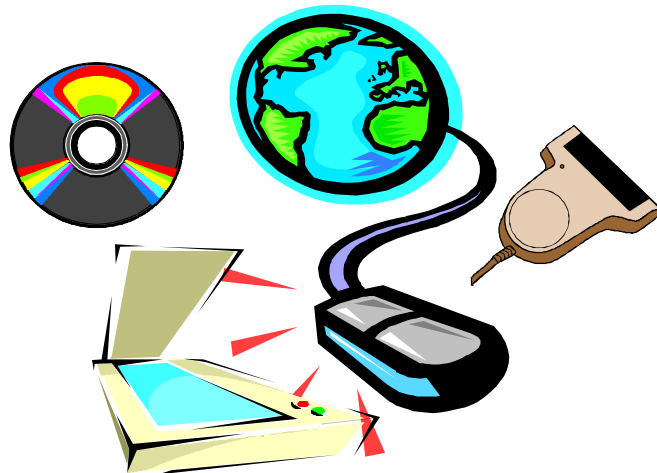


Instructional Technology Across the Curriculum

Michigan's Technology Benchmarks
Formatted for Teachers and Students



A Project from
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About the Project:

This project is intended to assist in the challenges of integrating technology into the curriculum. The project developers believe that technology should be used as a tool in the classroom, just as it is used in the working world. This document is intended to help teachers in planning and determining that the necessary skills prescribed by the Michigan Department of Education are mastered by each student.

The Student Technology Skills Checklist can be used as a progress report for schools that integrate technology and do not have separate computer classes. It can also be used as a planning tool for the teacher.

The Technology Skills Checklist for Teachers is intended to help teachers determine which students need more time at the computer. This can be helpful for planning in a classroom where the computer is a limited resource.

The Suggested Activities and Resources are in no way meant to be exhaustive or to support one company over another. They are meant to be a helpful guide in planning. Also, there are myriad web sites with helpful information in each of these areas. Visit <http://www.childrenssoftware.com> to find more information about the software suggested here and <http://www.remc11.k12.mi.us/bcisd/classres> for an often-updated listing of classroom Internet resources.


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Credits:

Suggested Activities and Resources were provided by the 1997-98 Technology Literacy Challenge Grant program Teachers Helping Teachers (THT), hosted by the Berrien County Intermediate School District. THT Participants who helped with this project are: Joan Abel, Anita Backus, Lora Baker, Ren Baldwin, Daniel Barz, Susan Bendrat, Sarah Berg, Nina Binger, Paul Blakely, Lisa Brady, Judith Bybee, Jeanne Carter, Jeneen Conway, Marla Coombes, David Couch, Marcia Cousins, Thomas Cullitan, Caryl Dadan, Paula Donner, Linda Fuchs, Clarence Grimm, Greg Hartsell, Paul Hoffman, Ed Irvin, Sally Jessup, Mary Kane, Ruth Kittleson, Kimberly LeBeau, Jim Leslie, Gail Lovelady, Chad Mandarino, Tom Martinic, Terry McNitt, Patricia Muchmore, Pam Opulskas, Kathy Osborne, Joe Pagano, Melissa Payne, Charlotte Poole, Dianne Ross, James Sandeen, Cathy Tapia, Marilyn Tilman, Melvin Wade, Karen Waller, and Earlene Whorton.

Formatting and overall idea by Janine Lim. Support and guidance provided by Jim Bembenek.

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Technology Across the Curriculum

Elementary Skill Checksheets

Kindergarten Student Technology Skills Checklist

Student Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Familiar with keyboard | | | | |
| WordProcessing Familiar with menu Compose | | | | |
| Add graphic | | | | |
| Print | | | | |

Grade 1 Student Technology Skills Checklist

Student Name _____ School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Left/right hand position | | | | |
| WordProcessing File menu: open, save and print | | | | |
| Keys: delete, return, arrow | | | | |
| Use mouse to insert curser | | | | |

Grade 2 Student Technology Skills Checklist

Student Name _____ School Year _____

Note: Evidences of these skills are in the student's technology portfolio.
 M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|---|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Home row hand position Key/finger accuracy 5 words per minute 50% accuracy | | | | |
| WordProcessing Review (grade 1) File menu: open, save and print Keys: delete, return, arrow Use mouse to insert cursor | | | | |
| File, menus, quit | | | | |
| Font selection/size | | | | |
| Desktop Publishing Type text | | | | |
| Choose graphic | | | | |
| Edit and print | | | | |

Grade 3 Student Technology Skills Checklist

Student Name _____ School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: 10 words per minute 80% accuracy Minimum: cover all letter keys, shift, space bar and punctuation | | | | |
| WordProcessing File menu: new, open, close, save as (title of document), print preview and print | | | | |
| Edit menu: undo | | | | |
| Document menu: spelling and thesaurus | | | | |
| Tab key | | | | |
| Select server or printer when networked | | | | |
| Desktop Publishing File menu: new, open, close, save as, print preview and print | | | | |
| Edit menu: undo | | | | |
| Reference menu: spelling and thesaurus | | | | |
| Picture menu: add graphics | | | | |
| Text menu: size | | | | |

Grade 4 Student Technology Skills Checklist

Student Name _____ School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|---|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: 15 words per minute 85% accuracy Left/right hand position Home row hand position Correct key/finder | | | | |
| WordProcessing Review (grade 3) File menu: new, open, close, save as (title of document), print preview and print Edit menu: undo Document menu: spelling and thesaurus Tab key Select server or printer when networked | | | | |
| Access template | | | | |
| Edit menu: cut, copy, paste, select all | | | | |
| Justification and style Font type and size | | | | |
| Desktop Publishing Access template (when necessary) Text menu: font, alignment and style (Optional: border and color) | | | | |
| Class newspaper (minimum of 2 entries per student) | | | | |
| Telecommunications Introduce on-line Access through signing on and off Learn acceptable use of communication Knowledge of individual software | | | | |
| Multimedia Learn to organize and arrange information for multimedia presentation Learn how to create and import imagery from a variety of sources Learn how to create and import sound Knowledge of individual software | | | | |

Grade 5 Student Technology Skills Checklist

Student Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: 20 words per minute 90% accuracy | | | | |
| WordProcessing Review previous: File, menus, quit Font selection/size Edit menu: cut, copy, paste, select all Justification and style | | | | |
| Set margins and tabs | | | | |
| Create folders and classify own documents | | | | |
| Use the computer to compose, edit and publish a creative writing story | | | | |
| Desktop Publishing Set margins and tabs | | | | |
| Individual project based on research topics, including electronic resources, from science, social studies or school theme | | | | |
| Telecommunications Review (grade 4) Access through signing on and off Learn acceptable use of communication Knowledge of individual software | | | | |
| Multimedia Review (grade 4) Learn to organize and arrange information for multimedia presentation Learn how to create and import imagery from a variety of sources Learn how to create and import sound Knowledge of individual software | | | | |

Lower Elementary (K-3) Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding:

Make up your own lesson using the keyboard, such as "Type dad, mom, etc."

Alphabetize names lesson: have students type in names in Excel and use a big screen to show their names. Then use the alphabetize feature to teach order and alphabetizing.

Practice writing their name and other kids' names.

Match upper and lower case letters.

Write the alphabet.

Type labels for things in the classroom.

Make designs of different size letters or design different size letters and fonts.

Use *Mavis Beacon Teaches Typing for Kids* from www.edin.com or *ClarisWorks for Kids* from www.claris.com or *Bailey's Book House* or *Millie's Math House* from www.edmark.com or *The Treehouse* or *The Playroom* from www.broderbund.com or *KidWorks Deluxe* from www.education.com

WordProcessing:

Draw a picture illustrating new words and letters learned.

Write stories about pictures.

Dictate stories to accompany pictures.

Do whole class or group story writing.

Have students create business cards.

Use pattern books and then have each student make their own book or their own page.

Publish student art or stories on the web. (Use *Claris HomePage* from www.claris.com)

Use *Wishbone Activity Zone* from www.palladiumnet.com or *ClarisWorks for Kids* as mentioned above or *KidPix Studio* from www.broderbund.com or *KidWorks* as mentioned above.

Desktop Publishing (2-3):

Have students make posters, ads, banners, invitations, cards, and reports.

Create a classroom newspaper or newsletter.

Have students enhance photos.

Have students write and publish poems.

Use it for science fair projects.

Download or copy pictures and then have the students write their own story.

Teach sequence activities and follow directions (technical reading).

Use *KidPix Studio* as mentioned above or *Windows Paintbrush* that comes with Windows 95 and 98 or *HyperStudio* from www.hyperstudio.com or *The Student Writing Center* from www.learningco.com

Other suggestions:

Use *KidDesk* from www.edmark.com, a utility for protecting the desktop.

Use *The Incredible Machine* from www.sierra.com/ (rated for grades 3+)

Use *The Graph Club* from Tom Snyder Productions www.teachtsp.com (great for K-3)

Use scanners and calculators.

Do research with CD-ROMs.

Have the students program the VCR.

Elementary (4-5) Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding:

Use *Mavis Beacon Teaches Typing v. 9.0* from www.mindscape.com or *UltraKey* from www.bytesoflearning.com or *Type to Learn* from www.sunburst.com or use the *Herzog System* from <http://tucson.com/herzog/>

WordProcessing:

Student write stories and essays.

Students write arguments for an issue you are studying.

Have students research and write skits.

Students research a famous person and write a news article.

Have students write fictional autobiographies.

Students create vocabulary word games.

Students keep a daily log of their nutrition, exercise, daily weather, or other data.

Have students keep a journal of the math concepts they understand and have learned.

Have students write reports about musicians and their work.

Use *ClarisWorks* from www.claris.com or *MSWorks* or *Word* from www.microsoft.com or *The Student Writing Center* from www.learningco.com or *KidWorks Deluxe* from www.education.com

Desktop Publishing

Publish newspapers and posters.

Students create a newspaper from the time period you are studying.

Students draw a map of an area or place.

Students make invitations.

Students write articles and feature stories to make a newspaper.

Students draw and label germs, parts of animals, plants, or other scientific objects.

Create a school or class newspaper or literary publication.

Use paint, draw, or graphics programs to draw, paint, or enhance photographs.

Use a digital camera to take a picture of the object and allow the students to draw from the 2D picture or the 3D object. Discuss the differences in each approach.

Use paint, draw, or graphics programs to draw musical symbols.

Draw strategy plans for games such as football or basketball and then try them on the field or court.

Use *ClarisWorks* from www.claris.com or *Publisher* from www.microsoft.com or *The Student Writing Center* from www.learningco.com or *Painbrush* which comes with Windows 95/98 or *KidPix Studio* from www.broderbund.com or *PrintShop* from www.broderbund.com or *Create-a-Card* from www.micrografx.com

Multimedia

Students create a collection of literature.

Create presentations on various report topics.

Make a travel brochure

Create a stack explaining actions and reactions or causes and effects.

Create a multimedia portfolio.

Research the application of a specific math skill in real life.

Explain a math concept and provide a little quiz/review at the end.

Create presentations with music students have written. They should choose graphics, pictures, even poetry or literature that fits the them of their music.

Publish student art on the Web

Use *Microsoft PowerPoint* which is part of Microsoft Office from www.microsoft.com or *HyperStudio* from www.hyperstudio.com or *KidPix Studio* from www.broderbund.com

Telecommunications

Participate in online projects.

Elementary Integration into All Content Areas

Activities and Resources

From the MI benchmarks

Language Arts, Social Studies, and World Languages

Word processing, spell check, thesaurus and grammar checking software used in writing process.
Database and telecommunications for research and communications.
Organize, track, and investigate and communicate progress in reading with databases and spreadsheets.
Intervention , remediation, and reinforcement of language arts skills.
Multimedia reports and productions with graphics, text, and sound.
Creation of timelines of events.
Desktop publishing of documents, reports, and other published materials.
Video portfolios.
Software and online resources for map skills.
CD-ROM and online resources for research.
Multimedia software and hardware used in student reports and productions.
Instructional resources on videotape, videodisc, and instructional television.
Still video and digitizing peripherals used in student projects.
Simulation software used in problem solving.
Individual and cooperative learning involving computer-based resources.
World language word processors for writing.
Vocabulary review via computer.
Introduction to languages via digitized voice.
Digitized audio for language development.

Math and Science

Database and spreadsheet software used in research.
Intervention , remediation, and reinforcement of software for skill development.
Simulation software used in problem solving.
Logo programming for problem solving and simple geometry.
Database and telecommunications for research and communications.
Instructional resources on videotape, videodisc, and instructional television.
Multimedia software and hardware used in student reports and productions.
Computer based laboratories for measurement/analysis.
Optical technologies for research and analysis.
Simulation software used in problem solving.
Download and analyze data from weather satellite via Internet resources.
Review of basic skills and concepts using computer-based resources.

Arts and Music

Computer drawing programs for creative expression.
Design compositions involving various computer-based resources.
Multimedia production and portfolios.
Use of still and live video in projects. And animation software.
Database and telecommunications for research.
Art history and appreciation involving sources on video and CD-ROM.
Use of MIDI interface for music composition and performance.
Creative music expression using multimedia resources.

Physical Education

Research in health and physical education involving databases, telecommunications, and other computer resources.
Instructional resources on videotape, videodisc, and instructional television.

Special Education: Elementary and Middle School Suggested Activities and Resources

From the MI Benchmarks

Elementary

Adapt lesson ideas from other areas as needed.

CAI software for remediation.

Assistive peripherals and software for special needs.

Visit Assistive Technology - Disabilities at <http://www.netins.net/showcase/atforum/> for more info.

Wordprocessing

Intervention, remediation, and reinforcement of skills development.

Instructional resources on videotape, videodisc, and instructional television.

Multimedia production.

Use of laptop computers.

Middle School

Computer software for remediation.

Technology as a tool to accomplish required objectives.

Skill development and reinforcement.

Use of laptop computers.

Note: High school information was not provided in the MI benchmarks.

Technology in the Media Center

Suggested Activities and Resources

From the MI Benchmarks

Elementary

Computerized card catalog.

Databases on CD-ROM.

Telecommunications, including satellite television and local and world-wide online resources for research.

Multiple computer stations for teacher/student use.

Multimedia work stations.

Central location of electronic resources.

Middle School


Computerized card catalog.

Multiple databases on compact/video disk.

Telecommunications lab for research and Internet instruction.

Multiple computer stations for teacher/student use.

Multimedia work stations.



Technology Across the Curriculum

Junior High Skill Checksheets

Organized by grade level

Note: THT Participants recommended using the middle school format instead of the junior high format.

Grade 6 Student Technology Skills Checklist

Student Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Practice throughout the curriculum | | | | |
| Word Processing Master the use of system commands or a computer program to control a technological system. | | | | |
| Master such word processing skills as entering, storing, editing, formatting and revising text. | | | | |
| Master the use of tabs and columns within a report. | | | | |

Grade 7 Student Technology Skills Checklist

Student Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Practice throughout the curriculum | | | | |
| Multimedia Multimedia used as a tool for organizing, arranging and storing information by creating buttons, fields, cards and stacks. | | | | |
| Introduce technology media (computer, laser disc, telecommunications, still and live video, to effectively search, collect, process and store information. | | | | |
| Apply technologies to interpret, analyze, synthesize and evaluate data information. | | | | |
| Use information technologies as tools for creative expression and communication of ideas. | | | | |

Grade 8 Student Technology Skills Checklist


Student Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | 1 st Term | 2 nd Term | 3 rd Term | 4 th Term |
|--|----------------------|----------------------|----------------------|----------------------|
| Keyboarding: Practice throughout the curriculum | | | | |
| Database and Spreadsheets Master the more advanced features of database computer applications in hands-on problem solving. | | | | |
| Introduce spreadsheet/computer applications and use learning activities to answer "what if" questions by manipulating numeric data formulas. | | | | |
| Use pre-existing databases to collect research. | | | | |
| Telecommunications Research Strategies: *To brainstorm possible topics and narrow the focus by asking questions which identify a "driving question." *To develop a search strategy using keywords which define the topic. *To learn strategies for online searching which aid in the management and movement of data. *To explain and use online resources that are appropriate for the learner and the topic. *To organize and analyze information in order to draw conclusions and implications based on the online investigation. *To utilize other print and non-print sources as necessary. *To produce a product using online sources combined with other resources. *To evaluate search results making a decision about accuracy of the data and reformulate the search if necessary. | | | | |
| Online communications: *To learn to evaluate a web site. *To become familiar with Internet procedure. *To practice electronic mail skills to communicate with the online community. *To learn and to model ethical, legal and responsible behavior in the online community. | | | | |



Technology Across the Curriculum

Middle School Integration Planning Sheets

Middle School Science and Math Technology Integration Planning Sheet

Teacher Name _____ School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|---|-------------------------|
| Keyboarding Practice throughout the curriculum | |
| Subject Specific Technology: Reinforce basic skills with computer software. Simulation software used in problem solving. Graphing calculators to discover concepts visually. Instructional resources on videotape, videodisc and instructional television. Optical (videodisc, CD, etc) technologies for research and analysis. | |
| Multimedia: Multimedia projects with graphics, text and sound. | |
| Spreadsheets and Databases: Spreadsheets to solve problems. Computer generated graphs. Database and telecommunications for research. | |
| Telecommunications: Database and telecommunications for research. Download and analyze data from NASA and other related Internet sites. Nationwide collaboration via telecommunications. Research Strategies: *To brainstorm possible topics and narrow the focus by asking questions which identify a "driving question." *To develop a search strategy using keywords which define the topic. *To learn strategies for online searching which aid in the management and movement of data. *To explain and use online resources that are appropriate for the learner and the topic. *To organize and analyze information in order to draw conclusions and implications based on the online investigation. *To utilize other print and non-print sources as necessary. *To produce a product using online sources combined with other resources. *To evaluate search results making a decision about accuracy of the data and reformulate the search if necessary. Online communications *To learn to evaluate a web site. *To become familiar with Internet procedure. *To practice electronic mail skills to communicate with the online community. *To learn and to model ethical, legal and responsible behavior in the online community. | |

MS Science and Math Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and Wordprocessing:

Students create vocabulary word games and then have them exchange with a friend and practice the vocabulary.
Students keep a daily log of their nutrition, exercise, daily weather, or other data.
Have students keep a journal of the math concepts they understand and have learned.
Create a banner or poster about a math concept or advertising something using a math concept.
Write an essay, story, or newspaper report about the topic you're studying.
Create a banner or poster about pollution, or other health or science issues.
Students draw and label germs, parts of animals, plants, or other scientific objects.
Use *ClarisWorks* and *ClarisDraw* from www.claris.com; *WordPerfect* from www.corel.com; *MS Office* from www.microsoft.com; *PrintShop* from www.broderbund.com; *SuperPrint* from www.scholastic.com MAC only

Subject Specific Technology:

Use *Alge-Blaster 3*, *Math Blaster: Algebra* or *Math Blaster: Pre-Algebra* from Davidson & Associates, Inc. www.education.com
Use graphing calculators.

Multimedia:

Report on an animal and play a frame animation of the animal in its environment.
Divide the class into teams to research specific topics about the general topic you're studying. Each team creates a stack about their topic and then all the stacks are combined to make a class report.
Create a multimedia portfolio of their research, including video clips of the experiment, photographs of insect collections, inventions, or other science projects.
Create a multimedia portfolio of math concepts they understand, including video clips of them using manipulatives, photographs of projects, and explanations of concepts.
Research the application of a specific math skill in real life (or a mathematician and what they do).
Explain a math concept and provide a little quiz/review at the end.
Use *Microsoft PowerPoint* from www.microsoft.com or *HyperStudio*: from www.hyperstudio.com or the *ClarisWorks* slide show feature from www.claris.com or *Cocoa* from www.apple.com or *Astound* from www.golddisk.com or *Scala* from www.agfaphoto.com or *Avid Cinema* from www.avid.com or *Director* from www.macromedia.com

Spreadsheets and Databases:

Create a line graph and then import the graph into a word processing program to write a report about that data.
Solve problems, collect and examine data, and report on findings.
Create a graph of various information such as heart rates, surveys, etc.
Use graphing tools as a bridge between the concrete and abstract. Have students compare information, such as bedtimes, pets, favorite books, TV shows, weather data they've collected, and more. Teach algebraic formulas from real-life numbers, for example, show how the average monthly rainfall resembles a parabola.
Show math relationships, set up banks, or a telephone company, a refreshment business, or keep track of finances.
In algebra, have students figure out how much money they could make at a car wash by manipulating the variables.
Create a table of info and have students create the formulas.
Set up a publishing business or other kind of business. Have students keep records of employees, pay scales, taxes, benefits, expenses, etc.
Introduce simple graphs with Microsoft Works or Excel from www.microsoft.com
Use *The Graph Club* from Tom Snyder Productions www.teachtsp.com
Use *MicrosoftWorks* from www.microsoft.com or *ClarisWorks* from www.claris.com

Middle School Social Studies and Language Arts Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|---|-------------------------|
| <p>Keyboarding: Practice throughout the curriculum</p> | |
| <p>Word Processing: Word processing, spell check, thesaurus, and grammar checking software used in the writing process. Outline/brainstorm software and CD-ROMs for writing. Desktop publishing of newspaper. Desktop publishing of documents, reports and other published materials. Desktop publishing of travel brochures and reports.</p> | |
| <p>Multimedia: Multimedia projects with graphics, text and sound. Simulations. Still video and digitizing peripherals used in student projects.</p> | |
| <p>Spreadsheets and Databases: Spreadsheets to graph statistics.</p> | |
| <p>Telecommunications: Database and telecommunications for research. Telecommunications to use online resources.</p> <p>Research Strategies: *To brainstorm possible topics and narrow the focus by asking questions which identify a "driving question." *To develop a search strategy using keywords which define the topic. *To learn strategies for online searching which aid in the management and movement of data. *To explain and use online resources that are appropriate for the learner and the topic. *To organize and analyze information in order to draw conclusions and implications based on the online investigation. *To utilize other print and non-print sources as necessary. *To produce a product using online sources combined with other resources. *To evaluate search results making a decision about accuracy of the data and reformulate the search if necessary.</p> <p>Online communications: *To learn to evaluate a web site. *To become familiar with Internet procedure. *To practice electronic mail skills to communicate online. *To learn and to model ethical, legal responsible behavior online.</p> | |

MS Social Studies and Language Arts Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and WordProcessing:

Practice typing by doing projects like making books.

Write stories and essays.

Write arguments for an issue you are studying.

Research battles and create skits.

Research a famous person and write a news article.

Write fictional autobiographies.

Create a poster related to the topic you're studying.

Create posters advertising something from a time period or calling people to participate in historical events.

Create a newspaper from the time period you are studying.

Draw a map of an area or place

Make invitations encouraging people to join in a protest or historical event.

Write articles and feature stories to make a newspaper.

Use *ClarisWorks* from www.claris.com

Multimedia:

Students create a collection of literature.

Create presentations on points of view of historical period by different people.

Create a multimedia and/or video presentation on current events and issues.

Make a travel guide for an area of the world, country or state.

Report information researched.

Create stories or reports and publish writing on the World Wide Web.

Create a multimedia book report.

Have students create a video presenting persuasive information.

Students present reports using presentation software.

Have students create a branching or choose your own ending story.

Use video and TV commercials to analyze persuasion and the difference between fact and opinion. Have students create their own commercial with video.

Have students select literature that best depicts conditions of an era and defend their choice in a multimedia presentation.

Use *Microsoft PowerPoint* which is part of Microsoft Office from www.microsoft.com

Use *HyperStudio* from www.hyperstudio.com

Use *Claris HomePage* from www.claris.com

Use *Microsoft FrontPage* from Microsoft www.microsoft.com

Spreadsheets and Databases:

Create a spreadsheet or database comparing information such as literacy rate, mortality rate, per capita income, etc.

Use print, online databases, CD-ROM encyclopedias to find the information. Enter the population growth rate and predict future growth rates. Create and answer questions about the information gathered.

Chronologically order events from the historical period you are studying.

Compare the land area or other numerical data of countries or states. Have them create a bar graph of the data, and then write a summary report of their findings.

Introduce simple graphs with Microsoft Works or Excel from www.microsoft.com

Telecommunications:

Research and collaborate in online projects.

Teach researching skills by using the Internet and distinguishing between what's good and bad.

Middle School Art, Music, PE, Health, Foreign Languages Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|--|-------------------------|
| Keyboarding: practice throughout the curriculum | |
| Subject Specific Technology: Art history and appreciation involving sources on video and CD-ROM. Compact disks on musical classics with analysis and history of writing. Create music. Develop music library. Computer interfaces to measure pulse in training. Vocabulary review via computer. Introduction to languages via digitized voice. Compact disks with digitized speech. | |
| Word Processing: World language word processors for writing. | |
| Multimedia: Computer drawing programs for creative expression. Design compositions. Multimedia production using still and live video and animation. | |
| Spreadsheets and Databases: Caloric analysis for physical fitness. Database for tracking of sports statistics. Spreadsheets to graph and analyze nutrients in different food groups. | |
| Telecommunications: Database and telecommunications for research. Research Strategies: *To develop a search strategy using keywords which define the topic. *To explain and use online resources that are appropriate. *To organize and analyze information in order to draw conclusions and implications based on the online investigation. *To utilize other print and non-print sources as necessary. *To produce a product using online sources combined with other resources. *To evaluate search results making a decision about accuracy of the data and reformulate the search if necessary. Online communications: *To learn to evaluate a web site. *To become familiar with Internet procedure. *To practice electronic mail skills to communicate online. *To learn and to model ethical, legal and responsible online behavior. | |

Middle School Other Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and WordProcessing:

Use *Mavis Beacon Teaches Typing v. 9.0* from www.mindscape.com

Write reports about musicians and their work.

Write stories, essays, or reports about famous sports people or other physical education topics.

Create a self portrait and then use computer software such as PhotoShop to alter it to convey artist's interpretation.

Use paint, draw, or graphics programs to draw, paint, or enhance photographs.

Some students draw easier from a 2D picture of an object as compared to the 3D object. Use a digital camera to take a picture of the object and allow the students to draw from the 2D picture or the 3D object. Discuss the differences in each approach.

Create a poster advertising a music event, concept or person.

Use paint, draw, or graphics programs to draw musical symbols.

Create a poster advertising a game or fitness principle.

Draw strategy plans for games such as football or basketball and then try them on the field or court.

Spreadsheets and Databases:

Graph heart rates, running times, and other personal data to compare week by week.

Multimedia:

Create presentations on information they have found such as the life and history of a musician or artist or comparing two musicians.

Create presentations with music they have written. They should choose graphics, pictures, even poetry or literature that fits the theme of their music.

Create video or multimedia portfolios of their work.

Create a multimedia presentation of their own art work.

After students have created an object (sculpture, clay modeling, etc.) have them create a multimedia presentation of it including music that fits the interpretation of the art.

Publish their art on the Web for others to see. Scan in pictures they've created. Take digital pictures of objects they've created and add those to a web art gallery as well.

Create a fitness plan to advertise and/or implement.

Create a short video showing steps in a skill or teaching a skill.

Create multimedia presentations on information such as athlete's scores and performances.

Create multimedia presentations on how to play a game and the rules involved.


Use *Cocoa* from www.apple.com Mac only.

Telecommunications:

Research

Collaborate in online projects.

Create a simulation of planning and purchase of computer systems: budget, requirements, disks or bundles, salesperson, and address long range usefulness.



Technology Across the Curriculum

High School Integration Planning Sheets

High School English Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|---|--|
| <p>Word Processing 9-10 Well-written, visually pleasing documents using basic word processing skills. Reports created on a computer with title page, outline, text, works cited and parenthetical referencing: ·indenting ·use of a variety of sizes and fonts ·centering, setting margins ·spell check ·thesaurus ·tabs, tab stops ·pagination ·spacing</p> | <p>Five hours in the first semester to outline expectations.</p> |
| <p>Word Processing 11-12 Well-written, visually pleasing documents using basic word processing skills. Reports created on a computer with title page, outline, text, works cited and parenthetical referencing. All of the above (grade 9-10), plus: · moving blocks of text · deleting blocks of text</p> | <p>Five hours in the first semester to outline expectations.</p> |
| <p>Multimedia 9-12 To compose, communicate, illustrate and illuminate their ideas. To research, interpret and communicate concepts and ideas. To compose meaningful images, video and sound. To demonstrate an understanding of various techniques used to create a multimedia presentation.</p> | <p>Five hours each semester.</p> |
| <p>Application Ideas Word processing, spell check, thesaurus, and grammar checking software used in writing process. Database and telecommunications for research. Outline/brainstorm software for writing. Multimedia projects with graphics, text and sound. Creation of timelines of events. Desktop publishing of newspaper and yearbook on computer. Enhance photographs. Video productions in Television Production class.</p> | |

High School English Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and WordProcessing:

Write stories and essays.

Write arguments for an issue you are studying.

Research a famous person and write a news article.

Write fictional autobiographies.

Create a poster related to the topic you're studying.

Create a newspaper from the time period you are studying.

Draw a map of an area or place

Make invitations encouraging people to join in a protest or historical event.

Write articles and feature stories to make a newspaper.

Create personal resumes.

Multimedia:

Students create a collection of literature.

Create a multimedia and/or video presentation on current events and issues.

Report information researched.

Create stories or reports and publish writing on the World Wide Web.

Create a multimedia book report.

Have students create a video presenting persuasive information.

Students present reports using presentation software.

Have students create a branching or choose your own ending story.

Use video and TV commercials to analyze persuasion and the difference between fact and opinion. Have students create their own commercial with video.

Have students select literature that best depicts conditions of an era and defend their choice in a multimedia presentation.

Telecommunications:

Research.

Collaborate in online projects.

Have students write their resumes and publish on the Internet.

Have students use OCLC FirstSearch as a research tool. <http://www.ref.oclc.org:2000> Access codes were given to REMC district media specialists in September 1997.

Software:

Use *Microsoft Office* from www.microsoft.com

Use *HyperStudio* from www.hyperstudio.com

Use *Corel WordPerfect* from www.corel.com

Use *Adobe PageMaker and Photoshop* from www.adobe.com

Use *TimeLiner* from Tom Snyder Productions www.teachtsp.com 1-800-342-0236

Use *Publisher* from www.microsoft.com

Use *Inspiration* from www.inspiration.com

Use *PhotoWise* from www.agfahome.com

High School Math Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|---|---|
| <p>Programming All levels Enter programs and use mathematics to analyze the program. Advanced levels Design, write and run similar programs to solve mathematical problems. ALGEBRA Master the use of nested loops, counting techniques, REM and GOTO. GEOMETRY Master the use of the IF-THEN statement to make decisions about which procedures to follow. ADVANCED ALGEBRA Master the use of the DEF FN command. Modify programs to achieve desired changes in the program's output. FUNCTIONS, STATISTICS and TRIG Master FOR-NEXT loop with advanced equations, and RND(1) function. PRECALCULUS, DISCRETE MATH Master PRINT options to produce output in well organized charts. Analyze when programming is an efficient way of problem solving.</p> | <p>One hour; five days each marking period.</p> |
| <p>Spreadsheet ALGEBRA Master formatting of cells and editing and clearing of cells. Use formulas to perform calculations. Enter and correct data in a spreadsheet. Format cells. GEOMETRY Master formula writing with multiple cells. Display answers in a variety of ways. Master the CUT, COPY and PASTE functions. Write formulas using many cells. Copy formulas using FILL DOWN. ADVANCED ALGEBRA Master the PMT function to calculate the periodic payments for an installment loan when given the interest rate, number of payments to be made and the amount of the loan. Format cells for dollar amounts. Produce an amortization table displaying interest, principal, and payments. FUNCTIONS, STATISTICS and TRIG Master graphing functions for the spreadsheet. Create pie charts, line graphs and bar charts to represent data. PRECALCULUS, DISCRETE MATH Master the VLOOKUP function. Create spreadsheets to solve complicated mathematical situations.</p> | |

High School Math Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Note: THT participants recommended teaching programming in separate classes and not with the math curriculum.

Keyboarding and WordProcessing:

Have students keep a journal of the math concepts they understand and have learned.

Create a banner or poster about a math concept or advertising something using a math concept.

Multimedia:

Create a multimedia portfolio of math concepts they understand, including video clips of them using manipulatives, photographs of projects, and explanations of concepts.

Research the application of a specific math skill in real life (or a mathematician and what they do) and create a multimedia presentation about their topic. All the stacks could be combined to make a class report.

Explain a math concept or a historical math figure and provide a little quiz/review at the end.

Spreadsheets and Databases:

Create a line graph and then import the graph into a word processing program to write a report about that data.

Solve problems, collect and examine data, and report on findings.

Create a graph of various information such as heart rates, surveys, etc.

Use graphing tools as a bridge between the concrete and abstract. Have students compare information, such as pets, favorite books, TV shows, weather data they've collected, and more. Teach algebraic formulas from real-life numbers, for example, show how the average monthly rainfall resembles a parabola.

Show math relationships, set up banks, or a telephone company, a refreshment business, or keep track of finances.

In algebra, have students figure out how much money they could make at a car wash by manipulating the variables.

Create a table of info and have students create the formulas.

Set up a publishing business or other kind of business. Have students keep records of employees, pay scales, taxes, benefits, expenses, etc.

Use *Excel*, *PowerPoint*, and *Access* which are part of Microsoft Office from www.microsoft.com

Telecommunications:

Research.

Collaborate on projects with other schools.

Have students research a historical math figure

Other Suggestions:

Use C++ and Visual Basic in separate computer programming classes.

High School Science Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|---|---|
| <p>Spreadsheet PHYSICAL SCIENCE and CHEMISTRY Learn to place actual lab data on a compatible spreadsheet, and use charting and presentation features to produce a presentation level document.</p> | <p>One hour, ten days in the first marking period to learn skills. After introduction, use skills to produce lab presentations during the remainder of the year.</p> |
| <p>PHYSICS and ANATOMY Use of advanced graphing to produce graphical regressions.</p> | <p>One hour, ten days in the first marking period to learn advanced spreadsheet skills. After introduction, use advanced skills to produce lab presentations during the remainder of the year.</p> |
| <p>Database GENERAL SCIENCE Learn to navigate a university-based bulletin board to gain access to current data and information. Contribute to high school level data gathering services and extract compiled results.</p> | <p>Nine hours in the first semester of the year to teach the use of the database search.</p> |
| <p>BIOLOGY Learn to navigate a university-based bulletin board to gain access to current data and information. Contribute to high school level data gathering services and extract compiled results.</p> | <p>Nine hours in the first semester of the year to teach the use of the database search.</p> |
| <p>Application Ideas Database and telecommunications for research. Multimedia projects with graphics, text and sound. Computer probes for measurement/analysis. Optical technologies for research and analysis. Computer interface with lab instruments. Gravity, projectile motion and other simulation. Download and analyze data from weather satellite. Troubleshooting to solve problems. Nationwide collaboration via telecommunications.</p> | |

High School Science Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and WordProcessing:

Students create vocabulary word games (such as a word scramble) and then have them exchange with a friend and practice the vocabulary.

Students keep a daily log of their nutrition, exercise, daily weather, or other data.

Have students keep a journal of the concepts they understand and have learned.

Create a banner or poster about a concept or advertising something using a concept.

Write an essay, story, or newspaper report about the topic you're studying.

Create a banner or poster about pollution, or other health or science issues.

Students draw and label germs, parts of animals, plants, or other scientific objects.

Multimedia:

Report on an animal and play a frame animation of the animal in its environment.

Divide the class into teams to research specific topics about the general topic you're studying. Each team creates a stack about their topic and then all the stacks are combined to make a class report.

Create a multimedia portfolio of their research, including video clips of the experiment, photographs of insect collections, inventions, or other science projects.

Research the application of a specific concept in real life (or a mathematician and what they do) and create a multimedia presentation about their topic. All the stacks could be combined to make a class report.

Explain a concept and provide a little quiz/review at the end.

Spreadsheets and Databases:

Create a line graph and then import the graph into a word processing program to write a report about that data.

Solve problems, collect and examine data, and report on findings.

Create a graph of various information such as heart rates, surveys, etc.

Telecommunications:

Research.

Collaborate on projects with other schools.

Software:

Use *PowerPoint*, *Access*, and *Excel* from *Microsoft Office* from www.microsoft.com

Use *HyperStudio* from www.hyperstudio.com

9-12 Social Studies Technology Integration Planning Sheet

Teacher Name _____

School Year _____

Note: Evidences of these skills are in the student's technology portfolio.

M=Student has mastered the skill; W=Student is working toward this skill; P=Evidence of skill in student portfolio

| Skill | Planning and Scheduling |
|--|---|
| <p>Research and Telecommunications Search for information online. Publish documents online. Establish online conferences with remote sites. Demonstrate legal, ethical and responsible behaviors online. Use electronic mail. Demonstrate the ability to access and filter information resources.</p> | <p>Five hours each semester required.</p> |
| <p>Application Ideas Atlas/map making. Telecommunications to use online resources. Multimedia projects with graphics, text and sound. Databases on compact disk. Simulations.</p> | |

High School Social Studies Suggested Activities and Resources

Suggested by Teachers Helping Teachers Participants

Keyboarding and WordProcessing:

Write stories and essays.

Write arguments for an issue you are studying.

Research battles and create skits.

Research a famous person and write a news article.

Write fictional autobiographies.

Create a poster related to the topic you're studying.

Create posters advertising something from a time period or calling people to participate in historical events.

Create a newspaper from the time period you are studying.

Draw a map of an area or place

Make invitations encouraging people to join in a protest or historical event.

Write articles and feature stories to make a newspaper.

Multimedia:

Students create a collection of literature.

Create presentations on points of view of historical period by different people.

Create a multimedia and/or video presentation on current events and issues.

Make a travel guide for an area of the world, country or state.

Report information researched.

Create stories or reports and publish writing on the World Wide Web.

Create a multimedia book report.

Students present reports using presentation software.

Spreadsheets and Databases:

Create a spreadsheet or database comparing information such as literacy rate, mortality rate, per capita income, etc.

Use print, online databases, CD-ROM encyclopedias to find the information. Enter the population growth rate and predict future growth rates. Create and answer questions about the information gathered.

Chronologically order events from the historical period you are studying.

Compare the land area or other numerical data of countries or states. Have them create a bar graph of the data, and then write a summary report of their findings.

Telecommunications:

Research.

Collaborate in online projects.

Play the Stock Market Game from <http://portia.advanced.org/3088/> or <http://library.advanced.org/10326/>

Have students use OCLC FirstSearch as a research tool. <http://www.ref.oclc.org:2000> Access codes were given to district media specialists in September 1997.

Use SearchBank as a research tool. http://www.searchbank.com/searchbank/lom_remc11 (provided free by the State Library of Michigan).

Software

Use *TimeLiner* from Tom Snyder Productions www.teachtsp.com 1-800-342-0236

Use *Word* and *Publisher* from www.microsoft.com