Table of Contents

Table of Contents *(cont.)*

How to Use This Book

Technology is a tool that when integrated into the curriculum can motivate students, encourage higher order thinking, and enhance learning. 32 *Quick and Fun Content Area Computer Activities* contains a variety of activities across the subject areas that seamlessly integrate technology into the classroom. Whether the subject you are teaching is language arts, math, science, or social studies, the easy to follow computer activities can boost students understanding and learning of what is already being taught in the classroom.

The activities in this book range from using word-processing programs, slide show programs, painting programs, desktop publishing, and spreadsheets to using the Internet. While the activities are not software specific, there are some software specific templates available for many of the activities. The templates efficiently maximize students' time at the computer and allow for students to focus on the main objectives of each activity.

Each activity can be done in a 45–60 minute class period. The activities are content based and aligned to content and technology standards, making them easy to fit into what is already being taught.

The book is divided into the following four subject area sections:

- Language Arts Activities
- Math Activities
- Science Activities
- Social Studies Activities

Each of these four sections contains a summary page with a description of the activities. There are eight activities in each section. Each activity contains a two-page teacher section. The teacher section contains clear objectives, materials needed to complete the activity, a step-by-step procedure, an assessment, and one or more extension activities that continue the learning. Content and technology standards are listed in each activity as well as in the Correlations to ISTE and McREL section on pages 10–15. In addition, there is a two-page student section that includes easy to follow step-by-step directions for the student to complete the activity on the computer and a sample of the activity that can also be accessed on the CD-ROM.

The accompanying CD-ROM contains templates, activity samples, assessment rubrics, and appendices. You can reference the CD-ROM Index on pages 159 and 160. Note: The templates, activity samples, or assessment rubrics were created using one of the following computer software (minimum software version needed is noted in parenthesis):

- *Microsoft Word* (1998 or above)
- *Microsoft Excel* (1998 or above)
- *Microsoft PowerPoint* (1998 or above)
- *KidPix Deluxe* (version 3.0 or above)

Research on Using Technology in the Classroom

There has been a lot of research on the importance of integrating technology into the K–12 curriculum. The research has shown positive correlations throughout the subject areas on how technology can improve students' work. It has been found that aligning technology with clear objectives and content standards allows for most favorable student learning. There has also been evidence that technology can improve students' higher-order thinking. Technology has also shown favorable results on improving learning with special needs students.

Subject Areas

In all the subject areas, encouraging results have been found when technology is used in the classroom setting. In the study *The Effectiveness of Technology in Schools: A Summary of Recent Research* (1996), it is reported that "…educational technology has demonstrated a significant positive effect on achievement. Positive effects have been found for all major subject areas, in preschool through higher education, and for both regular education and special needs students."

In language arts and social studies, teachers found that when students completed multimedia projects they had increased knowledge in research skills, ability to apply learning to real world situations, organizational skills and more interest in the topic. (Cradler and Cradler 1999). Allen Glenn and Don Rawitsch (1984) suggested reasons to use the computer in the social studies classroom: "…five ways computers can be used in social studies; i.e., as a method of delivering content, as a tool for retrieving and analyzing information, as an example of technology use in society, as a tool for developing thinking skills, and as a classroom management aid." Wendy D. Freiwald (1997) reviewed of the literature of computers in elementary social studies classrooms and concluded that there was advantageous learning when technology was integrated into the social studies curriculum.

There have been encouraging connections between the use of technology and math and science. Harold Wenglinsky's (1998) research on the effectiveness of technology in teaching math found that computers can raise student achievement and even the school climate. He found that students whose teachers used computers for math applications instead of drill and practice scored higher then students whose teachers did not. He also concluded that teachers who used computers for higher learning activities, opposed to drill and practice, correlated to the teachers and students having better attendance, less tardiness, and a higher morale. In her research on how technology changes the teacher-student relationship, Beth McGrath (1998) concluded that when computer technology is incorporated into the math and science curriculum students become more motivated; cooperative, collaborative, and communicative; are persistent in problem solving; and have interdisciplinary opportunities. Kathy Norman and Katherine Hayden (2002) demonstrated in their research that when science teaching, writing, and the use of technology is integrated in the K–12 classroom there is optimum learning.

Research has shown that writing on the computer in all the subject areas is an effective tool. Results of the studies on writing instruction in the article "Technology & Literacy: Is There a Positive Relationship?" (1999) indicated that the technology allowed students to focus on the content rather than the mechanics. The studies also found that students wrote more and developed better essays. Colette Daiute's (1985) studies of student writers substantiated these findings and indicated that students who use a word processor write more than those who use pen and pencil.

Activity 4

Science

Whose Mother Am I?

Objectives

- Students list at least three ways in which four plants and animals look and act like their parents.
- Students create a five-slide show (title slide and four content slides) with animation, text, and pictures to describe how adult and young plants and animals share traits and characteristics.

Materials

- picture file of plants and animals
- "Whose Mother Am I?" Planning Sheet from the Resource CD, one copy per student (file name *s4mther.doc*)
- encyclopedias, information books, or other resources about plants and animals
- multimedia software such as *Microsoft PowerPoint*
- electronic presentation equipment such as an LCD projector
- "Whose Mother Am I?" Sample (file name *s4samp.ppt*)
- "Whose Mother Am I?" Assessment Rubric from the Resource CD (file name *s4rbrc.doc*)

Content Standard (McREL)
Students know that many characteristics of plants and animals are inherited from their parents and other characteristics result from an individual's interactions with the environment.

Technology Standards (ISTE)
Students use keyboards and other common input and output devices efficiently and effectively.

Students use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.

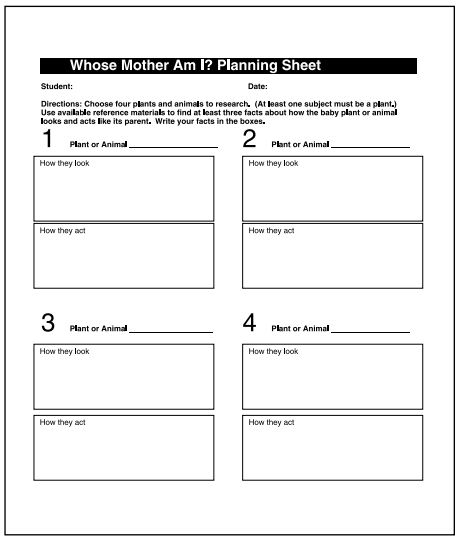
Students use technology tools for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.

Procedure

1. Show a picture of a plant or animal. Ask the students what the plant or animal's parent looked like. How do they know? What traits or characteristics can they list that are true of both the young plant or animal and its parent?
2. Explain to students that they will create a five-slide presentation with bulleted clues about a parent-child plant or animal. They should plan their work so they are ready when they arrive at the computer.

Whose Mother Am I? *(cont.)*

3. Distribute a copy of "Whose Mother Am I?" Planning Sheet from the Resource CD to each student (file name *s4mther.doc*). Instruct the students to list four plants and animals to research. Then let them use encyclopedias, information books, online resources, or other reference materials to list at least three facts describing how the baby plants or animals look and act like their parents. For example, zebra babies have black and white stripes like their parents. Allow time for the students to conduct their research and plan the information for their slides.



Whose Mother Am I? Planning Sheet

Student: Date:

Directions: Choose four plants and animals to research. (At least one subject must be a plant.) Use available reference materials to find at least three facts about how the baby plant or animal looks and acts like its parent. Write your facts in the boxes.

1 Plant or Animal _____ 2 Plant or Animal _____

How they look | How they look

How they act | How they act

3 Plant or Animal _____ 4 Plant or Animal _____

How they look | How they look

How they act | How they act

4. Allow time for the students to create their slide show presentations on the computer. A sample (file name *s4samp.ppt*) is provided.

5. Connect electronic presentation equipment, such as an LCD projector, to the computer. Access each student's slide show. Have the students click to reveal and read the clues one by one but stop before they click to reveal the picture. The class guesses the plant or animal. Then, the student clicks to reveal whether the class was correct.

Assessment

Use the "Whose Mother Am I?" Assessment Rubric (file name *s4rbrc.doc*) available on the Resource CD to evaluate each student's presentation. Each content slide should state at least three facts related to the animal or plant. Students should have included at least one plant slide. The bulleted information and pictures should be animated to appear in the presentation on a mouse click. Students should have neat and accurate work.

Whose Mother Am I? Assessment Rubric

Student Name		Points Possible	Points Earned
Title Slide	Spelled correctly	2	
Slide 1	Heading stated correctly	2	
	Contains accurate facts	10	
	Contains at least three bullets of information	10	
	Picture or clipart relates to topic	2	
Slide 2	Heading stated correctly	2	
	Contains accurate facts	10	
	Contains at least three bullets of information	10	
	Picture or clip art relates to topic	2	
Slide 3	Heading stated correctly	2	
	Contains accurate facts	10	
	Contains at least three bullets of information	10	
	Picture or clip art relates to topic	2	
Slide 4	Heading stated correctly	2	
	Contains accurate facts	10	
	Contains at least three bullets of information	10	
	Picture or clip art relates to topic	2	
Overall Presentation	General appearance; text is easy to read; animation works correctly	2	
	TOTAL	100	

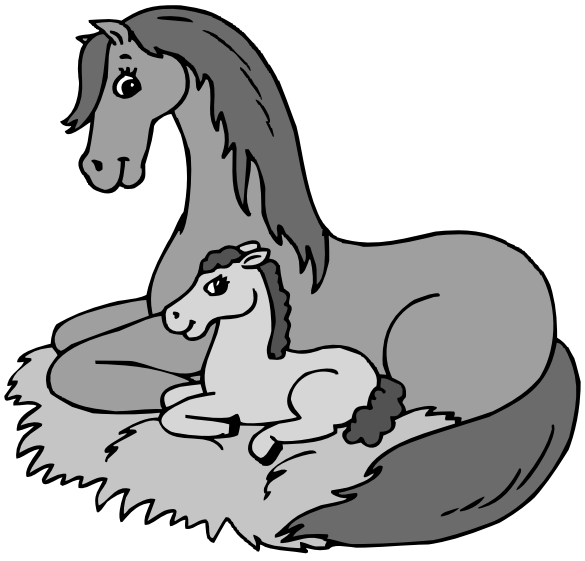
Extension

Invite a zoo worker into the class to discuss with students how they work with baby animals. Have the students assemble a list of questions ahead of time related to characteristics and traits that are evident in both the parent animal and the young animal.

Whose Mother Am I? *(cont.)*

Directions for Students

1. Open a multimedia program such as *Microsoft PowerPoint*. Make a slide show presentation describing plants and animals and how they look and act like their parents. Your presentation will be five slides long, including a title slide and at least one plant.
2. First choose a slide layout. Decide on the background you like. *PowerPoint* will apply this design to all your slides.
3. Make the first slide your title slide. In the top box, type "Whose Mother Am I?" In the smaller box, type your name. (The example on page 105 does not show the title slide.)
4. From the **Insert** menu, choose **New Slide**. Choose the slide layout that has a heading, text on one side, and a picture on the other. (Another way to change the slide layout is to use the **Format…Slide Layout** option from the toolbar.) In the heading at the top, type "Whose Mother Am I?" For each bullet, type how the plant or animal looks and acts like its parent. You should have at least three bullets. Use the completed planning sheet to type the bullets for each slide.
5. Click on the space to insert clip art. Type the name of your plant or animal to search for clip art. When you find a picture you like, insert it into your page.
6. Click and drag to highlight the first bulleted list. From the **Slide Show** menu, choose **Custom Animation**. Add an effect to the words' entrance that will start on a click. Do this for each bullet. Be sure to do each line in order from top to bottom. Then click once on the clip art to add an entrance effect to it, too. Your slides should show the order in which they will enter the slide show.
7. Follow Steps 4, 5, and 6 for three more slides. Your final presentation should have five slides altogether: a title slide, and four fact slides including at least one plant.
8. Run through your slide show once. Go to **Slide Show…View Show**. Click the mouse and watch your words and pictures come in on cue!
9. Save your presentation. From the **File** menu, choose **Save As**. Name your document with the words *whose mother* and your initials. (Ex: whosemotherjj)



Whose Mother Am I? *(cont.)*

Sample

Whose Mother Am I?

- I have mucous to keep me moist.
- I have no legs.
- I live in the ground.
- I help keep soil fertilized.
- Fish and birds think I am delicious.
- I eat leaves.

Whose Mother Am I?

- I have six legs.
- I pollinate flowers.
- I have black and yellow stripes.
- I live in a colony with a Queen, Drone, and Worker.

Whose Mother Am I?

- I have a trunk.
- I have long, thin needles.
- I live in a forest.

Whose Mother Am I?

- I have brown eyes.
- I have white fur as a baby that turns brown or gray as an adult.
- I move through the water with my back flippers.
- I live in all oceans but am best known as an arctic animal.