

Henry Ford Academy

Technology Plan

JULY 2007 – JUNE 2010

School Mission Statement

Henry Ford Academy provides a rigorous, relevant, and unique educational experience to a diverse student body. The Academy community develops critical thinkers, life-long learners, and responsible citizens prepared for college, career, and the global society.

Henry Ford Academy
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Table of Contents

Introduction 3

Mission, Vision, & Goals 4

Technology Committee 5

Curriculum 6-8

Professional Development 9

Infrastructure/Tech Support 10-11

Funding and Budget 12

Monitoring and Evaluation 13

Acceptable Use Policy 14

Henry Ford Academy Technology Plan

Henry Ford Academy is the nation's first charter school developed jointly by a global corporation, public education and a world-renowned cultural institution. Conceived, developed, and implemented in 1997 through collaboration with [Ford Motor Company](#) and [The Henry Ford](#), and chartered by [Wayne County Regional Educational Service Agency](#), this model partnership focuses some of the best practices from the business, non-profit, and public education worlds toward the common goal of building a school that will prepare students for life in the 21st century. Our school is located inside The Henry Ford, America's Greatest History Attraction. Henry Ford Museum houses our freshman class of approximately 120 students. Our remaining 350 students in the 10th, 11th and 12th grades are located in Greenfield Village. Students at HFA come from all over Wayne County. Approximately 35% qualify for free or reduced lunch and come to the 9th grade with varied academic skills and experiences. This diverse group of students located in such a culture rich environment, make Henry Ford Academy a unique, stimulating, learning environment.

Grade Level	# of Students		Ethnicity	Percentage
9th Grade	123		African American	62%
10th grade	122		Caucasian	32%
11th grade	116		Hispanic	4%
12 th grade	106		Asian	1%
Totals	467		Native American	1%

Background Information

Being located in a cultural institution and created as a school deeply embedded in technology, there is considerable infrastructure in place at this time. Henry Ford Academy (HFA) has access to the Information Technology Services (ITS) of The Henry Ford (THF). The members of the ITS staff were instrumental in the creation of the school and the technology backbone. The school relies heavily on their expertise each day. THF provides email, voice mail, and phone service to the school as a contracted service. Each teacher is given a laptop computer, email service and a private phone to allow easy communication with parents and other staff members. The school currently own approximately 115 laptop computers and 120 desktops computers for 480 students and 35 teachers and administrative support personel. The school provides calculators to students while they are enrolled in Math and Science classes as well as overhead projectors, sound systems and LCD projectors for class room use.

Technology Mission Statement

The mission of the technology department of Henry Ford Academy is provide robust, reliable, appropriate technology to the HFA student body and staff that will enhance the learning process and the over all efficiency of the school.

Vision

Henry Ford Academy envisions using communication and information technology to promote academic excellence for all students, to develop technological skills and to prepare our students for a constantly advancing technological world. Access to digital resources provided to students and staff will increase the overall efficiency and productivity of the school.

Goals

- 1) To provide up to date, reliable technology to all students and staff.
- 2) To provide the necessary instruction to students in the most current technology applications.
- 3) To provide in-service to staff to enhance the integration of technology in the classroom and through out the curriculum.
- 4) To provide training and support to administration and support staff that will help them use information technology to find, extract, analyze and submit data that enhances the education process and meets the requirements of the state.

Technology Committee

Name	Position
Rick Enright	Assistant Principal, Committee Chair
Charles Dershimer	Instructor, Team Leader, Science Committee
Mike DeSana	Instructor, Technology Team
Mike Flannery	Instructor, Team Leader, Social Studies Curriculum
Karen Galley	Instructor, Team Leader, Social Studies Curriculum
Jennifer Kuhowski	Instructor, Math Curriculum
Nicole Marbury	Instructor, Technology Team
Marsha Repensek	Instructor, Team Leader, Math Curriculum
Darren Sipos	Instructor

Curriculum

The curriculum at Henry Ford Academy was specifically designed to include the continuous use of technology. Aligned with state and national standards, the curriculum is marked by its use of projects and presentations as a major method of instruction and assessment. There are several courses designed specifically to teach technology that are aligned with the state and national standards for advanced technology use. This process starts with Beginning Computer Applications for all 9th grade students, HTML is taught in the 11th grade, and Web Design is a required class for all 12th grade students. The overall use of technology is a tiered process. At the 9th grade level technology use is teacher directed. The process becomes more and more student directed until the 12th grade where the decision to use technology lies mainly with the student.

Use of technology will be integrated into the curricula on the following timeline. By the end of the first semester, January 25, 2008, the ninth grade students are introduced to internet research and the use of power point through their core classes. By the end of the ninth grade year, June 13, 2008, all ninth grade students will have completed a course in beginning computer applications with a large emphasis on the Microsoft Office Suite. By the end of the first quarter, November 9, 2007, all tenth grade students will be proficient in the use of the office suite and will be using it routinely in class projects and presentations. By the end of the year, June 13, 2008, all eleventh grade students will take a class in HTML and will be using different internet applications such as Career Cruising and blackboard.com. By the end of senior year, June 13, 2008, all students will be giving a class in Web Design. The use of technology culminates in the senior year where all students are required to make a major presentation as the final portion of the senior mastery process. Lesson plans and unit plans will indicate when, where, and how technology is being used in the curricula.

The use of Michigan Virtual University has allowed students the opportunities to experience distance learning and several of our courses now have an on-line component through the use of blackboard.com.

The school currently uses the parent communication program, "Parentconnect", that allows parents to view their students critical information such as current grades, assignments, attendance and GPA. We plan to have desk tops computers available in the fall of 2007 in the office areas of both campuses to allow parents to have internet access while at the school. The school web site contains a link to the school calendar and other important information needed by parents as well as links to the parent organization website, college web sites and blackboard.com. These connections allow for continuous input from parents on the use and advancement of technology through out the school. Being that Henry Ford Academy is not a neighborhood school and is located in a museum we have not created an adult literacy program for the local community.

Henry Ford Academy Social Studies Program

The school's 9-12 technology based Social studies program integrates a combination of manipulatives in effort to execute curriculum and work towards the schools mission. The program integrates various forms of technology to allow student to perform authentic based assessments, projects, and programs rich in multimedia applications. Many tools used in the program are cross-curricular and are intended to make Henry Ford Academy students become self-initiated learners as citizens in the context of the broader community.

In Economics/Civics, United States History, and Global Studies technology is used extensively as students demonstrate application of content using various technological mediums. Students are introduced to music from various economic systems and other historical or current speeches or interviews using *Real One* audio program, *Microsoft Word* and *Internet explorer* for various research projects, *Microsoft Power Point* for various student created base group projects, LCD projectors use for obtaining visual presentations of films and student led presentations, *Microsoft Outlook* is used to communicate with instructors and turn in assignments. The teacher is able to demonstrate the application of all technology by using LCD projector in coordination with the wireless network available via *the Centrino* internal modem located in all teachers *Gateway* laptops. Student projects are often printed in 6 slide format to responsibly allocate paper resources and/or projects are emailed to limit the need for printer paper and ink.

Henry Ford Academy Mathematics Program

Electronic technologies, calculators and computers, are essential tools for teaching, learning, and doing mathematics. (NCTM Principles and Standards for School Mathematics, 2000)

Throughout the 9-12 mathematics curriculums, students are encouraged to use technology to enhance their learning. Students will collect, organize, and display data in various ways, i.e. box plot, scatter plot, bar graph histogram, circle graph, etc. in an effort to apply mathematical knowledge to real world applications. Specific applications for technology include computations not easily known, Stat-Plot to enter data, comparison of families of functions to discover how graphs translate by changing specific values within the equation, trigonometry investigations. Students use technology to determining the regression equation for data to interpolate and extrapolate information, and for graphing slopes on the coordinate grids to investigate transformations with regard to slope. Students use Graph Links to transfer data to a computer program and websites to collect data and to prepare for standardized tests. Technology is used for instructor demonstrations and a testing program to determine math grade level equivalency of incoming students to help determine acceleration or remediation needs.

Henry Ford Academy Science Program

The science department is focused on the use of scientific knowledge, the reflection on scientific knowledge, and the generation of new scientific knowledge. Technology acts as a tool that assists students with doing research, supporting problem solving, the construction of solutions, and the documenting and communicating of their ideas. Students will learn how to use the tools of scientists in the context of solving authentic problems that require professional tools. Internet libraries and CD ROMS will be used for research. Video discs will assist with demonstrations of science content. Computer based probes will collect scientific data in real time. LEGO systems will be used to learn programming, robotics concepts, and systems approach to problem solving. Different science based software packages will be used to scaffold students in their learning of different areas of science. Each science class will make use of technology in unique ways

Henry Ford Academy Language Arts Program

The language arts department at Henry Ford Academy uses technology in numerous ways. All language arts classes involve the use of the internet as a research tool and a review of acceptable use and appropriate citation. Language arts classes also use computers for word processing and for power point presentations to enhance presentation skills. In addition to presentation software, students are also expected to learn the use of LCD projectors for these presentations.

Henry Ford Academy Foreign Language Program

The district's 9-12 technology based foreign language program integrates a combination of manipulatives in an effort to execute curriculum and work towards the school's mission. The program integrates various forms of technology to allow students to perform authentic based assessments, projects, and programs rich in multimedia applications. Many tools used in the program are cross-curricular and are intended to make Henry Ford Academy students become self-initiated learners as citizens in the context of the broader community.

In the German and Spanish courses, technology is used extensively as students explore cultural components and practice language skills, using various technological mediums. Students are introduced to cultural celebrations using *Microsoft Internet Explorer* and demonstrate application of content, using *Microsoft Power Point* for various student-created research projects. *Internet Explorer* is also used to reinforce grammar and language concepts, through online German or Spanish language learning activities. In addition, students use *Internet Explorer* to complete reality based assignments by

connecting with current business and cultural websites in foreign countries. The LCD projector is used for obtaining visual presentations of student-led presentations. *Microsoft Outlook* is used to communicate with instructors and turn in assignments. The teacher is able to demonstrate the application of all technology by using the LCD projector in coordination with the wireless network available via *the Centrino* internal modem located in all teachers' *Gateway* laptops. Student projects are often printed in 6 slide format to responsibly allocate paper resources and/or projects are emailed to limit the need for printer paper and ink. Internet vocabulary and grammar activities results are often emailed to the teacher, or hand-written on student-generated scoring forms. In German 2 classes students use *Microsoft Word* to write their anticipated adult resume that is a portion of their written final exam.

Professional Development

Professional development in the area of technology at Henry Ford Academy has taken on several different forms. In an effort to continuously prepare the staff to meet state and national standards in all curriculum areas as well as in the use of technology, we are constantly seeking professional development opportunities. One such opportunity is the use of seminars and outside training. This includes training for new software being introduced to the school as well as attending conferences such as the annual meeting of the Michigan Association of Computer Users and Learners (MACUL) and tech training offered by Wayne County RESA. It is the expectation that those trained will return to the academy and train others.

A second method of technology professional development is the academy teacher institute at the beginning of each year. We hold the teacher institute one or two weeks before the school year starts in an effort to prepare the staff for the upcoming school year. A part of this institute is a set of technology training opportunities. We use a cafeteria style type of training schedule where staff can pick the trainings opportunities that they believe are most relevant. These “classes” are taught by those that have gone to training or are otherwise the experts on that particular program. During the school year this method is used once or twice as part of our monthly professional development sessions. Our school is organized by grade level teams and technology training takes place at team level meeting. When there is a new technology that involves parents, such as the parent connect program, technology training is offered by one of the members of the school technology team and takes place at one of their monthly meeting.

A third form of professional development involves the school technology staff and the Information Technology Services (ITS) department of the museum. As often as necessary, and at least twice a year, the technology staff meets with the ITS staff to discuss new developments in the school or the institution. This is an opportunity to train our staff on any new technologies that are being used by ether group.

The implementation of technology professional development will occur on the following timeline. New staff members will be given professional development opportunities during the teacher institute during the week of August 20, 2007. All staff members will be given professional development during this same teacher institute, august 20, 2007, on any new application that will be used during the year. During the first semester, the monthly scheduled professional development day on October 25,2007 will be dedicated to technology professional development. A second day will be scheduled during the second semester if needed. Individual profession development and support is available through out the year from the technology committee.

Infrastructure/Tech Support

Hardware – Software

One of the areas that benefits most from the partnerships at HFA is the area of technology. The Henry Ford, being a large cultural and business setting, has a strong Information Technology Services (ITS) department and they have been involved in the planning and the day to day operation since the very beginning. The model that has evolved is that the ITS department manages and upgrades the backbone or infrastructure as a service to the academy. This includes the servers owned solely by the academy as well as the proxy server and exchange server shared with the museum that provides our email and internet access. The required software for those servers, the switches, fiber and Ethernet that connect the academy to those servers is also maintained and upgraded by ITS. This year, with the assistance of the Henry Ford IT department, the Academy joined the technology consortium created by Wayne RESA in order to take advantage of the internet access offered by RESA. This not only moved our web access from a T-1 line to a 25meg connection but it also allowed us to take advantage of E-rate funds offered through the federal government.

As the academy was built all classroom were equipped with multiply electrical outlets and Ethernet ports to allow for the use of laptops in the classroom. We have since moved to wireless access as well. All new laptops are purchased with mobile technology built in.

The academy, through the assistant principal and tech coordinator, in conjunction with the ITS department, maintains any other hardware and software used solely by the school. This includes laptops, desktops, LCD and overhead projectors, calculators and other classroom needs and all classroom software. After the initial construction of 2 computer labs and an initial purchase of 225 laptops the academy has built 2 addition 30 set labs and is now replacing 30 laptops and/or 30 desktops each year to maintain up to date equipment and software. All other technology purchases are a part of the normal purchasing procedures of the school. The technology coordinator is responsible for all inventory, security, and repairs. This also includes a unique program where students, as service learners and independent study students are a critical part of the inventory and repair process.

The teaching staff is an active part of the selection, use, and security of the technology equipment. The school has purchased locking portable carts that provide 24 to 30 laptops to a classroom as requested by the teaching staff. In the ninth grade technology use is mostly teacher directed. Each year this becomes more student-directed until senior year when it is almost entirely student directed.

Our phone service is provided through the museum. It is a PBX system and all staff members of the school are provided with a phone and voice mail service in an office space other than the classroom. Each classroom is equipped with a phone as well.

Through our partnership with the museum we have provided a reliable and sustainable technology environment for our students. As members of the ITS team are trained or acquire new knowledge it is passed along to the technology staff of the school as needed. As the technology staff becomes more proficient we can, at times, rely less on the museum staff. The net result is a technology plan that serves the students well and provides knowledge and expertise to the school at a minimal cost.

Funding and Budget

Funding for technology is a part of the general operating budget. The school has made a commitment to technology funding and has created a structure that allows for routine replacement of hardware and software on an on-going basis. The development department of The Henry Ford is continuously seeking funding for the school at large and for technology specifically.

Categories	2007-2008	2008-2009	2009-2010	Totals
New Laptops	\$17,000	\$42,000	\$43,500	\$102,500.00
New Desktops	\$35,000	\$36,000	\$37,000	\$108,000.00
Switched Accessories	\$7,500	\$7,700	\$7,800	\$23,000.00
Servers	\$5,000	\$5,000	\$5,000	\$15,000.00
Replacement parts	\$3,000	\$3,000	\$3,000	\$9,000.00
Software	\$2,000	\$2,000	\$2,000	\$6,000.00
Connectivity Fees	\$5,000	\$5,000	\$5,000	\$15,000.00
Maintenance and Services	\$42,000	\$44,100.00	\$44,100.00	\$130,200.00
Salaries	\$45,000	\$47,250.00	\$47,250.00	\$139,500.00
Totals	\$161,500	\$192,050	\$194,650	\$548,200

Monitoring and Evaluation

Monitoring

Technology monitoring takes place on a daily basis through staff and student use. Staff communicates on a regular basis with the technology department with regards to the status of equipment through out the school. The technology coordinator, with the aid of student assistant, physically examines hardware and software applications on a bi-weekly, rotating basis. The infrastructure is monitored on an ongoing basis by the ITS department through the use of programming and automatic, electronic notification systems.

Evaluation

Evaluation takes place in many formats. The technology department is continuously evaluating the performance of technology and our ability to meet the goals of the school. In a more formal way the students are surveyed annually and the staff evaluates technology performance and accomplishment of stated goals through an evaluation rubric. Teachers are requested to note the use of technology in their lesson plans and to comment on the effectiveness of the use of technology during instruction. We survey students, parents, and staff each year to measure the overall effectiveness of the technology program. The technology committee then uses the information gain from these surveys to develop strategies to correct any areas where the goals of the technology plan are not being met.

Henry Ford Academy Acceptable Use Policy

Student Code of Conduct/Usage

Each Academy student has the PRIVILEGE to use hardware and software that has been placed in the computer labs, classrooms, and issued to students to facilitate personal academic growth.

Each Academy student has the RESPONSIBILITY to understand and act in a manner that adheres to the following code of conduct guidelines:

- ✓ Treat all equipment with care. If you do experience a hardware/software problem notify your instructor immediately. Do not attempt to make adjustments on your own unless instructed to do so.
- ✓ Ask for help if you are unfamiliar with the use of any hardware/software.
- ✓ Hardware, software, and manuals are to remain in the lab or classroom unless approval from instructor has been given.
- ✓ Academy students should not install or modify software on any computer.
- ✓ All food, candy, gum or drinks are not allowed in labs or classrooms where technology is being used.
- ✓ Use of all technology must be in support of educational goals and be consistent with the goals and purpose of HENRY FORD ACADEMY.
- ✓ Only academy approved software that is part of the teacher defined activities will be allowed.
- ✓ All academy students must obey copyright laws.
- ✓ Academy technology and network will not be used for illegal or inappropriate activities. Obscene activities will be defined as a violation of generally accepted social standards for use of a publicly operated computer network.
- ✓ Academy students will be required to sign-out all computer equipment taken out of the academy.
- ✓ Academy students must be aware of and adhere to the academy student code of conduct while using academy technology.
- ✓ Academy students must not share their password with anyone. A student is responsible for any use of technology associated with their password.
- ✓ An academy student or their parents are responsible for any loss or damage of any academy technology while being used by the student.

Any violation of these guidelines will be considered grounds for disciplinary action, loss of computer privileges and/or access to technology at the academy.

I/We understand and agree to this Technology Code of Conduct, and further understand that HENRY FORD ACADEMY assumes no responsibility for the student's

communications while using academy technology. Financial restitution may be required for unauthorized use or damages resulting from use of this technology.

Signed:

Student _____ Date

Print Name _____

Parent/ Guardian _____ Date

Print Name _____