
Technology Plan

July 1, 2008 – June 30, 2011

Principal: Dr. Tom DeMarco

School name: Brooklyn Excelsior Charter School
856 Quincy Street, Brooklyn, NY 11221

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Technology Plan

June 30, 2008 – June 30, 2011

Brooklyn Excelsior Charter School

School Contact Information

Intermediate District Name:	Brooklyn School District
District Name:	Brooklyn Excelsior Charter School
School Name:	Brooklyn Excelsior Charter School
District:	Brooklyn School District
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URL for technology plan on Web:	http://brooklynexcelsior.heritageacademies.com/
Years covered by plan:	2008-2011
Start date of plan:	July 1, 2008
End of plan:	June 30, 2011

Introduction

Brooklyn Excelsior Charter School

School Technology Purpose Statement

Working in partnership with parents and community, the Brooklyn Excelsior Charter School mission is to create an integrated approach to technology education within the school building. We expect our students to master the basic technology skills and realize their full academic potential in preparation for higher education and adulthood with the use of technology. The purpose of National Heritage Academies is "challenging each child to achieve".

Vision

All students will be technology literate by Eighth Grade.

School History & Demographics

Brooklyn Excelsior Charter School was founded in 2003 by local board of directors. Subsequently, National Heritage Academies was hired to provide professional services to Brooklyn Excelsior Charter School. Since its opening, has an enrollment of 680 students. It is a one building facility with grade levels K-8. The school has 40 teachers.

The population of the school reflects that of the surrounding community and is broken out as detailed below:

School Demographics

	Female	Male	Total
American Indian/ Alaska Native/Native Hawaiian	0	0	0
Asian American	0	0	0
Black/African American			98%
Hispanic/Latino			3%
White	0	0	0
Totals			100%

School Affiliation & Philosophy

In order to fully understand the role of technology at Brooklyn Excelsior Charter School, it is important to understand the relationship between the school and the company contracted to provide professional services.

National Heritage Academies (NHA) is an Educational Services company founded in 1995 to support charter schools with professional management services. Since its first contract with Excel Charter Academy in Grand Rapids, Michigan, NHA has expanded to support 55 schools serving over 33,000 students in 2007-2008.

NHA provides shared services between the schools it manages including, but not limited to:

1. Facility management
2. Curriculum support & staff development
3. Human resource support
4. Accounting and finance support
5. Board relations
6. State compliance & reporting
7. Technology infrastructure design, management, and support

NHA affiliated schools maximize school success through a deliberate process of sharing common resources to leverage economies of scale and sharing best practices to drive for continuous improvement.

For more information about National Heritage Academies, please refer to the NHA website, <http://www.heritageacademies.com>.

High Student Achievement

Student achievement is the focus for measuring success at Brooklyn Excelsior Charter School. Bearing this in mind, all activities and programs are evaluated using this metric. Technology, therefore, adds value in as much as it positively impacts student achievement.

We believe that “how” technology is applied in the classroom is substantially more important than “how much” or “how often” technology is applied. Technology’s role in an instructional setting must be deliberate, well-designed and continuously assessed. The successful application of technology for learning lies in the alignment of curriculum, staff preparedness, the quality and availability of training, responsive support systems, and the existence of a reliable and accessible infrastructure.

Safe, Orderly, and Caring Schools

Brooklyn Excelsior Charter School relies on NHA’s proprietary Moral Focus curriculum as a core element for developing a safe, orderly, and caring school environment. In a culture that is increasingly dominated by the presence of technology, students must be able to see the connection between actions and consequences. Just as NHA aligns its technology with its instructional goals and objectives, the policies relating to technology use must align with the development of strong moral character and good citizenship. This alignment is reflected in documents such as the Acceptable Use Policy [AUP], Internet Usage Policy and the application of copyright laws (see **Appendix**).

Quality Teachers, Leaders, and Staff

Brooklyn Excelsior Charter School is committed to developing an environment that fosters professionalism, personal growth, and knowledge acquisition. Technology plays a key role in the development of this environment by providing tools that can increase productivity, allow access to NHA’s curriculum resources, and connect teachers with resources and people throughout the world. To develop truly world-class teachers and administrators, Brooklyn Excelsior Charter School will implement a targeted staff development program designed to help the teachers at school become more effective in their various roles by leveraging technology. This staff development effort will be supported by NHA resources and methodologies as part of a larger staff development effort.

Strong Family, Community, and Business Support

Brooklyn Excelsior Charter School is committed to partnering with parents as a foundational element of our educational program and the development of a strong school culture. Research tends to support this approach, indicating that parent involvement has a measurable impact on student achievement. Accordingly, over the 2007-2008 school years, a technology committee made up of administration, teachers and parent consultant was established to begin the initial process of developing and finalizing this plan. A parent representative from the Brooklyn Excelsior Charter School. Improvement Team has also reviewed and approved this current plans emphasis and goals.

With the support of NHA, Brooklyn Excelsior Charter School believes that communication technology can be a powerful force in removing the barriers that sometimes exist between the classroom and the living room. Access to the Internet is increasingly more available. NHA has already initiated efforts that build and support technologies to extend the learning environment beyond the walls of the classroom and into student's homes. Additionally, the application of technology will, in the future, provide parents with access to supplemental curricular materials that will reinforce the students' classroom experiences.

The use of technology also provides Brooklyn Excelsior Charter School with the ability to involve the greater community in the life of the school. With tools already in place, Brooklyn Excelsior Charter School can make school-related information publicly available on the school Web site.

Effective and Efficient Operation

Brooklyn Excelsior Charter School has significant benefits through the association with NHA. Access to professional services and resources and the technology program. Because Brooklyn Excelsior Charter School is one of 55 schools receiving services from NHA, we are able to take advantage of a shared services model referred to as Total Cost of Ownership. Through our contract, we are serviced by a professional technical team that provides Brooklyn Excelsior Charter School with consulting, implementation, and support for all technology efforts. As a result of these shared services, our school is part of a network of other schools and best practices are shared on a regular basis. Ultimately, the partnership between Brooklyn Excelsior Charter School and NHA allows the school's staff to focus its efforts on the delivery of instruction and student achievement implementing and supporting technology.

Creativity and Innovation

Goal	Objective/ Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Teachers will use curricular lessons infused with technology to meet the requirements of both the NHA Technology Scope & Sequence and the New York state Educational Technology Standards.	Apply existing knowledge to generate new ideas, projects or processes.	Technology media staff Academic Curriculum Resources Appropriate network Hardware & Software.	Technology media staff and school administrators.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each school calendar year.	Review each year in May the compiled lesson plans integrating technology and how they align with NYSED Student technology performance standards.
2. Teachers will teach and reinforce skills specific to technology in the context of the regular academic curriculum.	Create original works as a means of personal or group expression. Focus on cooperative learning groups.	Technology media staff Academic Curriculum Resources. Appropriate network Hardware & Software.	Technology media staff and school administrators	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each school calendar year.	Regular review of student project rubrics throughout the school calendar year.
3. Teachers will be able to utilize online tools to manage and use curriculum resources for delivery of instruction to students.	BECS will continue to use Study Island, Brian Pop, United Streaming and NHA network tools.	Technology media staff Academic Curriculum Resources. Appropriate network Hardware & Software.	Technology media staff and school administrators	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each school calendar year.	Regular review of program reports of student use and teacher feedback on integration of online tools.
4. Assist personnel in the creation and use of project-based, interdisciplinary units that integrate technology into all curricula.	Align technology skills with student projects to develop complex systems and issues. Create and use projects that integrate technology.	Technology media staff Academic Curriculum Resources. Appropriate network Hardware & Software.	Technology media staff and school administrators	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each school calendar year.	Annual review in May of student and teacher technology skill development progress. Review of checklists and surveys.

Communication and Collaboration

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Continuously identify goals and assess progress of school level educational technology plan.	Regular use of class and school newsletters, <i>atschool</i> announcements, progress reports and calendars.	School Technology Plan. School Improvement Plan.	Technology media staff and school administrators.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each calendar year.	Review Parent annual survey results regarding school communication tools.
2. Staff will be proficient in using electronic tools to communicate with other people throughout the organization.	BECS will provide training on accessing and using network drives and resources.	Computers and access.	Technology media staff and school administrators and NHA.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each calendar year.	Staff self-assessments reviewed annually and regular teacher feedback.
3. Students will continue to produce technology presentations for assemblies, parent meetings and to meet middle school requirements.	Interact, collaborate and publish with peers, staff and community. Communications skills through the Study Island program.	Computers and digital resources.	Technology media staff and school administrators and NHA.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities.	September through June each calendar year.	Teacher evaluation of student work will be reviewed on an annual basis. Consistent monitoring by staff of student communication in Study Island evaluated quarterly.

Research and Information Fluency

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Build on prior knowledge to enhance the use of digital tools to gather, evaluate and use information.	Follow Big 6 method information fluency. Use of graphic organizers and network resources to develop research and information skills.	Technology resources	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual review of a sample of teacher rubrics for student project work.
2. Support the creation and use of teacher created rubrics to evaluate students' media and technology projects.	Training teachers to use the technology skill standards and create expectations based on appropriateness to specific tasks.	Technology resources	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual review of a sample of teacher rubrics for student project work.
3. To provide continued support of the library and staff with professional development resources to implement information literacy lessons into the library classes.	BECS follows NHA library curriculum by planning, teaching, evaluating and reinforcing instruction designed to make students and staff effective users of information.	Library, library staff and library curriculum materials.	Library staff, school administrators and NHA.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual observation of library classes and staff.

Critical Thinking, Problem Solving and Decision Making

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Continuously identify goals and assess progress of school level educational technology plan.	Plan and manage activities to develop a solution or complete a project.	Technology resources and planning time.	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Review completed projects annually each May for effectiveness.
2. Corrections will be made to technology projects and or plans as they are needed based on formative assessments.	Use multiple processes and diverse perspectives to explore alternative solutions.	Technology resources and planning time.	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Review completed projects annually each May for effectiveness and student achievement.
3. Continue development of learning centers in library/media center.	By implementing literature circles, buddy reading program, Principal's Reading club and guest reading programs and writing centers and book clubs.	Librarian, support, technology, books, staff and resources.	Librarian and school administrators.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Regular review of student work, formal and informal observation results.

Digital Citizenship

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Develop & utilize a plan to create responsible use of technology.	Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity. Provide internet safety education annual for upper elementary	Technology resources provided by NHA.	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual staff review of educational technology goals listed in STP.

	students.					
2. Integrate use of electronic resources into classroom practice.	Use morals focus lessons such as respect and responsibility of the uses of technology and equipment resources.	Technology resources provided by NHA.	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual review of effectiveness of Technology User Agreements elements.

Technology Operations and Concepts

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Plan for and acquire technology in accordance with the NHA Acceptable Use policy and local funding requirements and to develop student achievement.	School technology committee will be responsible to assess available technology and student achievement.	STP, technology resource information and planning time.	Technology media staff and school staff.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June of each calendar year	Annually complete NHA end of year checklist and align to SIP goals.
2. Continue to support and train building media staff.	Media staff will understand and maintain technology systems for staff and student use.	STP, technology resource information and planning time.	Technology media staff and school administrators and NHA Service Center.	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June of each calendar year	Annually complete NHA end of year checklist.

Quality Teachers, Administrators and Staff – Professional Development

Goal	Objective / Strategy	Resources Needed (Human & Material)	Person(s) Responsible	Budget Needs	Time-line (Beginning & Ending dates)	Method of Evaluation
1. Integrate use of electronic resources into classroom practice.	Continue and improve building level professional development on integration of technology.	Technology media staff planning and professional development opportunities.	Administrator and NHA Service Center	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June each school calendar year.	Annual review of Teacher staff development survey.
2. Create professional development tracking system.	Media staff to meet on a regular basis to plan professional development. Analyze resources available to meet learning standards.	Technology media staff planning and professional development opportunities	Media staff, school administrator and NHA Service Center	Brooklyn Excelsior Charter School annual technology operating budget and local funding opportunities	September through June of each calendar year	Review tracking documents and implementation of professional development for media staff and teachers.

Curriculum and Instruction

Current Situation

While NHA provides a recommended curriculum scope and sequence for technology use and skill development, is focused on implementing these resources to ensure that all students develop the computer skills to be technologically literate by the time they leave the Eighth Grade.

With access to technology as outlined in the infrastructure & connectivity section of this plan, Brooklyn Excelsior Charter School has the resources necessary to effectively deliver the curriculum. In addition, the school allocates time for technology use to meet NCLB (NETS) and New York Technology Standards.

Time Committed to Technology Instruction (Weekly)	
Kindergarten	45 minutes
First Grade	45 minutes
Second Grade	45 minutes
Third Grade	45 minutes
Fourth Grade	45 minutes
Fifth Grade	45 minutes
Sixth Grade	45 minutes
Seventh Grade	45 minutes
Eighth Grade	45 minutes

Additional technology use is expected outside of technology-specific instruction. Students are asked to use technology to further their academic development through its use in content-specific projects such as curriculum-based presentations, classroom simulations, and research/review of Web-based content.

Brooklyn Excelsior Charter School encourages the teachers' use of technology by providing real-time support through the Media technology staff. Based in the school, the media technology staff consults with teachers on a daily basis to identify and support technology integration opportunities within the classroom. Through the school's affiliation with NHA, the school's media staff meets regionally with other media staff to share best practices with one another. The media staff also meets on a regular basis with school leadership to review goals for technology education.

Future

Philosophy

- By incorporating NHA's approach to technology into the school environment, students at Brooklyn Excelsior Charter School will develop information literacy skills through a comprehensive technology curriculum.
- These skills will be developed as the use of the technology is integrated into the course of each academic subject.
- Teachers will develop an appropriate technology skill-set through well-aligned staff development opportunities and will apply these skills in their instruction.

Developing Technology Skills

- NHA's core academic curriculum is very rigorous, focuses on the development of foundational skills and background knowledge.
- It is essential that instructional time be provided for the development of these skills and to prioritize this instructional time relative to the core academic areas.
- While computer technologies should be used at all grade levels to support the delivery and enhance the effectiveness of instruction. In grades K-2 in the NHA scope and sequence, standards have been developed to accommodate technology instruction in K-2 as needed.
- During the upper elementary years (grades 3-5), the curriculum calls for students to develop specific technology skills that align with state and national standards. With the ultimate goal of having each 8th grade student technology literate, technology-skill instruction will be addressed in the context of academic coursework during each student's middle school education. NHA has provided for additional computers in the classroom as well as the media center lab setting.

Technology Approach by Grade Level

	Philosophy / Approach	Resources
K – 2	<p>Technology skills are not formally taught or assessed.</p> <p>Technology is used throughout the curriculum to enhance instruction as appropriate and as indicated in the curriculum guidelines.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Students access technology in the classroom (mobile computer labs) or the media center as part of an instructional activity. Use of technology is designed solely to reinforce mastery of the content material. • Teachers use technology to enhance the presentation of material to their students through simulation, projection, etc. 	<p>LCD projectors, Internet connectivity</p> <p>Limited student access to computers in common spaces or in the classroom</p> <p>Basic computer skills introduced in lab and classroom setting.</p>
3 – 8	<p>Instructional time is dedicated to developing specific technology skills such as:</p> <ol style="list-style-type: none"> 1. Computer operations 2. File management 3. Word processing 4. Keyboarding 5. Presentation tools 6. Spreadsheet use 7. Database basics 8. Internet use & responsibilities <p>Examples:</p> <ul style="list-style-type: none"> • All fourth grade students take part in a 9 week keyboarding course with periodic refresher lessons throughout fifth grade • Teachers provide students with technology-specific instruction to prepare them to apply the use of technology to their learning. For example, a teacher may give instruction on writing formulas in a spreadsheet in preparation for a unit in which data will be stored and evaluated using a spreadsheet. • Teachers will use a combination of curriculum-aligned activities and fully technology-integrated units of curriculum to deliver instruction and build technology skills as dictated by the Technology scope & sequence. 	<p>LCD projectors, Internet connectivity</p> <p>Regularly scheduled student access to computers required in either a shared space (lab / media center) or in the classroom.</p>
Adults	<p>Brooklyn Excelsior is a K-8 school and is not equipped to implement any adult studies at this time. The school does provide a Parent room for parents of students and volunteer opportunities for those parents.</p>	

Timeline for Curriculum Integration

The following timeline serves to address the integrated technology activity a student will participate in at Brooklyn Excelsior Charter School:

Grade Level	Integration Activity
K - 2	Classroom teachers are encouraged to lead technology integrated lessons when possible. They have access to resources on Curriculum Center enabling them to do so.
3 - 6	<p>Classroom teachers will teach technology integrated lessons encompassing the Technology Scope and Sequence within their core academic curriculum.</p> <p>Option 1: By following the recommended technology lesson sequence for Open Court (found on Curriculum Center), the teacher will accomplish the Technology goals for that grade level within the framework of the Open Court Reading Curriculum.</p> <p>Option 2: Alternatively, teachers may follow the recommended technology lesson sequence termed "Cross-Curricula" and will meet the technology objectives for that grade level within the framework of the core curriculum.</p>
6-8	<p>Technology Literacy Focus</p> <ul style="list-style-type: none"> • Teacher Observation • Project Based Learning • Student Portfolios • Formal Assessments • Integrated technology Lessons

Technology's Role in the Academic Curriculum

- Specific technology-related skills are not treated equally at each grade level, the underlying philosophy regarding technology's role in the delivery of instruction is consistent across all grade levels.
- Teachers and students will have access to tools (such as computers, scanners, digital cameras, LCD projectors, etc.) and curriculum that integrates the use of technologies.

- All teachers will be expected to develop basic competencies in the use of teaching technologies (see Technology Staff Development section of this document) and to use these technologies appropriately to enhance the delivery of instruction. Additionally, NHA will continue the development of curriculum that capitalizes on the multi-modal aspects of digital technology. (See **Appendix**)

Online Access to Curriculum

- Internet-based technologies streamline the process for distributing of information. Through *MyNHA* Teacher Central and *Sharepoint* sites has access of a vast collection of curricular resources made developed for and aligned with the NHA curriculum. These resources include:
 - Unit plans
 - Lesson plans/Project based Learning Resources
 - Background readings
 - Presentations
 - Activities
 - Interactive Web sites
 - Rubrics/Assessments
 - Reading lists
 - Handbooks

Each resource in this collection is aligned with specific content standards. Many of the lessons are also aligned with specific technology-skill objectives.

Managing Curriculum with Technology

- To support the management of student performance information at Brooklyn Excelsior Charter School, NHA will develop and implement a tool set that will enable regular reporting of student performance based on assessment data.
- Teachers will be able to address student deficiencies by accessing the curricular resources that align with content standards and assessment tools. The use of information technology in this process is vital to the management of the data and reporting both teachers and school leaders need.

Staff Development

Current Situation

Staff development is a critical element in the successful implementation and integration of technology in the school environment. Brooklyn Excelsior Charter School understands the value of staff development and has dedicated the LTS to support this function.

Since staff development efforts are supported by the National Heritage Academies Service Center which provides ongoing professional development for all NHA staff members:

- New Teacher Orientation Conference – annually in August
- Regional Professional Learning Institutes – annually each fall and spring
- National Heritage Academy University - annually in July
- Specific curriculum workshops in reading, writing and technology
- School level professional development sessions, annual teacher skill survey, goals and evaluation of development process

Future

Staff Development Philosophy

Brooklyn Excelsior Charter School is committed to including a technology plan that includes a well-organized and comprehensive staff development component. This component will be aligned with the academic curriculum, educational philosophy of the school, and will focus on challenging each child to achieve.

The NHA technology staff development framework contains several component processes. The core curriculum for staff development activities is based on NETS for Administrators and NETS for teachers, as defined by NYSED and ISTE (International Society for Technology in Education) standards.

- NHA provides a comprehensive Library and EdTech Professional Development Calendar each year.
- NHA has prepared a Teacher Development Survey to assess skill levels and determine school level professional development.
- Professional Development funds available for NYSCATE and other conferences sponsored by the state of New York.
- Weekly newsletters with technology resources, updates and advancement announcements available to all staff members through the NHA network.

Connectivity & Infrastructure

Current Situation

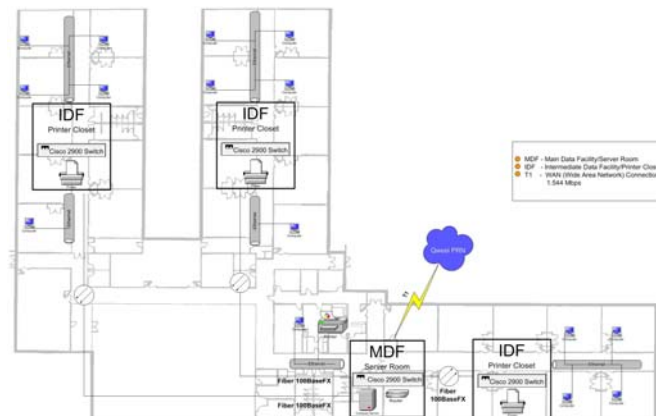
Through its affiliation with NHA, Brooklyn Excelsior Charter School benefits from the professional services and shared infrastructure provided to all NHA affiliate schools. This infrastructure has been developed to support the needs of the school while minimizing the cost by effectively managing the infrastructure lifecycle, accessing shared resources, and leveraging economies of scale.

The current infrastructure at consists of the following elements:

- 1) Local Area Network (LAN)
- 2) Wide Area Network (WAN)
- 3) Internet Access
- 4) Telephony

LAN Infrastructure

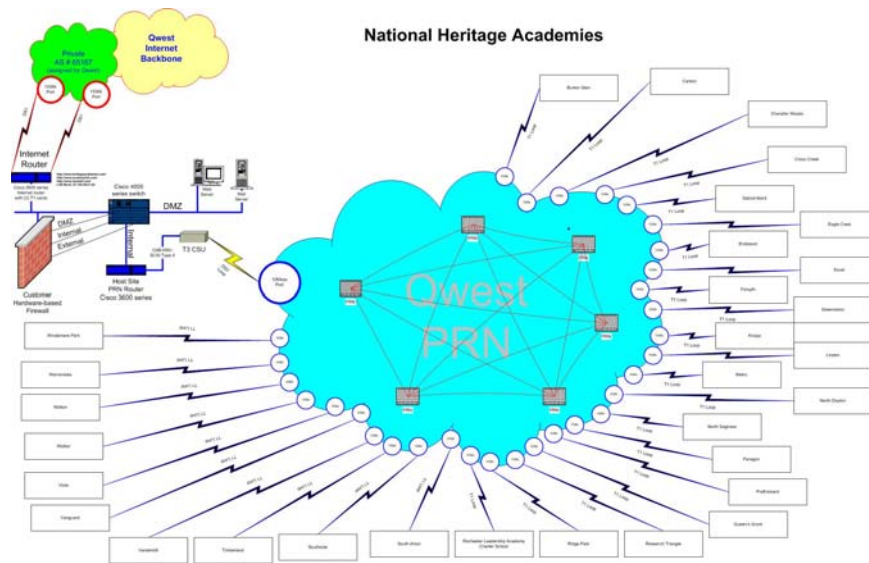
The active networking hardware operates at 100Mbps in a completely switched environment; providing 100Mbps access to each device on the network. The LAN utilizes TCP/IP exclusively. This component of the infrastructure is detailed more clearly in the diagram below:



The LAN was designed and installed by NHA's technology staff. All LAN management is handled through remote management tools by the NHA technical staff.

WAN Infrastructure

Brooklyn Excelsior Charter School receives many of its data services through its access to the NHA provided WAN. The WAN connectivity provides access both to NHA resources and to the Internet. The school currently has a T1 circuit provisioned through Qwest Communications. This circuit uses Qwest's Premium RPN service to connect securely to all other NHA sites in a "hub and spoke" topology. (see WAN diagram below)



WAN connectivity is monitored and managed remotely by the NHA technology staff

Internet Access

Internet access for Brooklyn Excelsior Charter School is obtained through the schools connection to the NHA WAN. All traffic emanating from the school is routed through a web filtering solution.

Telephony Infrastructure

Telephone access is provided in every classroom at Brooklyn Excelsior Charter School through 3Com's NBX voice over Ethernet system. The telephone system provides a high degree of functionality and individual voicemail. The NBX system includes a Web-based configuration tool employed by NHA's technology staff to provide support remotely for telephone issues.

Personnel

Current Situation

- NHA is committed to providing training and curriculum support at the school site.
- NHA has lowered the Total Cost of Ownership (TCO) of technology by centralizing technical support functions to its Grand Rapids office.

Instructional Technology Support

- In order to provide teachers with high-levels of support for the use of technology, Brooklyn Excelsior Charter School employs three full-time Library/Technology Staff. The media staff responsibilities include supporting the delivery of a technology-integrated curriculum and the delivery of staff development.
- The media staff is focusing on the effective use of technology in the learning environment.
- The school's media staff will assume the ownership and responsibility of the technology program within the school. Responsibilities will include oversight of building-level technology efforts, management of the staff-development program, and ongoing assessment of building needs. This person will work hand-in-hand with teachers to support the infusion of technology in the academic curriculum.
- The media staff will truly be a member of the school staff. The school leader will be responsible for hiring and managing the media staff. NHA is committed to providing professional development and program resources to the LTS and providing guidelines for the educational technology process at Brooklyn Excelsior Charter School.

Information Technology Support

- NHA provides technology support services to BECS through its NHA Information Technology team.
- This team provides centralized management of NHA's technological infrastructure, consults with school staff regarding technology needs and use, and sets IT policies for all NHA affiliate schools.
- The responsibilities of this team includes management of NHA's Wide Area Network (WAN), Local Area Networks (LANs), file servers, desktop and portable computers, Web (WWW) servers, application servers, software configurations, etc. In addition to managing this infrastructure, the IT team provides a technical support through a centralized help desk made accessible via telephone or through a Web browser.

Resources

Current Situation

Network Resources

- Technology that provides access and resources to students, teachers and the parent community.
- NHA Service Center support and school level support.

Software

Brooklyn Excelsior Charter School provides access to a variety of software resources supplied and supported by NHA's technology staff. All resources are selected to meet the academic needs of the students and enhance the instructional process.

The software resources offered as part of the model can be grouped into three distinct categories: (1) instructional software, (2) productivity software, and (3) management software.

Software Listing

- Destiny Library System, Graph Club, Timeliner, Inspiration, Encarta 2006, Finale Notepad, Type to Learn
- Bowmac REDI for School Emergencies, NWEA Test Taker, SIRS, Star Early Literacy, TestWiz
- Windows XP Professional, Microsoft Office 2003 Professional, Access, Excel, Outlook, PowerPoint, Publisher, Word, Adobe Acrobat Reader 7.0, McAfee Virus Scan, Internet Explorer, Lifetouch Image, Yearbook Forms Wizard

Publication of School Information

Brooklyn Excelsior Charter School envisions communications through the use of Internet technologies. NHA is equally committed to this goal by providing parent access to student information via At-School, a proprietary Web-based student information system. Moving forward, NHA has extended this functionality to include more school-related information (i.e. this School Technology Plan, calendars, publications, memos, etc.) and allow for parents to access it via the Web or to subscribe to content via E-mail. Brooklyn Excelsior Charter School will also begin to publish more content via the Brooklyn Excelsior Charter School webpage developed by the Parent Ambassador Program.

Community resource use is encouraged, such as:

- Community and Regional libraries
- Intermediate School Districts, REMC's, and RESA's, student resources and professional development resources

- Annual Subscription to United Streaming/Discovery Education
- Online media and video teleconferences

Hardware Recommendations

Current Situation

Brooklyn Excelsior Charter School takes advantage of its association with NHA for the procurement, installation, and lifecycle management of its hardware assets. NHA handles the installation and lifecycle management, for Brooklyn Excelsior Charter School. Finally, this arrangement with NHA allows the school to access shared professional services from NHA. By spreading the cost of these services across all NHA affiliated schools, the Total Cost of Ownership (TCO) for TEA is minimized.

School Assets

- Brooklyn Excelsior Charter School maintains a 1 computer per student computer ratio during assigned computer lab periods. Additionally,
- Brooklyn Excelsior Charter School is equipped with a full compliment of tier 1 networking equipment (Cisco or HP router and switches) as well as network attached workgroup printers located throughout the building and a multi-function printers/scanners/fax machine.
- For instructional purposes, Brooklyn Excelsior Charter School also employs three LCD projectors throughout the facility.

Controlling TCO through Lifecycle Management & Standards

Hardware at Brooklyn Excelsior Charter School is procured, installed, and managed through its relationship with NHA. This arrangement allows the school to maintain its focus on the instructional uses of technology while relying on IT professionals at NHA to focus on issues of performance, scalability, reliability, TCO, licensing, etc.

NHA has adopted stringent hardware standards designed to ensure system reliability and performance while simultaneously minimizing support time and costs. These standards are enforced through acquisition and support policies and enable NHA to reach a 400:1 computer to technician ratio while maintaining the highest standards for support. Hardware standards address product continuity, total lifecycle cost, reliability, and performance. These criteria are applied to telephony hardware, desktop and portable computers, cabling, networking hardware, software, digital imaging devices, software, and management tools.

The following sections describe the current state of the hardware specified by NHA's hardware standards.

Telephony Hardware

- NHA provides telephone access in every classroom, for ready access to communications in the event of an emergency; the telephone also provides a critical link that supports the Parent-Teacher partnership.

Computer Hardware

- Personal computer: By providing and adhering to hardware standards, NHA's technicians are able to provide the highest service levels by making the computing environment consistent.
- When replacing existing computers, NHA is deploying thin client computers with an expected life of six years.
- Printers, networking components, and additional peripheral devices (scanners, digital cameras, etc.) are expected to exceed a four-year lifecycle and will be replaced at the end of their useful lives.
- NHA deploys technology:
 - Six years on the thin clients, without requiring any upgrades or maintenance.
 - Hardware is replaced through a scheduled process entitled "refresh" and provides for upgrades.
 - Each school is equipped with two (HP) servers with the primary purpose of storing data, managing network printing, and serving network enabled applications to client computers.
 - NHA's technology group revises the standard annually to match the latest technology.

Future Technology Purchases

- 1) Technology literate students with ready access to technologies that support the collection of information and the creation of content
- 2) Technology empowered teachers with access to technologies that enhance their instruction in effective and dramatic ways
- 3) Technology-enabled administrators able to effectively manage school operations and monitor academic progress at the student, classroom, and school levels.

Brooklyn Excelsior Charter School will apply the following criteria to decisions related to hardware acquisition:

- 1) Instructional/curricular requirements
- 2) Operational requirements
- 3) State/industry standards
- 4) Support requirements (maintenance, remote management)
- 5) Total Cost of Ownership
- 6) Scalability
- 7) Return on Investment (ROI)

Measured using both

...methods that evaluate administrative efficiencies, productivity, and added value

and

...impact on student learning potential and curriculum delivery.

The establishment and application of these criteria will ensure the most effective use of technology and financial resources with the ultimate goal of improving student performance. By leveraging the schools financial resources through the use of leasing and re-thinking the use of externally acquired funding.

- Brooklyn Excelsior Charter School will review the technology equipment and curriculum yearly to insure continued progress toward student and staff technology competency and improved student achievement.
- Brooklyn Excelsior Charter School committed to the belief that every teacher should have access to technology that ties the use of technology with the delivery of instruction in a specific content area.
- Due to the sensitive nature of student information, the technology employed at each NHA school will be dependable, reliable, robust, and secure.
 - NHA's technology group will employ security best practices and currently has:
 - Scheduled security audits
 - group policies for desktop computer security,
 - policies for maintenance of security patches, employing encryption for the transmission of student data, implementations of secure technologies such as VPN, and PRN.

Technical Support Procedures

- All technical support issues are addressed through NHA's Tech Support Center. The technicians at this desk are available from 7AM – 7PM ET Monday – Friday. Problem tickets can be opened via telephone or through a self-service Web interface. The technician connects to the computer remotely and demonstrates how to correct the problem to the customer.
- NHA will continue to seek more efficient methods for addressing technical support issues as both the technologies and the organization evolves.

Guidelines

Current Situation

National Heritage Academies and Brooklyn Excelsior Charter School has adopted several guidelines and procedures to ensure compliance with applicable state and federal guidelines for technology use in schools.

Current Procedures	Developing Procedures
<p>Deployment Procedures</p> <p>Help Desk Technical Support Request procedure</p>	<p>Brooklyn Excelsior Charter School is able to access ELL education technology resources.</p>
Current Guidelines	Established Procedures
<p>A hardware and software procurement policy that follows Information Resource Management (IRM) technology standards.</p> <p>CIPA compliant Acceptable Use Policy</p> <p>Data Integrity management</p> <p>Network security policy</p> <p>A policy for equipment maintenance, repair, replacement, and disposal</p> <p>A policy for equipment/materials donation</p> <p>A comprehensive policy for inventory control</p> <p>The media center is encouraged to post and practice guidelines as established by Hall Davidson (See Copyright below) and distributed by Tech Learning.</p>	<p>FERPA Laws and legislation is addressed in all handbooks and contracts.</p> <p>NHA does not participate in advertising and commercialism on school resources and equipment.</p> <p>Each NHA school has a school web page developed by the NHA Parent Ambassador Program.</p> <p>NHA provides Open House activities for parents and the community on a regular basis.</p> <p>NHA has established the Parent room at each school building and provides computer technology for parental use.</p>

Equipment / Materials Donation

- NHA is not accepting donated equipment that does not meet the definitions of NHA's IT architecture.

Data Privacy

- NHA must develop and publish a data privacy policy in compliance with the Family Educational Rights and Privacy Act of 1974 (The Buckley Amendment), 20 U.S.C. S123g and 34 C.F.R. Part 99.

Access to Information Policy

- NHA affiliated schools will have an Access to Information Policy as NHA develops Internet filtering mechanisms in accordance with Public Law 106-554, The Children's Internet Protection Act (CIPA) and the Neighborhood Children's Internet Protection Act. This policy must ensure adequate data retrieval capabilities for both students and staff and provide for legal requirements relating to Internet access. This policy will include disaster recovery.

Copyright Protocol

Dated 11/09/06

- NHA employees who provide original written, musical or technical work for NHA, in the course of their employment, are bound by the terms and conditions of the Copyright Clause contained in the Employee Handbook.
- Vendors hired to create written, musical or technical work for NHA, should sign an Assignment of Copyright. The Assignment transfers all copyright ownership to NHA. An Assignment of Copyright can be obtained from Dani Phillips, Legal Services & Risk Manager (616.954.3090) or dphillips@heritageacademies.com.
- Classroom Teachers are given considerable advantage in using copyrighted materials but should be trained in proper citation requirements and the scope of materials that can be copied.
- NHA customer service center employees who use materials from an outside source must follow the copyright clause displayed within the body of that source (e.g. a copyright clause may require permission before using the materials). NHA may be held to a higher standard than a Classroom Teacher. All sources should be properly cited.

Copyright Training:

Step 1: Library Technicians should be the initial point of contact for questions regarding copyright use. The "*Copyright Guidelines for Administrators*" by Hall Davidson is an excellent resource for training (www.techlearning.com).

Step 2: The above referenced poster may be used for nonprofit purposes. Approval must be submitted to techlearning_editors@cmp.com.

Step 3: The "*Copyright Guidelines for Administrators*" should be displayed in the Library. Training of teachers should be conducted on-site and on a semi-annual basis.

Step 4: Copyright guidelines should be taught to students and volunteers by each individual teacher.

Step 5: Annual review should be conducted of the Technology Policy and Plan.

Step 6: Semi-Annual audits should be conducted of licensed and registration materials.

Budget

Current Situation

Budgeting Philosophy

- Technology expenditures at Brooklyn Excelsior Charter School , combine the fixed costs and the variable costs, and are fundamentally tied to being successful in fulfilling the vision of all students becoming computer literate by the eighth grade.
- Hardware refreshes cycle for managing the cost of technology throughout its lifecycle. All equipment and software supplied through NHA is being purchased. The refresh cycle for thin client computers is six years and the remaining equipment is four years. The technology department may decide that a certain piece of hardware is still architecturally viable after the refresh cycle and will continue to deploy it.
- Budget allocations for the media staff role at Brooklyn Excelsior Charter School is embedded in the school's personnel budget.
- Other budgeted items such as shared services provided by NHA (i.e. Internet access, WAN access, Help Desk) are accounted for in a billed services model. Other services such as access to Atschool / atschool.com, the curriculum center, development of the Technology Curriculum, support for the media staff are included as value-add services and are not billed or included in the school budget.

School Budget

Brooklyn

Desktops/Laptops

33

Thin Clients

119

Network

Annual cost

Internet	335
School WAN	1736
Service center WAN	617
PRN	3472
Total	6160

Access to Tech

2008-2009

2009-2010

2010-2011

Desktops/laptops	12375	750	750
n-computing	2352	2352	2352
Thin clients	11970	16100	16100
Thin client server	2670	2670	2670
Total	29367	21872	21872

Shareholder

Annual cost

Phones	1750
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Security

Annual cost

Microsoft	7550
Anti virus	480
Content filter	1132
Spam	304
Total	9466

Staffing

Annual cost

Help desk	3510
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Aligning the Budget

- The budgeting process for technology must not only account for acquisition of hardware, software, connectivity, and staffing, but it must also pay careful attention to the Total Cost of Ownership (TCO). NHA will continue to apply standards and IT best practices to reduce the TCO. NHA's policies and procedures ensure that software and hardware are utilized for their optimal life while staying current with the new technology advances.
- As evidenced in the **Infrastructure & Connectivity** section of the Technology Framework document, NHA is committed to developing systems, procedures, and support structures to improve technology's impact while reducing the TCO.

Communication & Collaboration

Current Situation

- Through its association with NHA, Brooklyn Excelsior Charter School is able to take advantage of school for communication and collaboration. NHA has demonstrated a strong commitment to use technology for communications. This system has become a hallmark of our internal operations and serves as a major communication vehicle both within the organization and externally with parents.
- Principal Meetings – NHA currently provides technology updates (covering report card processes, resources, reviewing policies/procedures, instructional practices and general questions) at monthly principal meetings for all NHA affiliated schools.
- Media staff - Principal Meetings – Media staff have periodic meetings with school leaders, school leadership teams, and at full staff meetings to discuss educational technology issues at BECS.
- Classroom Planning – Media staff currently meet with individual teachers, small groups, or entire staffs to devise effective uses of technology with respect to the NHA curriculum.
- Regional LTS Meetings – As the primary support structures within the school, media staff must be well trained in the various aspects of their role. To support these efforts, NHA has committed resources that allow for regularly scheduled regional training sessions for media staff.

Future

- WebEx and Video Conferencing capabilities currently being used and expanded capabilities in the future for collaborating with colleagues, parents and the community.
- *Intermediate School Districts* – Assist NHA with communication on state reporting regulations and access to state technology resources.
- *Universities & Colleges* – Local colleges and universities TEA may have opportunities to become part of pilot programs or benefit from access to the resources of the institutions.
- *Granting Agencies* – National Heritage Academies is able to collaborate with local foundations, institutions, or businesses to form partnerships.

Evaluation

Current Situation

- Evaluation of technology integration efforts at Brooklyn Excelsior Charter School
 - Regular NHA Service Center Conference Calls with the Information Technology Department
 - Helpdesk assistance available on a daily basis
 - The media staff is primarily responsible for the implementation of the instructional and staff development portions of the technology plan.
 - The media staff and the school leader meet on a regular basis to assess the state of the technology efforts at the school.
 - On an annual basis, goals devised through the technology planning process are reviewed in the development of each school's annual action plan.

**TECHNOLOGY USER AGREEMENT
AND PERMISSION FORM
2008 - 2009**

A. As a parent or guardian of a student at National Heritage Academies, I have read the **Technology Acceptable Use Policy** about the appropriate use of computers at the school and I understand this agreement will be kept on file at the school. (Questions should be directed to the principal or technology department for clarification.) I have explained the following rules to my child to the best of my ability to help them understand the responsibilities that correspond with use of the NHA computer network:

- 4) The user's data must remain within the allocated disk space on all data drives and on the e-mail server.
- 5) Downloading or installing of any commercial software, shareware, or freeware onto network drives or disks is not permitted.
- 6) Copying other people's work or attempting to intrude into any user's folders or files is not permitted.
- 7) Using profane, abusive or impolite language to communicate and/or accessing, viewing, sending or displaying offensive, obscene, or abusive materials is not permitted.
- 8) Users must obtain a username and password from the National Heritage Academies Technology Department.
- 9) Sharing your password or allowing another person to access network resources under your username is not permitted.
- 10) Leaving a resource that you are logged onto unattended is not permitted.
- 11) Logging onto a resource for use by another person is not permitted.
- 12) Visiting non-education websites, chat rooms, or personal email accounts is prohibited.
- 13) Disclosing any sensitive data to others lacking the authority or right to view that data is not permitted.
- 14) Request a password change in the event you suspect your password is no longer confidential.
- 15) Using a computer to harm people or their work is not permitted.
- 16) Damaging the computer or the network in any way is not permitted.
- 17) Violating copyright laws is not permitted.
- 18) Wasting printing resources such as toner, color ink, and paper is not permitted.
- 19) Should students encounter any inappropriate material by accident, he/she should report it to their instructor immediately.

B. As a parent or guardian of a student at National Heritage Academies, I have read the above information describing the NHA position on the appropriate use of the Internet in the classroom. I understand my child will be using devices that are connected to the Internet in a supervised and educationally focused environment. I also understand that any breach of this "User Agreement" will result in the loss of computer privileges.

- ACCEPT** We accept and agree to abide by **the National Heritage Academies Technology User Agreement and Permission Form**. This agreement is on record and valid until my child is no longer enrolled with a school affiliated with National Heritage Academies.
- DECLINE** We decline the right to use the technology devices provided by National Heritage Academies.

Student Signature: _____

Parent Name (print): _____

Parent Signature: _____ **DATE:** _____

Please sign, date, and return this form to your school

Appendix A

National Heritage Academies Technology Scope and Sequence for Staff

N	Novice: Introduction and overview of learning concepts/areas
B	Basic: Developed skills through planned training sessions
P	Proficient: Applied learning without direction
C	Technology Coach: Can train and assist others

Network Basics

	Years as a NHA Teacher	NTO	1	2	3	4	5
Login and Network:							
	NHA Technology Standards & Model						
	Log-in to the NHA Network	N	B,P	P	P	P	C
	Identify and use school network drives such as the Personal Z; Universal & Project Drive(s)	N	B,P	P	P	P	C
	Contact the NHA Help Desk (electronic tickets and telephone)	N	B	P	P	P	C
	Understand the process and purpose of the NHA Desktop Image	N	B	P	P	P	C
	Identify and use other drives (e.g. A: Floppy & D: CD; other...)		N,B	P	P	P	C
	Locate computer identification information (e.g. IP address & Serial Number)		N,B	P	P	P	C
	Reset a Student's Password		N	B	P	P	C
File Management:							
	Save and retrieve documents (Name a file, choose a location and retrieve saved files)		N,B	P	P	P	C
	Distinguish between Save and Save As			N,B	P	P	C
	Create, save, open and move documents inside sub-folders			N	B	P	C
Printing:							
	Set a default printer		N,B	P	P	P	C
	Select various printers within the building		N,B	P	P	P	C
	Print only selected pages from documents		N,B	P	P	P	C
	Print duplex		N,B	P	P	P	C

Electronic Mail

	Create a New message; Add multiple recipients	N,B	P	P	P	P	C
	Reply to a message	N,B	P	P	P	P	C
	Forward a message	N,B	P	P	P	P	C
	Use the Address Book (Search for mail recipients)	N,B	P	P	P	P	C
	Add Attachments to E-Mail (e.g. pictures, documents)	N,B	P	P	P	P	C
	Open an Attachment from E-Mail	N,B	P	P	P	P	C
	Download an Attachment to an appropriate storage area (network drive)	N	B	P	P	P	C

	Organize E-Mail (create and use filing folders; role of Public Folders)		N,B	P	P	P	C
	Sort messages (by name, date subject)		N	B	P	P	C
	Delete E-mails (clean out your Mailbox)		N	B	P	P	C
	Create Distribution and Contact Lists		N	B	P	P	C
	Use the Outlook Web Access Calendar			N	B	P	C

AtSchool Student Information System

Atschool Teacher Modules:							
	Attendance		N,B	P	P	P	C
	Gradebook		N,B	P	P	P	C
	Progress Reports		N	B,P	P	P	C
	Report Cards		N	B,P	P	P	C
	Publications (newsletters)		N	B,P	P	P	C

Hardware

	Set up and use Mobil Laptop Cart		N	B	P	P	P	C
	Set up and use mobile Keyboarding System		N	B	P	P	P	C
	Set up and use the LCD Projector		N	B	P	P	P	C
	Basic Troubleshooting			N,B	P	P	P	C
	Use the Telephone System			N,B	P	P	P	C
	Use the Scanner			N	B	P	P	C
	Use the Digital Camera			N	B	P	P	C
	Use the digital Video Camera				N	B	P	C

Microsoft Software Applications

MS Word: Word Processing							
	Enter text into a new Word Processing document		N,B	P	P	P	C
	Change the font and size of text		N,B	P	P	P	C
	Align text with alignment buttons		N,B	P	P	P	C
	Highlight text with the mouse		N,B	P	P	P	C
	Change the format of text with bold, italics and underline		N,B	P	P	P	C
	Use the cut and paste commands		N,B	P	P	P	C
	Use the menu bar functions		N,B	P	P	P	C
	Insert and format Clip Art		N,B	P	P	P	C
	Use Spell Check		N,B	P	P	P	C
	Learn Keyboard short-cuts (Ctrl-V = Paste, etc...)			N,B	P	P	C
	Learn to use headers and footers			N,B	P	P	C
	Insert and format other digital images			N,B	P	P	C
	Word Processing Tasks - The Options Menu			N	B	P	C
MS Publisher: Desktop Publishing							
	Use the Publisher Menu Bar Functions		N,B	P	P	P	C
	Resize, group and move objects		N,B	P	P	P	C

	Link text boxes for text flow			N,B	P	P	C
	Add other digital images			N,B	P	P	C
	Add and Delete Pages			N,B	P	P	C
	Locate and use existing templates from the Template Wizard			N,B	P	P	C

MS Excel: Spreadsheets

	Use the mouse to select and enter data into a cell			N,B	P	P	P	C
	Spreadsheet: Learn to add/subtract cell information			N,B	P	P	P	C
	Spreadsheet: Formatting (cells; columns; rows)			N,B	P	P	P	C
	Spreadsheet: Learn spreadsheet terms			N,B	P	P	P	C
	Spreadsheet: Learn to graph or chart			N,B	P	P	P	C
	Spreadsheet: Create basic formula functions			N,B	P	P	P	C
	Learn to use headers and footers			N,B	P	P	P	C
	Advanced Spreadsheets (Sorting, Filters, Freeze Panes; Copying Worksheets)				N,B	P	C	

MS PowerPoint: Presentations

	Use a readymade PowerPoint Presentation			N,B	P	P	P	C
	Learn how to select and use a design template			N	B	P	C	
	Learn how to create a basic presentation			N	B	P	C	
	Learn how to format a presentation with slide transitions and animation			N	B	P	C	
	Learn how to insert multimedia (sound, video, etc.) and hyperlinks			N	B	P	C	

MS Access: Databases

	Know how to start a new database document				N	B	P,C
	Know database terms				N	B	P,C
	Know how to create fields and enter information into records				N	B	P,C
	Learn to sort the database based on one field				N	B	P,C
	Perform a search based on one or more fields				N	B	P,C

Graphics & Images

	Know how to use basic painting/drawing tools such as MS Paint			N	B	P	C
	Know how to select specific areas of a painting or graphic			N	B	P	C
	Knows the difference between several graphic formats			N	B	P	C
	Printing to a page			N	B	P	C
	Access and use clip art			N	B	P	C

Working with the Internet - World Wide Web

	Filtering @ NHA	N	B	P	P	P	C
	Manually enter an Internet Web Address (URL)		N,B	P	P	P	C
	Learn Internet Explorer button functions (back, forward, stop, etc.)		N	B	P	P	C
	Know basic internet terms		N	B	P	P	C
	Learn to build and organize a 'Favorites' list of most used websites		N	B	P	P	C
	Know how to create website shortcuts and hyperlinks in MS Word		N	B	P	P	C
	Know how to search and use keywords for information within a search engine program			N	B	P	C
	Know how to search for and download graphics/images within a search engine program			N	B	P	C

NHA Educational Software

	Know how to use Graph Club 2.0	N	N	B	P	P	C
	Know how to use Timeliner 5.0	N	N	B	P	P	C
	Know how to use Inspiration 8.0	N	N	B	P	P	C
	Know how to use MS Encarta	N	N	B	P	P	C
	Know how to use Type to Learn	N	N	B	P	P	C
	Know how to use Accelerated Reader	N	N	B	P	P	C
	Know how to use United Streaming	N	N	B	P	P	C
	Know how to use Scholastic Keys	N	N	B	P	P	C

Education and Curriculum

Online Resources

	Know how to access Curriculum Center	N	B	P	P	P	C
	Know how to access and use NHA History Interactive materials	N	B	P	P	P	C
	Know how to locate and use recommended internet sites	N	B	P	P	P	C
	Know how to access, download and print lesson resources from Curriculum Center	N	B	P	P	P	C
	Know how to locate and use e-curriculum	N	B	P	P	P	C

Technology Curriculum

	Interpret and understand the NHA Technology Scope & Sequence of Content Standards	N	B	P	P	P	C
	Know how to access, download and print grade appropriate technology curriculum resources	N	B	P	P	P	C
	Deliver curricular instruction that incorporates the use of Technology		N,B	P	P	P	C
	Access and download resources to effectively assess and track student progress of technology skills		N,B	P	P	P	C
	Design lessons that incorporate the use of technology to enhance computer literacy in students.		N	B	P	P	C
	Know how to evaluate internet sites for accuracy and suitability	N	B	P	P	P	C

The ISTE

National Educational Technology Standards (NETS•S) and Performance Indicators for Students

1. Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Students:

- a. apply existing knowledge to generate new ideas, products, or processes.
- B. creates original works as a means of personal or group expression.
- C. use models and simulations to explore complex systems and issues.
- D. identifies trends and forecast possibilities.

2. Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

Students:

- A. interacts, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- B. communicates information and ideas effectively to multiple audiences using a variety of media and formats.
- C. develops cultural understanding and global awareness by engaging with learners of other cultures.
- D. contributes to project teams to produce original works or solve problems.

3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information.

Students:

- A. plan strategies to guide inquiry.
- B. locates, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- C. evaluates and select information sources and digital tools based on the appropriateness to specific tasks.
- D. process data and report results.

4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Students:

- A. identifies and defines authentic problems and significant questions for investigation.
- B. plan and manage activities to develop a solution or complete a project.
- C. collects and analyzes data to identify solutions and/or make informed decisions.
- D. uses multiple processes and diverse perspectives to explore alternative solutions.

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Students:

- A. advocate and practice safe, legal, and responsible use of information and technology.
- B. exhibits a positive attitude toward using technology that supports collaboration, learning, and productivity.
- C. demonstrates personal responsibility for lifelong learning.
- D. exhibit leadership for digital citizenship.

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

Students:

- A. understands and uses technology systems.
- B. selects and uses applications effectively and productively.
- C. troubleshoots systems and applications.
- D. transfer current knowledge to learning of new technologies.

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Technology (ICT) Literate Students - Profiles

National Educational Technology Standards for Students

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Excerpted from NETS for Students Booklet

A major component of the ***NETS Project*** is the development of a general set of profiles describing technology (ICT) literate students at key developmental points in their pre-college education. These profiles are based on ISTE's core belief that all students must have regular opportunities to use technology to develop skills that encourage personal productivity, creativity, critical thinking, and collaboration in the classroom and in daily life. Coupled with the standards, the profiles provide a set of examples for preparing students to be lifelong learners and contributing members of a global society.

The profiles highlight a few important types of learning activities in which students might engage as the new NETS•S are implemented. These examples are provided in an effort to bring the standards to life and demonstrate the variety of activities possible. Space limitations and the realities of the constantly evolving learning and technology landscapes make it impossible to provide a comprehensive collection of examples in this document, and consequently, students and teachers should not feel constrained by this resource. Similarly, because this represents only a sampling of illuminating possibilities, the profiles cannot be considered a comprehensive curriculum, or even a minimally adequate one, for achieving mastery of the rich revised National Educational Technology Standards for Students. Educators are encouraged to stay connected to the ***ISTE NETS Refresh Project*** and contribute their best examples to expand this resource.

The profiles are divided into the following four grade ranges. Because grade-level designations vary in different countries, age ranges are also provided.

Grades PK–2 (ages 4–8)

Grades 3–5 (ages 8–11)

Grades 6–8 (ages 11–14)

It's important to remember that the profiles are *indicators of achievement at certain stages* in primary, elementary, and secondary education, and that success in meeting the indicators is predicated on students having regular access to a variety of technology tools.

Skills are introduced and reinforced over multiple grade levels before mastery is achieved. If access is an issue, profile indicators will need to be adapted to fit local needs. The standards and profiles are based on input and feedback provided by instructional technology experts and educators from around the world, including classroom teachers, administrators, teacher educators, and curriculum specialists. Students were also given opportunities to provide input and feedback. In addition, these refreshed documents reflect information collected from professional literature.

Technology (ICT) Literate Students

Grades PK–2 (Ages 4–8)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during PK–Grade 2 (ages 4–8):

1. Illustrate and communicate original ideas and stories using digital tools and media-rich resources. (1, 2)
2. Identify, research, and collect data on an environmental issue using digital resources and propose a developmentally appropriate solution. (1, 3, 4)
3. Engage in learning activities with learners from multiple cultures through e-mail and other electronic means. (2, 6)
4. In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area. (1, 2, 6)
5. Find and evaluate information related to a current or historical person or event using digital resources. (3)
6. Use simulations and graphical organizers to explore and depict patterns of growth such as the life cycles of plants and animals. (1, 3, 4)
7. Demonstrate the safe and cooperative use of technology. (5)
8. Independently apply digital tools and resources to address a variety of tasks and problems. (4, 6)
9. Communicate about technology using developmentally appropriate and accurate terminology. (6)
10. Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and Web sites. (6)

The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

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Technology (ICT) Literate Students

Grades 3–5 (Ages 8–11)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during Grades 3–5 (ages 8–11):

1. Produce a media-rich digital story about a significant local event based on first-person interviews. (1, 2, 3, 4)
2. Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1, 2, 6)
3. Recognize bias in digital resources while researching an environmental issue with guidance from the teacher. (3, 4)
4. Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (3, 4, 6)
5. Identify and investigate a global issue and generate possible solutions using digital tools and resources. (3, 4)
6. Conduct science experiments using digital instruments and measurement devices. (4, 6)
7. Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support. (4, 6)
8. Practice injury prevention by applying a variety of ergonomic strategies when using technology. (5)
9. Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5, 6)
10. Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems. (4, 6)

Technology (ICT) Literate Students

Grades 6–8 (Ages 11–14)

The following experiences with technology and digital resources are examples of learning activities in which students might engage during Grades 6–8 (ages 11–14):

1. Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software. (1, 2)
2. Create original animations or videos documenting school, community, or local events. (1, 2, 6)
3. Gather data, examine patterns, and apply information for decision making using digital tools and resources. (1, 4)
4. Participate in a cooperative learning project in an online learning community. (2)
5. Evaluate digital resources to determine the credibility of the author and publisher and the timeliness and accuracy of the content. (3)
6. Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3, 4, 6)

7. Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3, 4, 6)
8. Use collaborative electronic authoring tools to explore common curriculum content from multicultural perspectives with other learners. (2, 3, 4, 5)
9. Integrate a variety of file types to create and illustrate a document or presentation. (1, 6)
10. Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4, 6)

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The numbers in parentheses after each item identify the standards (1–6) most closely linked to the activity

described. Each activity may relate to one indicator, to multiple indicators, or to the overall standards referenced.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

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