# The Arts & Technology Academy's

# Educational Technology & Implementation Plan 2006 — 2009

**The Arts & Technology Academy**
**5300 Blaine Street, NE**
**Washington, DC 20019**

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# Technology and Learning Implementation Plan


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## Introduction / School Mission

The Arts & Technology Academy Public Charter School (ATA) provides a wide range of technology resources to its students, staff, and school community for the purpose of advancing its educational mission: providing an academically challenging, technologically rich, child-centered environment, where each student develops a strong intellectual, moral, environmentally conscious, and artistic foundation.

At The Arts & Technology Academy Public Charter School, our program exists with the core belief that student learning is enhanced by the creative utilization of visual, performing, media, and technological arts to deliver core content. At ATA, Technology is to be used as a daily, seamless tool for the enhancement, delivery, and assessment of standards-based instruction.

This three-year plan begins with a vision for student learning, a statement of beliefs, and a rationale for creating and continuing to build Technologically-enhanced learning environments. It also identifies the 21st century skills endorsed by the Partnership for 21st Century Skills, an advocacy organization focused on infusing 21st century skills into education. These skills will provide a constant subtext for the entire Technology curriculum at ATA.

The plan continues with the International Society for Technology in Education's (ISTE) Technology Learning Standards for all students, instructional staff, and administrators, including performance indicators by grade level, and performance expectations for all stakeholders. These standards are the basis for the current draft of ATA's instructional technology scope and sequence for students in grades PK-6, which is also included.

Professional development strategies, scheduling, and philosophies are described in support of assisting teachers to meet the demands of a rigorous standards-based, technology-integrated curriculum.

The networking and telecommunications plan is offered to support the school's instructional goals and ensure that the network and infrastructure of ATA's technology remains cutting edge.

As conditions constantly change, and technology is continually evolving, it should be noted that this is a working, developing document. As such, a section has been included that identifies/describes the process to annually review whether goals are being met on schedule.

Finally, a process is described to review, update, and adjust this plan.

## ATA's Technology Vision

At the Arts & Technology Academy, the learning community is defined as all students and their family members, faculty and staff, board and community members, and any other stakeholders who can be directly affected by the available instructional opportunities offered by the school.

ATA recognizes that technology is a tool that enables teachers and administrators to work more productively, that offers solutions for time management, that provides an instrument for student monitoring and intervention, and when used effectively and logically, can ensure interesting and effective lessons and classroom activities.

Research suggests that when technology is integrated into the larger instructional framework, students will not only learn how to use the equipment and software, but will also gain content knowledge (Silverstein et al., 2000). Moreover, using technology within the curriculum framework can enhance important skills that will be valued in the workplace, such as locating and accessing information, organizing and displaying data, and creating persuasive arguments (Sandholtz et al., 1997; "Critical Issue," 1999). At ATA, technology skills will be taught in the context of project-based units that have been developed using an instructional design process that encourages teachers to understand/unwrap the standards, design assessments (enhanced by the use of technology) to require students to produce evidence of content mastery, plan instructional opportunities (that incorporate technology skills) for students to acquire knowledge and practice skills, and finally reflect on the overall design and implementation of the unit to make adjustment. The development of these units will be ongoing as teachers map out their core content curriculum objectives. A technology taskforce has been established to identify where technology can be logically and seamlessly integrated into teacher-created instructional units.

Currently, ATA students are consumers of technology resources. At home, they are able to engage in electronic games, download music files, and view websites on subjects of their own interest.

While consuming and utilizing appropriate technology is worthwhile, it is insufficient for the Arts & Technology Academy students and staff. They must become active producers of technology. The technology should work for them, enhancing their own personal and academic aspirations and assisting with the achievement of their goals.

It is the ultimate goal of ATA to create technology producers. ATA students and staff will use technology to produce substantial works of art, creative pieces of music, academic pieces of literature, and logical mathematic and scientific projects and presentations.

It is the technological vision of ATA to create a learning community that fosters technologically literate life-long learners prepared to meet the academic, social, and economic demands of the 21st century. All learners will be able to interact successfully in a technological environment to achieve their personal, educational, and workplace goals. They will skillfully use technology to access, retrieve, and use information school-wide, community-wide, nationally, and internationally.

**ATA's Core TECHnology Beliefs**

## Technology as a Tool for Collaborative Teaching and Learning

ATA prepares students to be lifelong learners who are responsible for their own learning, skilled in accessing and processing information, confident in using technological tools, able to solve complex problems alone or collaboratively, capable of being creative and innovative, and able to communicate locally, nationally, and world-wide. By using available technologies as tools for collaboration, ATA provides the learning community with greater opportunity for interaction and information exchange. ATA promotes a collaborative environment for project-oriented activities and increases the productivity of students as they work toward attaining learning outcomes. Technology at ATA enables learning to involve partnerships within the school, among schools, and with other organizations. ATA Technology is used to provide a collaborative system that helps students, parents and teachers work together to support educational outcomes.

## Equitable Access to World-Class Knowledge Using Technology

All members of the learning community will have equal access to the technology resources available at ATA. All piloted programs and new technologies will be offered through professional development to all interested staff. Technology allows ATA to better serve the diverse learning needs of all students, including students with special needs. A concerted effort will be made to incorporate assistive technologies that will bring academic opportunities to all students. All students, staff and sites will be provided with and have equal access to minimum standards of hardware and software. ATA will implement grade level technology goals to ensure equity of delivery to all students. Via telecommunications, ATA will enable 24-7 access to school learning resources and school information for students, parents, staff, and community members. ATA promotes equitable access to learning technology as a community investment and encourages an active partnership among schools, businesses, homes and the community.

## Connecting Curriculum through the Skillful Use of Technology

Skillful use of Technology is defined as incorporating learning new curriculum (math, writing, science, etc.) with the appropriate technology applications. The skillful use of Technology expands classroom tools for teaching and learning and provides for the integration of multiple resources for the existing and emerging curriculum. Technology can also link classrooms with educational resources within the building, community and worldwide. Technology at ATA will enable the learning community to communicate more effectively, access and process information, and work productively.

## Higher Student/Staff Performance through Effective Technology Use

Skillful use of technology supports the development of process skills such as flexibility, adaptability, critical thinking, problem solving and collaboration which

are essential to success in our rapidly changing information age. Effectively using technology encourages the use of multimedia tools, thereby enabling students to become active and experiential learners. Using Technology to enhance a rigorous academic curriculum will result in higher achievement for all ATA students.

**Existing Conditions**

Considerable work to ATA's technological infrastructure has been accomplished. The school was recently rewired for improved connectivity in each room. The school's network runs on a T1 line with a DSL backup. The school has 5 servers. Currently, students and staff have access to a networked environment in which all classrooms and work areas are equipped with networked computers and telephones with voice mail. All staff members are able to have network and email accounts so that they may collaborate and seek information. Every classroom has 2-4 functional, internet capable computers. The plan calls for 8 computers per class by 2009. The foundation has been set to provide all students above third grade personal logins to increase accountability and tracking of student use. From any computer in the school, members of the network access files from their own dedicated drives on servers and from shared drives.

**Rationale for Plan**

Now that the infrastructure has been established for bringing effective technology to ATA stakeholders, what are the next steps for ATA?

ATA must answer and address the following essential questions to ensure that the use of technology is fulfilling the school's instructional/technological mission.

- How does ATA ensure quality in student learning and seamless integration of technology in the daily life of the ATA community?
- How can technology be logically woven into the existing curriculum prescribed by National and District standards?
- How does ATA create a relevant and rigorous technology curriculum that meets the content standards of every grade level?
- What processes must ATA have in place to assure that students, staff, parents, and community members use technology effectively?
- How does ATA assess the progress made towards achieving its goals of creating graduates that are lifelong technologically-literate learners?

This plan is the first pivotal step towards instituting an academic cultural shift long overdue at ATA. No longer will technology be used for technology's sake. Technology must be utilized as a logical tool for teaching and learning.

This plan conveys next steps in using technology more productively and in weaving it more thoroughly into the daily learning and teaching life of ATA.

## 21st Century Skills

As ATA is preparing students and working with staff, parents, and community members who must be prepared to address the challenges of the 21st century, ATA must ensure that the technology curriculum has the skills necessary embedded in the suggested activities and proposed programs.

As asserted by the Partnership for 21st century skills, "standards that reflect content mastery alone do not enable accountability and measurement of 21st century skill." 21st century skills are the skills students need to succeed in work, school and life. ATA Technology resources, effectively used, will support and enhance these skills.

They include:

Core Subjects (as defined by NCLB)
21st century content: global awareness, financial, economic, business and entrepreneurial literacy, civic literacy and health and wellness awareness

Learning and thinking skills: critical thinking and problem solving skills, communication skills, creativity and innovation skills, collaboration skills, contextual learning skills and information and media literacy skills

Information and communications technology literacy

Life skills: leadership, ethics, accountability, adaptability, personal productivity, personal responsibility, people skills, self-direction and social responsibility

The ATA technology plan recognizes that 21st Century Skills are essential for the success of 21st century learners. 21st century skills will be included in the technology curriculum for all learners.

## School-wide Initiatives

In the summer of 2006, the ATA staff established four school-wide initiatives. These initiatives were developed to give ATA better focus and guidance for all stakeholders to be more involved in the academic and social achievement of ATA students.

The four initiatives for School Year 2006-2007 are:

- Standards-Based Instruction
- Literacy (using the Open Court Reading Curriculum)
- Attendance and Truancy
- Social/Emotional Learning

While the Arts & Technology Academy's Technology Plan has been designed to reflect and support the 2006-2007 School Initiatives, it is understood that the Technology Plan will be adjusted annually to ensure its alignment with ATA school-wide initiatives.

## Learning Outcomes/Goals

The learning outcomes provide specific measurable goals for successful implementation of ATA's Technology Plan. All activities for the improvement of ATA's technology resources will be assessed by their ability to support the learning outcomes.

## ATA Learning Goals for Students/Families

- Learning Goal #1: Increase the number of ATA students who have access to information technology in their classrooms and throughout the school.
- Learning Goal #2: Increase the number of ATA students who have technology and information literacy skills as demonstrated by classroom, school, and nationwide assessments.
- Learning Goal #3: Increase the number of ATA students who use technology to communicate effectively in a variety of modes, as demonstrated by classroom, school and nationwide assessments.
- Learning Goal #4: Increase the number of ATA students who use technology for thinking, learning and producing quality projects in a variety of content curriculum areas, as demonstrated by classroom, school, and national assessments.
- Learning Goal #5: Increase the number of ATA students who use technology for research, problem-solving, and decision-making in a variety of modes, as demonstrated in classroom, school, district, and national assessments.

## ATA Learning Goals for Faculty/Staff

- Learning Goal #1: Increase the number of ATA staff who develop and utilize both personal and professional technology and information literacy skills.
- Learning Goal #2: All ATA staff will use technology effectively to help students achieve high academic standards.
- Learning Goal #3: All ATA staff will understand and utilize technology to provide ongoing assessment of student learning and performance to support continuous academic improvement.
- Learning Goal#4: All ATA staff will utilize technology to meet the individual instructional needs of all students.
- Learning Goal #5: All ATA staff will utilize technology to enable the school, families, and the community to interact as partners to strengthen opportunities to learn.

## Standards-Based Technology

In order to achieve our current goals, and to meet state standards, ATA adopted *Technology Standards* for all students in 2003. The standards were derived from previous technology goals and the *National Educational Technology Standards for Students* from the International Society for Technology in Education (ISTE).

The NETS for Students (NETS-S) *(Appendix A1)* cover six areas for all students in grades K-12:

- basic technology operations and concepts
- responsible and ethical use
- thinking, learning, and producing
- effective and creative communication
- academic and personal research
- problem-solving and decision-making

Performance indicators are listed for each standard (see Appendix A2). The performance indicators have been adjusted to reflect ATA's current grade levels, but will be amended as the school population continues to grow.

## Standards-Based Professional Practice

As part of the National Technology Standards published by ISTE, educational technology foundational skills have been established for pre-service and in-service teachers.

The NETS for Teachers (NETS-T) (Appendix B1) covers six areas for all instructional staff in grades PK-6:

- Technology operations and concepts
- Planning and designing learning environments and experiences
- Teaching, learning, and curriculum
- Assessment and evaluation
- Productivity and professional practice
- Social, ethical, legal, and human issues

It will be an ongoing effort to include the NETS teacher standards in planning aimed at improving teaching and current and future professional development.

Performance indicators for technology-integrated instruction (Appendix B2) have been derived from the North Central Regional Technology in Education Consortium. Although NCRTEC is no longer in operation, its Learning with Technology Profile Tool is a standard self-assessment tool. This profile tool assists teachers with assessing their own current practices to ensure that their instruction effectively employs technology and is engaging to all students.

## Standards-Based Administrative Management

Also published by ISTE, educational technology foundational skills have been established for administrators in an educational setting.

The NETS for Administrators (NETS-A) (Appendix C1) cover:

- Leadership and Vision
- Learning and Teaching
- Productivity and Professional Practice
- Social, Legal, and Ethical Issues
- Support, Management, and Operations
- Assessment and Evaluation

**Performance Indicators for Technology-Integrated Instruction/ Administration** (Appendix B2) addresses some of the ways to identify that Administrators are integrating technology into the school's day-to-day operation. This section will be more robust as additional focus is provided by the Technology Taskforce.

The ATA *School-wide Expectations* list identifies some of the proposed annual activities for students around each of the Technology standards.

## ATA SCHOOL-WIDE EXPECTATIONS

### Standard 1. Basic technology operations and concepts

- Regular, ongoing, and flexible access to computers throughout the school year
- Keyboarding instruction and practice. Key emphasis on grades 2-4, with yearly practice sessions conducted from elementary classrooms.

### Standard 2. Responsible, Social, and ethical use

- Continuous emphasis on responsibility and ethics
- Copyright recognition and citations used properly in research
- Login accounts for all students in grades 4-6

### Standard 3. Thinking, learning, and producing

- Technology available and a regular part of lesson plans
- Obtaining/examining software titles that enhance content curriculum
- Use of spreadsheets, databases and other tools for understanding, meaning making with data, and production

### Standard 4. Effective and creative communications

- Planned use of a variety of media throughout the curriculum
- Planned use of a digital media laptop cart to create media presentations
- Pilot of 5 Promethean boards for instructional use and staff/student presentations
- Yearly multiple writing experiences using technology for the full writing process

### Standard 5. Research

- Students complete at least one research project every semester, (a culminating research project which involves the standards-based instructional model (based on essential questions, questioning, planning, gathering, sorting, synthesizing, evaluating, reporting)

### Standard 6 Problem-Solving and Decision-making

- Students participate in a collaborative on-line project that requires them to work cooperatively to address a real-world problem (CIESE tele-collaborative classroom projects)
- Continuous emphasis on evaluating when it is appropriate to use technology.
- Students will participate in the annual Technology Fair, which will encourage students to create and present projects that demonstrate how Technology has affected our lives.

## PROFESSIONAL DEVELOPMENT STRATEGIES

### WHY PROFESSIONAL DEVELOPMENT?

A thriving learning community focuses on improving learning for all of its youth and adult members. In order for staff members to create powerful learning experiences for children, they need to be engaged in the same. *ATA* promotes continuous inquiry and improvement embedded in the daily life of faculty and staff which focuses on individual, collegial, and organizational improvement. Professional Development will occur in a school setting that supports hands-on experience with demonstration, immediate feedback, and coaching. All staff will be given time for technology instruction in after-school workshops, in-service days, and summer workshops with allotted time to develop and refine new skills.

### STAFF NEEDS ASSESSMENT

Each year, staff is instructed to complete a *Technology Skills Self-Assessment*. Results from this and other assessments (surveys, online TAGLIT survey, focus group interviews, classroom observations, and an analysis of student work) will be combined with the annual Self-Assessment data to create yearly professional development strategies.

### TARGETED PROFESSIONAL DEVELOPMENT AREAS FOR IMPLEMENTING TECHNOLOGY GOALS

ASSESSMENT:

- Evaluate individual work and class progress with reporting options available in software programs.
- Report student achievement to parents using electronic communication tools.
- Review portfolios of student work and writing saved on the network.
- Prepare written assessments of student progress with report card programs.
- Use resources created on shared drives to store and share assessment data.

INSTRUCTION:

- Use a variety of multi-media materials to more effectively differentiate instruction to reach students with diverse learning styles.
- Plan individualized learning programs based on assessment data.
- Increase student motivation with expanded multi-media resources for class work and assignments.
- Provide opportunities for students to work collaboratively and actively.
- Guide student use of the Internet by creating and using curriculum pages on school and district websites. Continue to create resources for each other.
- Guide students to use online research modules created by teacher/librarians that guide students through investigations using the resources of the World Wide Web, and productivity software such as W*ord, PowerPoint*, and *Excel*.

- Challenge students with an intriguing question which prods them, working in collaborative groups, to seek information, display it, process it, and produce a presentation of their solution. Grade-level or subject area teacher teams write the research modules to support the district-adopted curriculum.

COMMUNICATION:

- Use electronic mail systems to communicate within the building and throughout the district.
- Use network access to link up with other educators on specific topics through online discussion groups and professional list serves.
- Increase communication with parents by phone and email exchanges, and by posting information on classroom and school websites.
- Collaborate with distant learning partners via online global projects and distance learning opportunities.

INFORMATION:

- Access current information to supplement teaching resources with electronic sources and online services.
- Access professional journals and information online.

PRODUCTIVITY:

- Increase teaching time by using management programs to streamline grades, attendance, lunch count, etc.
- Use report card programs, databases, and spreadsheets to manage student data.
- Prepare high quality teaching materials at the desktop.
- Use technology tools to deliver interactive content electronically (Promethean boards, PowerPoint presentations, online tests, etc.)

## BUILDING A CULTURE OF CONTINUOUS STAFF LEARNING

### School-based Support Strategies

ATA Technology Taskforce

The ATA Technology Taskforce will be the primary voice for determining how Technology progresses at ATA. The purpose of the Technology Taskforce is to decide what ATA will look like technologically for the coming years, create a rigorous, integrated technology curriculum for ATA, make decisions on hardware and software purchases , update our school wide technology plan , identify professional development opportunities for all staff to increase technology skill sets , define technology entrance standards for staff define technology exit standards for students, and ensure that ATA students have the needed technology skills to be productive in the 21st century workforce
Technology Taskforce Team meets monthly and works throughout the year to coordinate activities, curriculum, and staff development at ATA.

The Process:

- Identify one agenda item for discussion a few weeks prior to the monthly meeting.
- Task Force members will research information on how to address it for their discipline (upper school, lower school, tech lab/classes, admin/professional development, arts team, and infrastructure).
- TF members will solicit additional input from their constituents
- TF members will prepare their ideas to share with the whole group.
- TF members will meet once a month to discuss and debate.
- TF will decide on a recommended course of action.
- TF will then forward recommendations to Mr. Greene/the Board for action.

Technology Specialist

The Technology Specialist serves as the instructional technology coordinator at ATA. The Technology Specialist will receive ongoing training and is a critical component of network and instructional support to the school. The Technology Specialist offers building-level support and in-service training when needed. Courses are offered in a variety of formats and times, including during and outside of the school day and the school year. The Technology Specialist will be the primary facilitator for ensuring that integrated technology stays at the forefront of ATA's mission.

Resource Library

The Technology department will maintain a professional library of books, videos, and resources to support staff learning. This professional library will be available for staff checkout through the school library.

Peer Experts

Teachers are chosen to pilot different innovative technologies and to tie student learning to the district's academic content standard requirements. These teachers are front runners in designing in-classroom learning activities who then share their learning with their colleagues. Both the Technology Specialist, Peer Experts, and other interested teachers will regularly attend (and present) at technology conferences (such as ISTE's upcoming 2007 conference in Atlanta)

**Additional Support Strategies**

Network Services/Helpdesk Support

Network Services and Helpdesk Support have been provided through Building Hope Services (BHS), a nonprofit organization focused on providing professional back office services to Washington, DC charter public schools. Building Hope Services has assisted ATA by hiring Dynamic Network Solutions (DNS), a professional technology consulting firm. Dynamic Network Solution's IT outsourcing team works with the School's management team to examine the existing information technology infrastructure (IT) and needs and then develop an action plan that meets the School's IT goals. Dynamic Network Solutions provides the following services:

- **Strategic guidance, staff training, and IT project management**
  - Provides expert guidance to staff on all technical issues, including systems and network design;
  - Manages IT projects as requested by ATA; and
  - Meets with individual staff or with groups to provide training and support as needed.
- **Systems analysis and service architecture design**
  - Server, workstation and peripheral analysis
    - Designs server and workstation configurations as needed.
    - Oversees implementation of acquired technologies
  - Infrastructure analysis
    - Examines existing IT infrastructure;
    - Recommends improvements and changes to infrastructure to meet needs of organization and to meet organizational goals; and
    - Oversees implementation of infrastructure modifications and make sure they meet required needs.
- **Security analysis and system hardening recommendations**
  - Provides recommendations and planning for all security needs including firewalls, content filtering, Antivirus, Anti-Spyware, Anti-Spam, and Patch Management; and
  - Oversees implementation of recommended solutions.
- **Staff IT training**
  - Works with faculty and staff to better understand and use IT resources, in both one on one and group settings;
  - Makes recommendations for additional training and support from outside vendors; and
  - Reviews and assesses benefits of training and recommend changes to improve benefit to organization.
- **IT outsourcing services**
  - Provides support for all desktops, laptops, printers, servers, and other IT equipment;
  - Provides purchasing support and installation of new IT equipment; and
  - Provides high-level support for servers, workstations and related technology.
  - Provides support for intranet and internet servers.
- **Executive technology liaison**
  - Works with existing contracts and vendors to manage and improve delivery of services; and
  - Meets with staff to determine school needs and ways to improve service.

- **Telecommunications Cost Reduction Analysis**
  - Examines existing phone and data plans;
    - Examines cell phone and land line phones and contracts
    - Examines Data and networking plans and contracts
  - Recommends improvements and cost savings to maximize schools benefit from technology; and
  - Provides continued oversight and management and work with vendors to modify services plans as necessary.
- **Disaster Recovery/Business Continuity Planning**
  - Examines existing backup and data retention policy, and compare and contrast with industry standard best practices;
  - Develops updated plans to meet the needs of the organization and meet data retention needs; and
  - Oversees implementation and assessment of policy, test and evaluate backup solution.

DNS has provided invaluable 24/7 technical assistance with maintaining ATA's infrastructure, as well as assisting with Professional Development opportunities.

**FUNDING FOR PROFESSIONAL DEVELOPMENT**

Funding for staff development has been critical to the successful implementation of technology integration. To date, ATA has primarily funded staff development for invited Technology Trainers and substitutes provided for release time for teacher/trainers. Most of the training has been offered during school provided in-service time such as building-based in-service days, staff development days, or early release time. Operational funds have been used to fund curriculum development, training of trainers, technology assessments, and design of staff development courses.

**ASSESSING PROFESSIONAL DEVELOPMENT**

The following indicators/essential questions will be used to assess the amount of professional development given to employees. Additionally, self-assessments, surveys, skills-based tests and technology certifications will be created to quantify the impact of professional development on professional practice.

***Possible Indicators for Assessing Technology-Related Professional Development***

1. To what extent have instructional staff received technology-related professional development?
   a. What is the total number of hours of professional development received by instructional staff in the most recent academic year, per instructional staff FTE?

b. What is the number of hours of technology-related professional development received by instructional staff in the most recent academic year, per instructional staff FTE?
c. What is the ratio of hours of technology-related professional development to the total hours of professional development received by instructional staff?
d. What percentage of instructional staff have received at least the minimum number of district or state-required hours of technology-related professional development in the most recent academic year?

2. To what extent have administrative/support staff received technology-related professional development?
    a. What is the total number of hours of professional development received by administrative and support staff in the most recent academic year, per administrative and support staff FTE?
    b. What is the number of hours of technology-related professional development received by administrative and support staff in the most recent academic year, per administrative and support staff FTE?
    c. What is the ratio of hours of technology-related professional development to the total hours of professional development received by administrative and support staff?
    d. What percentage of administrative and support staff have received at least the minimum number of required hours of technology-related professional development in the most recent academic year?

### The Network and Telecommunications Plan (as outlined by DNS)

The Network and Telecommunications Plan describes the technology objectives, infrastructure upgrades, and minimum Technology Standards for laptops, desktops, servers and connectivity.

ATA will maintain a 4 year replacement policy on all desktop and laptop computers and a 3 year replacement schedule on all servers.

**Desktop computer**
Pentium 4 3.0 GHz or faster
512 MB of system RAM
80GB hard disk
Dedicated video card
19" LCD monitor

**Laptop computer**
Intel Core Duo 1.8 or faster
512MB of system RAM
40GB hard disk
14" or larger screen

**Network Connectivity**
All computers must have 100mbps wired Ethernet or 54mbps wireless Ethernet.

**Servers**
Xeon 2.8 GHz or higher processor
2GB of system Ram
RAID 1 or RAID 5 storage
Tape Backup

## Technology Objectives

*The Arts and Technology Academy* understands that attainment of its instruction and technology goals is dependent on a high performance, reliable data voice network infrastructure. This requires the school to be served by high speed Internet service, adequate data and voice cabling to all rooms, a wireless network, and a modern PBX phone system with extension in all rooms, state of the art servers, and proper maintenance and support to keep the infrastructure working properly.

### Servers

The school currently has 5 servers:

- Domain controller: This server handles all domain security and printing
- Exchange server: This server handles all internal and external email
- Intranet server: This server hosts all internal websites
- Utility server: This server hosts the Ghost imaging platform
- Old Domain controller: This server will be redeployed as a backup domain controller and as a print server, as well as the primary file server

All servers are backed up to tape on a nightly basis and kept on a 10-tape three-month rotation.

**Classroom Technology**
The school currently provides four computers per classroom for student use and one laptop for teacher use. This will expand to a total of 8 computers per classroom over the next three years.

ATA is currently piloting five Promethean learning systems. If this pilot proves successful, this will expand to include 10 classrooms by the end of 2008.

Currently, there is a mobile Mac computer lab to be used for video editing projects. There will be several Windows mobile labs added for general purpose student use.

**Software**

All school PC computers will operate on MAC OSX or Microsoft Windows XP operating systems with access to Microsoft Office Suite.

**Network Infrastructure**
All offices and classrooms will have access to a Windows 2003 network with at least Category 5e cabling connecting to the network server. All classrooms have at least one network connection and a switch to provide adequate connectivity to all computers. Wiring connections will need to be added to enable additional connections in all classrooms and in addition there will be created a school-wide wireless network for network access anywhere in the school facility.

**Voice Systems**
The school has an Avaya PBX system to provide phone access. There is phone access in all classrooms and administrative offices.

**Communication Goals**

- To expand and enhance the dissemination of information to staff through the consistent use of internal e-mail correspondence
- To encourage parent participation in their child's education and school events through frequent and informative communication
- To provide distance-learning opportunities through on-line web based information and video-on-demand solutions

## Technology Inventory

In order to reach full access for all students and staff, *The Arts and Technology Academy* will provide in its annual budget sufficient funding to meet the goals established herein. In addition, a concerted effort will be made to accelerate the attainment of full access through federal and private grants and donations.

| Major Technology Inventory Assets | Comments | Current | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| **Servers and OS** | | 5 | 5 | 6 | 6 |
| **Server Software** | Internal Web & Email | 2 | 2 | 3 | 3 |
| **Server Hosted Applications** | Computer aided instruction | 0 | 1 | 1 | 1 |
| **Server Hosted Applications** | Ghost | 1 | 1 | 1 | 1 |
| **Routers** | Add 2nd T1 to Internet | 1 | 1 | 2 | 2 |
| **Firewalls** | | 1 | 1 | 1 | 1 |
| **Core Switches** | | 3 | 4 | 4 | 5 |
| **Aux Switches** | | 30 | 20 | 10 | 10 |
| **Access Points** | | 5 | 10 | 10 | 10 |
| **PCs** | | 125 | 165 | 185 | 200 |
| **Macs** | | 20 | 20 | 20 | 20 |
| **Laptops** | | 40 | 60 | 80 | 100 |
| **Laptop Carts** | | 1 | 2 | 3 | 4 |
| **Printers** | | 10 | 10 | 10 | 10 |
| **Scanners** | | 3 | 3 | 3 | 3 |
| **Phone System** | | 1 | 1 | 1 | 1 |

## Three-Year Technology Budget (SY '07 to SY '09)

The following budget estimates the cost and source of funds for the implementation of this Technology Plan. Implementation of this Plan is dependent on funding from E-rate.

| Technology Budget Items | 2007 | 2008 | 2009 |
|---|---|---|---|
| | $ | $ | $ |
| Servers and Licensing | 60,000 | 15,000 | 15,000 |
| Routers and Security Appliances | 5,000 | 1,000 | 5,000 |
| Switches and Access Points | 20,000 | 15,000 | 5,000 |
| Misc. Network Components | 3,000 | 3,000 | 3,000 |
| Cabling | 80,000 | 10,000 | 15,000 |
| Video Distribution Equipment | 0 | 5,000 | 90,000 |
| Phone Equipment | 2,500 | 30,000 | 5,000 |
| Engineering Services | 5,000 | 5,000 | 5,000 |
| Basic Maintenance | 20,000 | 20,000 | 20,000 |
| Application Software | 20,000 | 5,000 | 5,000 |
| Instructional Software | 5,000 | 5,000 | 5,000 |
| Computer workstations w/ OS | 60,000 | 60,000 | 60,000 |
| Printers and Scanners | 3,500 | 10,000 | 5,000 |
| Misc. Computer Equipment | 10,000 | 10,000 | 10,000 |
| Maintenance and User Support | 102,000 | 112,000 | 112,000 |
| Professional Development | 10,000 | 10,000 | 10,000 |
| Instructional Hardware | 15,000 | | |
| Administrative Hardware/Software | 11,524 | | |
| Telecommunications | 6,000 | 7,000 | 8,000 |
| Internet Access | 6,000 | 12,000 | 12,000 |
| Internet Hosting (Web & Email) | 200 | 1200 | 1200 |
| **Total Technology Expenditures** | **444,724** | **336,200** | **391,200** |

| Revenue | 2007 | 2008 * | 2009 * |
|---|---|---|---|
| Title IIA funding for technology | 13,800 | 13,800 | 13,800 |
| Title IID funding for professional development | 3,000 | 3,000 | 3,000 |
| Title IID funding for equipment | 7,964 | 7,964 | 7,964 |
| School Budget for Computers and Technology | 305,460 | 282,563 | 336,436 |
| eRate Grant Funding | 114,500 | 28,873 | 30,000 |
| * Estimated federal title funds- subject to federal funding formulas | | | |
| **Total Revenue allocated for Technology** | **444,724** | **336,200** | **391,200** |

## Evaluation:

This plan will be updated and adjusted during the monthly meetings of the Technology Taskforce. The Taskforce will provide a continuous review of faculty, staff, and student achievements. The Taskforce will also receive continuous feedback from students and staff. Below are some of the possible indicators that the Taskforce will use to assess the progress of ATA's Technology program.

### *Possible Indicators for Assessing Technology Proficiency in the Teaching/Learning Environment*

1. Are teachers proficient in the use of technology in the teaching/learning environment?
    a. What percentages of teachers are achieving acceptable performance on standards-based performance profiles?
2. Are administrators proficient in the use of technology in support of school management?
    a. What percentages of administrators are demonstrating acceptable technology proficiency performance on standards-based profiles?
    b. What percentages of support staff are demonstrating acceptable technology proficiency on standards-based profiles?
    c. What percentages of administrators are using computer-based technologies on a variety of administrative tasks?
    d. What percentages of support staff are using computer-based technologies on a variety of administrative tasks?
3. Are students proficient in the use of technology in the teaching/learning environment?
    a. How many student presentations incorporate technology into their contents?
    b. What percentages of students perform at or above grade-level-specific performance levels on standards-based profiles?
    c. What percentage of students are demonstrating competency at the basic level according to the Technology Rubrics/ Technology Scope and Sequence

### *Technology Scope and Sequence*

| The Arts & Technology Academy PK-6 Educational Technology Scope and Sequence | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Standard 1: Basic Operations and Concepts: Students demonstrate a sound understanding of the nature and operation of technology systems. Students are proficient in the use of technology.** | | | | | | | | | |
| | All ATA students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
| **1.1** | **Understand common uses of technology in everyday life and advantages and disadvantages those uses provide.** | **I** | R | R | R | R | R | R | R |
| **1.2** | **Understand the function of computer components and peripherals including monitor, keyboard, mouse, headphones, scanner, and printer** | **I** | **I** | R | R | A | A | A | A |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **1.3** | **Use keyboards and other common input and output devices (including adaptive devices, when necessary) efficiently and effectively.** | **I** | **I** | R | R | A | A | A | A |
| **1.4** | **Understand the following software terms: Menu, icon, start, close, save, save as, file, scroll bar, cursor, file, select, open, launch, copy/paste** | | | **I** | R | R | A | A | A |
| **1.5** | **Understand the following network terms: login, password, server, network, group shared, network management software** | | | **I** | R | R | A | A | A |
| **1.6** | **Understand the following Internet terms: Internet, World Wide Web, website, links, URL (location/address), blog, webquest, home, and favorites** | | | **I** | **I** | R | R | A | A |
| **1.7** | **Be proficient in basic computer procedures** | | **I** | R | R | A | A | A | A |
| | a. Identify a computer (desktop or laptop) and communicate about it using appropriate and accurate terminology (mouse, monitor, keyboard, cd rom, floppy disk drive, cursor, CPU) | **I** | R | A | A | A | A | A | A |
| | b. Demonstrate correct mouse usage (left and right functions) and cursor manipulation | **I** | **I** | R | R | A | A | A | A |
| | c. Recognize icons and understand their functions | **I** | **I** | R | R | A | A | A | A |
| | d. Identify basic keyboard functions (spacebar, escape, shift, alt, caps lock, tab, enter, backspace, delete) | | **I** | R | R | A | A | A | A |
| | f. Activate computer for use (also shutdown, sleep, and reboot if applicable) | **I** | **I** | R | R | A | A | A | A |
| | g. Login and logout with network account name and password | | | **I** | R | R | A | A | A |
| | h. Locate, launch, run, close, and quit applications (locally and on network) | **I** | **I** | **I** | R | R | A | A | A |
| | i. Utilize pull down menus and commands | | | **I** | R | R | A | A | A |
| | i. Create, name, save, retrieve, and print a document | | | **I** | R | R | A | A | A |
| | j. Use keyboard shortcuts | | | **I** | R | R | A | A | A |
| | k. Understand and demonstrate proper use of removable media (CD's, diskettes, flash drives, etc.) | **I** | **I** | **I** | R | R | A | A | A |
| | l. Manipulate window view and size (minimize, restore) | | | **I** | **I** | R | R | A | A |
| **1.8** | **Use digital technology equipment and associated software (video camera, scanner, and camera)** | | | | **I** | R | R | R | R |

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

| | All students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| **2.1** | **Describe some uses of technology in society (i.e., cash registers, grocery scanners, employee tags, etc.)** | **I** | **I** | R | R | R | R | A | A |
| **2.2** | **Respect privacy of staff and student files** | **I** | **I** | R | R | R | R | R | R |
| **2.3** | **Demonstrate appropriate care and use of all technology systems equipment** | **I** | **I** | R | R | R | R | R | R |
| **2.4** | **Work cooperatively and collaboratively with others when using technology** | **I** | **I** | R | R | R | R | R | A |
| **2.5** | **Understand and adhere to policies** | **I** | **I** | R | R | R | R | R | A |
| | a. Established district, school, classroom, and computer lab policies | **I** | **I** | R | R | R | R | R | A |
| | b. Give credit to authors, electronic sources and copyright laws | | | | | | **I** | R | A |
| | c. Hardware and software licensing agreements | | | | | | | **I** | R |

**Standard 3: Technology productivity tools: Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools (portable keyboards, wordprocessing, spreadsheets) to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.**

| | All students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| **3.1** | **Develop keyboarding skills** | I | I | I | R | R | A | A | A |
| | a. Assume correct posture | I | I | I | R | R | A | A | A |
| | b. Use space bar, return key, shift key, delete key | I | I | I | R | R | A | A | A |
| | c. Maintain homerow location and employ correct keystroking techniques | | | | I | I | R | A | A |
| | d. Practice to increase speed | | | | I | R | A | A | A |
| | e. Acquire punctuation and number techniques | I | I | I | I | R | R | R | R |
| **3.2** | **Use a spreadsheet as a productivity tool** | | | | | I | I | R | A |
| | a. Understand and use the following terms: Cell, column, row, toolbar, cell reference | | | | | | I | R | A |
| | b. Open, key, navigate, close, save, and print a spreadsheet | | | | | | I | R | A |
| | c. Enter and edit text, numbers, and dates | | | | | | I | R | A |
| | d. Modify columns / rows | | | | | | I | R | A |
| | e. Format Cells | | | | | | I | R | A |
| | f. Cut / Paste data or cells | | | | | | I | R | A |
| | g. Create charts | | | | | | I | R | A |
| | h. Insert rows / columns | | | | | | I | R | A |
| | I. Fill down / across / special | | | | | | | I | R |
| | j. Incorporate graphs in word processing or other documents | | | | | | | I | R |
| | k. Create formulas and utilize functions in problem solving including absolute and relative cell references | | | | | | | I | R |
| | l. Create fields and records and utilize sort and filter functions as a database | | | | | | | | I |
| | m. Mail and print merge records into a word processing document | | | | | | | | I |
| **3.3** | **Use a word processor / portable keyboard as a productivity tool** | I | I | I | R | R | A | A | A |
| | a. Write letters, stories, and poems | I | I | I | R | R | A | A | A |
| | b. Create, save, retrieve, print, and close document | | | I | R | R | A | A | A |
| | c. Indent text using space bar and tab key | | | I | R | R | A | A | A |
| | d. Use formatting toolbar | | | I | R | R | A | A | A |
| | e. Adjust line spacing | | | | I | R | R | A | A |
| | f. Insert and manipulate clip art or photos | I | I | I | R | R | A | A | A |
| | g. Create text boxes | | | | | I | R | R | A |
| | h. Access drawing toolbar and use the functions | | | | | I | R | R | A |
| | I. Cut, copy, paste, and delete text and objects | I | I | I | R | R | A | A | A |
| | j. Utilize spell checker | I | I | I | R | R | A | A | A |
| | k. Justify text | | | | | I | R | R | A |
| | l. Type reports | I | I | I | R | R | A | A | A |
| | m. Copy and paste a graph into a word processing document | | | | | | I | R | R |
| | n. Utilize grammar checker | | | | | | I | R | R |
| | o. Wrap text around images | | | | | | | I | R |
| | p. Inset headers, footers, pagination | | | | | | | I | R |
| | q. Create columns | | | | | | | I | R |
| | r. Create newsletters and outlines | | | | | | I | R | A |
| | s. Add entries to bibliography | | | | | | | I | R |
| | t. Inset page breaks | | | | | | | I | R |
| | u. Find and replace text | | | | | | | I | R |
| | v. Create and modify tables | | | | | | | I | R |
| | w. Create resume | | | | | | | I | R |

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

**Students use various technology tools (multimedia presentations, digital still cameras, portable keyboards) for individual and collaborative writing, communication, art expression, and publishing activities to create products for audiences inside and outside the classroom.**

| | Students will use both sychronous (chat, teleconferencing) and asychronous (email, listserves) communication. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | All ATA students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
| **4.1** | **Enter and organize information using a multimedia presentation** | I | I | I | R | R | A | A | A |
| | a. Open, start, and save a new presentation | I | I | I | R | R | A | A | A |
| | b. Insert relevant graphics (clip art or digital images) | I | I | I | R | R | A | A | A |
| | c. Add background elements to slide | | | I | R | R | A | A | A |
| | d. Add transitions to a slide show | | | I | R | R | A | A | A |
| | e. Add sound effects to a slide | | | I | R | R | A | A | A |
| | f. Add text to a slide | I | I | I | R | R | A | A | A |
| | g. Link slides and/or stacks together with buttons or other means | | | | | I | R | R | A |
| | h. Add bulleted and numbered text to a slide | | | | | I | R | R | A |
| | I. Record and insert student-made sounds into a slide or stack | | | | | I | R | R | A |
| | j. Add animation to a slide or stack | | | | | I | R | R | A |
| | k. Utilize various View options (slide, outline, slide sorter, notes page, and/or slide show) | | | | | I | R | R | A |
| | l. Add video and or digitized movie clips to slide or stack | | | | | | I | R | R |
| | m. Create and modify slide or stack templates | | | | | | I | R | R |
| | n. Incorporate a music CD track to a slide or stack | | | | | | I | R | R |
| | o. Add student produced graphs to a slide or stack | | | | | | | | I |
| **4.2** | **Communicate information to an audience using a multimedia presentation** | I | I | I | R | R | R | A | A |
| | a. Create and run a multimedia presentation for a class project consisting of a series of slides/screens | | | | I | I | R | A | A |
| | b. Run a pre-created presentation manually | I | I | I | R | R | A | A | A |
| | c. Set a presentation to auto-run | | | | | | I | R | A |
| **4.3** | **Create digital photographs/posters** | | | | | I | R | A | A |
| | a. Use a digital still camera to take digital photographs | I | I | I | I | I | R | A | A |
| | b. Import digital photographs from an external source/peripheral device | | | | | I | R | A | A |
| | c. Create and save a new digital photo project | | | | | I | R | A | A |
| | d. Edit or crop digital still photos | | | | | I | R | A | A |
| | e. Print digital photographs | I | I | I | I | I | R | A | A |
| **4.4** | **Create digital movies** | | | | | | E | E | I |
| | a. Create and save a new digital movie project | | | | | | E | E | I |
| | b. Import video clips from an external source | | | | | | E | E | I |
| | c. Edit or crop video clips | | | | | | E | E | I |
| | d. Arrange video clips within a digital movie | | | | | | E | E | I |
| | e. Incorporate sound clips, recordings, and CD tracks into a digital movie | | | | | | E | E | I |
| | f. Incorporate still pictures into a digital movie project | | | | | | E | E | I |
| | g. Add transitions before and after video clips | | | | | | E | E | I |
| | h. Add title pages and text to a digital movie | | | | | | E | E | I |
| | I. Export digital video project to external source | | | | | | E | E | E |
| **4.5** | **Enter and organize information using web pages** | | | | | | E | E | E |
| | a. Create and save webpages into a site folder | | | | | | E | E | E |
| | b. Add and format text including bulleted and numbered text in a web page | | | | | | E | E | E |
| | c. Add backgrounds to web pages | | | | | | E | E | E |
| | d. Use various view options as needed | | | | | | E | E | E |
| | e. Link web pages together | | | | | | E | E | E |
| | f. Insert relevant graphics (clip art or digital images) | | | | | | E | E | E |
| | g. Add student produced graphs to web pages | | | | | | E | E | E |
| | h. Add video or digital movie clips | | | | | | E | E | E |
| **4.6** | **Create a website presentation for a class project and deliver** | | | | | | E | E | E |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **to an audience.** | | | | | | | | |
| **4.7** | **Compose, open, reply, delete, and forward email messages, attach documents** | | | | | | | F | F |
| **Standard 5: Technology research tools: Students use technology to locate, evaluate, and collect information from a variety of sources. Students use technology tools to process data and report results. Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.** | | | | | | | | | |
| | All students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
| **5.1** | **Utilize and understand basic research terms such as website, search engine, bookmark, web archive, and boolean searches** | | | | **I** | R | R | A | A |
| **5.2** | **Gather information and conduct research using technology tools** | | | | **I** | R | R | A | A |
| | a. Access and utilize archived or bookmarked websites | | | | **I** | R | R | A | A |
| | b. Utilize curriculum-based CD ROM's | | | | **I** | R | R | A | A |
| | c. Access information from various school-approved web sites | | | | | **I** | R | A | A |
| | d. Access and utilize search engines or online databases employing various search strategies | | | | | **I** | R | A | A |
| **5.3** | **Save research results for later use** | | | | | | | | |
| | a. Print research results to local or network printer | | | | **I** | R | R | A | A |
| | b. Record needed information for citation documentation | | | | | **I** | R | R | A |
| | c. Insert search results into word processing program | | | | | **I** | **I** | R | A |
| | d. Record specific research strategies performed for long term research projects | | | | | | | **I** | **I** |
| **Standard 6: Technology problem-solving and decision-making tools: Students use technology resources for solving problems and making informed decisions. Students employ technology in the development of strategies for solving problems in the real world.** | | | | | | | | | |
| | All students will: | PK | K | 1 | 2 | 3 | 4 | 5 | 6 |
| **6.1** | **Understand and use graphing software** | | | **I** | R | R | A | A | A |
| | a. View and contribute to a group-created graph | **I** | **I** | **I** | R | R | A | A | A |
| | b. Understand the type of graph to use based on the data to be displayed | | | | **I** | R | R | A | A |
| | c. Access and save a graphing project | | | | **I** | R | R | A | A |
| | d. Enter data into the graphing program | **I** | **I** | **I** | **I** | R | R | A | A |
| | e. Create picture, bar, line, and pie graphs | **I** | **I** | **I** | **I** | R | R | A | A |
| | f. Add and format a title, legend (key), and data labels to a graph | | | | **I** | R | R | A | A |
| | g. Copy and paste a graph into a multimedia presentation or word processing document | | | | | | **I** | R | R |
| **6.2** | **Evaluate results of graphs produced from spreadsheets** | | | | | | | **I** | R |
| **6.3** | **Understand and use concept mapping/webbing software** | **I** | **I** | **I** | **I** | **I** | **I** | **I** | R |
| | a. Access and save a concept-mapping project | | | | | | **I** | **I** | R |
| | b. Enter text and/or data representing and supporting main concepts | | | | | | **I** | **I** | R |
| | c. Convert a concept map into a text outline and visa-versa | | | | | | **I** | **I** | R |
| | d. Print a concept map and insert it into another document | | | | | | **I** | **I** | R |
| | e. Create, save, and print a chronological timeline | | | | | | **I** | **I** | R |
| **6.4** | **Use technology resources (e.g., puzzles, logical thinking programs, writing tools, etc.) for problem solving, communication, and illustration of thoughts, ideas, and stories** | **I** | **I** | R | R | R | R | R | R |
| | **I = Introduced** Students will practice skill with assistance/instruction<br>**R = Reinforced** Students will review then apply skill<br>**A = Autonomous** Students will apply skill independently | | | | | | | | |

# Resources

This first draft of ATA's Technology plan has been developed by consulting various resources, most notably, The International Society for Technology in Education (ISTE), the Institute of Education Sciences at the Department of Education's National Center for Education Statistics, and the North Carolina, Washington State, and District of Columbia Public Schools' Technology Plans

Online Resources Consulted:
International Society for Technology in Education
http://www.iste.org

National Center on Accessible Information Technology in Education (AccessIT)
http://www.washington.edu/accessit

WebAIM
http://www.webaim.org/

National Center for Accessible Media (NCAM)
http://ncam.wgbh.org/

Center for Applied Special Technology (CAST)
http://www.cast.org/

Forum Unified Education Technology Suite- offered through the Department of Education. An online service that offers resources for Technology planning.
http://nces.ed.gov/pubs2005/tech_suite/index.asp

Collected Lists of Technology Standard Websites
http://www.sabine.k12.la.us/Teachers/techstandards.htm

TechBuilder- a free, online tool that assists with creating/assessing a school-wide technology plan. ATA is currently a subscriber of this service.
http://compaq.edmin.com/

TAGLIT- Taking a Good Look at Instructional Technology (TAGLIT) is a suite of assessment tools designed to help principals and other school leaders gather, analyze, and report information about how technology is used for teaching and learning in their schools. ATA is a registered subscriber of this service.
http://www.taglit.org

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