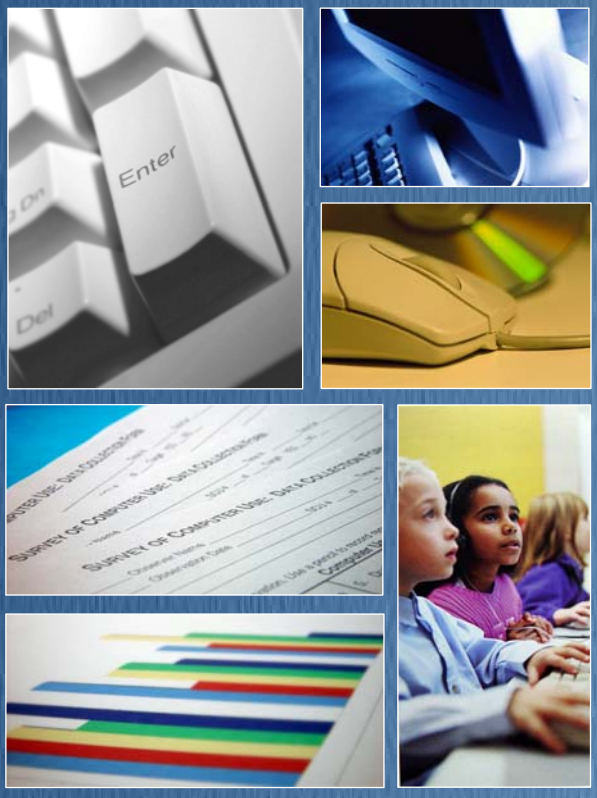
Survey of Computer Use

Observer's Manual



SCU

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This manual was designed by Jongpil Cheon

SCU

SURVEY OF COMPUTER USE

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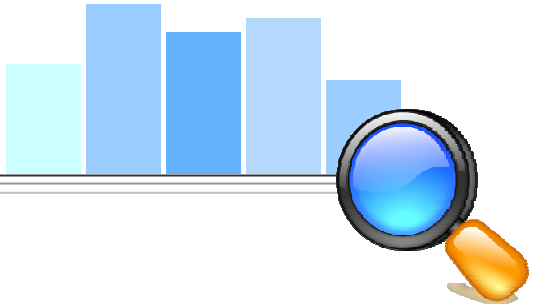
INTRODUCTION

SURVEY OF COMPUTER USE



The Survey of Computer Use (SCU) is designed to collect data regarding ***student*** use of computers or digital tools rather than teacher use of these tools. This manual guides observers to identify and code what they observed on student's computer use in the classroom with a consistent manner.

The procedures of SCU observation are:

- Receiving formal training of the use of SCU
- Requesting approval for visiting a school
- Completing SCU Data Collection Forms for each classroom
- Completing a SCU Data Summary Form for each school

The SCU Data Collection Forms should be completed for each classroom. Then these forms should be used to complete the SCU Data Summary at the conclusion of the visit. Observers may bring the manual as a reference. Reporting accurate data is an important role of the observer.

The skilled observer is able to improve the accuracy, authenticity, and reliability of observations through intensive training and rigorous preparation.

1 General Information

The Observation Period

- Total number of classroom is typically from 1 to 12 at each school.
- Each classroom is observed for approximately 15 minutes.

Observation Manner

- When entering the classroom, adopt a friendly manner with both the teacher and students. As an observer, you should explain a brief introduction and purpose of your visit to the teacher.
- While in the classroom, try to be unobstructive and remain at a distance (in the back of the room or another area from student focus) so both students and teacher will behave "naturally," without feeling overly self-conscious about your presence. Comments about observed activities can be quickly noted while you are in the classroom and expanded after leaving and before going to the next classroom.
- You may have unanswered questions at the end of a 15 minute session that are important in accurately recording one or more of the SCU categories. If an appropriate time can be found (e.g., during a break or after school) to speak with teacher without disrupting classroom activities, clarifying questions may be asked.

Basic Data of Observation

At the top of the data collection form, there are spaces you should fill out basic data for each classroom being observed.

- Time in/Time out

  The actual time you enter and leave the classroom should be recorded on the in these spaces. If the observation time is abbreviated, the Data Collection Form should indicate how many minutes were actually spent in the room and the reason for the shortened time period.

- Grade

  Record the grade level(s) of the students in the class you are observing and the room number.

- SCU #

  The SCU # indicates which observation this is in your total visits per school. For example, if this is the third time that you have observed among total ten classrooms at this school, the numbers "3 of 10" should be recorded in the space.

- Target
  - Yes – visit was to one prearranged class
  - No – visit involved randomly visiting several classrooms

- Subject/ Activity Overview

  It will be helpful you to make note of the subject(s) being taught during the observation. This space should be used for descriptions to help you remember the specific classroom being observed.

2 Computer Configuration

Number of Computers for Student Use

Question 1

- Count the number of computers, laptops or digital tools which are available for students in the classroom.
  - None
  - Only 1
  - 2-4
  - 5-10
  - 11 or more

Computer Age and Capacity

Question 2

- Select the capacity of computers for students in the classroom.
- The following features help you figure out the capacity.
  - Up-to-date
    - CD-RW, DVD-ROM and Maybe a Zip drive
    - 1 to 2 years old
  - Aging but adequate
    - Maybe a CD-ROM
    - 3 to 5 years old
  - Out-dated and limited in capacity
    - Over 5 years old

Computer with Internet Access

Question 3

- Ask the teacher if connection to the internet is not easily determined.

If students do not use computers or digital tools during the observation, Mark "No" in question number 4 and stop the observation.

3 Computer Use

Percent of Student Using Computers

Question 5

- Record the approximate percentage of students that used computers during the observation.
  - Only a few (less than 10%)
    - 1 to 2 students*
  - Some (about 10–50 %)
    - 3 to 12 students*
  - Most (about 51-91%)
    - 13 to 20 students*
  - Nearly All (91-100%)
    - More than 20 students*

*In a class with 25 students

Students per Computer/Digital Tool

Question 6

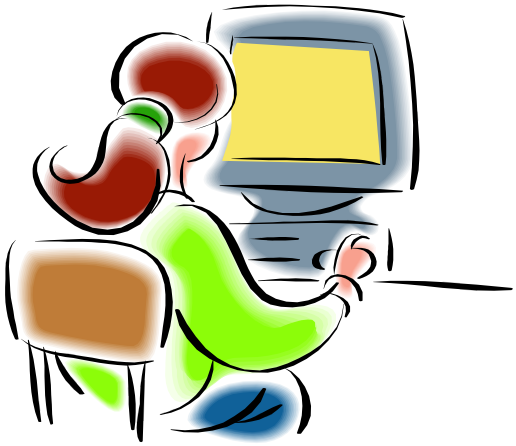
- Record how frequently students worked at computers or with digital tools.
  - alone
  - in pairs (two students)
  - in small groups (three or more students)

- If students rotate to and from a computer during the observation, record each grouping
  - If at the beginning of the observation computer #1 has one students writing a letter, then has two students creating a presentation, record:
    - "1" for alone
    - "1" for pairs

Rate Student Computer Literacy Skills

Question 7

- Observe computer literacy skills of students using computer and tally the number of students for each level.
  e.g., locate/open programs, locate/select menu items, save/print documents, etc.
- Rate as not observed if students do not engaged in any of these tasks during the observation
- Scale
  - Poor
  - Moderate
  - Very good
  - Not observed



Rate Student Keyboard Skills

Question 8

- Examine students' the ability to use a keyboard to enter information – e.g., ease in locating keys, using shift, space, tab, enter/return, backspace/delete, etc. key.
- Rate as Not observed if students only use the mouse or only use the keyboard in a very limited manner (e.g., entering a password) during the observation.
- Scale
  - Poor
  - Moderate
  - Very good
  - Not observed

Types of Computers and/or Digital Tools

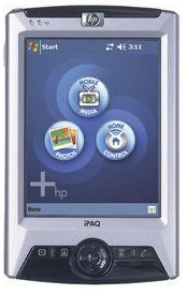
Question 9

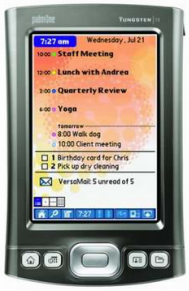
Check all types of computers and/or digital tools that were used during this observation

- Types of Computers and Digital Tools
  - Laptop Computers

  - Desktop Computers

  - Personal Data Assistants (PDA)





Graphic Calculator

Information Processor

Digital Camera

Scanner

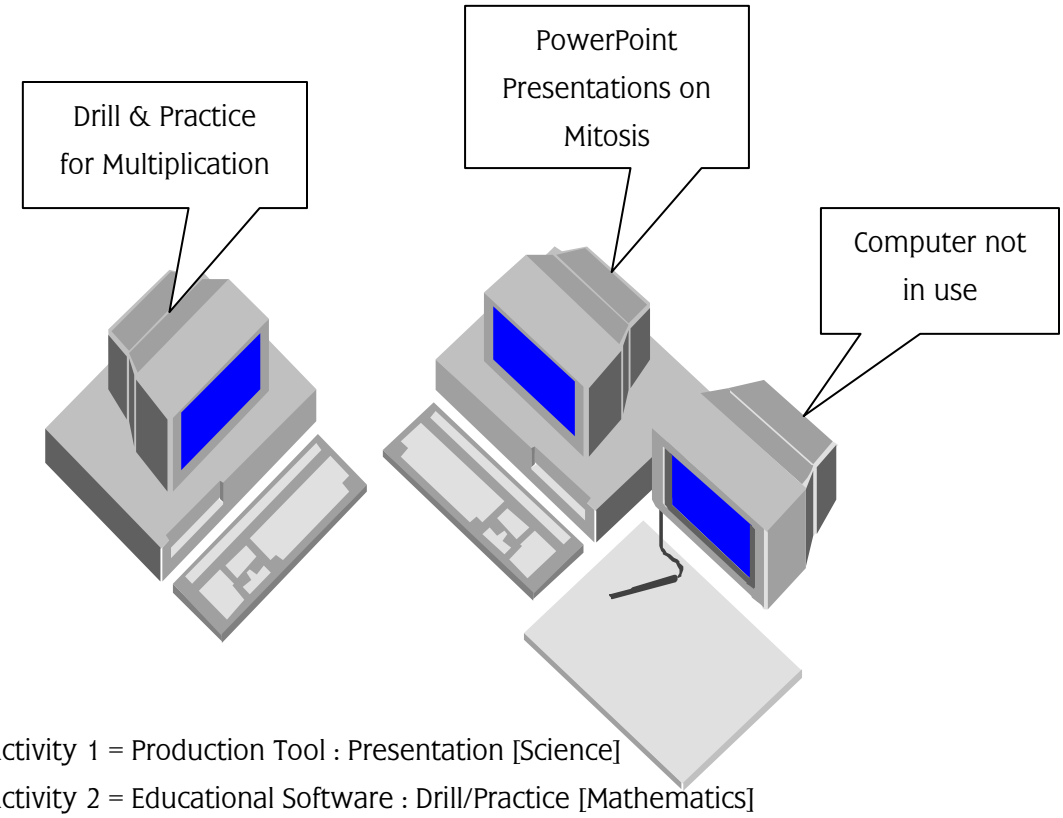
Probes

4 Computer Activity

General Guidelines

Observations of computer activities, such as frequency and types of computer activity, should be recorded by what is happening at each computer.

Example



- Activity 1 = Production Tool : Presentation [Science]
- Activity 2 = Educational Software : Drill/Practice [Mathematics]

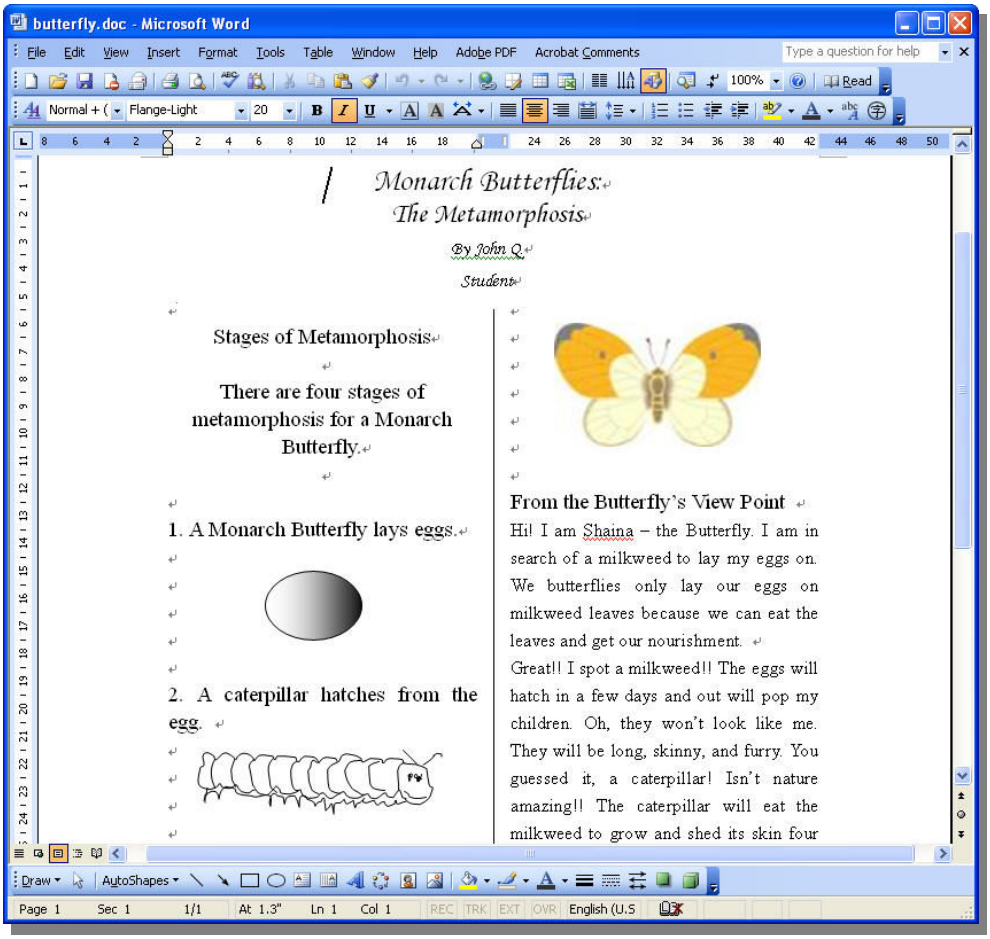
For example, when you record the activity 1, you should mark one in the "Presentation" cell under "Production tools" section. In addition, you should record the number of students involved same activities, the level of meaningfulness, and subject areas.

Types of Computer Tools

Production Tools

Word Processing

- Any type of activity that has students using a word processor to enter, format, or manipulate information
  - Enter = add text, graphics
  - Edit = spell check, cut and paste, rewrite sentences
  - Format = change font type or style, add tables, tabs, or borders
  - Manipulate = sort information, moving text
- Examples: MS Word, MS works and Apple Works Word Processing tool
- Non-example: Entering information in Power Point or Hyper Studio
- Word Processing Example

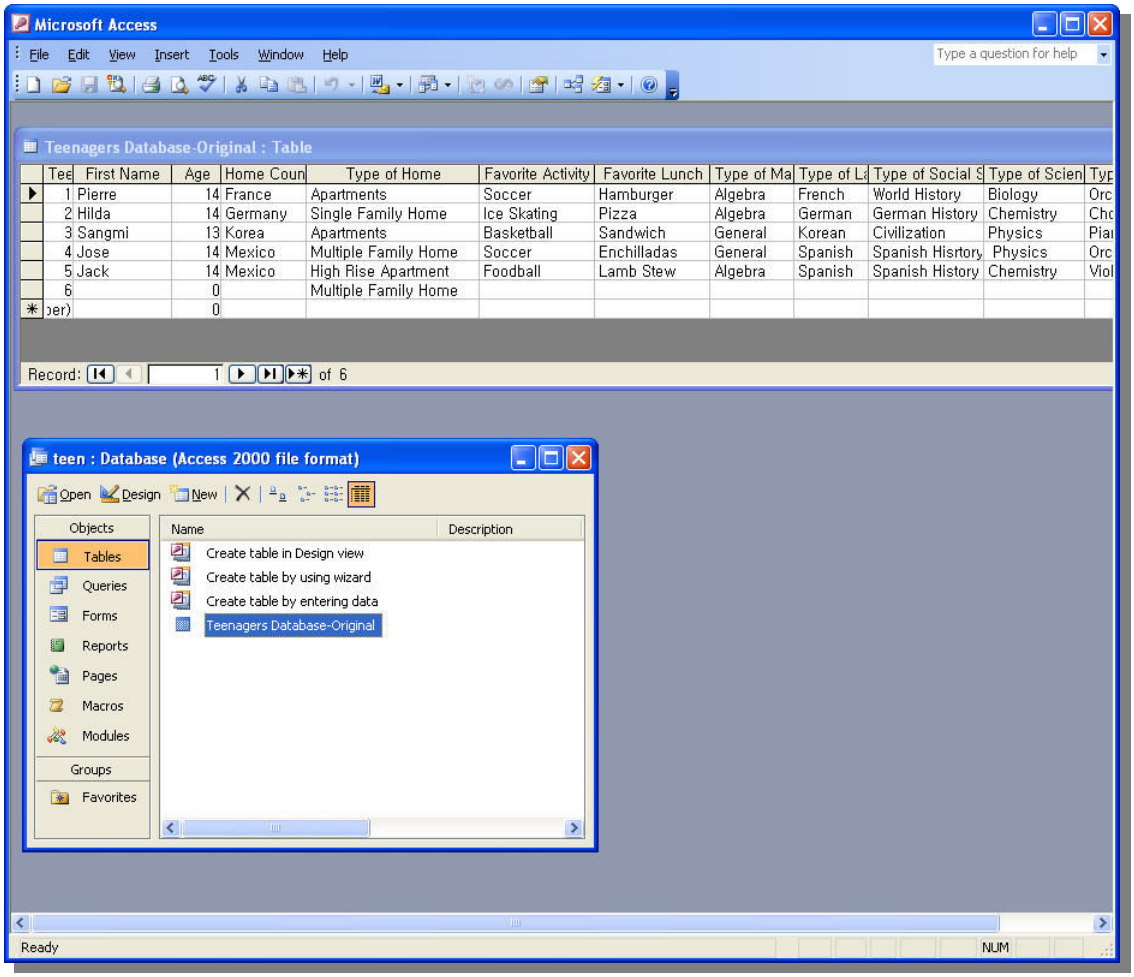


Database

- Any type of activity that has students using database software to create fields, enter, format, or manipulate information, and/or generate reports
  - Create Fields = name and format data fields
  - Enter = data into fields
  - Format = change font type/style or layout of data fields
  - Manipulate = sort information in data fields
  - Generate Reports = select and format report data

- Examples: MS Access, MS Works, Apple Works

- Database Example

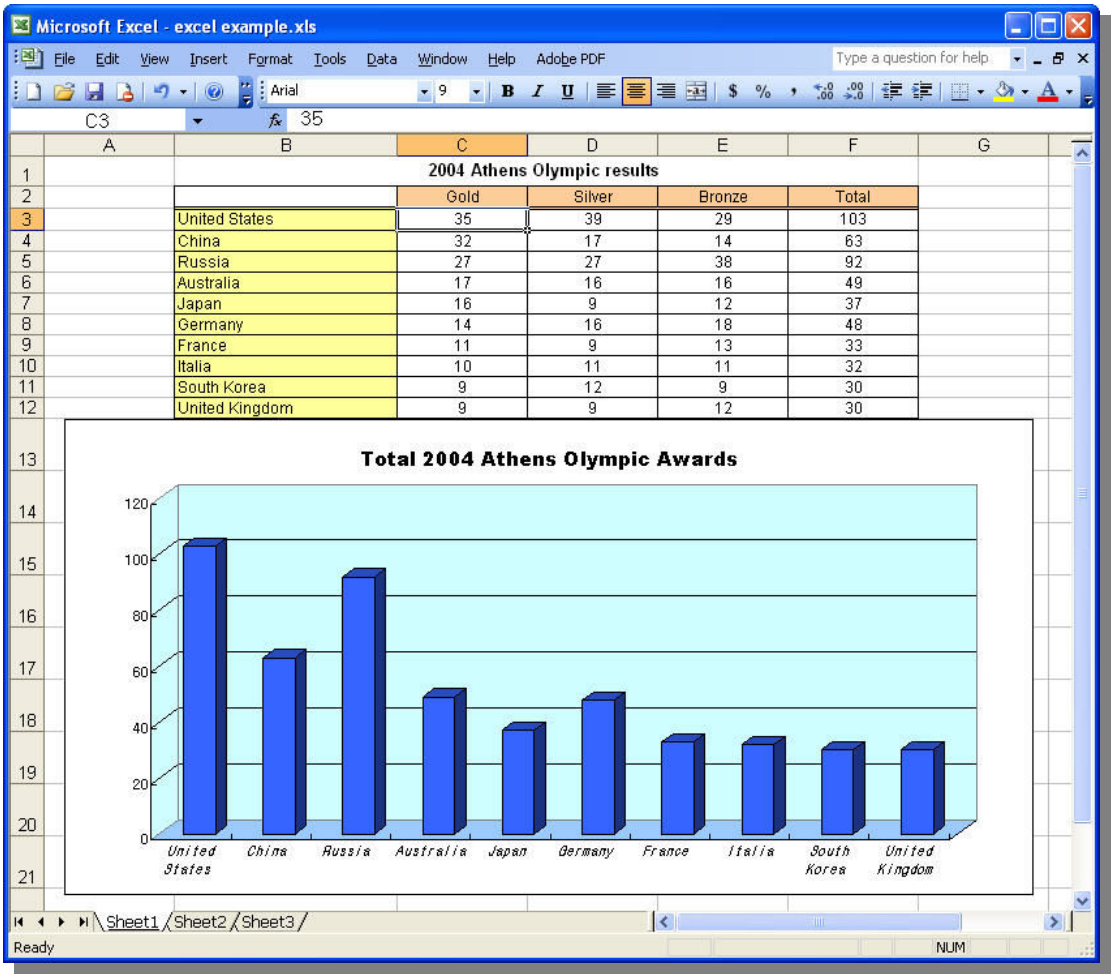


Spreadsheet

- Any type of activity that has students using spreadsheet software to enter, format, or manipulate information and/or generate charts.
  - Enter = add row and column headers, cell data and formulas
  - Format = change font type or style, number type, or chart details
  - Manipulate = sort information, perform calculations
  - Generate charts = highlight data and create charts

- Examples: MS Excel, MS Works, Apple Works

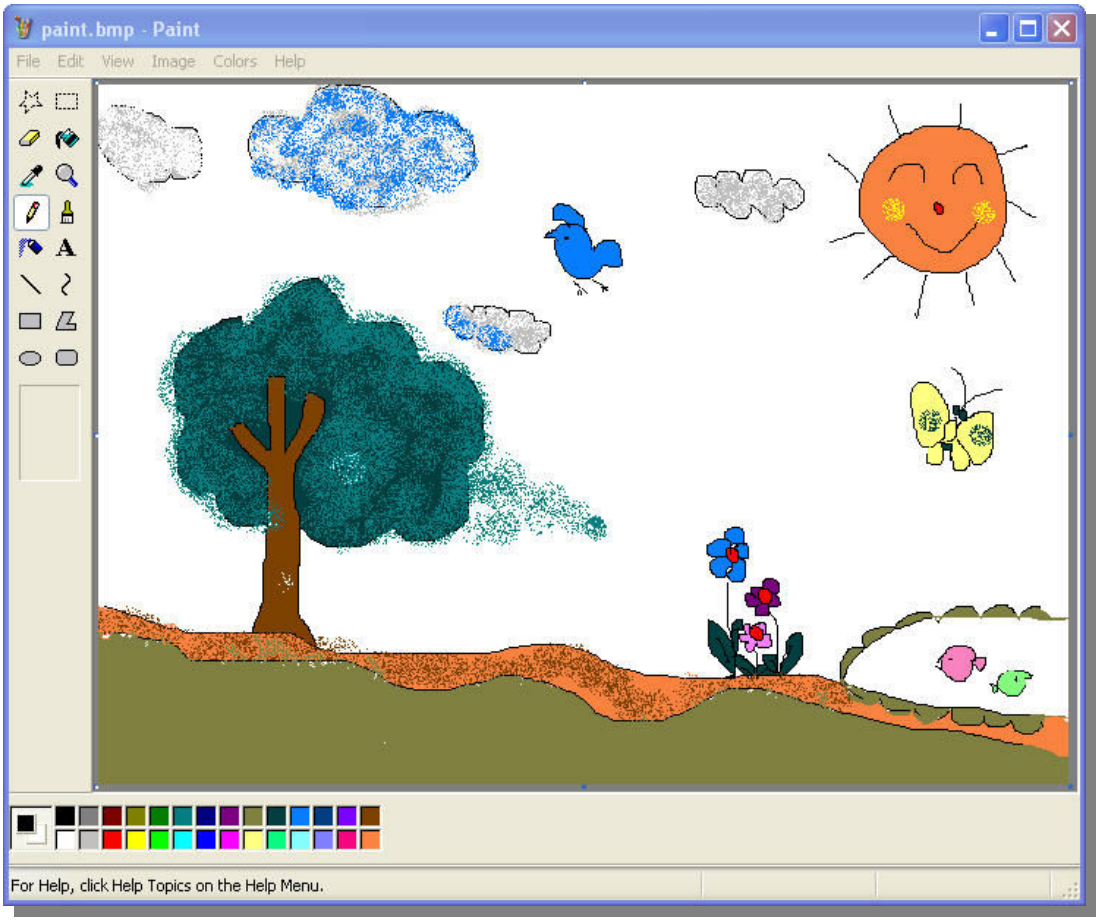
- Spreadsheet Examples (Excel)



Draw/Paint/Graphics

- Any type of activity that has students using draw, paint, or graphics software tools to draw and or compile digital images
  - Draw = use tools, such as pencil or paint brush, shapes and eraser to create images
  - Compile = add clip art/existing images to create original artwork
- Examples: Ms Office – draw tools, KidPix MS Works and Apple Works Draw/Paint tools

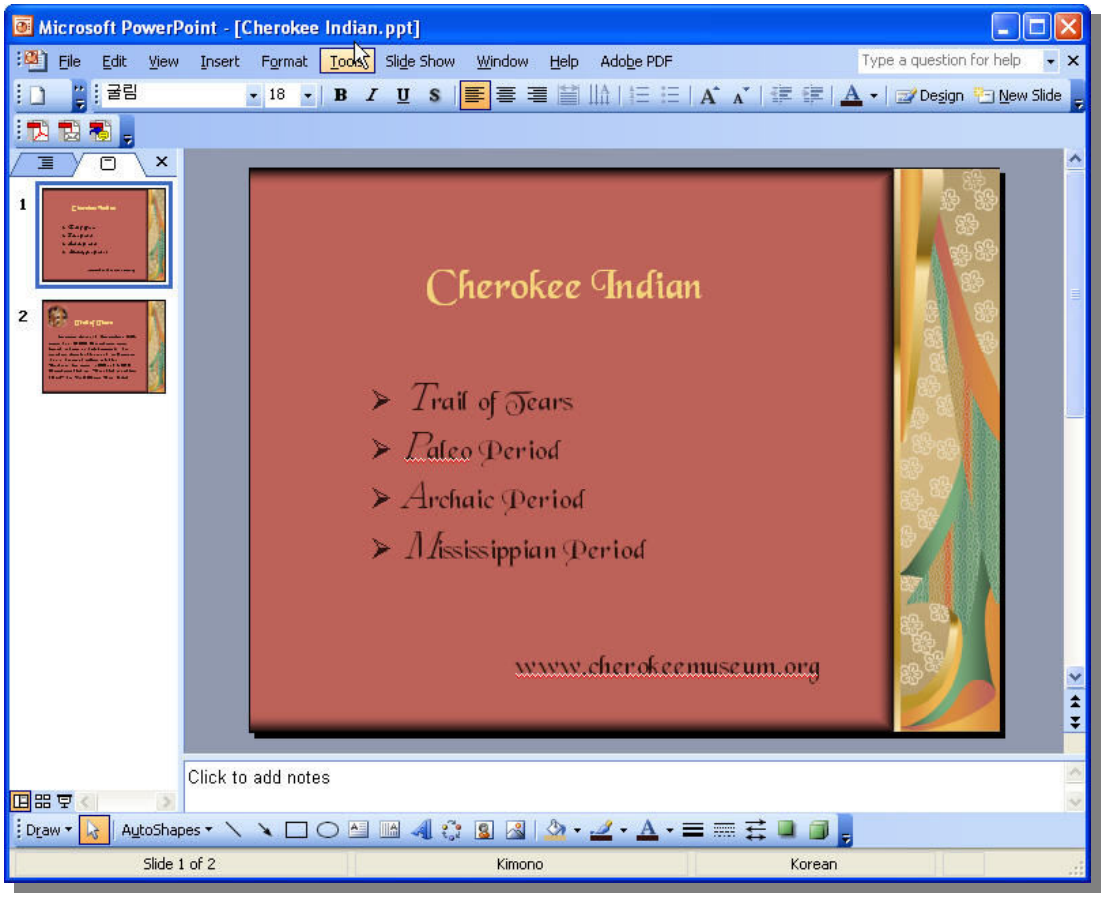
- Drawing tool examples



Presentation

- Any type of activity that has students using presentation software to enter, organize, format, and enhance information to be presented to others
  - Enter = add text, graphics
  - Organize = outline, set order of text, graphics, or slides
  - Format = change font, slide type or design
  - Enhance = add sound, transitions, animation
- Examples: MP Express, mPower, MS PowerPoint, MS Works and Apple Works Presentation tools

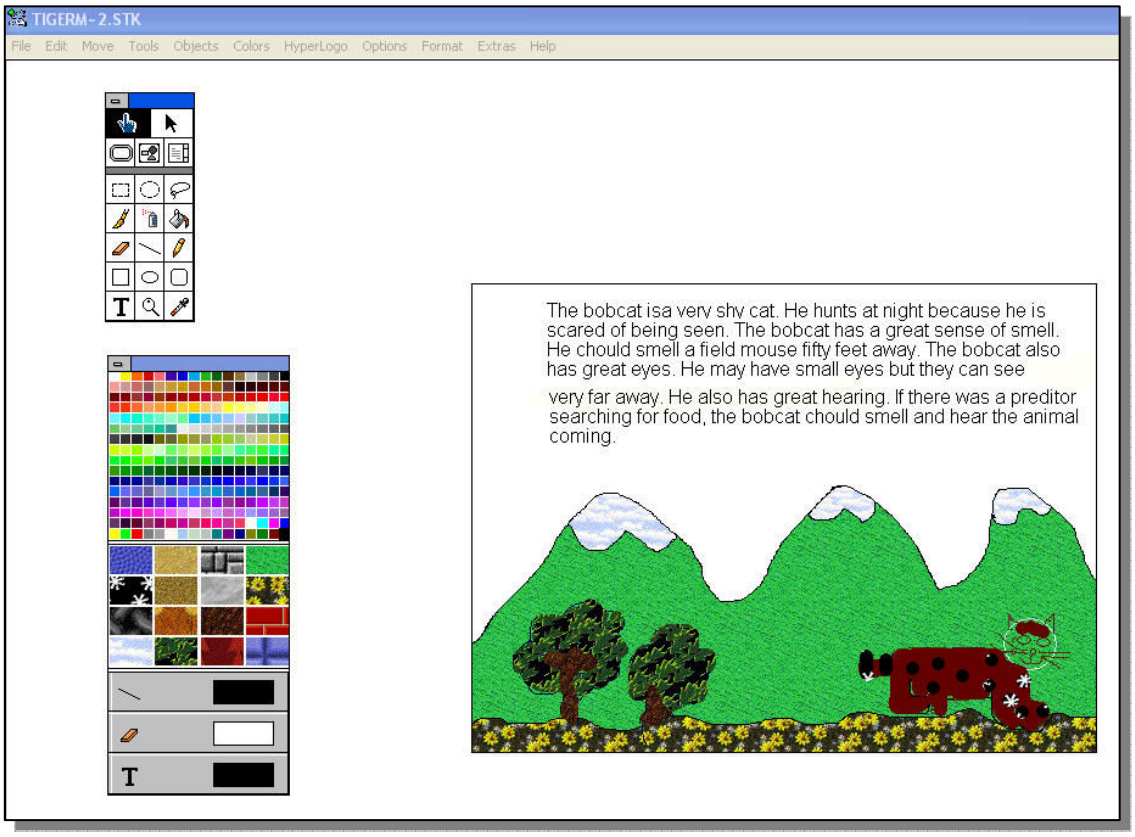
- Presentation Example (PowerPoint)



Authoring

- Any type of activity that has students using authoring software to enter, organize, format, and program information
  - Enter = add text, graphics
  - Organize = set order of text, graphics, animations, or cards
  - Format = change font type or style, card design
  - Program = add sound, transitions, animation, functions and/or navigation
- Example: HyperStudio

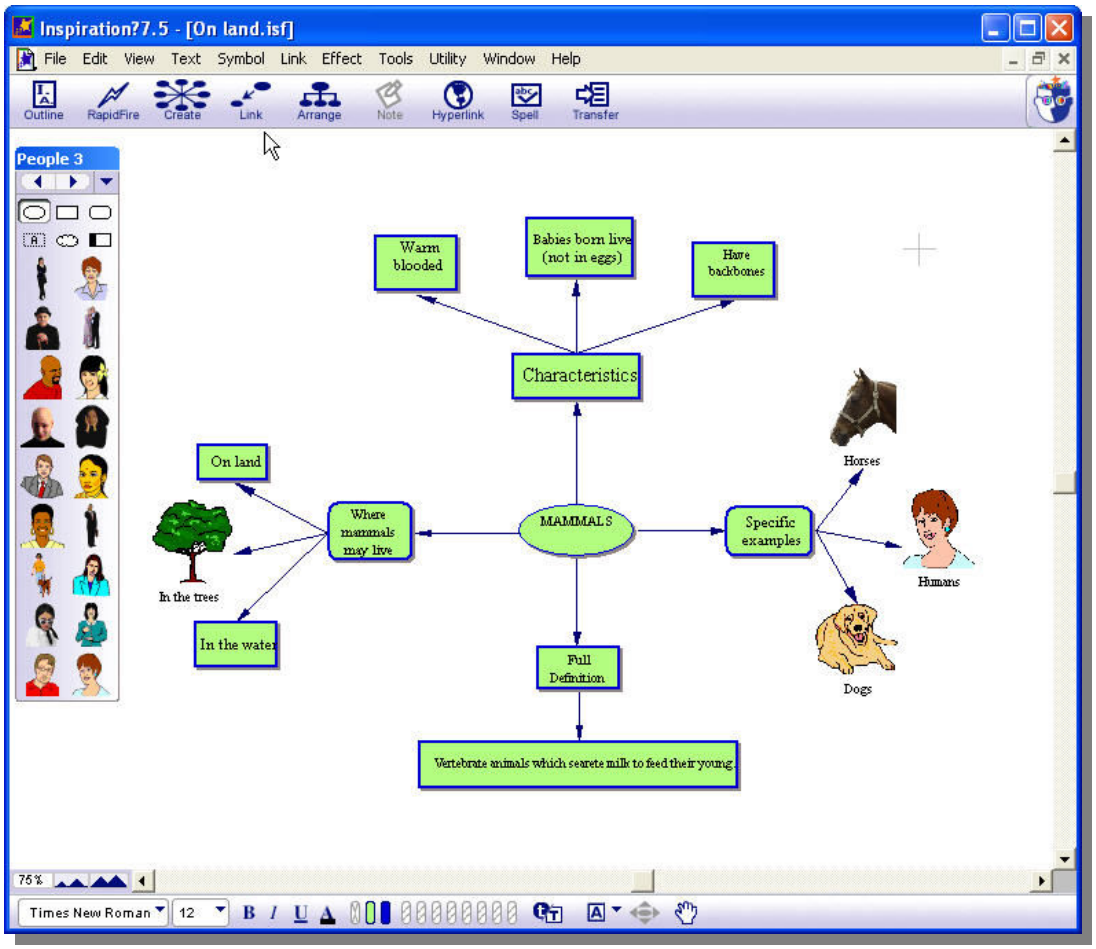
- Authoring Examples (HyperStudio)



Concept Mapping

- Any type of activity that has students using software that enables students to enter, edit, format and organize information into concept maps
  - Enter = add text, shapes and connector lines
  - Edit = spell check, cut and paste, rewrite
  - Format = change font, borders
  - Organize = arrange information into networked map
- Examples: MS Office, MS Works, Apple Works, Inspiration

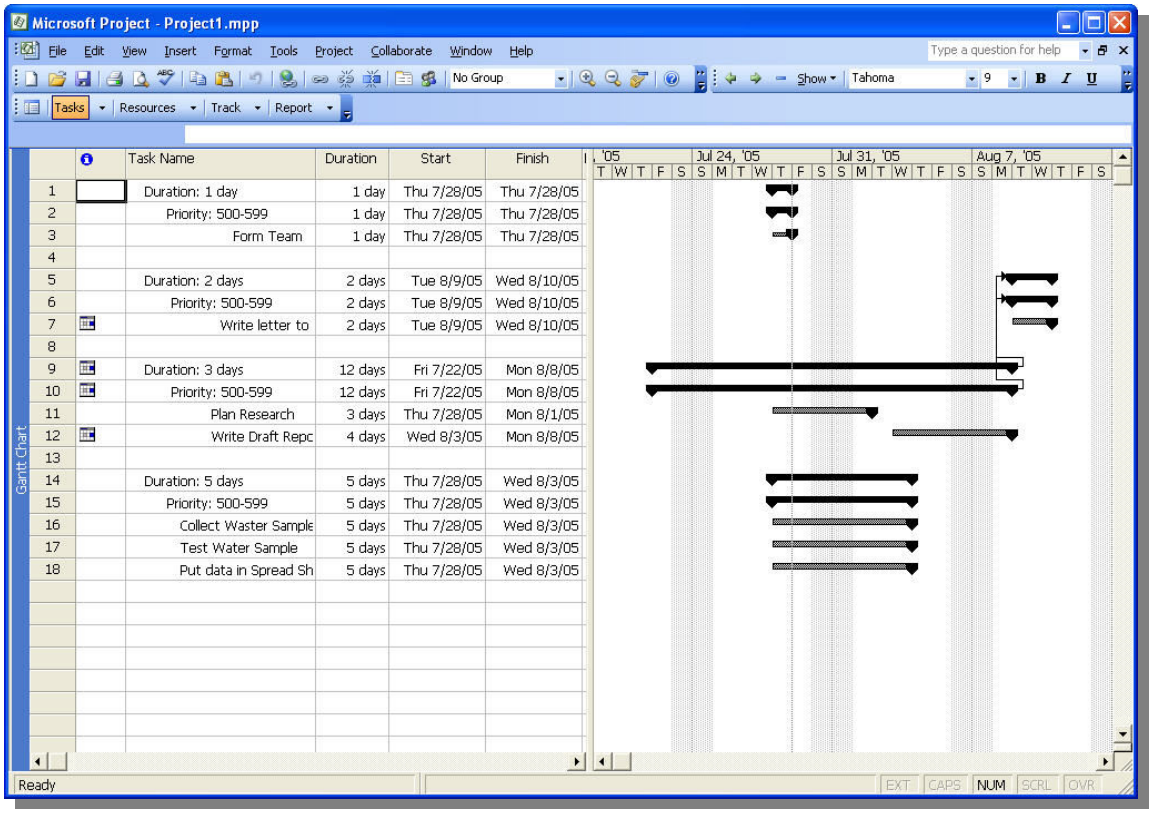
- Concept Mapping Example (Inspiration)



Planning

- Any type of activity that has students using planning software to enter, edit, format, or organize information
  - Enter = add text or dates
  - Edit = spell check, cut and paste, rewrite
  - Format = change font, add organizing features
  - Organize = move information
- Examples: MS Project

- Planning Example (MS Project)



	Task Name	Duration	Start	Finish
1	Duration: 1 day	1 day	Thu 7/28/05	Thu 7/28/05
2	Priority: 500-599	1 day	Thu 7/28/05	Thu 7/28/05
3	Form Team	1 day	Thu 7/28/05	Thu 7/28/05
4				
5	Duration: 2 days	2 days	Tue 8/9/05	Wed 8/10/05
6	Priority: 500-599	2 days	Tue 8/9/05	Wed 8/10/05
7	Write letter to	2 days	Tue 8/9/05	Wed 8/10/05
8				
9	Duration: 3 days	12 days	Fri 7/22/05	Mon 8/8/05
10	Priority: 500-599	12 days	Fri 7/22/05	Mon 8/8/05
11	Plan Research	3 days	Thu 7/28/05	Mon 8/1/05
12	Write Draft Repc	4 days	Wed 8/3/05	Mon 8/8/05
13				
14	Duration: 5 days	5 days	Thu 7/28/05	Wed 8/3/05
15	Priority: 500-599	5 days	Thu 7/28/05	Wed 8/3/05
16	Collect Waster Sample	5 days	Thu 7/28/05	Wed 8/3/05
17	Test Water Sample	5 days	Thu 7/28/05	Wed 8/3/05
18	Put data in Spread Sh	5 days	Thu 7/28/05	Wed 8/3/05

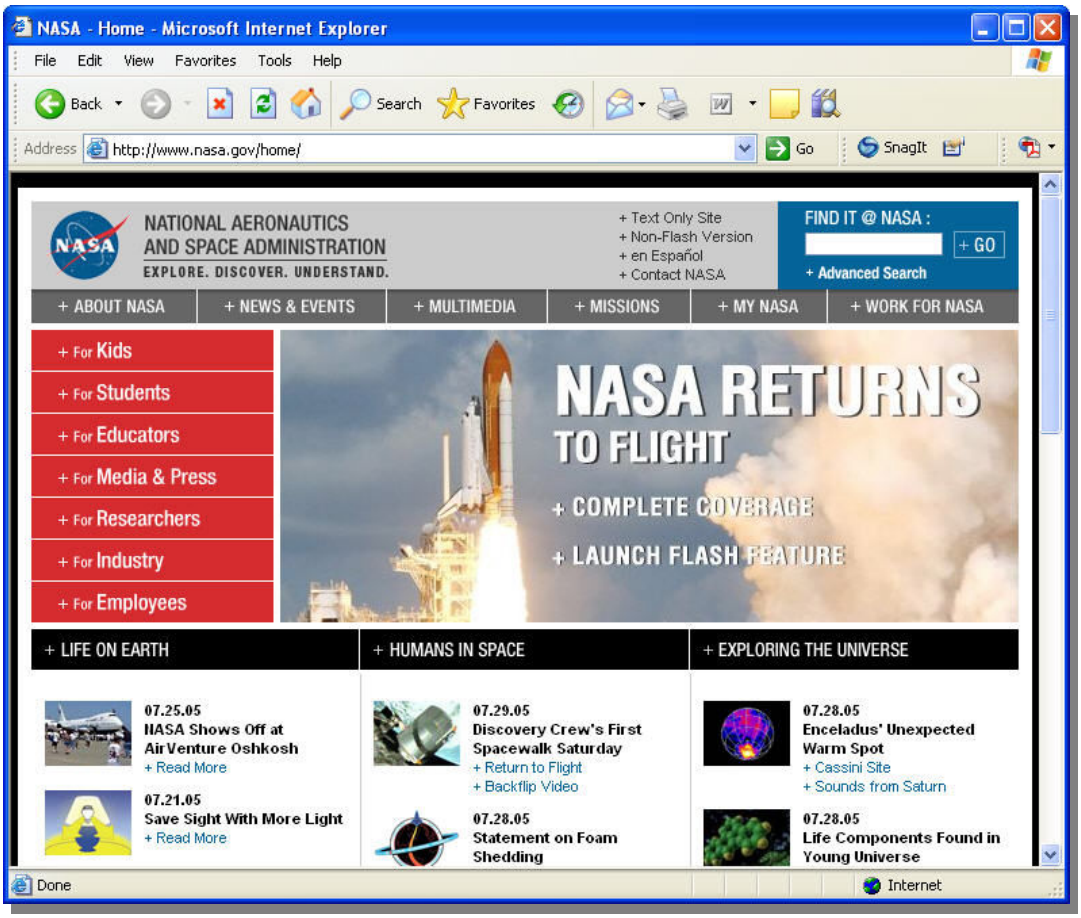
Internet/Research Tools

Internet Browser

- Any type of activity that has students using an Internet Browser to locate, bookmark, and/or retrieve information
  - Locate information = use existing search categories or search terms
  - Bookmark = create and/or organize bookmarked URLs
  - Retrieve information = download or copy information

- Examples: Nescape Navigator, MS Internet Explorer

- Internet Browser example (Internet Explorer)



CD Reference

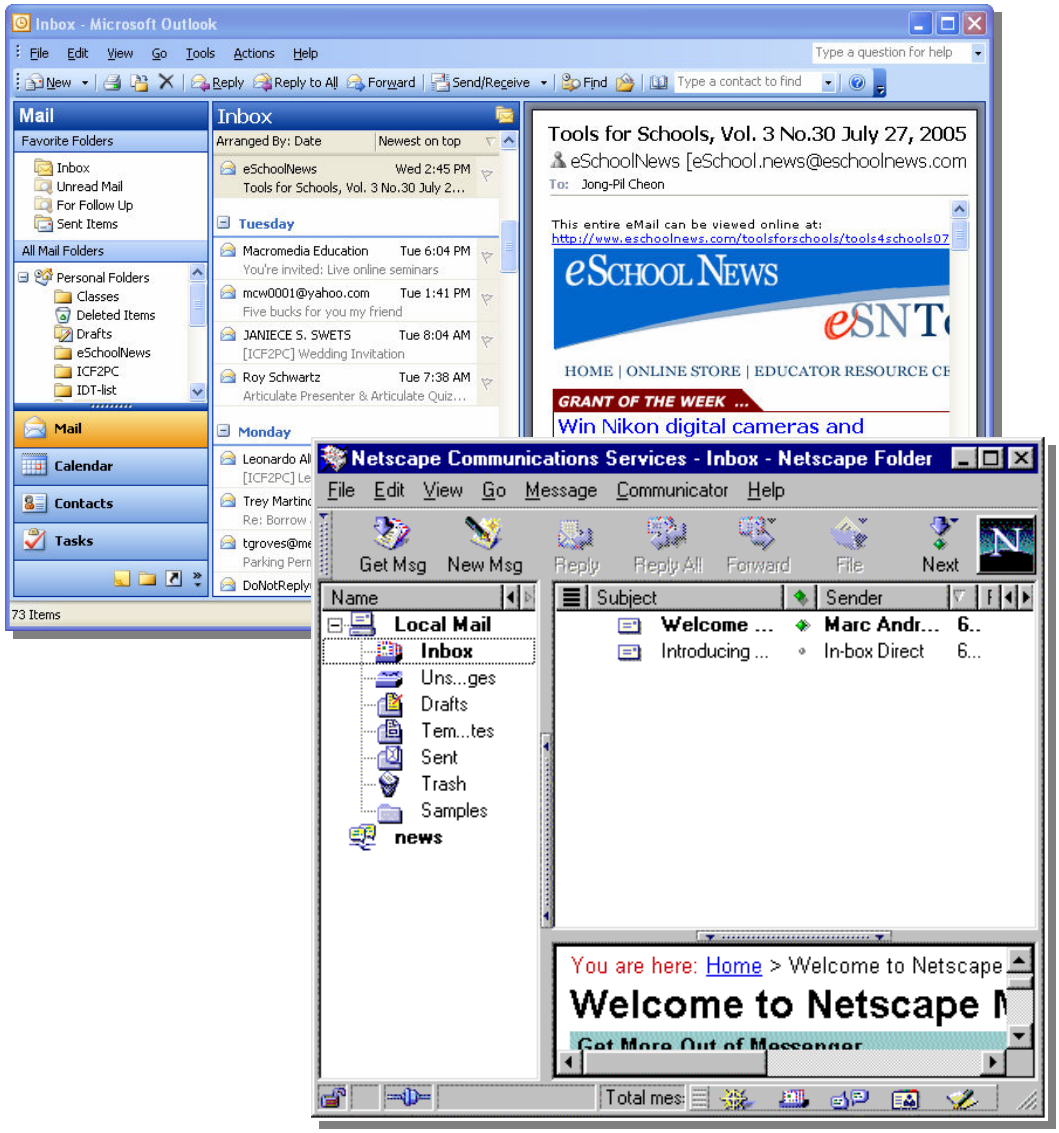
- Any type of activity that has students using CD-ROM reference materials to locate and/or retrieve information
  - Locate information = use existing search categories or search terms
  - Retrieve information = download or copy information

- Examples: Britanica, Compton's, Encarta, Crolier's, World Book encyclopedia, Time/Life Magazine Archive, National Geographic Maps, 3-D Atlas. Merriam-Webster's Dictionary

Communications

- Any type of activity that has students using communications software to enter, edit, format, and send digitized correspondence
  - Enter = add text, graphics
  - Edit = spell check, cut and paste, rewrite sentences
  - Format = change font type or style
  - Send = message is digitally sent to an individual or list

- Examples: Netscape Messenger, Microsoft Outlook.



Educational Software

Drill, Practice & Tutorial

- Any type of activity that has students using educational software to review or learn new content or skills
  - Tutorials/Guided Practice – presents new information and provides interactive practice and feedback
  - Drill and Practice – provides interactive practice and feedback of previously presented information
  - Learning Games – provide drill-and-practice in a competitive and motivational nature. Competition can be provided with time constrains, points earned, and/or computer characters.

- Examples: Most integrated learning systems for which students log on and complete prescribed lessons, Math Blaster, Smart Start: Hebrew

Problem-Solving

- Any type of activity that has students using educational software to solve problems in simulated environments
  - Problem-solving-present students with situations that require the use of higher-order thinking skills to achieve the intended outcome(s). Many problem-solving programs involve simulations of "real-world" situations and often are game-like.

- Examples: SimEarth, Science Sleuths, Oregon Trail

Process Tools

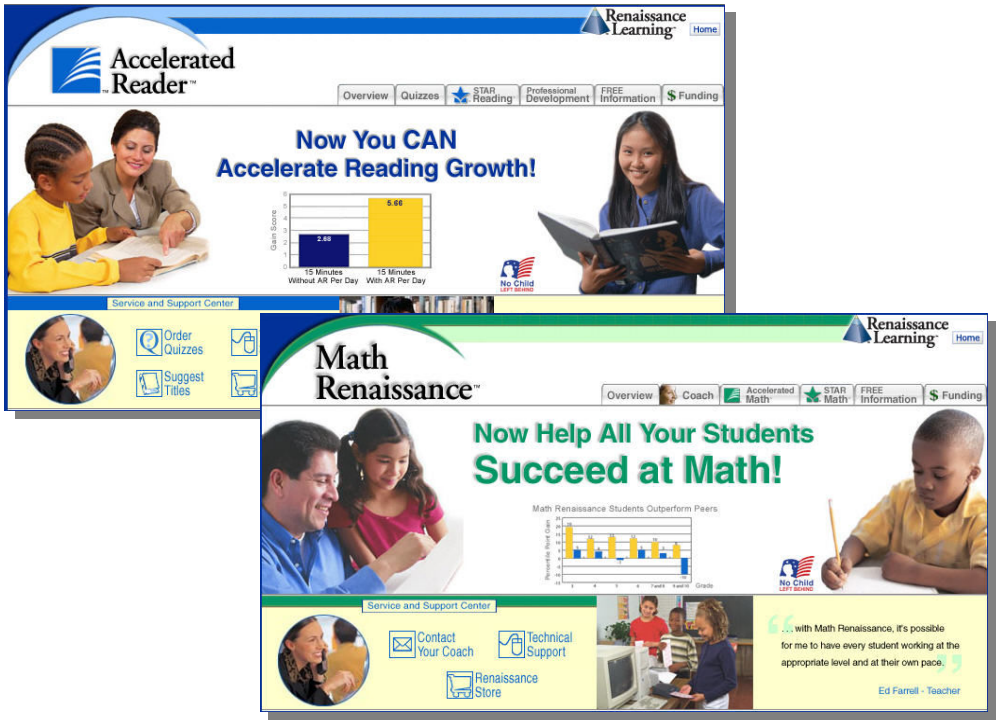
- Any type of activity that has students using educational software
  - Process Tools-provide students with a set of tools to assist them with completing a designated process such as writing, graphing, or designing.

- Examples: Geometer's Sketchpad, Author's Toolkit

Testing Software

Individualized or Tracked Testing

- Students log in to take tests
- Students performance is recorded and stored
- Performance Reports can be generated
- Example: Accelerated Reader



Generic Testing Software

- Student records are not maintained
- Student performance results can typically be printed

Checking Subject Areas

- Check subject area(s) involved with each activity.
- Check none if it was a "free time" activity without an academic focus
- If an activity is related to more than two subject areas, check all subject areas.
- Examples

  - Production Tools

  If a student begins by wiring a friendly letter, and then switches to a HyperStudio stack on the planets, mark both language arts and science.

  - Internet or a Research Tool

  These activities are often interdisciplinary, so more than one area may be marked

  - Educational Software

  Most drill and practice software is subject-specific. Some of the problem-solving software may involve more than one subject area

  - Test Software

  Most testing software is also subject-specific. Very few, if any, will involve more than one subject area

- Scale
  - Language arts
  - Mathematics
  - Science
  - Social Studies
  - Other – select if content are is not listed below, e.g., art, foreign language
  - None – select if no subject area is observed, for example if a student is playing a game that is not related to any content area

Meaningfulness of the Activities

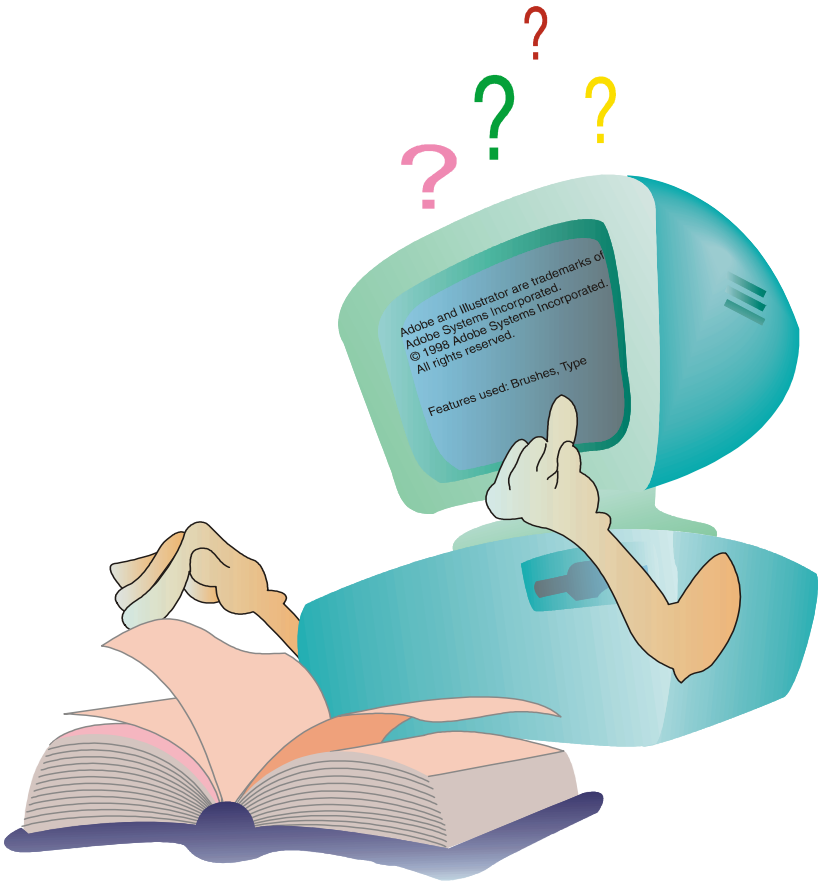
- Rate each computer activity that was observed
- Computer activity means overall assignment rather than how individual students approach the assignment.
- Example = Two rating would be given for the following class
  - At one computer, two students are collecting internet-based data to place in a spreadsheet.
  - At another computer, one student is reviewing basic math skills by using the district software to complete practice exercises
- Total number of meaningfulness should be same as the number of each computer activity

- Rating scale
  - Low level use of computers:
    Activities in general required no critical thinking, e.g., used computer applications for copying text or free-time drawing, or used educational software for drill & practice, tutorials, or games.
  - Somewhat meaningful use of computers:
    Activities in general required very little problem-solving or critical thinking and used computer applications or educational software in a limited manner.
  - Meaningful use of computers:
    Activities were problem-based, required some critical thinking skills, and some use of computer applications to locate and/or process information or some manipulation of educational software variables to reach solutions.
  - Very meaningful use of computers:
    Activities were based on meaningful problems, required critical thinking skills, and appropriate use of computer applications to locate and/or process information or manipulation of educational software variables to reach solutions.

Observation Notes

- Provide a brief description of the lesson and what the students were doing while at the computers

- This description should emphasize the content and educational meaningfulness of the computer activities rather than specific technology-related skills.



5 Data Summary

General Guidelines

After completing your SCU data collection Forms at each school, complete a SCU data summary form. This form is to summarize the information you observed at a school.

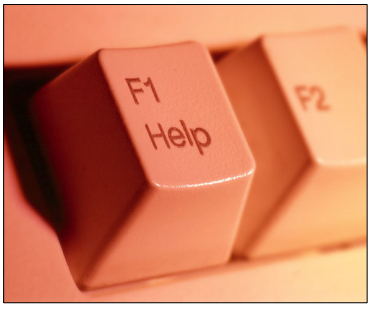
Frequency Rubric

Use this rubric to rate how often the items in "computer/digital tools" section and "frequency and type of computer activity" section.

- Not Observed
  - Never observed during observations
- Rarely
  - Observed in only one or two classes
  - Receives isolated use and/or little time in classes
  - Clearly not a prevalent/emphasized component of teaching and learning across classes
- Occasionally
  - Observed in some classes
  - Receives minimal or modest time/emphasis
  - Not a prevalent/emphasized component of teaching and learning across classes
- Frequently
  - Observed in many but not all classes
  - Receives substantive time or emphasis in classes
  - A prevalent component of teaching and learning across classes
- Extensively
  - Observed in most or all classes
  - Receives substantive time and/or emphasis in classes
  - A highly prevalent component of teaching and learning across classes

Appendix A

SCU Data Collection Form



SURVEY OF COMPUTER USE: DATA COLLECTION FORM

School _____ Observer Name _____ Time In _____ Time Out _____

Grade _____ID# _____ Observation Date _____ SCU # ____ of _____ Target YES ____ NO ____

Subject/ Activity Overview _____

Directions:
Use one sheet for each 15 minutes of observation. Use a pencil to record information. Only mark one response per item, unless noted otherwise.

Computer Configuration

1. How many computers/laptops/digital tools were **available for student use**:
   _____None – if none, skip to Question 4.
   _____Only one
   _____ 2-4
   _____ 5-10
   _____ 11 or more
2. **Most** of the computers/laptops (not digital tools) were:
   _____ Up-to-date
   _____ Aging but adequate
   _____ Outdated/limited capacity
   _____ No computers were available
3. **Most** of the computers/laptops (not digital tools) were:
   _____ Connected to the Internet
   _____ Not connected to the Internet
   _____ No computers were available
4. Did **students** use computers or digital tools during the observation?
   _____ Yes
   _____ No

If No, STOP here. If Yes, please continue with Question 5.

Computer Use

5. During this 15 minute observation, classroom computers/digital tools were used by:
   _____only a few (less than 10%) students
   _____some (about 10-50%) students
   _____most (about 51-90%) students
   _____nearly all (91-100%) students
6. **TALLY** the number of times students worked at computers or with digital tools:
   _____ # alone
   _____ # in pairs
   _____ # in small groups
7. **TALLY** the number of students whose computer literacy skills were:
   _____ Poor
   _____ Moderate
   _____ Very good
   _____ Not observed
8. **TALLY** the number of students whose keyboarding skills were:
   _____ Poor
   _____ Moderate
   _____ Very good
   _____ Not observed

Computers/Digital Tools

9. Check ALL types of computers and/or digital tools that were used during this observation:
   _____ Desktop computers
   _____ Laptop computers
   _____ Personal Digital Assistants (PDA)
   _____ Graphing Calculator
   _____ Information Processor (e.g., AlphaSmart)
   _____ Digital Accessories (e.g., cameras, scanners, probes

Observation Notes: Provide a brief description of the lesson and what the students were doing while at the computers. This description should emphasize the content and educational meaningfulness of the computer activities rather than specific technology-related skills.

_____

_____

_____

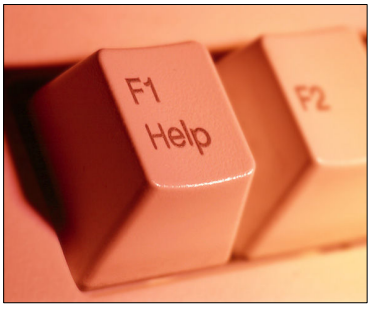
COMPUTER TOOLS USED BY STUDENTS	Number of Activities	Number of Students involved in all the activities		Meaningfulness of the activities Use tally mark to indicate rating (use rubric* at bottom of page) of each activity included in the "Number of Activities" column.				Subject Area(s) of the activities Check subject area(s) involved with each activity. Check None if it was a "free-time" activity without an academic focus.					
	Tally the number of ***different*** activities for each tool.	Tally # Students Involved	Total Students Involved	**1** Low level use of computers	**2** Somewhat meaningful use of computers	**3** Meaningful use of computers	**4** Very meaningful use of computers	Language Arts	Mathematics	Science	Social Studies	Other	None
Sample: Database	*III*	*~~IIII~~ II*	*7*	*I*	*II*			*X*		*X*			
PRODUCTION TOOLS													
Word Processing													
Database													
Spreadsheet													
Draw/Paint/Graphics													
Presentation (e.g., MS *PowerPoint™)*													
Authoring (e.g., *HyperStudio™*)													
Concept Mapping (e.g., *Inspiration™*)													
Planning (*e.g., MS Project™*)													
Other *(please describe)*													
INTERNET/RESEARCH TOOLS													
Internet Browser (e.g., *Netscape™*)													
CD Reference *(e.g., encyclopedias)*													
Communications *(e.g., email, list serves, chat rooms)*													
Other *(please describe)*													
EDUCATIONAL SOFTWARE													
Drill/Practice/Tutorial													
Problem Solving (*e.g., Oregon Trail™*, *SimCity™*)													
Process Tools (*e.g., Geometer's Sketchpad™*, *Author's Toolkit™*)													
Other (please describe)													
TESTING SOFTWARE													
Individualized/Tracked *(e.g., Accelerated Reader)*													
Generic													
Other *(please describe)*													

***RUBRIC for Meaningful Use of Computers**

1. ***Low level use of computers***: activities in general required no critical thinking, e.g., used computer applications for copying text or free-time drawing, or used educational software for drill & practice, tutorials, or games.
2. ***Somewhat meaningful use of computers***: activities in general required very little problem-solving or critical thinking and used computer applications or educational software in a limited manner.
3. ***Meaningful use of computers****:* activities were problem-based, required some critical thinking skills, and some use of computer applications to locate and/or process information or some manipulation of educational software variables to reach solutions
4. ***Very meaningful use of computers***: activities were based on meaningful problems, required critical thinking skills, and appropriate use of computer applications to locate and/or process information or manipulation of educational software variables to reach solutions.

Appendix B

SCU Data Summary Form



Survey of Computer Use (SCU©)
Data Summary Form

DIRECTIONS
USE NO. 2 PENCIL ONLY
MAKE DARK MARKS
EX
ERASE COMPLETELY TO CHANGE

School _____ Observer Name _____

Observation Date _____ SCU # ____ of _____ Observer Affiliation _____

Directions: Use information from your SCU Data Collection Forms to complete the following sections. Only mark one response per item, unless noted otherwise.

COMPUTER CONFIGURATION

1. Classrooms most frequently had the following number of computers or digital tools:
   - ◯ None
   - ◯ One
   - ◯ 2 - 4
   - ◯ 5 - 10
   - ◯ 11 or more

2. Classroom computers were most frequently:
   - ◯ Up-to-date
   - ◯ Aging but adequate
   - ◯ Outdated/limited capacity
   - ◯ No computers were observed

3. Classroom computers were most frequently:
   - ◯ Connected to the Internet
   - ◯ Not connected to the Internet
   - ◯ No computers were observed

4a. Total number of classrooms visited:

◯0 ◯0
◯1 ◯1
◯2 ◯2
◯3 ◯3
◯4 ◯4
◯5 ◯5
◯6 ◯6
◯7 ◯7
◯8 ◯8
◯9 ◯9

4b. Total number of classrooms without students using computers:

◯0 ◯0
◯1 ◯1
◯2 ◯2
◯3 ◯3
◯4 ◯4
◯5 ◯5
◯6 ◯6
◯7 ◯7
◯8 ◯8
◯9 ◯9

COMPUTER USE

5. Classroom computers or digital tools were most frequently used by:
   - ◯ Few (less than 10%) students
   - ◯ Some (about 10-50%) students
   - ◯ Most (about 51-90%) students
   - ◯ Nearly all (91-100%) students
   - ◯ Students did not use computers

6. Students most frequently worked with computers or digital tools:
   - ◯ Alone
   - ◯ In pairs
   - ◯ In small groups
   - ◯ Students did not use computers

7. Student computer literacy skills were most frequently:
   - ◯ Poor
   - ◯ Moderate
   - ◯ Very good
   - ◯ Not observed

8. Student keyboarding skills were most frequently:
   - ◯ Poor
   - ◯ Moderate
   - ◯ Very good
   - ◯ Not observed

FREQUENCY RUBRIC

Use the rubric below to rate how often the items in the following sections were observed.

(0) Not Observed	Never seen during observation
(1) Rarely	Observed in only one or two classes that had students using computers or digital tools
(2) Occasionally	Observed in some classes that had students using computers or digital tools
(3) Frequently	Observed in many classes that had students using computers or digital tools
(4) Extensively	Observed in most or all classes that had students using computers or digital tools

COMPUTERS/DIGITAL TOOLS

9. Indicate how frequently students used the following computers and/or digital tools

	Not Observed	Rarely	Occasionally	Frequently	Extensively
Desktop Computers	◯0	◯1	◯2	◯3	◯4
Laptop Computers	◯0	◯1	◯2	◯3	◯4
Personal Data Assistants (PDA)	◯0	◯1	◯2	◯3	◯4
Graphing Calculator	◯0	◯1	◯2	◯3	◯4
Information Processor (e.g., Alphaboard)	◯0	◯1	◯2	◯3	◯4
Digital Accessories (e.g., camera, scanner, probes)	◯0	◯1	◯2	◯3	◯4

Survey of Computer Use: Data Summary Form

FREQUENCY AND TYPE OF COMPUTER ACTIVITY

10. Indicate how frequently students were engaged in the following types of computer activities.

	Not Observed	Rarely	Occasionally	Frequently	Extensively
Production Tools Used by Students					
Word Processing	0	1	2	3	4
Database	0	1	2	3	4
Spreadsheet	0	1	2	3	4
Draw/Paint/Graphics/Photo-imaging	0	1	2	3	4
Presentation (e.g., MS PowerPoint)	0	1	2	3	4
Authoring (e.g., HyperStudio)	0	1	2	3	4
Concept Mapping (e.g., Inspiration)	0	1	2	3	4
Planning (e.g., MS Project)	0	1	2	3	4
Other (please describe) _____	0	1	2	3	4

Indicate all subject areas involved with the use of Production Tools:

☐ Language Arts ☐ Mathematics ☐ Science ☐ Social Studies ☐ Other ☐ None

Internet/Research Tools Used by Students					
Internet Browser (e.g., Netscape)	0	1	2	3	4
CD Reference (encyclopedias, etc.)	0	1	2	3	4
Communications	0	1	2	3	4
Other (please describe) _____	0	1	2	3	4

Indicate all subject areas involved with the use of Internet/Research Tools:

☐ Language Arts ☐ Mathematics ☐ Science ☐ Social Studies ☐ Other ☐ None

Educational Software Used by Students					
Drill/Practice/Tutorial	0	1	2	3	4
Problem Solving (Oregon Trail, SimCity, etc.)	0	1	2	3	4
Process Tools (Geometer's Sketchpad, etc.)	0	1	2	3	4
Other (please describe) _____	0	1	2	3	4

Indicate all subject areas involved with the use of Educational Software:

☐ Language Arts ☐ Mathematics ☐ Science ☐ Social Studies ☐ Other ☐ None

Testing Software					
Individualized/Tracked (e.g., Accelerated Reader)	0	1	2	3	4
Generic	0	1	2	3	4
Other (please describe) _____	0	1	2	3	4

Indicate all subject areas involved with the use of Testing Software:

☐ Language Arts ☐ Mathematics ☐ Science ☐ Social Studies ☐ Other ☐ None

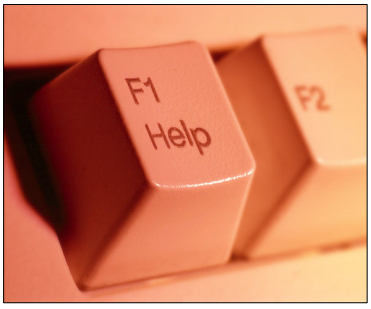
Overall Meaningful Use of Computers

Directions: Indicate how frequently the following levels of computer activity were observed.

	Not Observed	Rarely	Occasionally	Frequently	Extensively
Low level use of computers: Activities in general required no critical thinking, e.g., used computer applications for copying text or free-time drawing, or used educational software for drill & practice, tutorials, or games.	0	1	2	3	4
Somewhat meaningful use of computers: Activities in general required very little problem-solving or critical thinking and used computer applications or educational software in a limited manner.	0	1	2	3	4
Meaningful use of computers: Activities were problem-based, required some critical thinking skills, and some use of computer applications to locate and/or process information or some manipulation of educational software variables to reach solutions.	0	1	2	3	4
Very meaningful use of computers: Activities were based on meaningful problems, required critical thinking skills, and appropriate use of computer applications to locate and/or process information or manipulation of educational software variables to reach solutions.	0	1	2	3	4

Appendix C

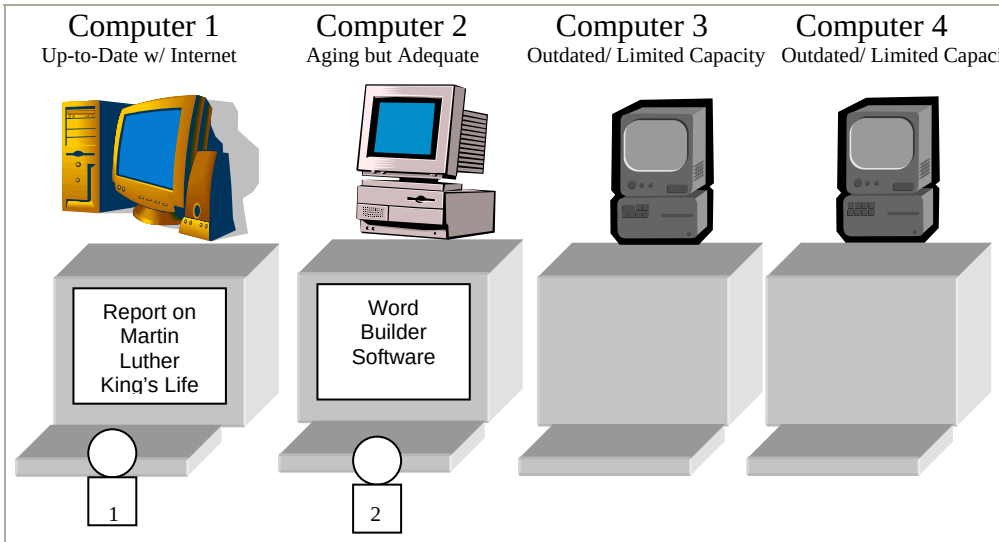
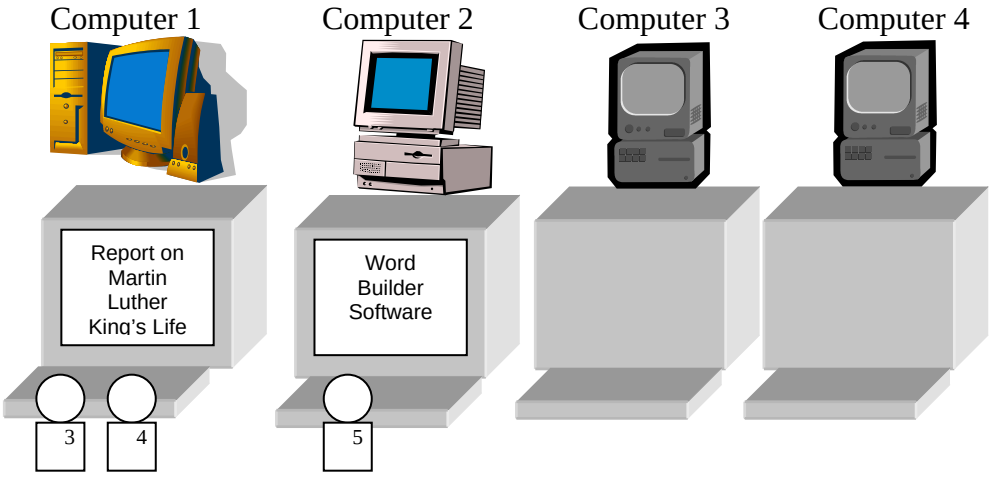
SCU Practice Activities



SCU Practice Activities

Activity #1

Directions: Use the following graphics and information to complete an SCU Data Collection Form-

Classroom	Classroom # 1 – 7th Grade- 22 Students ▪ Number and Type of Computer ▪ Number of Students per Computer ▪ Computer Activity Chart
Time:	**10:00-10:10**
Computer Type/ Activity/ Number of Students	
Time:	**10:10-10:15**
Computer Type/ Activity/ Number of Students	

Activity #1 – Continued

Student Activities

Use these descriptions to gather information regarding computer literacy and keyboarding skill, computer tools used by students, and the meaningfulness of the computer activity.

Student 1- Searches the Internet with ease for resources related to Martin Luther King's Life. Student uses multiple search engines and types in key search terms.

Student 2- Did not use any computer skills except the mouse to select answers in the Word Builder Software. Student practicing vocabulary skills by matching words to definitions.

Student 3- Student is easily typing text into a Word Processor program. Student opens Netscape and uses copy and paste functions to insert URL's in their Martin Luther King report directly from the Internet site. Student knows how to save the report to disk, how to center and change the font size of the title, and how to print a draft copy.

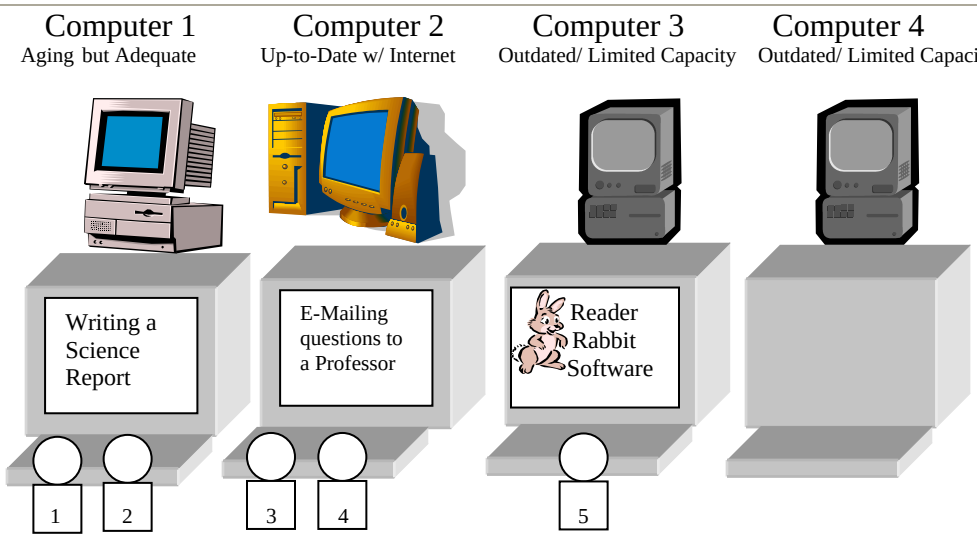
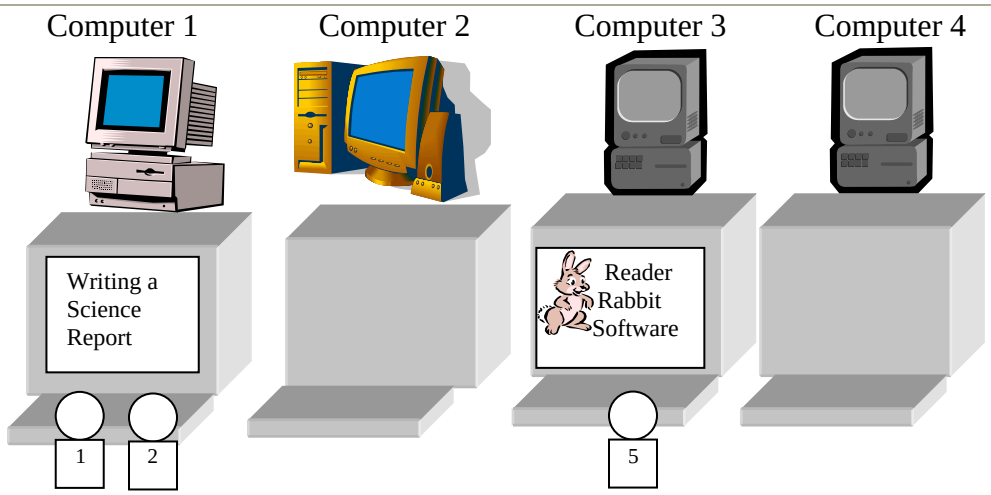
Student 4- Student assists Student 3 by suggesting which URL to copy. Student also reads text aloud that should be typed into the paper.

Student 5- Did not use any computer skills except the mouse to select answers in Word Builder software. Student practicing vocabulary skills by matching words to definitions.

SCU Practice Activities

Activity #2

Directions: Use the following graphics and information to complete an SCU Data Collection Form

Classroom	Classroom # 2 – 2nd Grade- 26 Students ▪ Number and Type of Computer ▪ Number of Students per Computer ▪ Computer Activity Chart
Time:	**8:00-8:10**
Computer Type/ Activity/ Number of Students	
Time:	**8:10-8:15**
Computer Type/ Activity/ Number of Students	

Activity #2 – Continued

Student Activities

Use these descriptions to gather information regarding computer literacy and keyboarding skill, computer tools used by students, and the meaningfulness of the computer activity.

Student 1- Students 1 & 2 are working together to write a descriptive paragraph on an endangered species and including reasons why the class should raise money to save the species. Student 1 reads the text to be entered from their handwritten report, but does not use the computer.

Student 2- Types the text slowly while looking for the correct keys.

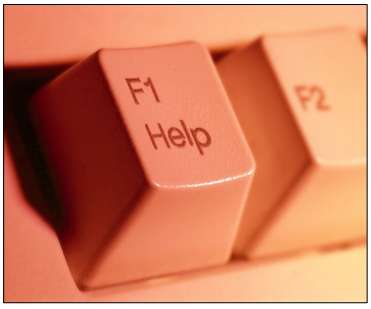
Student 3- Students 3 & 4 are e-mailing a professor and asking three questions that they generated regarding their endangered species. Student 3 is typing the e-mail easily and using address book features. Student sends the e-mail successfully.

Student 4- Student does not touch the computer but assists Student 3 by saying, “click here” and “enter the address here.”

Student 5- Student is practicing vocabulary skills. Student did not use any computer skills except the mouse to select answers in Reader Rabbit software.

Appendix D

SCU Practice Answer Sheets



Practice Exercise
ANSWER SHEET #1

SURVEY OF COMPUTER USE: DATA COLLECTION FORM

School SCU Middle School Observer Name SCU Researcher #1 Time In 10:00 Time Out 10:15

Grade 7th ID# _____ Observation Date 11/5/04 SCU # 1 of 2 Target YES ____ NO √

Subject/ Activity Overview Social Studies Class

Directions:
Use one sheet for each 15 minutes of observation. Use a pencil to record information. Only mark one response per item, unless noted otherwise.

Computer Configuration

1. How many computers/laptops/digital tools were **available for student use**:
   _____None – if none, skip to Question 4.
   ___√___Only one
   _____ 2-4
   _____ 5-10
   _____ 11 or more
2. **Most** of the computers/laptops (not digital tools) were:
   _____ Up-to-date
   ___√___ Aging but adequate
   _____ Outdated/limited capacity
   _____ No computers were available
3. **Most** of the computers/laptops (not digital tools) were:
   ___√___ Connected to the Internet
   _____ Not connected to the Internet
   _____ No computers were available
4. Did **students** use computers or digital tools during the observation?
   ___√___ Yes
   _____ No

If No, STOP here. If Yes, please continue with Question 5.

Computer Use

5. During this 15 minute observation, classroom computers/digital tools were used by:
   ___√___only a few (less than 10%) students
   _____some (about 10-50%) students
   _____most (about 51-90%) students
   _____nearly all (91-100%) students
6. **TALLY** the number of times students worked at computers or with digital tools:
   ///_____ # alone
   /_____ # in pairs
   _____ # in small groups
7. **TALLY** the number of students whose computer literacy skills were:
   _____ Poor
   _____ Moderate
   //_____ Very good
   ///_____ Not observed
8. **TALLY** the number of students whose keyboarding skills were:
   _____ Poor
   _____ Moderate
   //_____ Very good
   ///_____ Not observed

Computers/Digital Tools

9. Check ALL types of computers and/or digital tools that were used during this observation:
   ___√___ Desktop computers
   _____ Laptop computers
   _____ Personal Digital Assistants (PDA)
   _____ Graphing Calculator
   _____ Information Processor (e.g., AlphaSmart)
   _____ Digital Accessories (e.g., cameras, scanners, probes

Observation Notes: Provide a brief description of the lesson and what the students were doing while at the computers. This description should emphasize the content and educational meaningfulness of the computer activities rather than specific technology-related skills.

One student is typing a report on MLK's role in the Civil Rights movement. Another student gathers information from multiple websites. This activity required the student to sort through and identify the most important information. Students using word builder software are matching words to definitions.

Answer Sheet #1 **COMPUTER TOOLS USED BY STUDENTS**	**Number of Activities** Tally the number of ***different*** activities for each tool.	**Number of Students involved in all the activities** Tally # Students Involved	Total Students Involved	**Meaningfulness of the activities** Use tally mark to indicate rating (use rubric* at bottom of page) of each activity included in the "Number of Activities" column. **1** Low level use of computers	**2** Somewhat meaningful use of computers	**3** Meaningful use of computers	**4** Very meaningful use of computers	**Subject Area(s) of the activities** Check subject area(s) involved with each activity. Check None if it was a "free-time" activity without an academic focus. Language Arts	Mathematics	Science	Social Studies	Other	None
Sample: Database	*III*	*~~IIII~~ II*	*7*	*I*	*II*			*X*		*X*			
PRODUCTION TOOLS													
Word Processing	*I* (MLK Report)	*II*	2			*I* (MLK Report)		***X***			***X***		
Database													
Spreadsheet													
Draw/Paint/Graphics													
Presentation (e.g., MS *PowerPoint*™)													
Authoring (e.g., *HyperStudio*™)													
Concept Mapping (e.g., *Inspiration*™)													
Planning (*e.g., MS Project*™)													
Other *(please describe)*													
INTERNET/RESEARCH TOOLS													
Internet Browser (e.g., *Netscape*™)	*I* (MLK Search)	*III*	3			*I* (MLK Search)					***X***		
CD Reference *(e.g., encyclopedias)*													
Communications *(e.g., email, list serves, chat rooms)*													
Other *(please describe)*													
EDUCATIONAL SOFTWARE													
Drill/Practice/Tutorial	*I* (word builder)	*II*	2	*I* (word builder)				***X***					
Problem Solving (*e.g., Oregon Trail*™, *SimCity*™)													
Process Tools (*e.g., Geometer's Sketchpad*™, *Author's Toolkit*™)													
Other (please describe)													
TESTING SOFTWARE													
Individualized/Tracked *(e.g., Accelerated Reader)*													
Generic													
Other *(please describe)*													

***RUBRIC for Meaningful Use of Computers**

1. ***Low level use of computers***: activities in general required no critical thinking, e.g., used computer applications for copying text or free-time drawing, or used educational software for drill & practice, tutorials, or games.
2. ***Somewhat meaningful use of computers***: activities in general required very little problem-solving or critical thinking and used computer applications or educational software in a limited manner.
3. ***Meaningful use of computers:*** activities were problem-based, required some critical thinking skills, and some use of computer applications to locate and/or process information or some manipulation of educational software variables to reach solutions
4. ***Very meaningful use of computers***: activities were based on meaningful problems, required critical thinking skills, and appropriate use of computer applications to locate and/or process information or manipulation of educational software variables to reach solutions.

Practice Exercise
ANSWER SHEET #2

SURVEY OF COMPUTER USE: DATA COLLECTION FORM

School SCU Elementary Observer Name SCU Researcher #1 Time In 8:00 Time Out 8:15

Grade 2nd ID# _____ Observation Date 11/5/04 SCU # 2 of 2 Target YES ____ NO √

Subject/ Activity Overview Science Class

Directions:
Use one sheet for each 15 minutes of observation. Use a pencil to record information. Only mark one response per item, unless noted otherwise.

Computer Configuration

1. How many computers/laptops/digital tools were **available for student use**:
   - _____None – if none, skip to Question 4.
   - ___√___Only one
   - _____ 2-4
   - _____ 5-10
   - _____ 11 or more
2. **Most** of the computers/laptops (not digital tools) were:
   - _____ Up-to-date
   - ___√___ Aging but adequate
   - ___√___ Outdated/limited capacity
   - _____ No computers were available
3. **Most** of the computers/laptops (not digital tools) were:
   - ___√___ Connected to the Internet
   - ___√___ Not connected to the Internet
   - _____ No computers were available
4. Did **students** use computers or digital tools during the observation?
   - ___√___ Yes
   - _____ No

If No, STOP here. If Yes, please continue with Question 5.

Computer Use

5. During this 15 minute observation, classroom computers/digital tools were used by:
   - ___√___only a few (less than 10%) students
   - _____some (about 10-50%) students
   - _____most (about 51-90%) students
   - _____nearly all (91-100%) students
6. **TALLY** the number of times students worked at computers or with digital tools:
   - /_____ # alone
   - //_____ # in pairs
   - _____ # in small groups
7. **TALLY** the number of students whose computer literacy skills were:
   - /_____ Poor
   - _____ Moderate
   - /_____ Very good
   - ///_____ Not observed
8. **TALLY** the number of students whose keyboarding skills were:
   - /_____ Poor
   - _____ Moderate
   - /_____ Very good
   - ///_____ Not observed

Computers/Digital Tools

9. Check ALL types of computers and/or digital tools that were used during this observation:
   - ___√___ Desktop computers
   - _____ Laptop computers
   - _____ Personal Digital Assistants (PDA)
   - _____ Graphing Calculator
   - _____ Information Processor (e.g., AlphaSmart)
   - _____ Digital Accessories (e.g., cameras, scanners, probes

Observation Notes: Provide a brief description of the lesson and what the students were doing while at the computers. This description should emphasize the content and educational meaningfulness of the computer activities rather than specific technology-related skills.

The students send an email to a professor. Students are asking the professor questions about endangered species. Questions were generated by the students. Two students typing a report about their endangered species. The first student reads the text out loud, while the second student types the text slowly. Student struggles to find each key. One student using Reader Rabbit software to practice vocabulary skills.

COMPUTER TOOLS USED BY STUDENTS	Number of Activities	Number of Students involved in all the activities		Meaningfulness of the activities Use tally mark to indicate rating (use rubric* at bottom of page) of each activity included in the "Number of Activities" column.				Subject Area(s) of the activities Check subject area(s) involved with each activity. Check None if it was a "free-time" activity without an academic focus.					
	Tally the number of ***different*** activities for each tool.	Tally # Students Involved	Total Students Involved	**1** Low level use of computers	**2** Somewhat meaningful use of computers	**3** Meaningful use of computers	**4** Very meaningful use of computers	Language Arts	Mathematics	Science	Social Studies	Other	None
Sample: Database	*III*	*~~IIII~~ II*	*7*	*I*	*II*			*X*		*X*			
PRODUCTION TOOLS													
Word Processing	***I* (science report)**	***II***	2		***I*** (science report)					***X***			
Database													
Spreadsheet													
Draw/Paint/Graphics													
Presentation (e.g., MS *PowerPoint™)*													
Authoring (e.g., *HyperStudio™*)													
Concept Mapping (e.g., *Inspiration™*)													
Planning (*e.g., MS Project™*)													
Other *(please describe)*													
INTERNET/RESEARCH TOOLS													
Internet Browser (e.g., *Netscape™*)													
CD Reference *(e.g., encyclopedias)*													
Communications *(e.g., email, list serves, chat rooms)*	***I* (email professor)**	***II***	2		***I* (email)**					***X***			
Other *(please describe)*													
EDUCATIONAL SOFTWARE													
Drill/Practice/Tutorial	***I* (word builder)**	***I***	1	***I* (word bldr)**				***X***					
Problem Solving (*e.g., Oregon Trail™, SimCity™*)													
Process Tools (*e.g., Geometer's Sketchpad™, Author's Toolkit™*)													
Other (please describe)													
TESTING SOFTWARE													
Individualized/Tracked *(e.g., Accelerated Reader)*													
Generic													
Other *(please describe)*													

***RUBRIC for Meaningful Use of Computers**

1. ***Low level use of computers***: activities in general required no critical thinking, e.g., used computer applications for copying text or free-time drawing, or used educational software for drill & practice, tutorials, or games.
2. ***Somewhat meaningful use of computers***: activities in general required very little problem-solving or critical thinking and used computer applications or educational software in a limited manner.
3. ***Meaningful use of computers****:* activities were problem-based, required some critical thinking skills, and some use of computer applications to locate and/or process information or some manipulation of educational software variables to reach solutions
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