THE INFORMATION AGE

COMPETENCY
CATEGORY: Work Place

COMPETENCY
NUMBER: H.76

COMPETENCY: Demonstrate familiarity with a variety of technologies

OBJECTIVE: Upon completion of this module, students will be able to demonstrate a familiarity with a variety of technologies.

JAG

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INTRODUCTION

- Ask the following questions to set up module:

  1. What is technology?

  2. What things do you have in your home that is technology based?

  3. What other things are technology based?

  4. What types of technology do you know how to use?

  5. What is your favorite technology based item?

- We will be looking at the different types of technology, where they came from, where they are going, and how you can utilize them in this module entitled "The Information Age".

Administer Pre-Assessment

OUTLINE

A. Definition of technology/multi-media

  1. Technology is the application of scientific discoveries to the production of goods and services that improve the human environment.

  2. Multi-media is the combination of text, sound, and video into interactive electronic products and services.

     a. Can you think of different types of multi-media?

     b. Do you think that multi-media is primarily for fun or for business purposes?

B. The history of technology

1.   When was the first computer created?

   a.   The first computer was the abacus, which arrived about 5,000 years ago in Asia Minor.

   b.   The abacus allows users to make computations using a system of beads on wires arranged on a rack.

   c.   It is still in use today.

2.   The next advancement was in 1642. Blaise Pascal invented the Pascaline at age 18 for his father.   The Pascaline was a brass rectangular box that used eight movable dials to add sums up to eight figures long. Because of its design, it was limited to addition.

3.   Did you know that the 1880 Census and today's computers are directly related to each other?

4.   In 1889, Herman Hollerith used the idea of punch cards that were currently used to store data information for the U.S. Census.

5.   The punch cards that Hollerith developed could store up to 80 variables each.

6.   The 1880 Census took 7 years to count and officials were worried that because of growth, the next Census would take even longer. With the invention of punch cards, the next Census took only six weeks to complete.

7.   Hollerith went on to develop the Tabulating Machine Company in 1896 and brought punch cards to the world.

8.   His company changed names in 1924 and became the International Business Machines (IBM) company. Punch cards were used until the 1960's.

9.   What year was the very first all-electronic computer developed?

10. In 1940, John V. Atanasoff and Clifford Berry developed the all-electronic computer.

11. World War II provided the impetus for countries to devote more time and money to the continued development of the computer.

12. From 1945-1956, the first generation of computers emerged.

13. During this time, the Z3 was invented to design airplanes and missiles.

14. The Colossus was developed to break secret codes.

15. The UNIVAC I arrived as one of the first commercially available computers.

16. During 1956-1963, the Second Generation of computers emerged. This generation of computers was led by the invention of the transistor. The transistor allowed for computers to become smaller.

17. Second generation computers were smaller, faster and more reliable than the previous computers.

18. From 1964-1971, the third generation of computers emerged. This generation was known for the development of the integrated circuit, the semiconductor, and the operating system.

19. From 1971-present, the fourth generation of computers emerged. This generation is known for creating the central processing unit, memory, input and output controls, and microprocessors.

20. During this generation the public saw the emergence of arcade video games, home video game systems, personal computers, laptop computers, and palmtop computers.

21. The fourth generation of computers has also given the world Local Area Networks (LAN) and the Internet.

22. One of the first video arcade games was "Pac-Man."

23. One of the first home video games was "Pong." It was similar to playing tennis and users "bounced" a digital ball back and forth.

24. The present and beyond is considered the fifth generation of computers. During this generation, we should see the emergence of artificial intelligence, the ability of computers to accept spoken word instructions from humans, the ability to translate a foreign language, parallel processing, and more advancements in superconductor technology.

COMPLETE LEARNING ACTIVITY H.76-1
"TECHNOLOGY LIFELINE"

C. Terms common to multi-media

1. Overhead projector–uses clear plastic sheets and a bright light bulb to project an image onto a flat surface.

2. LED/lightbox–a clear panel that hooks-up to a computer and is placed on top of an overhead projector. The LED is used in conjunction with the overhead projector and a computer. The user runs a presentation from the computer through the LED and the image shows up on the LED and the overhead projector projects the image onto a flat surface.

3. PowerPoint–software program from Microsoft that allows users to create presentations on a computer. These presentations can be used to make transparencies for an overhead or they can be used with a computer and a projector.

4. Computer–allows users to create images and words via electronic components. The computer also allows users to utilize different software packages.

5. Film projector–uses continuous film and a bright light to project moving pictures onto a flat surface.

6.	Slide projector–uses small transparent film and a bright light to project pictures and images onto a flat surface one at a time.

COMPLETE LEARNING ACTIVITY H.76-2
"HANDS-ON TECHNOLOGY"

D.	Different types of multi-media presentations

1.	Television ads–advertisements for products or services shown on television

2.	Video games–games that are played by one or more persons with the aid of a computer, graphics, and sound

3.	Internet–a series of web sites and pages created by individuals, groups and governments to share information, products, and services with others around the world

4.	PowerPoint Presentations–presentations created with the aid of the PowerPoint software created by Microsoft

5.	Computer games–games played by one or more individuals on a computer

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COMPLETE LEARNING ACTIVITY H.76-3
"MULTI-MEDIA REVIEW"

E.	Video conferencing

1.	Videoconferencing allows people to communicate face-to-face without the high costs of travel.

2.	Videoconferencing is done with relative ease by using personal computers and adding on desktop videoconferencing products.

3.	Videoconferencing can be done via the Plain Old Telephone System (POTS), but because POTS was originally designed for voice communication, it doesn't handle the video signals very well.

4.   An alternative to POTS is the ISDN line. This is an Integrated Services Digital Technology line.

5.   Many corporations are now using videoconferencing and it is beginning to show up at universities and colleges around the world.

6.   Schools are using the term *Distance Learning* when they institute some forms of videoconferencing.

COMPLETE LEARNING ACTIVITY H.76-4
"VIDEOCONFERENCE VISITS"

G.   Available and future technology

1.   Many of you named several things in your homes and lives that have technology.

2.   Are there any other items that you can think of that involve technology?

3.   What about technology in the entertainment industry?

4.   Think about a personal computer or laptop.

5.   Many offer word processing functions similar to a typewriter.

6.   They have database software that allows the user to keep track of a large amount of information in an orderly fashion.

7.   They have software that lets you create newsletters, flyers, resumes, and cards.

8.   They also let you create your own multi-media presentations.

9.   Are there any things in your life that you think are improved by technology?

10.   Every year there is a competition to decide the best new technology. Some of them are:

a. Battleship, Hasbro Interactive

b. Britannica Online, Encyclopedia Britannica

c. Cabbage Patch Kids, Mattel Media, Inc.

d. How to Draw Comic Book Heroes and Villains, DiAMAR Interactive

e. SimCity 2000 Network Edition, Maxis

11. Entertainment Weekly also issues its list of the best multi-media and it also includes some of the worst multi-media.

a. The computer game RIVEN was selected as the best CD-ROM in 1997.

b. The Mars Pathfinder Landing was selected as one of the best in 1997.

c. Mapquest was selected as one of the best in 1997.

d. Virtual Pets was listed as one of the worst.

12. Where do you think technology is headed?

13. One trend on the horizon is an all encompassing piece of technology that puts the cell-phone, telephone, radio, television, computer, VHF radio, short-wave radio, VCR, CD-music player, DVD movie player, CD and DVD ROM, fax, and personal digital assistant, all in **one device**.

14. Complete on-line banking is another direction that technology is headed.

15. The current trend of on-line businesses is expected to increase and become more acceptable than many of the traditional walk-in stores that currently exist.

G.   Ethics and responsibilities of technology

   1.   Human responsibility

      a.   We should utilize technology intelligently.

      b.   We should take responsibility for our choices and consequences.

      c.   We should know what technology can do, cannot do, and can undo.

   2.   Confidentiality and privacy

      a.   Respect the human right to privacy.

      b.   Avoid intruding on someone else's privacy.

      c.   Avoid placing all information on the same level and acknowledge that some information is not suitable for every person.

      d.   Restrict access to some information that isn't necessary for everyone to view.

H.   Privacy issues on the Internet

   1.   E-mail privacy

      a.   Companies use e-mail to communicate between employees. Generally, these are stored as text data files to a main computer. The manager of the organization's computing system is usually able to open any and all files stored on the main computer.

b.   Many organizations have been successfully and unsuccessfully sued for looking at a person's e-mail. The future could hold many more such lawsuits.

2.   Access and security issues

a.   Who should be in control of the Internet?

b.   Should the governments around the world control the Internet and everything on it?

c.   Another question being raised is the opportunity for all members of the public to have access to the Internet. Currently in the U.S. the public has access to the telephone system and the postal service. The same cannot be said for access to the Internet.

d.   Another potential issue is the security of an organization's computer system. Protecting the information that is vital to the organization's growth and continued health is very important.

COMPLETE LEARNING ACTIVITY H.76-6
"CYBER THIEVES"

I.   Creating a web page on the Internet

1.   Web pages can be created either offline or online.

2.   Offline web pages can be created and then uploaded to your Internet Service Provider (ISP).

3.   Online web pages are created using a Telnet program by accessing your UNIX account.

4.   For beginning web page creators, it is often better to use the web builder tutorials and wizards that the site offers.

5. Yahoo.com and Xoom.com both offer free space for Internet users. You can sign up for an account and begin building your web site by using their builder software.

6. Other providers such as America Online and Flash.net also offer web site builders for their members. Many of these ISPs charge fees for their Internet services.

7. There are many languages that can be used to create a web site. Some are more complex than others. HTML and Java are two examples.

8. You can purchase software to create your web site and then upload to your site. Dreamcast and FrontPage are two examples.

9. You will need to decide what you want out of your web site and then decide the appropriate language or software to use to achieve your desired goal.

COMPLETE LEARNING ACTIVITY H.76-7
"CREATING AN E-MAIL ACCOUNT"

COMPLETE LEARNING ACTIVITY H.76-8
"CREATING A WEB PAGE"

COMPLETE LEARNING ACTIVITY H.76-9
"JOURNAL WRITING"

COMPLETE LEARNING ACTIVITY H.76-10
"SERVICE LEARNING"

COMPLETE READING ACTIVITY H.76
"GETTING EVEN"

COMPLETE MATH ACTIVITY H.76
"READING A GRAPH"

Administer Post-Assessment

            COMPETENCY H.76

OBJECTIVE: To put into perspective how computer technology has occurred over a short period of time

RESOURCES:
- Timeline from 5,000 years ago to 2010
- Blank note cards for each student
- Note cards for each of the following: Abacus, Pascaline, Blaise Pascal, Mechanical Calculators, Herman Hollerith, Punch Cards used for U.S. Census, Tabulating Machine Company, IBM, All Electronic Computer, World War II, First Generation of Computers, Z3, Colossus, UNIVAC - I, Second Generation of Computers, Third Generation of Computers, Integrated Circuit, Semiconductor, Operating System, Fourth Generation of Computers, Central Processing Unit, Memory, Microprocessors, Arcade Video Games, Home Video Games, Laptop Computers, Palmtop computers, LAN, Fifth Generation of Computers, Artificial Intelligence

SUGGESTED TIME: 1 hour

DIRECTIONS:

1.   Place the timeline either on a long wall or large open floor space.

2.   Shuffle the note cards.

3.   Pass out the note cards evenly amongst the students.

4.   Pass out one blank note card to each student.

5.   Have the students write their birthday on the card.

6. Have the students put their cards on the timeline in order of actual history.

7. Help students along the way with any corrections to the timeline.

8. After each student has finished, discuss the events including where each student falls on the timeline.

| **LEARNING ACTIVITY H.76-2**
| **"HANDS-ON TECHNOLOGY"**

OBJECTIVE: To have students research some of the different types of technology

RESOURCES:
- Overhead projector
- LED/Lightbox
- Computer with PowerPoint
- Film projector
- Video camera
- Slide projector
- TV
- VCR

SUGGESTED TIME: 3–4 days of research and 1-2 days of presentations

DIRECTIONS:

1. Divide students into groups of 2 or 3.

2. Assign each group a technology product to use.

3. Have the students research each of the following technologies:

- Proper usage (i.e. how it works)
- Tips for using (i.e. what is the best way to hold the product)
- Benefits of product (i.e. what are the advantages to using this product)
- Negatives of product (i.e. what are the negatives to using this product)
- Examples of how product is used (i.e. how are these products used daily)

4. Have the students create a 10-minute presentation on their technology product.

5. Have the students present their technology product to the class.

LEARNING ACTIVITY H.76-3
"MULTI-MEDIA REVIEW"

OBJECTIVE: To identify the benefits and drawbacks of multi-media

RESOURCES:
- Personal computer
- Appropriately rated computer game/activity
- TV
- VCR
- 8 previously recorded commercials appropriate to student age

SUGGESTED TIME: 2 hours

DIRECTIONS:

1. Have students play with the computer game/activity for about 10 minutes each.

2. Have students take notes on some of the things that they liked and disliked about the game.

3. Have students watch all of the commercials.

4. Have students take notes on some of the things that they liked and disliked about the commercials.

5. After all students have played the game and watched the commercials, generate a list on the board of all the likes and all the dislikes about both the games and the commercials.

6. Review the definition of multi-media with your students.

7. Ask students which was an example of multi-media: the computer game or the commercials.

8. Have students explain why they think one or the other is an example of multi-media.

9.   Have the students brainstorm other types of multi-media technology.

10.   Discuss with your students why multi-media is better or worse than standard media (books, audio tapes, magazines, newspapers).

11.   Include the Internet, PowerPoint presentations, and video games in the list of other types of multi-media.

OBJECTIVE: To allow students a hands-on chance to experience videoconferencing

RESOURCES:
- Telephone videoconferencing equipment (camera, microphone)
- Computer videoconferencing equipment (camera, microphone, software)
- Two organizations with videoconferencing capabilities

SUGGESTED TIME: 1 day of research, 2 hours for videoconferencing, 2 days for paper writing

DIRECTIONS:

1.   Have students research the two companies that are participating in the videoconferencing project.

2.   Have students generate 10-15 questions to ask each organization.

3.   Conduct a telephone videoconference with one organization.

4.   Have students take notes on the answers to the questions and about the telephone videoconferencing experience.

5.   Conduct a computer videoconference with the second organization.

6.   Have students take notes on the answers to the questions and about the computer videoconferencing experience.

7.   Have students write a 2-page paper explaining the similarities and differences between the two companies and the two types of videoconferencing.

OBJECTIVE: To create a new technology product and advertise this product to others

RESOURCES:
- Magazines
- Newspapers

SUGGESTED TIME: 3 days

DIRECTIONS:

1. Have students read the newspapers and magazines to look for something that could be improved with technology.

2. Have them create a new technology product.

3. They need to name it, describe what it does, and determine whom they are going to sell their product to (i.e. young children, teenagers, young adults, etc.) and create an advertisement to sell the product.

4. Have the students present their products to the class.

5. Post the advertisements around the classroom after each student has completed their presentation.

OBJECTIVE: To have students recognize how easy it is for cyber thieves to gain access to computer data

RESOURCES: Library access

SUGGESTED TIME: 3 days

DIRECTIONS:

1.   Have students research some of the current events that revolve around computer data theft (i.e. Melissa Virus, Love Bug, web site vandalism, etc.).

2.   Have students write a 3-page paper describing what happened, how it could have been prevented, and what can we learn from someone else's misfortune.

OBJECTIVE:	To allow students hands-on experience with the current software technology

RESOURCES:

- Parental permission to sign-up for an email account
- Personal computers
- Internet access

SUGGESTED TIME: 30 minutes per student

DIRECTIONS:

Note to Specialist: You will want to complete this activity prior to having your students complete the activity to determine if the depth of information that will be given to the students is appropriate according to school guidelines.

1.   Log on to the Internet via a browser (i.e. Netscape Explorer, Netscape Navigator, etc.).

2.   Go to the web site: www.xoom.com

3.   Have students click on the icon that offers free e-mail.

4.   Have students follow the instructions to their completion.

5.   Have students write down their e-mail address.

6.   Have students e-mail 3 other students in the class.

OBJECTIVE: To create a web page using the web page tutorials that are available on the Internet

RESOURCES:
- Internet access for each student
- Each student must have an email account through www.xoom.com
- Parental consent for student to create a web page

SUGGESTED TIME: 2 hours per student

DIRECTIONS:

Note to Specialist: You will want to complete this activity prior to the students beginning the activity to determine where students may encounter difficulties. The software tutorials are very easy to follow, but having a basic understanding of the flow of the information would be beneficial.

1.   Have students log into their e-mail account on www.xoom.com.

2.   Have students click on the icon that says "create page."

3.   Students will need to click on icon that says "Easy Page Builder" to begin.

4.   Follow the 6 steps for web page creation:

- Step 1. Choose a name for the page (like a page in a magazine).

- Step 2. Choose the type of page you want to create (Anime Community, Business, Classic Movies, Professional Basic, Soccer, Personal Basic, Religion, Personal Whimsical, Women's Circle, and Professional Marble)–this is how others will be able to find your page in the xoom.com index.

- Step 3. Choose the graphics to use for your background, header, and email icon.

- Step 4. Preview what you have so far. This is your last chance to change the basics of your web page.

- Step 5. Adding Text and Custom Graphics. This is the opportunity for you to add your own words and pictures. You can also link to another page or web site from this step.

- Step 6. Final Preview

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LEARNING ACTIVITY H.76-9
"JOURNAL WRITING"

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OBJECTIVE: Student will demonstrate writing skills by creating a journal entry centered on a topic assigned by the Specialist

RESOURCES: None

SUGGESTED TIME: 1 hour

DIRECTIONS:

1.   Provide students with the topic they are to use for this journal writing activity. The topic should relate to this module.

2.   Assign the page range for the journal writing assignment.

        This range could vary depending on the timeframe provided for the assignment, the writing skills of the entire group, a small group of students, or individual students. This assignment can be individualized by the Specialist by placing the page length in the blank space on the work sheet.

LEARNING ACTIVITY H.76-9
"JOURNAL WRITING"
WORK SHEET

NAME:

DATE:

TOPIC:

DATE DUE: **PAGE LENGTH:**

OBJECTIVE: Students will participate in a service learning activity assigned by the Specialist

RESOURCES: Learning Activity H.76-10

SUGGESTED TIME: 1 hour

DIRECTIONS:

1.   Identify the type of support linkage which could be used to reinforce the key concept(s) in this module with students (See "Types of Support Linkages").

2.   With your students, identify the school and/or community resources which could be contacted to create a Service Learning Activity for this module (See "Community Resources").

3.   With students, brainstorm, organize, implement and evaluate the effectiveness of the Service Learning Activity using the "Service Activity Action Plan."

TYPES OF SUPPORT LINKAGES		
Direct Services to Students	**Consultative and Technical Assistance**	**Information and Referral**
Community agencies	Professional organizations	Career counseling centers
Parents and personal advocates	Service organizations	Work experience and job placement services
Local education agency support/auxiliary staff	Parent organizations	School and private psychologists
Volunteer and service organizations	Advisory groups	Tutors
Placement services	State education agency personnel	Recreational programs
Postsecondary programs and personnel	Business/industry personnel and programs	Employers
Transitional services	Other vocational support service teams	Employment Services
Other school-based personnel	Local colleges and universities	Community agencies for counseling or health services
	Vocational education research and development resource center(s)	New schools (transfer students)
		Division of Vocational Rehabilitation
		Job Training Partnership Program

Source: HANDBOOK FOR VOCATIONAL SUPPORT SERVICE TEAMS IN MARYLAND

COMMUNITY RESOURCES

Federal and State Agencies provide services to their local and regional offices. Such services include financial support, job training and placement programs, housing, health, youth programs, consumer information, and legal aid. Examples include:

- legal services
- armed services
- state employment services
- state agency or school for the visually impaired
- State Department of Welfare
- mental health agency
- Department of Immigration
- Veterans Administration
- Social Security Administration
- Job Training Partnership Act (JTPA)
- Community Action Program
- law enforcement agency
- legal and judicial agencies
- Bureau of Indian Affairs
- public health service
- social services
- adult continuing education programs
- Office of Economic Opportunity
- civil service programs
- Rehabilitation Services Administration
- employment services
- Parks Department
- public health programs
- Adult Basic Education programs
- migrant programs
- military service representatives
- Planned Parenthood
- correctional facilities
- Governor's/Mayor's Committee for Employment of the Disabled

Community agencies and organizations provide such services as youth recreation, counseling and tutoring, employment and job training, foster care placement, and leadership development. Examples include:

- Chamber of Commerce
- YMCA/YWCA
- drug and alcohol abuse centers
- Red Cross
- child abuse/women's centers
- urban league
- adult continuing education programs
- student financial aid programs
- League of Women Voters
- mental health clinics
- probation and parole services
- children and youth services
- foster homes
- halfway houses
- community action programs
- migrant programs
- bilingual programs
- dropout prevention programs
- parent-teacher organizations
- American Legion
- Veterans of Foreign Wars
- Salvation Army
- JAYCEES
- Optimists
- Goodwill Industries

Citizen and special interest groups typically offer scholarship programs, legal aid, daycare, and transportation. Examples include:

- Lions Club
- canes
- Rotary
- churches
- women's and men's clubs in the community
- crisis intervention centers
- hospitals
- Girl Scouts
- Campfire Girls
- Big Brothers and Sisters
- Boy Scouts
- Indian guides
- Knights of Columbus
- Sertoma
- Elks
- retired citizens
- Volunteer tutor groups

Business, industry, and labor organizations are good sources of field trips, guest speakers, job opportunities, and occupational and product information. Examples include:

- Trade and labor unions
- Advisory committee members
- Employers
- Personnel offices
- industrial supervisors

Source: Sarkees-Wircenski, M. & Scott, J. VOCATIONAL SPECIAL NEEDS

SERVICE ACTIVITY ACTION PLAN

IMPLEMENTATION ACTIVITY/IDEA	
IMPLEMENTATION STEPS	**RESOURCES NEEDED**

     COMPETENCY H.76

PERSONNEL/AGENCIES/ COMMUNITY	REPRESENTATIVE INVOLVED RESPONSIBILITIES

POSSIBLE BARRIERS	CREATIVE SOLUTIONS

TIMEFRAME

OBJECTIVE: To read with comprehension

RESOURCES: Reading Activity H.76

SUGGESTED TIME: 1 hour

DIRECTIONS:

1. Make copies of Reading Activity H.76 and distribute to each student.

2. Have students read "Getting Even."

3. Have students complete the "Reading Recall" and check their answers for accuracy.

4. Discuss the story with your students.

"GETTING EVEN"

No one at Jefferson High could stand Mrs. Ethel Cleever. Mike Hayes was always entertaining people in the cafeteria by saying, "Ethel May Cleever, the meanest librarian who ever walked the face of the earth!"

She really was mean. She frowned at you when you walked into the library. She snapped at you if you asked for help on the computers. She yelled at you if you even tried to whisper. She thought that if two people came into the library together, they were going to cause trouble.

Mike and his friend Bruce Markle, the captain of the basketball team, would sit behind the computers and entertain the girls. Bruce would pretend to be Mrs. Cleever. Whenever Mrs. Cleever looked over at them they would pretend to be busy. Then Mike would say, "Watch out! Ethel May is gonna get you!"

In fact, it was at one of these group sessions that they came up with the plan. It was mostly Mike's idea. Bruce thought it would be really funny. They decided to ask a few more people to help them. It would take a lot of time. None of the girls wanted to help out, but they promised to keep it a secret.

The boys waited until the Thursday night before the big basketball game with Jackson High. That Friday was Green and White Day. The boys thought it would do a lot for school spirit to know that Mrs. Cleever had finally been paid back. They waited until late at night. They wore their gym clothes and carried a basketball. If anyone saw them they would say they were shooting baskets late at night. They made sure that there was no one in the building. Then they quietly let themselves in through a back window and quickly got to work.

One of the teachers discovered it early the next morning. It was Ms. Kane, the gym teacher. She had gone into the library to get a film projector. She opened the door and started across the room before she noticed anything. Then she stopped and stared. Half of the shelves in the library were empty. The books lay in piles all over the floor. All the computers were disassembled and piled in the corner. The potted plants on the window were turned upside down. The whole place was a mess. It would take days, maybe weeks, before things could be put back in order. Somehow

Ms. Kane failed to see the point of the banner that had been strung from the library lights. It read: THIS IS WHAT WE'RE GOING TO DO TO JACKSON HIGH!

Mr. Mills, the principal, called a special assembly first thing that morning. He told the school about the library. He said he had heard that students were responsible. He said there would be no pep assembly that afternoon unless he found out who had torn up the library. There were some angry murmurs from the students. Mr. Mills waited until it got quiet. Then he said, "I spoke with Coach Winters shortly after I saw the library this morning. He and I have agreed there will be no basketball game this evening unless I have the names of all the students who vandalized the library."

At this, angry cries filled the auditorium. Some students yelled that Mr. Mills wasn't being fair. Other students were asking each other, "Do you know who did it?"

When the assembly was over Mike and Bruce stood together in the hall. Mike shook his head. "I don't see what the big deal is!" he said. "We didn't really hurt much. So it's going to take some time to clean things up. That will give Mrs. Cleever something to do with her time. She won't have time to hassle us."

"I don't know, Mike," Bruce said. "When I think about it now–well, maybe we shouldn't have done it. And maybe we should go tell Mr. Mills we did it."

"Are you crazy?" Mike asked. "Go and tell? What for?"

PART I

DIRECTIONS: How well did you read? Complete the following sentences.

1. No one liked Mrs. Cleever because she

    a. ___ wouldn't let the students work in the library.
    b. ___ was unfriendly.
    c. ___ wouldn't go to basketball games.

2. The boys messed up the library

    a. ___ to get even with Mrs. Cleever.
    b. ___ so they wouldn't have to study.
    c. ___ because they didn't like Mr. Mills.

PART II

DIRECTIONS: Fill in the blanks to complete the paragraphs below.

No one at the high school liked Mrs. Cleever. _____ was the librarian and _____ was mean. She wouldn't _____ people even whisper in _____ library. If a student _____ into the library with _____ friend, she thought they _____ cause trouble.

Mike and _____ decided to pay Mrs. _____ back. They went into _____ library late one night. _____ pulled the books off _____ shelves. They piled the _____ in the corner. They turned the potted _____ upside down. They hung _____ banner from the lights. _____ read: THIS IS WHAT _____ GOING TO DO TO _____ HIGH!

When Mr. Mills, _____ principal, found out about _____ library he talked with _____ Winters. He called a _____ assembly right away. He _____ the students there would _____ no pep assembly and _____ basketball game unless he _____ out who had wrecked _____ library.

Some of the _____ said this wasn't fair. _____ students wanted to know _____ had done it.

After _____ assembly Mike and Bruce _____ in the hall. Mike _____ not understand why everyone _____ so upset. He didn't _____ why it was such _____ big deal. But Bruce _____ maybe they shouldn't have _____ it. He thought maybe they should go tell Mr. Mills they were the ones who did it.

|	
OBJECTIVE:	To demonstrate the ability to read a graph and calculate averages
RESOURCES:	Work Sheet—Math Activity H.76
SUGGESTED TIME:	1 hour

DIRECTIONS:

1. Make copies of the work sheet for Math Activity H.76 and distribute to each student.

2. Have students complete the questions on the work sheet and check their answers for accuracy.

3. Discuss the Math Activity with your students.

MATH ACTIVITY H.76
"READING A GRAPH"
WORK SHEET

DIRECTIONS: Below is a graph kept by the principal at Jefferson High. Use it to help you answer the questions.

Computer Vandalism at Jefferson High
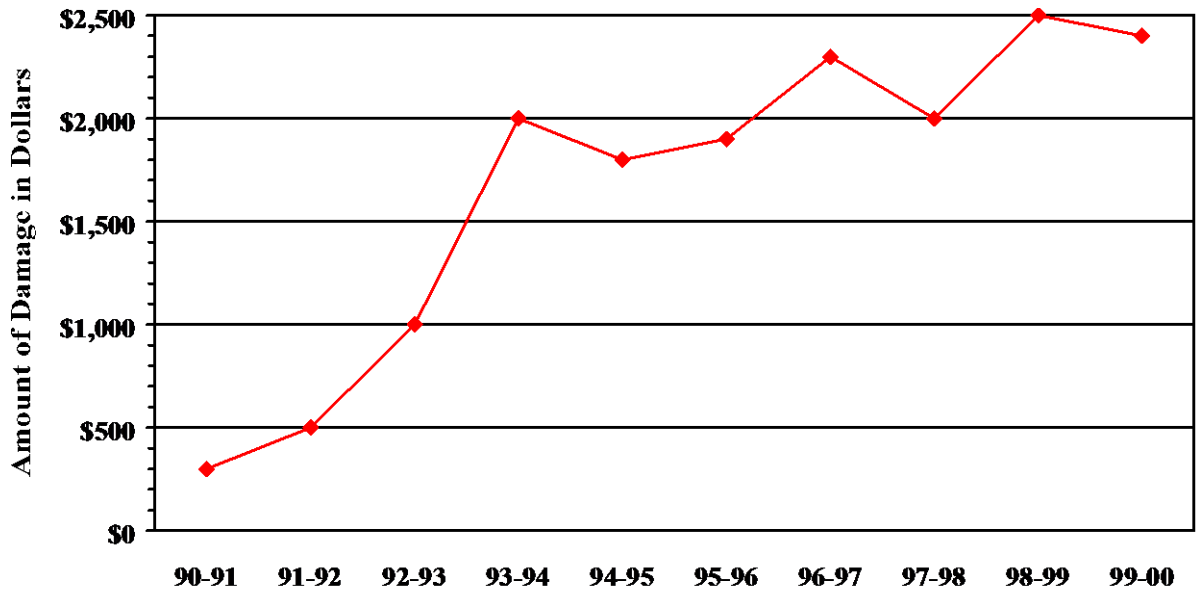
1.   This graph shows

2.   In 1991–92, how much money did computer vandalism cost Jefferson High?

3. In what 2 school years was damage approximately $2,000?

4. The biggest difference in damage costs was between which 2 school years?

5. What was the difference in costs of computer vandalism between school years 1990-91 and 1993-1994?

6. Between which 2 school years did the smallest change in damage costs occur? What was the amount of the change?

7. After 1996-97, what was the total amount of money lost to computer vandalism?

8. Of the $2,000 in damages in 1993-94, 20 percent of it was in damage to printers. How much money would this be?

9. During the first 5 school years on the graph, what was the average amount lost each year due to computer vandalism?

10. Find the total amount of money lost during 10 years from 1990 to 2000.

☐ **PRE-ASSESSMENT** ☐ **POST-ASSESSMENT**

DIRECTIONS: Answer the following questions to the best of your ability.
A listing of points as opposed to sentences is suggested.

1.   Define the term multi-media.

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2.   When was the first computer created?

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3.   In what year was the very first all-electronic computer developed?

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4.   What was one of the first video arcade games?

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5.   What is PowerPoint?

6.   What is the Internet?

7.   What is videoconferencing?

8.   What is an ISP?

ANSWER KEY
☐ **PRE-ASSESSMENT** ☐ **POST-ASSESSMENT**

1. Define the term multi-media.

   - Combination of text, sound, and video into interactive electronic products and services

2. When was the first computer created?

   - About 5000 years ago

3. In what year was the very first all-electronic computer developed?

   - 1940

4. What was one of the first video arcade games?

   - Pac-Man

5. What is PowerPoint?

   - A software program used to create presentations

6. What is the Internet?

   - A series of web sites and pages created by individuals, organizations, governments to share information

7. What is videoconferencing?

   - Face to face communication over the telephone line or ISDN line

8. What is ISP?

   - Internet service provider

PART I

1.   No one liked Mrs. Cleever because she

        a.   ___   wouldn't let the students work in the library.
        b.   _**X**_   was unfriendly.
        c.   ___   wouldn't go to basketball games.

2.   The boys messed up the library

        a.   _**X**_   to get even with Mrs. Cleever.
        b.   ___   so they wouldn't have to study.
        c.   ___   because they didn't like Mr. Mills.

PART II

No one at the high school liked Mrs. Cleever. <u>She</u> was the librarian and <u>she</u> was mean. She wouldn't <u>let</u> people even whisper in <u>the</u> library. If a student <u>went</u> into the library with <u>a</u> friend, she thought they <u>would</u> cause trouble.

Mike and <u>Bruce</u> decided to pay Mrs. <u>Cleever</u> back. They went into <u>the</u> library late one night. <u>They</u> pulled the books off <u>the</u> shelves. They piled the <u>computers</u> in the corner. They turned the potted <u>plants</u> upside down. They hung <u>a</u> banner from the lights. <u>It</u> read: THIS IS WHAT <u>WE'RE</u> GOING TO DO TO <u>JACKSON</u> HIGH!

When Mr. Mills, <u>the</u> principal, found out about <u>the</u> library he talked with <u>Coach</u> Winters. He called a <u>special</u> assembly right away. He <u>told</u> the students there would <u>be</u> no pep assembly and <u>no</u> basketball game unless he <u>found</u> out who had wrecked <u>the</u> library.

Some of the <u>students</u> said this wasn't fair. <u>Some</u> students wanted to know <u>who</u> had done it.

After <u>the</u> assembly Mike and Bruce <u>stood</u> in the hall. Mike <u>could</u> not understand why everyone <u>was</u> so upset. He didn't <u>see</u> why it was such <u>a</u>

big deal. But Bruce <u>said</u> maybe they shouldn't have done it. He thought maybe they should go tell Mr. Mills they were the ones who did it.

ANSWER KEY
MATH ACTIVITY

1. Yearly computer vandalism at Jefferson High
2. $500.00
3. 1993–94 and 1997-98
4. 1992-93, 1993-94
5. $1750.00
6. 1994-95 and 1995-96, $125.00
7. $6875.00
8. $400.00
9. $1100.00
10. $16,500