



# **Gilbertsville – Mount Upton Central School**

Gilbertsville-Mt. Upton Central School  
693 State Highway 51  
Gilbertsville, NY 13776

## **PK-12 Technology Plan & Curriculum Framework**

**July 1, 2013 – June 30, 2016**

Prepared by the Eric D. Voorhees, Technology Director, in consultation with the GMU Administration and Staff:

**Administration Members:**

Glenn R. Hamilton, Superintendent

Karen Volpi, Elementary Principal / Director of Student Support Services

Annette Hammond, Secondary Principal

Contact: Eric Voorhees

Phone: 607-783-2207 x126

E-Mail: [evoorhees@gmucsd.org](mailto:evoorhees@gmucsd.org)

# Table of Contents

<u>Item</u>	<u>Page</u>
District Mission Statement.....	3
District Description and Background.....	3
Current Technologies in Use at GMU.....	3
Technology’s Role in Education.....	4
Technology Plan Vision.....	4
District Technology Goals.....	5
District Technology Assessments.....	5
Involvement and Communication.....	6
Professional Development.....	6
Access for All Learners.....	7-8
Student- and Staff-Owned Computing Devices (“BYOD”).....	8
Use of Assistive Technologies.....	9
Acceptable Use and Internet Safety.....	10
Pre-K - 12 Computer Curriculum Framework (Foundations).....	11-21
Integration Strategies.....	11
Section 1: Elementary.....	12-18
Grades Pre-K - 2.....	12-13
Grades 3 - 4.....	14-15
Grade 5 - 6.....	16-18
Section 2: Middle School.....	19-20
Grade 7 - 8.....	19-20
Section 3: High School.....	21
Grades 9-12 & Graduation.....	21
Projected 3 Year Budget Cycle.....	22-24
2013 – 2014.....	22
2014 – 2015.....	23
2015 – 2016.....	24

# District Mission Statement

The Gilbertsville - Mount Upton Central School District is committed to an educational environment that assures equitable opportunity for individuals to become responsible, productive members of society. We will encourage individual excellence in students of all ages that they may gain a lifetime enthusiasm for work and learning.

## District Description and Background

Gilbertsville - Mount Upton Central School ("GMU") is a rural school district in Upstate New York with an enrollment of approximately 430 students in grades pre-kindergarten through twelve.

Teaching staff consists of approximately 50 classroom teachers, plus teaching assistants, aides, support staff and administration for a total of approximately 100 staff members.

GMU prides itself on innovative courses, a high level of technological resources, and its knowledgeable teaching staff.

## Current Technologies in Use at GMU

- All classrooms have connectivity to the building-wide network.
- The core network has been fully updated to 1GB Ethernet as of summer 2012, and the building-wide wireless network is in its third generation to provide the best possible accessibility to online resources. A "fourth generation" upgrade of the wireless network is tentatively planned for the summer of 2013.
- GMU is part of a high-speed, fiber optic based regional network.
- The district's Safari Montage® Integrated Information System was updated in 2010. This system is capable of providing multimedia programming to classrooms via fiber optic cable.
- The district has adopted the Microsoft Live@edu® service for students and staff which includes e-mail, online productivity applications, and "cloud-based" file storage.
- Online software applications for administrative purposes, such as payroll, personnel management, and budget planning.
- A web-based student information system that allows for efficient student and special education management. Parents and students also have the ability to view student academic progress online.
- The number of computers available for student use, comprised of mobile computer lab carts and classroom-based labs has achieved a 2:1 computer-to-student ratio as of the beginning of the 2012-13 school year.
- Blended and fully-online courses are available to students for new credit and credit recovery.
- Online curricula, textbooks, coursework and educational activities are used in all major subject areas across all grade levels.
- Interactive whiteboards or interactive projector systems are installed in all core subject and many elective course classrooms; additional visual presenters and projectors are available via mobile carts.

# Technology's Role in Education

Research continues to show that students learn faster and more deeply when aided by appropriate classroom technology. This is due to the highly interactive and visual nature of educational software that responds and adapts to the individual needs of each student through multiple learning channels.

Using the tools of technology, students and teachers can research, organize, integrate, and present the content that is the core of a school's curriculum. These tools also allow administrators to better guide and support this process.

## Technology Plan Vision

The Gilbertsville-Mt. Upton Central School District has a longstanding and strong commitment to technology in education. Certainly a testament to this statement are the advanced technologies (for the time) that were incorporated into the building that opened in the 1994 – 1995 school year and the ongoing support for district technology enhancement.

This plan supports more effective methods of teaching and learning using contemporary tools in all areas of the curriculum. It will help empower teachers in every classroom to meet the individual learning needs of each student in our diverse student body, and it will prepare them for a lifetime of learning and employment in the 21<sup>st</sup> century.

### **This technology plan is based on these belief statements:**

We believe that the purpose of technology at Gilbertsville-Mt. Upton Central School is to improve instruction, learning and the educational environment.

We believe this can be accomplished by:

- setting common goals for the use and application of technology
- developing and increasing student and faculty competency levels
- setting processes and procedures for the acquisition, upgrade, utilization, and evaluation of software and hardware
- supporting these practices in a positive learning environment for staff and students
- having a system in place to support, monitor and adjust practices for best effect

As with our other plans for instruction, we see that there are characteristics that show positive applications of technology:

- incorporates and supports the common goals of the technology plan, staff development plan and the curriculum initiatives
- must be appropriately integrated into authentic learning opportunities
- focuses on improving academic achievement

## **District Technology Goals**

- 1) To maintain a level of computer based technology that is up to date and accessible to all students and staff.
- 2) To elevate and maintain student and staff computer literacy so that they are able to access and use technology in a proficient manner as it relates to tasks at school, work and home.
- 3) To increase the level and sophistication of staff development in the use of instructional technologies.
- 4) To integrate the use of computers and other modern technologies with classroom instruction so that they become a part of regular use on a daily basis.
- 5) To integrate computer and online resources with the use of traditional library resources in the district libraries so students become capable of using a variety of information sources to develop solutions that address the needs of their education.

## **District Technology Assessments**

- 1) The assessment of the “up to date” status of technology equipment and services at GMU will be made by comparing system capabilities / requirements of newly available equipment and software to equipment currently in the GMU inventory. Equipment and / or software replacement will take place on such a basis that the majority (over 75%) of computer equipment be no more than 4 years old. Guidelines for assessing other equipment and / or services (telecommunications, library services, etc.) will be determined on a cooperative basis between the technology, maintenance, library and other involved departments.
- 2) The level of student computer literacy will be assessed through the methods discussed in the Computer Literacy Foundations on pages 11 through 21.
- 3) Staff development in the use of technology will consist of scheduled training workshops facilitated by the GMU technology department, details of which are listed in the Professional Development section of this plan. Computer literacy of staff members will be assessed by tracking staff use of technology equipment, and by tracking the level and types of technology maintenance / repair requests.
- 4) Evaluation of the impact of professional development in the use of technology and its use as an instructional tool will be made based upon staff reporting of experiences with technology use in the classroom, as well as classroom observations.
- 5) Progress of the plan’s implementation and the impact of technology on student learning will be reviewed by the GMU administrative council on an ongoing basis.
- 6) Amendments to the technology plan will be made on an as needed basis (not to exceed three years) and will be filed with the designated technology plan approver and agents thereof. These amendments will consist of additions, deletions and revisions determined necessary by the GMU administration and the technology department, in consultation with staff and students, to better meet the goals outlined in this plan as changes in the state or nature of technology occurs.

# Involvement and Communication

Communication of this technology plan and promoting involvement in the plan's implementation and future development will be accomplished using the following methods:

- Staff discussions and professional development
- Open houses
- Community workshops
- Regular information updates via the school newsletter and website

## Professional Development

This section of the GMU technology plan is intended to provide a comprehensive framework for staff development in computer technology so that it may be better integrated into the instructional environment.

A catalog of computer equipment and services will be provided as necessary to assist staff in planning for the use of technology in the classroom. This may include, but is not limited to:

- Computer labs
- Presentation equipment (projectors, visual presenters, interactive whiteboards, etc.)
- Wireless computing resources
- Central audio / video scheduling (Safari Montage<sup>®</sup>) services
- Library-based technology resources
- In-house training services
- BOCES provided workshops and training services
- Other workshops and / or training opportunities appropriate to the integration of computer technology in the instructional environment

In-house training will be provided to staff in the following areas:

- Use of the equipment mentioned in the section above
- Software germane to staff administrative tasks, such as grading and budget
- Office software (e.g. word processing, spreadsheets) in current use
- Safe use of online resources, including virus and malware awareness and prevention
- Other equipment or software used to further student learning

Identification of knowledge, skills, and attitudes needed by teachers will be accomplished by classroom observations and staff verbal and/or written feedback. For administrators, identification will be made on an ongoing basis by review in administrative council meetings.

All staff that work in an instructional capacity will be included for participation in in-house training sessions and staff development. Staff members wishing to attend BOCES workshops may do so upon review for applicability and approval by the appropriate administrator.

# Access for All Learners

Gilbertsville - Mount Upton Central School is committed to maintaining reliable and efficient access to computer based resources for all students and staff. In support of this, GMU operates its technology infrastructure under the following conditions:

## ***Minimum Infrastructure and Equipment***

- At least one computer per classroom with network capability
- At least one active wired network connection or wireless equivalent per instructional area or office
- Wireless network coverage capable of servicing 90 percent or greater area of the school building, including 100 percent of core instructional areas
- Printer access for all instructional and office staff, with supervised access for all students
- Mobile computer support with a minimum of 60 laptop computers per school for student use
- Network servers capable of handling file service, e-mail, and website traffic at highest usage times with minimal lag or interruption of service
- Network switch capacity to accommodate all active wired connections plus a reserve capacity of at least 10 ports
- Internet filtering appliance that conforms with the Children's Internet Protection Act (CIPA)

## ***Local and Wide Area network security / configuration***

- Network router configuration includes active firewall, anti-virus, and malware protection to prevent virus infiltration and hacking at the network level
- Servers and workstations have active firewalls, anti-virus, and anti-malware software to further prevent malicious activity
- Servers and workstations containing sensitive information are password protected to prevent unauthorized access. This includes, but is not limited to, all file servers and administrative office workstations
- Wireless network access / traffic is secured via active device denial and encryption as appropriate
- Wherever possible, wired network traffic takes place at 1 Gbps and wireless traffic takes place at a minimum of 56 Kbps to limit delays in accessing network resources – this level of bandwidth availability should never fall below 90 percent of the total number of district-owned workstations.

## **Access for All Learners (Continued)**

### ***Access to Software and Digital Content***

Access to content via the Internet shall be as open as possible unless it conflicts with the CIPA, the Gilbertsville - Mount Upton Central School Acceptable Use policies, and/or applicable Federal, State and local laws.

All staff shall have access to the software necessary to perform their job duties. Software requested for the education of students will be reviewed by the appropriate administrator for educational applicability and by the Technology Director for system compatibility prior to purchase.

### ***Ensuring Accessibility***

The district's Technology Director is responsible for ensuring that all district-owned computer equipment is in good working condition and that access to internal network and online resources are available to the fullest extent possible.

For shared equipment, such as mobile lab carts, the Technology Director will be responsible for scheduling use as fairly as possible based upon staff requests for the equipment.

## **Student- and Staff-Owned Computing Devices (“BYOD”)**

As of the 2012-2013 school year GMU allows the use of staff-owned computing devices within the district to provide another avenue of accessibility to online resources. The district recognizes that people tend to use computing devices with which they have greater experience and are comfortable with.

Staff shall be allowed to use their computing devices on the district network under the following general guidelines:

- All computing devices used within the district are to be used first and foremost for educational purposes.
- Computing devices used within the district are subject to all current and future policies implemented by GMU regarding such use.
- Computing devices with network connectivity are to be registered on the district network via their physical network (MAC) addresses. Devices that are not registered for use on the network are denied access.

The use of student devices as of the 2012-2013 school year is restricted to those with specific needs and administrative permission. It is felt that district-owned and -issued devices are sufficient to support student needs.

As conditions change in regard to the best ways to support instruction using, the subject of allowing student-owned devices, particularly mobile/handheld devices, to be used within the district will be revisited.



# Use of Assistive Technologies

*“Assistive Technology (AT) includes both devices and services. A device is any item or piece of equipment used to maintain or improve the functional capabilities of a person with a disability.”*

*“AT services support people with disabilities or their caregivers to help them select, acquire, or use AT devices.”*

-Washington Assistive Technology Alliance ([wata.org/what-is-at.htm](http://wata.org/what-is-at.htm))

The role of Assistive Technology is to provide equality of access to curriculum features for students with a demonstrated difficulty in an area of academic processing. Technology is available to students in the district to help them accomplish tasks set forth in the Computer Literacy Foundations as well as General Education curricula.

Students will also be instructed in the awareness of new assistive technologies that are available in both secondary and post-secondary requirements.

## **Skills Taught**

## **Assistive Technologies**

Keyboarding

Large font or high contrast key labels  
AlphaSmart keyboard for younger students  
OnScreen keyboard  
Voice recognition

Pointing Devices

Trackball  
Switch adapted Mouse / Trackball  
Joystick  
Touch screen

Word Processing,  
Spreadsheets,  
E-mail

Text to speech  
Word prediction  
Voice recognition  
Spelling and grammar checking

## **Curriculum Integration**

Language Arts

Alternate keyboard and pointing devices  
Text to speech  
Paper to electronic conversion (Scanner use)  
Organization techniques and software  
Bookmaking software  
Presentation software  
Computer and audio books

Math, Science, Social  
Studies

Spreadsheet and database software  
Skill-based drill software  
On screen calculator  
Video microscope  
Topic-based research and fact software  
Problem solving software

# Acceptable Use and Internet Safety

Policy regarding the acceptable use of computer based and online resources are covered under Gilbertsville - Mount Upton Central School's Board of Education policies 6490 and 8271.

In summary, these policies state that computer based and online resources are to be used in a professional manner for school related activities and operations only. Usage that contradicts GMU policy or is illegal is prohibited.

Enforcement of acceptable use is ensured in the following ways:

- A content filtering appliance is in place in accordance to the Children's Internet Protection Act (CIPA) to monitor overall Internet access and to block access to sites of a questionable or illegal nature.
- Student use of computers or the Internet is supervised by GMU staff members to ensure that they are used in a manner commensurate with the educational environment.
- Staff e-mail is archived and can be accessed to ensure legal and ethical use.

Instruction of elementary students in the safe use of the Internet currently takes place as part of elementary computer classes. Instruction of middle/high school students and staff takes place as an ongoing dialogue between the GMU technology department, administration, faculty and students.

Formal Internet safety instruction for middle/high school students and staff takes place as part of a formal session at the beginning of each school year, with ongoing reinforcement of Internet safety practices throughout the year by administration and staff.

# Pre-K - 12 Computer Curriculum Framework (Foundations)

The following curriculum framework consists of suggested outcomes, skills to be taught, instructional and assessment strategies, as well as a list of possible learning resources.

This framework was adapted from guidelines originally proposed on the web site of the government of British Columbia's Educational Services Curriculum Branch:  
(<http://www.est.gov.bc.ca/curriculum>)

The framework is divided into 3 grade level sections. This is due to the different computer instruction environments prevalent in elementary, middle school, and high school.

The breakdown of these environments is as follows:

Pre-K-6: Instruction is performed in the Elementary Computer Lab as an elementary "special". Instruction takes place primarily as "pure" computer instruction (not directly related to regular classroom instruction), with integration to classroom learning taking a strong secondary role.

7 - 8: Instruction takes place as an integrated element of regular courses.

9 - 12: Computer instruction currently takes place as an integrated element of regular courses and computer related electives, when available.

## ***Integration Strategies***

In order to insure that technology will be integrated into curriculum and instruction, the following strategies will be used:

- Where applicable, Common Core Learning Standards and 21<sup>st</sup> Century Skills will be used to guide technology implementation to further improve instruction.
- Superintendent's conference days contain technology components, where new uses of computer resources can be introduced and experiences with technology in the classroom can be shared.
- After-school training sessions at GMU and BOCES workshops provide further training in the use of technology as part of instruction.

# Curriculum Framework, Section 1: Elementary

## Computer Literacy Foundations - Grades Pre-K - 2

### Prescribed Learning Outcomes

*It is expected that students will:*

- Identify and describe the effects of technology tools that communicate information in the home and school.
- Demonstrate a willingness to use technology tools.
- Enter information on a computer and print it.
- Demonstrate a willingness to work cooperatively when using technology tools.
- Use appropriate terminology to describe the parts of a computer system.
- Demonstrate the proper care and safe use of equipment
- Identify occupations in the community that involve the use of information technology.

#### **Skills Taught**

#### **Nature of Instruction**

Keyboarding	Pre-Kindergarten: basic function keys (Enter, Esc, Ctrl, Shift, etc.) Kindergarten: letter recognition 1 <sup>st</sup> Grade: Keyboard layout and functions 2 <sup>nd</sup> Grade: Introduction of typing tutorial software; home row skills are introduced.
Pointing Devices	Basic operations (click, double-click, drag and drop) are taught and reinforced.
Word Processing	1 <sup>st</sup> and 2 <sup>nd</sup> Grade: Basic writing skills are taught in the classroom and reinforced in the lab.
E-mail	1 <sup>st</sup> and 2 <sup>nd</sup> Grade: Password use and login process are taught and practiced; simulated e-mails are typed and sent, received and replied to.
Internet Use	1 <sup>st</sup> and 2 <sup>nd</sup> Grade: Basic browser skills; access to child-specific web sites; simulated web addresses are typed.

### Suggested Instructional Strategies

Children are surrounded by technology tools at home and at school. They need to know how to use these technologies so that they can communicate more effectively with others.

- Have students work individually to identify and match picture vocabulary cards with the parts of a computer (e.g., mouse, keyboard, monitor, printer). Discuss the proper care & safe use of this equipment with students.
- To help students develop their understanding of how information technology is used in the workplace, ask them to create collages showing people using a variety of technology tools (e.g., computers, telephones, fax machines, video cameras)

## Suggested Assessment Strategies

In the early primary years, young children begin to explore technology formally and to acquire fundamental skills for handling technology tools. Playing games and using simple graphics and text programs with partners provide children with the opportunity to gain confidence using technology tools. By observing students as they work and listening to their conversations, teachers can assess knowledge, understanding, and care of technology tools, as well as ability to work cooperatively with others.

- Listen to students' conversations as they work with technology tools. Note the extent to which they use terms correctly (e.g., *click, select, space bar, enter, return, escape, cancel, icon, print*)
- Observe students as they use software. Note the extent to which they are able to:
  - Use a mouse to point, select, and drag.
  - Access menus and a tool or button bar or palette.
  - Print documents.
- While students are working with a computer, assess their knowledge of the basic components of a computer system. Note the extent to which they are able to:
  - Accurately identify the parts.
  - Explain the general purpose or function of each part.
  - Use correct terminology.
- Conference with students to discuss their collages showing people using technology tools. To assess their knowledge, ask questions such as:
  - What can you tell me about the technology tools you have included in your collage?
  - What is the purpose of each tool?
  - Can you think of some tools that you have not included?
  - Which technology tools have you used before? How were they useful to you?

## Recommended Learning Resources

### Print Material

Computers: A Visual Encyclopedia

### Software / Online Resources

*Kindergarten to 2<sup>nd</sup> Grade*: DIBELS ([dibels.uoregon.edu](http://dibels.uoregon.edu), [www.teachers.cr.k12.de.us/~galgano](http://www.teachers.cr.k12.de.us/~galgano))

*Kindergarten*: ABCya ([www.abcya.com](http://www.abcya.com))

*1<sup>st</sup> Grade*: Read, Write & Type™

*2<sup>nd</sup> Grade*: Learn To Type Jr™., Type Through Time™, Bernie's Typing Travels™, Kid Pix Studio Deluxe®

*1<sup>st</sup> - 2<sup>nd</sup> Grade*: Type to Learn Jr.™, Read, Write & Type™, Microsoft Word®, Microsoft Internet Explorer®

# Computer Literacy Foundations - Grades 3 - 4

## Prescribed Learning Outcomes

*It is expected that students will:*

- Enter, save, and retrieve information using a computer or other information technology tools.
- Use word processing and graphics software to present ideas.
- Demonstrate an understanding of data storage practices.
- Describe how storage media are used.
- Use appropriate terminology when using technology tools.
- Demonstrate a willingness to work cooperatively when using technology tools.
- Identify technology tools used in the home, school, and community.
- Demonstrate the proper care and safe use of equipment

### Skills Taught

### Level of Instruction

Keyboarding	Continuing use of typing tutorial software to increase fluency and skill level.
Pointing Devices	Additional selecting and editing skills are taught in conjunction with word processing.
Word Processing	Writing skills taught in the classroom are reinforced in the lab.
E-mail	Concepts taught in Pre-K - 2 are reinforced and practiced.
Internet Use	Basic browser skills taught in Pre-K - 2 are reinforced and practiced; Search engine skills are introduced and gradually increased as students develop language skills.
Presentations	Introduced to basic graphics / presentation software; basic presentation "slides" are constructed.

## Suggested Instructional Strategies

At this level, students become more proficient and self-reliant in their use of information technology. They are introduced to the concepts of safety and security in the use of technology tools. They become aware of the importance of developing the skills required to use these tools in their daily lives.

- Discuss with students the safe and unsafe uses of technology tools. Use role-playing to reinforce these concepts
- Have students launch a word processing program, write a story, save it, and print it. Encourage students to write letters using the computer, and send them to classmates and pen pals.

## **Suggested Instructional Strategies (continued)**

- As part of a project, demonstrate how to retrieve information from an online or CD-ROM based encyclopedia and then invite students to try it. A demonstration of how to retrieve information using an Internet search engine or library database system can also be demonstrated by the instructor, then performed and practiced by students.

## **Suggested Assessment Strategies**

Students improve their basic skills as they create electronic documents such as stories, pictures, and reports. The teacher can assess student's abilities to organize, store, and retrieve information by observing them as they create and manipulate text, graphics, and other data. Observation as to how students save their work is also useful.

- As students use various software, note the ease and confidence with which they are able to:
  - Launch (open) applications.
  - Close (exit) applications.
  - Access tool bars, menus, and help documents.
  - Use the features of the program (e.g., align and format text, move the cursor within the document, insert, drag, and delete text).
  - Save and print documents.
- Listen to students' conversations as they work. Note the extent to which they use accurate terminology
- Observe students as they work and listen to their conversations. Note the extent to which they:
  - Take turns communicating
  - Share materials
  - Share their own ideas and use the ideas of others

## **Recommended Learning Resources**

### **Print Material**

Computers: A Visual Encyclopedia

### **Software / Online Resources**

Inspiration<sup>®</sup>

Microsoft Word<sup>®</sup>

Microsoft Internet Explorer<sup>®</sup>

Kid Pix Studio Deluxe<sup>®</sup>

# Computer Literacy Foundations - Grades 5 - 6

## Prescribed Learning Outcomes

*It is expected that students will:*

- Manipulate electronic documents using a variety of tools.
- Demonstrate an understanding of the need for the security and privacy of electronic information.
- Use appropriate terminology when using technology tools.
- Demonstrate a concern for the need to take care of technology resources and materials.
- Demonstrate an awareness of health and safety issues when using information technology.
- Demonstrate a willingness to be self-reliant when using information technology tools.
- Identify role models in the community who use technology tools, being careful to consider all individuals, regardless of gender, culture, and ability.

### Skills Taught

### Level of Instruction

Keyboarding	Skill continues to be practiced and refined using typing tutorial software; keyboard “skins” are introduced to promote touch-typing.
Pointing Devices	Skill is now inherent with computer use.
Word Processing	Writing skills taught in the classroom are reinforced; research projects utilizing multiple computer skills are introduced.
Presentations	Slides are constructed with more graphics, animation and sound
Spreadsheet	Data entry and math functions are introduced.
E-mail	Concepts previously taught are practiced and refined.
Internet Use	Browser skills are practiced and increased; research assignments are introduced. Use of library databases is introduced and practiced
Troubleshooting	Use of help documentation and logic to solve more complex software & hardware problems.

## Suggested Instructional Strategies

Students need to become aware of ethical issues related to the use of information technology (e.g., copyright, plagiarism, privacy, the use of on-line resources). Their exploration of these issues will help them understand how to use the tools responsibly.

- Lead a class discussion about the problems created by computer viruses. Have students suggest practices for avoiding viruses and dealing with a virus "infection" after one has occurred.



## **Suggested Instructional Strategies (continued)**

- As part of a character education unit, discuss some ethical considerations involved in using electronically retrieved information. To confirm their understandings, have students create a list of references or a bibliography that credits the works and on-line resources accessed for a project.
- As part of personal planning, have students work in cooperative groups to create a list of rules to follow when creating passwords. Suggest that they post these rules beside their computers in the classroom.
- Have students develop a list of ways to find help when faced with a problem in using information technology tools (e.g., ask a peer, consult help screens, read the manual or guidebook).

## **Suggested Assessment Strategies**

As students explore career opportunities in the field of information technology, they become aware of the need for sophisticated skills and for the responsible use of technology tools. Students demonstrate their abilities to use software features effectively by creating and modifying electronic documents. The extent to which they work responsibly can be assessed through observation as they use sources such as the Internet.

- With the class, generate and post a list of suggestions for problem solving when using technology tools (e.g., use on-line help, ask a peer, refer to a manual). Note the extent to which students are self-reliant and able to assist others when using technology tools.
- Discuss the use and potential misuse of information technology tools, including issues such as privacy of information, copyright, and plagiarism. To assess students' understanding, ask:
  - What are some examples of how information technology tools can be misused?
  - What should you do if you find information belonging to someone else (e.g., storage media, passwords)?
  - Why is it important to cite the sources of your information?
- Discuss proper etiquette or conduct when using electronic messaging systems. Have students save and print their e-mail correspondence and use their collections as a basis for self- and peer assessment. Look for evidence of appropriate content and language.
- Observe students as they use a keyboarding program to improve speed and accuracy. Use a checklist to assess students' proficiency with specific skills (e.g., correct posture, eyes on the copy, use of home row keys, correct finger reaches, use of numeric keypad). Students may use the same checklist to conduct peer assessments.
- Assess students' knowledge of spreadsheets by observing how they organize and enter data; have students print out completed sheets for further review.

## Recommended Learning Resources

### **Print Material**

Computers: A Visual Encyclopedia

### **Software / Online Resources**

Mavis Beacon Teaches Typing

Microsoft Word<sup>®</sup>, Excel<sup>®</sup>, and PowerPoint<sup>®</sup>

Windows Movie Maker<sup>®</sup>

Microsoft Internet Explorer<sup>®</sup>

Kid Pix<sup>®</sup>

Inspiration<sup>®</sup>

# Curriculum Framework, Section 2: Middle School

## Computer Literacy Foundations - Grade 7 - 8

### Prescribed Learning Outcomes

*Upon exit from the 8th Grade, it is expected that students will:*

- Work cooperatively using information technology tools.
- Access information using a variety of on-line information tools.
- Identify and apply a variety of software based on specific needs.
- Apply troubleshooting strategies when using technology tools.
- Demonstrate an understanding of software compatibility when using technology tools.
- Practice the socially responsible use of electronic information.
- Demonstrate an awareness of the impact of information technology on society.

*Throughout 7<sup>th</sup> and 8<sup>th</sup> Grade, it is expected that students will:*

- Learn the necessary computer skills to succeed in middle and high school classes.
- Use a computer as an effective tool for learning.
- Enter, save modify and retrieve information using a variety of software.
- Use appropriate keyboard techniques to enter information into a computer.
- Practice behaviors that demonstrate self-reliance when using technology tools.
- Demonstrate a concern for the responsible use of technology and resources.

### Skills Taught

### Level of Instruction

Pointing Devices	Skill is inherent with computer use.
Word Processing	Advanced editing and formatting skills are taught. Research paper and letter formats are taught.
Presentations	Construction of presentations with animation, sound and video are continued as part of the normal classroom environment.
Spreadsheet	Advanced data entry techniques, formulas and functions are introduced.

### Suggested Instructional Strategies

Students develop an understanding of the impact of information technology on their daily lives, careers, and society. They use technology tools in their daily lives to solve problems at school and at home. Students become aware of the need to maintain and manage data and technology resources responsibly.

- Have students write and edit various business letters and research papers. Discuss the elements necessary to convey content in an easily understood manner.

## **Suggested Assessment Strategies**

Students broaden their knowledge as they are introduced to new software and more powerful techniques in the manipulation of information, and are introduced to the inner workings of stand-alone computers and the basics of computer networks.

- Assess students' knowledge of word processing, spreadsheets, and computer-based research by observing how they organize and enter data.
- Assess technology literacy of exiting 8<sup>th</sup> grade students with a minimum of one in-class observation of an assignment using online research and word processing software, and one observation of an assignment using presentation software.

## **Recommended Learning Resources**

### **Software / Online Resources**

Microsoft Word<sup>®</sup>, Excel<sup>®</sup>, and PowerPoint<sup>®</sup>  
Microsoft Live@edu<sup>®</sup> services  
Windows Movie Maker<sup>®</sup>  
Microsoft Internet Explorer<sup>®</sup>  
Inspiration<sup>®</sup>  
Prezi online presentation tool (<http://prezi.com>)

# Curriculum Framework, Section 3: High School

## Grades 9-12

### Prescribed Learning Outcomes

***Upon graduation from Gilbertsville-Mt. Upton Central School, it is expected that students will:***

- Demonstrate proficiency in the use of technology tools commensurate with the skills necessary to enter and succeed in the world of work and higher education.
- Demonstrate the ability to formulate questions and to use a variety of sources and tools to access, capture, and store information.
- Use appropriate information technology terminology.
- Create and modify documents, spreadsheets, and multimedia presentations.

### **Computer-based or -related courses (offered as scheduling permits):**

- SUNY Cobleskill Microcomputer Applications
- Design and Drawing for Production (DDP)
- Yearbook
- Digital Photography

Outcomes, instruction, and assessment for these courses are accessible as part of various GMU curriculum listings. Descriptions of these courses are listed below:

#### SUNY Cobleskill Microcomputer Applications

This course is an introduction to the use of microcomputers and application software. Topics will include microcomputer terminology, hardware system components, disk operating systems and Microsoft Windows<sup>®</sup>. The student will learn through hands-on experience the skills necessary to use Windows<sup>®</sup>-based word processing, spreadsheets and data base systems..

#### Design and Drawing for Production (DDP)

This is an introductory course to design, drafting, and production. The use of AutoCAD<sup>®</sup> software is a component of this course. After learning how to design and create technical drawings, students create models and prototypes using tools and machinery on various materials.

#### Yearbook

Students will be instructed in the use of computer programs and technologies integral to the area of publishing, with the school yearbook as the final result.

#### Digital Photography

Students are instructed in the use of digital still cameras and photo editing as they relate to traditional photography techniques and artistic composition.

# GMU Technology Planning Projected 3 Year Budget Cycle

All funding for In-House training and purchases, and IPA (Installment Payment Agreement) payments will be provided through appropriations in the GMU general budget. Grant funds, when available, will be used to purchase additional equipment and/or training.

## 2013-2014

**Staff Development:** In-House Training / Transition training with new equipment  
GMU Intranet Resources  
BOCES Training  
BOCES Online Resources

*Projected Cost: \$15,000*

**Hardware Acquisition:** Broome IPA Purchases:  
Replacement of classroom computers  
Replacement / additional mobile lab computers  
Interactive whiteboards / interactive projector systems  
Visual presenters  
Multimedia projectors  
Wireless networking equipment

*Projected Cost: \$55,000*

In-House Purchases:  
Maintenance of Internet filtering appliance and associated software  
Computers & peripherals to account for replacements due to attrition  
Interactive whiteboards / interactive projector systems  
Visual presenters  
Multimedia projectors

*Projected Cost: \$15,000*

**Software Acquisition:** Student Information System updates & support  
Library software updates & support  
Updates of Internet filtering software  
Updates of Workstation control and tracking software  
Security software (anti-virus, anti-malware) updates  
Other software upgrades as necessary

*Projected Cost: \$10,000*

**Internet:** Regional network service via BT-BOCES

*Projected Cost: \$35,000*

# GMU Technology Planning Projected 3 Year Budget Cycle (Continued)

## 2014-2015

**Staff Development:** In-house Training / Transition training with new equipment  
GMU Intranet Resources  
BOCES Training  
BOCES Online Resources

*Projected Cost: \$15,000*

**Hardware Acquisition:** Broome IPA Purchases:  
IPA Service Payments

*Projected Cost: \$55,000*

In-House Purchases:

Computers & peripherals to account for replacements due to attrition.

Interactive whiteboards

Visual presenters

Multimedia projectors

*Projected Cost: \$15,000*

**Software Acquisition:** Enrichment - Core Areas  
Remedial Software - Core Areas  
Student Information System updates & support  
Library software updates & support  
Updates of Internet filtering software  
Security software (anti-virus, anti-malware) updates  
Other software upgrades as necessary

*Projected Cost: \$10,000*

**Internet:** Regional network service via BT-BOCES

*Projected Cost: \$35,000*

# GMU Technology Planning Projected 3 Year Budget Cycle (Continued)

## 2015-2016

**Staff Development:** In-house Training / Transition training with new equipment  
GMU Intranet Resources  
BOCES Training  
BOCES Online Resources

*Projected Cost: \$15,000*

**Hardware Acquisition:** Broome IPA Purchases:  
IPA Service Payments

*Projected Cost: \$55,000*

In-House Purchases:

Computers & peripherals to account for replacements due to attrition.

Interactive whiteboards

Visual presenters

Multimedia projectors

*Projected Cost: \$15,000*

**Software Acquisition:** Enrichment - Core Areas  
Remedial Software - Core Areas  
Student Information System updates & support  
Library software updates & support  
Updates of Internet filtering software  
Security software (anti-virus, anti-malware) updates  
Other software upgrades as necessary

*Projected Cost: \$10,000*

**Internet:** Regional network service via BT-BOCES

*Projected Cost: \$35,000*