the school's Technology Protection Measures and Internet Safety Policy will be held as part of the school's regularly scheduled monthly board of trustees meetings during the August meeting.

E. Budget

A budget for technology will be established every year and be part of HVM's total budget. Formal input to inform the technology budget will be solicited from the Data and Development Director as well as the Technology Task Force in January of each year. Input into technology needs will be informally solicited from teachers by the Data and Development Director at least twice per year.

Current FY10 and FY11 projected budget for technology is as follows:

	FY2010	FY2011 (proj)	Comments
Technology Related Revenues			
Federal sources	$37,500	$25,000	Title IID, Special Ed Title I, ARRA, DDI
State sources	94,000	66,500	Tuition
Private sources			
Technology Related Expenses			
Administrative Staffing	$20,000	$20,000	Portion of DDD and Tech support salaries
Computer, internet access	720	720	
Computer maintenance and supplies	3,000	4,000	
Software (administrative)	10,000	15,000	Rediker, c3Net, SNAP, Semsnet
Software (instructional)	5,000	5,500	ALEKS
Telephone	4,000	4,000	
Professional Development	22,000	10,000	Data driven instruction training and coaching

Consulting: Technology Audit, customized ESE DW reports	14,000		Audit of current systems, structures, assessments, reports
Network consultant and ongoing offsite network support contract	7,500 7,500	 10,000	Network infrastructure consult Network ongoing support
Capital expenditures	15,000	10,000	Computers
New site tech work	7,500		Wiring
TOTAL	$116,220	$79,220	

F. Evaluation

At the highest level, the successful use and implementation of technology for the school at large is overseen via a task force of the board of trustees, the Technology Task Force. The Technology Task Force meets at least quarterly to review progress made to date on achieving the goals defined in the Technology Plan. Further, a report summarizing the findings of the Technology Task Force is prepared and delivered quarterly to the board of trustees at their regularly scheduled meetings. Also, the board reviews quarterly financials, part of which includes expenditures related to technology.

At the teacher and staff levels, annual administration of the TSAT is one mechanism used to evaluate the status and growth of staff members as it relates to technology generally. Further, through the monitoring of the progress made on student achievement goals outlined in HVM's Accountability Plan, the impact of technology use as it relates to data driven instruction can be ascertained. The belief is that improved student achievement occurs because HVM has quality data, coupled with a strong data culture and the capacity to ensure systemic data use.

For students, an annual, informal assessment by the classroom teacher will yield informal information about the use of technology. Further, the use of technology as students demonstrate their learning will serve to verify its understanding and application.

Benchmark 2: Technology Integration and Literacy

Technology integration, as defined as "the daily use of technology in classrooms, libraries, and labs to improve student learning" shall be identified to be in existence when at least 85% of teachers and staff members use technology every day outside of teaching time; and for teaching and learning.

Technology literacy, as specified by the Massachusetts Department of Elementary and Secondary Education, is achieved when at least 85% of eighth grade students show proficiency in the Massachusetts recommended Technology Literacy Standards and Expectations for eighth grade (included in appendix).

Technology integration and literacy is further defined by the existence of the following:

- 100% of teachers are working to meet the proficiency level in technology, and by the FY2011, 60% of teachers reach the proficiency level as defined by the Massachusetts Technology Self-Assessment Tool (TSAT)
- The school has an administrative level coordinator directly overseeing technology to ensure its use as an integral component of the school's overall strategic direction.
- The school has staff that are trained, capable and dedicated to overseeing data management and integration.

At HVM, technological integration and literacy is further evidenced when:

- Our teachers share information about technology use for progress monitoring and assessment with their colleagues at their weekly collaborative meetings thus use it as a means to improve instruction; refer to data based formative assessment data in creating their weekly lesson plans; use the internet to research and leverage best practices posted by other teachers; use technology as a means of effective and efficient communication and for administrative responsibilities (attendance, family communications, etc.)
- All students at our Upper Elementary and Middle School levels use and have evidence of technology being used appropriately to improve, to access and/or to demonstrate student learning of the curriculum. Activities include some of the following: research, multimedia, simulations, data interpretation, communications, and collaboration.
- Students at Upper and Middle School levels use the artificial intelligence system ALEKS at least three times per year for mathematic assessment; teachers use it to generate individualized instruction and students use it as a means of attaining additional mathematics support.
- At the Lower Elementary and kindergarten levels, technology is used appropriately to improve or enhance learning or to demonstrate information at least weekly.
- Students at all levels routinely include a keyboarding program in their weekly work expectations.
- Staff members routinely use the software systems in place to manage student information (Special education, attendance, contact information, e-newsletters, etc.) Reports can be and are accessed during the general course of the day.

Benchmark 3: Technology Professional Development

HVM teachers and staff members will take the Technology Self Assessment for Teachers (TSAT) available online through the Massachusetts Elementary and Secondary Education's technology portal, MassONE at the beginning of each school year.

With results from the TSAT, individualized professional development needs will be identified and content-specific training will be offered to address the areas of need. (The value of the training

will be assessed following PD through the use of participant evaluations. Further, with annual administration of the TSAT, we will be able to see if areas previously identified as needing improvement have been addressed.)

- During each of the next three years, teachers will participate in ten half day high-quality professional development sessions that directly relate to technology skills and the integration of technology into instruction. (A three year contractual agreement with PCG exists for training, coaching, and mentoring with the goal of transferring ownership and creating sustainability within the organization. By the design of the professional development program, reliance on PCG is slowly reduced and internal sustainability created. This DDI professional development is described further below).

- Administrators and teachers consider their own needs for technology professional development, using the technology self-assessment tools and relay this information to the Data and Development Director directly or to their immediate supervisor.

Beginning in September of 2009 and continuing for three years, teachers will be participating in ongoing professional development around data driven instruction and its use to improve student achievement. Professional development in this area is being provided by an outside consulting group, PCG-CRM, and will initially include small group training sessions with collaborative teams as well as coaching sessions that will occur in between the training sessions. Training sessions will be interactive and teachers will be given "real world" assignments analyzing student outcomes and then applying their learning to create improved instructional measures for their current students.

Benchmark 4: Accessibility of Technology

HVM has as its goal, technology access for all regular fulltime staff members in a 1:1 ratio; i.e., every staff member has direct access to his or her own computer (be it laptop or desktop). Part-time employees shall have access, at a minimum, to at least one computer per five PT employees.

HVM employees a full time Data and Development Director who has ultimate responsibility for all data and technology related tasks and requirements. In addition, one of HVM's administrative assistant's dedicates a portion of her time to technology related tasks including first line troubleshooting, basic report writing (data base) projects, etc. For more sophisticated technology needs as well as the long term back and maintenance of the school's network, a subcontracted consulting group will provide service.

For students, the goal is for HVM students to have access to technology at the following rates:

- No more than five students per computer access point (laptop/desktop). Each Upper Elementary classroom will thus have at least five computer access points available in the classroom.

- Upper Elementary classrooms will have internet access for all computers
- Lower Elementary students will have access to at least one student computer per classroom at all times. The use of additional computers for student usage will be shared between classrooms. At the Lower Elementary level, at least one student computer will have internet access.
- Classrooms will have ample calculators and other handhelds as well as at least one general use camera per classroom.

HVM has two digital projectors that are shared throughout the school, special education reading software and the AI-based math program from ALEKS.

Going forward with plans for the new site, HVM will ensure that it meets the Massachusetts Department of Elementary and Secondary Education's benchmarks for accessibility of technology including:

- Computer and internet to user ratios
- Bandwidth recommendations and network card capacities
- Minimum of cat5 wiring and wireless
- Secure and backed-up networking
- Remote access for staff

For students and families who are unable to access the internet from home, the Haverhill Public Library offers free access and numerous computers for children, teen and adult use. HVM makes its constituency aware of this through its regular written communications.

Benchmark 5: E-Learning and Communications

As HVM expands into the upper grades it is increasingly looking to innovative uses of technology to augment teaching and learning.

HVM has contracted with Rediker, the provider of the student information system, for an additional module that allows the school to use the IS system for both general and targeted communications with families. During the summer of 2009, three staff members will be attending training with Rediker to learn how to employ the database and communication system to its fullest.

Additionally, HVM recently launched a new website that will serve as a resource for families and community members. Information will be updated on a regular basis as this site will be used as a vehicle for sharing school-wide information with parents.

While HVM has back-upped and maintained general documents, it has not historically had a policy regarding the backup and maintenance of electronic communications. The Technology Task Force

is in the process of drafting a policy that complies with federal and state laws and clearly outlines the specifications.

Appendices

HVM Acceptable Use Policy

MA Dept of Elementary and Secondary Education Technology Literacy Standards and Expectations

HILL VIEW MONTESSORI
CHARTER PUBLIC SCHOOL

Pledge for Appropriate Use of Computers

I understand that I must abide by the school's computer usage rules in order to use HVM computers. If I do not follow the rules, I will lose my computer privileges.

I agree to...

1. Utilize HVM computers for educational purposes only.
2. Access appropriate websites only.
3. Respect the privacy of others.
4. Honor property rights; give proper credit for intellectual property.
5. Represent HVM honorably in all instances involving use of computer resources.
6. Alert a teacher about the presence of any violation of this agreement.
7. Alert a teacher about the existence of any threats to the school's students and staff.
8. Respect HVM computer resources as private property of the school
9. Refrain from damaging the school's computer network or bypassing network restrictions or security.

I/we have read this pledge and agree to be bound by all rules stated in The Pledge of Appropriate Use of Computers. I/we authorize my child to use the computer resources of the school computer network and its connections to the Internet. I/we understand that access to the Internet will necessarily involve access to information, which is not under the control of the school. I/we agree that my child will comply with all network rules and that the school may suspend or revoke network/Internet access as the school deems appropriate. Violation of any of the rules will result in disciplinary action, up to and including suspension from school in certain instances, at the discretion of the school leaders.

_____ _____
(Student) (Date)

_____ _____
(Parent/Guardian) (Date)

MA Technology Literacy Standards & Expectations

Standard 1. Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity

Expectations: Basic Operations

Kindergarten-Grade 2

1.1 Demonstrate beginning steps in using available hardware and applications (e.g., turn on a computer, launch a program, use a pointing device such as a mouse).
1.2 Explain that icons (e.g., recycle bin/trash, folder) are symbols used to signify a command, file, or application.
1.3 Identify, locate, and use letters, numbers, and special keys (e.g., space bar, Shift, Delete) on the keyboard.
1.4 Recognize the functions of basic file menu commands (e.g., New, Open, Close, Save, Print).

Grades 3-5

1.1 Demonstrate basic steps in using available hardware and applications (e.g., log into a computer, connect/disconnect peripherals, upload files from peripherals).
1.2 Select a printer, use print preview, and print a document with the appropriate page setup and orientation.
1.3 Use various operating system features (e.g., open more than one application/program, work with menus, use the taskbar/dock).
1.4 Demonstrate intermediate[4] keyboarding skills and proper[5] keyboarding technique

Grades 6-8

1.1 Use features of a computer operating system (e.g., determine available space on local storage devices and remote storage resources, access the size and format of files, identify the version of an application).
1.2 Identify successful troubleshooting strategies for minor hardware and software issues/problems (e.g., "frozen screen").
1.3 Independently operate peripheral equipment (e.g., scanner, digital camera, camcorder), if available.
1.4 Identify and use a variety of storage media (e.g., CDs, DVDs, flash drives, school servers, and online storage spaces), and provide a rationale for using a certain medium for a specific purpose.
1.5 Demonstrate keyboarding skills between 25-30 wpm with fewer than 5 errors. (For students with disabilities, demonstrate alternate input techniques as appropriate.

Expectations: Word Processing and Desktop Publishing

Kindergarten-Grade 2

1.5 Use a word processing application to write, edit, print, and save simple assignments.
1.6 Insert and size a graphic in a word processing document.

Grades 3-5

1.5 Use menu/tool bar functions in a word processing program (i.e., font size/style, line spacing, margins) to format, edit, and print a document.
1.6 Copy and paste text and images within a document, as well as from one document to another.
1.7 Proofread and edit writing using appropriate resources (e.g., dictionary, spell-checker, grammar resources).

Grades 6-8

1.6 Demonstrate use of intermediate features in word processing applications (e.g., tabs, indents, headers and footers, end notes, bullet and numbering, tables).
1.7 Create, save, open, and import a word processing document in different file formats (e.g., RTF, HTM

Expectations: Database and Spreadsheet (Tables/Charts and Graphs)

Kindergarten-Grade 2

1.7 Explain that computers can store and organize information so that it can be searched.
1.8 Use a simple computer graphing application to display data.

Grades 3-5

1.8 Define the term “database” and provide examples from everyday life (e.g., library catalogues, school records, telephone directories).
1.9 Define terms related to databases, such as “record,” “field,” and “search.”
1.10 Do simple searches of existing databases (e.g., online library catalog, electronic encyclopedia).
1.11 Demonstrate an understanding of the spreadsheet as a tool to record, organize, and graph information.
1.12 Identify and explain terms and concepts related to spreadsheets (i.e., cell, column, row, values, labels, chart, graph).
1.13 Enter/edit data in spreadsheets and perform calculations using simple formulas (+, -, *, /), observing the changes that occur

Grades 6-8

1.8 Describe the structure and function of a database, using related terms appropriately.
1.9 Create a simple database, defining field formats and adding new records.
1.10 Perform simple operations in a database (i.e., browse, sort, filter, search on selected criteria, delete data, enter data).
1.11 Plan and develop database reports to organize and display information.
1.12 Describe the use of spreadsheets to calculate, graph, organize, and present data in a variety of real-world settings.
1.13 Create an original spreadsheet, using formulas.
1.14 Use various number formats (e.g., scientific notation, percentages, exponents) as appropriate.
1.15 Produce simple charts and graphs from a spreadsheet.
1.16 Distinguish among different types of charts and graphs, and choose the most appropriate type to represent given data.
1.17 Apply advanced formatting features to customize tables, charts, and graphs

Expectations: Internet and Multimedia (Communications)

Kindergarten-Grade 2

1.9 Explain that the Internet links computers around the world, allowing people to access information and communicate.
1.10 Demonstrate the ability to use tools in painting and/or drawing programs

Grades 3-5

1.14 Explain and use age-appropriate online tools and resources (e.g., tutorial, assessment, Web browser).
1.15 Save, retrieve, and delete electronic files on a hard drive or school network.
1.16 Explain terms related to the use of networks (e.g., username, password, network, file server).
1.17 Identify and use terms related to the Internet (e.g., Web browser, URL, keyword, World Wide Web, search engine, links).
1.18 Use age-appropriate Internet-based search engines to locate and extract information, selecting appropriate key words
1.19 Create, edit, and format text on a slide.
1.20 Create a series of slides and organize them to present research or convey an idea.
1.21 Copy and paste or import graphics; change their size and position on a slide.
1.22 Use painting and drawing applications to create and edit work

Grades 6-8

1.18 Use Web browsing to access information (e.g., enter a URL, access links, create bookmarks/favorites, print Web pages).
1.19 Identify probable types and locations of Web sites by examining their domain names, and explain that misleading domain names are sometimes created in order to deceive people (e.g., .edu, .com, .org, .gov, .au).
1.20 Explain and correctly use terms related to networks (e.g., LANs, WANs, servers, and routers) and Internet connectivity (e.g., DSL, T1, T3).
1.21 Explain and correctly use terms related to online learning (e.g., IP address, post, thread, Intranet, discussion forum, drop box, account, password).
1.22 Explain that some Web sites require the use of plug-ins and specific browser versions to access content.
1.23 Use e-mail functions and features (e.g., replying, forwarding, attachments, subject lines, signature, and address book.) The use of e-mail is at the school district's discretion and may be a class-wide activity if students do not have individual accounts
1.24 Create a multimedia presentation using various media as appropriate (e.g., audio, video, animations, etc.).
1.25 Use a variety of technology tools (e.g., dictionary, thesaurus, grammar-checker, calculator) to maximize the accuracy of work.

Standard 2. Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school, and in society.

Expectations: Ethics

Kindergarten-Grade 2

2.1 Follow classroom rules for the responsible use of computers, peripheral devices, and resources.
2.2 Explain the importance of giving credit to media creators when using their work in student projects.

Grades 3-5

2.1 Explain and demonstrate compliance with school rules (Acceptable Use Policy) regarding responsible use of computers and networks.
2.2 Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use.
2.3 Explain Fair Use Guidelines for the use of copyrighted materials (e.g., text, images, music, video) in student projects

Grades 6-8

2.1 Explain ethical issues related to privacy, plagiarism, spam, viruses, hacking, and file sharing.
2.2 Explain how copyright law protects the ownership of intellectual property, and explain possible consequences of violating the law.
2.3 Explain fair use guidelines for using copyrighted materials (e.g., images, music, video, text) in school projects.
2.4 Describe appropriate and responsible use of communication tools (e.g., chats, instant messaging, blogs, and wikis).

Expectations: Classroom/Society

Kindergarten-Grade 2

2.3 Explain why there are rules for using technology at home and at school.
2.4 Identify the purpose of a media message (to inform, persuade, or entertain).
2.5 Describe how people use many types of technologies in their daily lives.

Grades 3-5

2.4 Identify ways in which technology is used in the workplace and in society.
2.5 Work collaboratively online with other students under teacher supervision.
2.6 Analyze media messages and determine if their purpose is to inform, persuade, or entertain.
2.7 Explain that some Web sites and search engines may include sponsored commercial links.
2.8 Explain how hardware and applications can enable people with disabilities to learn.

Grades 6-8

2.5 Identify and discuss the technology proficiencies needed in the workplace, as well as ways to prepare to meet these demands.
2.6 Identify and describe the effect technological changes have had on society.
2.7 Explain how technology can support communication and collaboration, personal and professional productivity, and lifelong learning.
2.8 Analyze and explain how media and technology can be used to distort, exaggerate, and misrepresent information.
2.9 Give examples of hardware and applications that enable people with disabilities to use technology

Expectations: Health and Safety

Kindergarten-Grade 2

2.6 Follow the school rules for safe and ethical Internet use. (Use of Internet in this grade span is determined by district policy.)
2.7 Demonstrate knowledge of ergonomics and electrical safety when using computers.
2.8 Explain that a password helps protect the privacy of information

Grades 3-5

2.9 Recognize and describe the potential risks and dangers associated with various forms of online communications.
2.10 Identify and explain the strategies used for the safe and efficient use of computers (e.g., passwords, virus protection software, spam filters, popup blockers).
2.11 Demonstrate safe e-mail practices, recognition of the potentially public exposure of e-mail and appropriate e-mail etiquette (if the district allows student e-mail use).
2.12 Identify cyber bullying and describe strategies to deal with such a situation.
2.13 Recognize and demonstrate ergonomically sound and safe use of equipment

Grades 6-8

2.10 Explain the potential risks associated with the use of networked digital information (e.g., Internet, mobile phones, wireless, LANs).
2.11 Provide examples of safe and unsafe practices for sharing personal information via e-mail and the Internet.
2.12 Explain why computers, networks, and information need to be protected from viruses, intrusion, and vandalism.
2.13 Explain terms associated with the safe, effective, and efficient use of telecommunications/Internet (e.g., password, firewalls, spam, security, Acceptable Use Policy).
2.14 Describe how cyber bullying can be blocked

Standard 3. Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity, and innovation

Expectations: Research (Gathering and Using Information)

Kindergarten-Grade 2

3.1 Use various age-appropriate technologies to locate, collect, and organize information.
3.2 Review teacher-selected Internet resources and explain why each resource is or is not useful.

Grades 3-5

3.1 Locate, download, and organize content from digital media collections for specific purposes, citing sources.
3.2 Perform basic searches on databases (e.g., library card catalogue, encyclopedia) to locate information, using two or more key words and techniques to refine and limit such searches.
3.3 Evaluate Internet resources in terms of their usefulness for research.
3.4 Use content-specific technology tools (e.g., environmental probes, sensors, measuring devices, simulations) to gather and analyze data.
3.5 Use online tools (e.g., e-mail, online discussion forums, blogs, and wikis) to gather and share information collaboratively with other students, if the district allows it

Grades 6-8

3.1 Explain and demonstrate effective searching and browsing strategies when working on projects.
3.2 Collect, organize, and analyze digital information from a variety of sources, with attribution.
3.3 Use a variety of computing devices (e.g., probeware, handheld computers, digital cameras, scanners) to collect, analyze, and present information for curriculum assignments

Expectations: Problem Solving

Kindergarten-Grade 2

3.3 Use age-appropriate technologies (e.g., a simple graphing application) to gather and analyze data.

Grades 3-5

3.6 With teacher direction, use appropriate technology tools (e.g., graphic organizer) to define problems and propose hypotheses.
3.7 Use spreadsheets and other applications to make predictions, solve problems, and draw conclusions

Grades 6-8

3.4 Independently use appropriate technology tools (e.g., graphic organizer) to define problems and propose hypotheses.
3.5 Use and modify databases and spreadsheets to analyze data and propose solutions.
3.6 Develop and use guidelines to evaluate the content, organization, design, use of citations, and presentation of technologically enhanced projects

Expectations: Communication & Collaboration

Kindergarten-Grade 2

3.4 Use a variety of age-appropriate technologies (e.g., drawing program, presentation software) to communicate and exchange ideas

Grades 3-5

3.8 Create projects that use text and various forms of graphics, audio, and video (with proper citations) to communicate ideas.
3.9 Use teacher-developed guidelines to evaluate multimedia presentations for organization, content, design, presentation, and appropriate use of citations.
3.10 Communicate with other students and other classes using appropriate technology, including e-mail if the district allows it

Grades 6-8

3.7 Plan, design, and develop a multimedia product to present research findings and creative ideas effectively, citing sources.
3.8 Identify differences between various media and explain issues associated with repurposing information from one medium to another (e.g., from print to the Web).
3.9 Use a variety of telecommunication tools (e.g., e-mail, discussion groups, Web pages, blogs, Web conferences) to collaborate and communicate with peers, experts, and other audiences (at district's discretion).