Microsoft®
productivity *in the*
classroom

A cross-curriculum workbook to help you integrate computer applications into every subject you teach

Microsoft Office 97/98 • Word 97/98 • PowerPoint 97/98 • Excel 97/98 • Access 97

Encarta 98 Encyclopedia Deluxe • FrontPage 98 • Encarta 99 Virtual Globe

Internet Explorer 4.0 • Publisher 98 • Encarta 99 Encyclopedia Deluxe

Word 97/98 • PowerPoint 97/98 • Microsoft Excel 97/98 • Access 97 • Bookshelf 99

presented by
Microsoft

SCHOLASTIC

http://www.microsoft.com/education/curric/activity

From the Editors of
Instructor/Electronic Learning in Your Classroom

Dear Technology Leader:

Want to make this school year a smashing success? Put this set of outstanding technology-infused lesson plans into your teachers' hands – and then step out of the way.

Drawing on the exemplary work of technology-using classroom educators across the country and themed especially for Fall and Winter, this fourth *Microsoft Productivity in the Classroom* workbook is designed to make the most of your school's Windows or Power Macintosh computers. The ten lesson plans in this workbook were designed for use with both *Microsoft® Office 97 Professional Edition* (*Microsoft® Word 97, Microsoft® Excel 97, Microsoft® PowerPoint® 97 and Microsoft® Access 97*) for Windows **and** the new *Microsoft® Office 98 Macintosh Edition* (*Microsoft® Word 98, Microsoft® Excel 98, Microsoft® PowerPoint® 98*). Many of the lessons also integrate other Windows products, such as *Microsoft® Publisher 98*, *Microsoft® FrontPage 98*, and *Microsoft® Encarta Encyclopedia Deluxe,* while taking advantage of online resources with *Microsoft® Internet Explorer 4.0.* All lessons include step-by-step instructions for using software effectively while weaving it into the curriculum.

Developed by the editors of Scholastic's *Instructor* and *Electronic Learning in Your Classroom* in partnership with Microsoft, this workbook can be an effective tool for staff technology training as well as an instant idea bank for classroom teachers. We hope that it energizes your curriculum this season and inspires your teachers to try their own technology-powered projects all year long.

Sincerely,

Mickey Revenaugh
for *Instructor/Electronic Learning in Your Classroom*

P.S. More free resources to help teachers use technology are available at:

www.microsoft.com/education/k12/training.htm

Table of Contents

productivity *in the*
classroom

productivity in the
classroom
Lessons at-a-Glance

LESSON	GRADE LEVELS	TIME ALLOTTED
A IS FOR AARDVARK	Primary	Two class periods to start, ongoing as needed
THE YEAR OF THE RABBIT	Primary/Intermediate	Five class periods
NO FLAKES LIKE SNOWFLAKES!	Intermediate	One to two class periods
WEIGHTS AND MEASURES	Intermediate	Two to three class periods
DO VAMPIRES REALLY EXIST?	Intermediate	One class period
EXTREME WEATHER!	Middle School	Three to five class periods
OUR BRILLIANT CAREERS	Middle School/High School	Two to three class periods, and ongoing
THE ART AND SCIENCE OF FRACTALS	Middle School/High School	Two to three class periods
LITERARY SCAVENGER HUNT	High School	Two to three class periods
DESERT STORM, REVISITED	High School	Three class periods

Find more great lessons at: www.microsoft.com/education/curric/activity
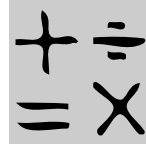
	Language Arts	Social Studies	Geography	Math	Science	Art

SOFTWARE NEEDED	PAGE	CURRICULUM CONNECTION
Microsoft Word 97/98	4	Language Arts, Art
Microsoft Internet Explorer 4.0 Microsoft Encarta 98/99 Encyclopedia Deluxe Microsoft Word 97/98 Microsoft Publisher 98	7	Language Arts, Social Studies, Science
Microsoft Internet Explorer 4.0 Microsoft Paint (Windows 95/98 Accessory) Microsoft PowerPoint 97/98	11	Math, Science, Art
Microsoft Excel 97/98	15	Math, Science
Microsoft Internet Explorer 4.0 Microsoft Excel 97/98	18	Math, Social Studies
Microsoft Encarta 98/99 Encyclopedia Deluxe Microsoft Internet Explorer 4.0 Microsoft Word 97/98 Microsoft Front Page 98	21	Science, Social Studies, Geography
Microsoft Internet Explorer 4.0 Microsoft Access 97/98	24	Social Studies, Language Arts
Microsoft Encarta 98/99 Encyclopedia Deluxe Microsoft Internet Explorer 4.0 Microsoft Publisher 98	27	Math, Art
Microsoft Word 97/98 Microsoft Internet Explorer 4.0 Microsoft PowerPoint 97/98	31	Language Arts
Microsoft Encarta 98/99 Encyclopedia Deluxe Microsoft Internet Explorer 4.0 Microsoft PowerPoint 97/98	34	Social Studies

A IS FOR AARDVARK

Teacher Guide

SUMMARY

To master the art of reading, kids should collect words the way they collect baseball cards or Beanie Babies. Few learning tools are as powerful as a personal dictionary that a child can create, add to, and use as needed. This activity will help you start an electronic dictionary for your whole class.

OBJECTIVES

♦ To build children's vocabulary and spelling skills

♦ To reinforce reading concepts

♦ To provide fun practice using technology

PREREQUISITE SKILLS

♦ Basic introduction to *Microsoft Word 97/98,* including opening and saving files

♦ Ability to use clip art

TIME ALLOTTED

Two class periods to get started; ongoing as needed

HOW TO BEGIN

1. To organize your students' work, you'll want to create a set of folders on a server or computer accessible to all. Name the main folder Our Class Dictionary. Inside this folder, create a folder for each letter of the alphabet. In
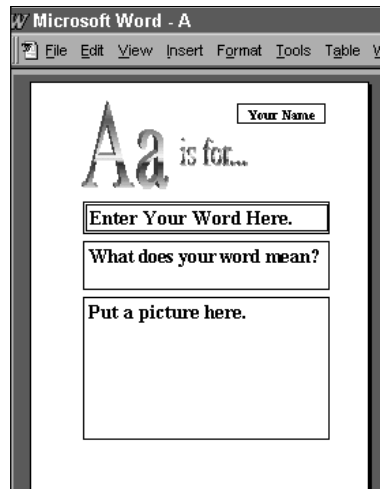
With your help, even very young learners can use *Microsoft Word 97/98* to set up a dictionary page template for each letter of the alphabet, and then fill in a new page for each word they learn.

Windows 95/98, if you need assistance, select Help, Help Topics, then Index, and search on Creating Folders.

2. Using your class list, tentatively assign a letter to each student, but keep A for yourself.

3. Demonstrate for students how to use *Word* to create a dictionary page template for the letter A, following the model above. (Step-by-step instructions are repeated in the Student Activity.) Show kids how to use WordArt to make a fancy letter A, upper and lower case. Walk through the process of inserting Text

Boxes and providing template text for words, definitions, and your name. Add another text box to provide a placeholder for clip art. Then show how to Save As a template called A.dot. Close the document.

4. Demonstrate for students how, when you go to *Word,* File and select New, the A template appears in the General menu. Double-click on A, and create a page for an A word. *Aardvark* is sure to get a giggle out of your students, especially if they're fans of the Arthur series by Marc Brown.

5. Show students how to save a dictionary page. When you select the File menu and choose Save, *Word* automatically asks for a new file name and indicates that it will save as a Word Document, rather than a template. Select your "A" file folder, and save the document as Aardvark (or whatever it is).

6. Print out a copy of your dictionary page. Explain that you will add it to your own personal dictionary notebook, but that the whole class can now easily look up Aardvark if ever the need should arise.

7. Assign each student his or her letter, and explain that you will help each person set up an alphabet letter template.

Student Activity

DESCRIPTION

Just think of all the new words you learn every day, from the books you read and the stories you write. Wouldn't it be great if you could save each one and share it with your friends? Now you can. Follow these steps to make a special dictionary that you can add new words to all year.

STEP A

Make a Letter Template

SOFTWARE: Microsoft Word 97/98

WHAT TO DO: Remember how your teacher made a dictionary template page for the letter A? Here's how you can make one for the letter you have been assigned.

1. In *Word*, go to File and select New. Click on the Template button in the bottom right corner. Then double-click Blank Document.

2. Go to Insert, choose Picture, and then click on WordArt.

3. Choose a WordArt design you like and click OK. A screen will come up that says Your Text Here. Type in your assigned letter, once as a capital (big) letter and once as a lower case (small) letter. Click OK.

4. Click in the middle of your WordArt design, and drag it to the top left hand corner of the page. You can also stretch it by clicking and dragging on one of the little boxes around
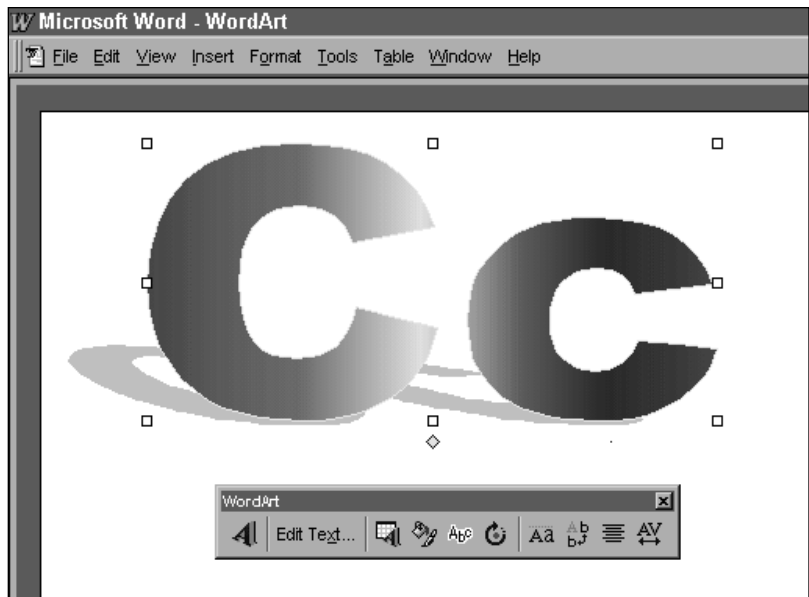
The WordArt feature of *Microsoft Word 97/98* lets you make alphabet letters in fun shapes and sizes for your dictionary pages.

the edge of the design.

5. Click outside of your WordArt design and press tab a few times to get to the top right corner of the page. Go to Insert again, and this time choose Text Box. Drag the cross tool to make a box just big enough for a kid's name. Click inside it, and type the words: Your Name.

6. Click outside the text box, and press Enter a few times to move down the page. Insert another text box. Click in the middle of it, then click on a corner and drag it to make it bigger. Click inside and type: Enter Your Word Here. Go to Edit, choose Select All, and then go to the Format toolbar and make your text bigger and bolder.

7. Add another text box. Inside this one, type: What does your word mean?

8. Add another text box underneath this one. Inside, type: Put a picture here.

9. When you are happy with your page design, go to File and choose Save. Name your file for your assigned letter. It will automatically save as a template.

STEP B

Add a Word

SOFTWARE: Microsoft Word 97/98

WHAT TO DO: Now it's time to make a your own dictionary page using one of the templates you and your classmates created. Here's how.

1. Choose a new word you've just learned – from a book you have been reading, from something you saw in your classroom, or from a piece of writing you've done.
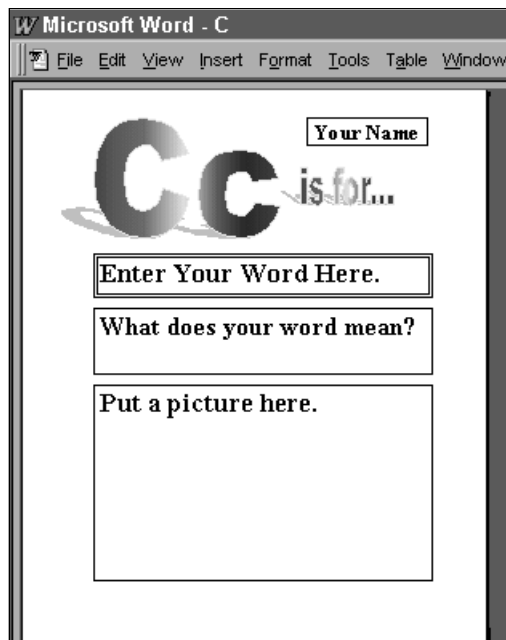
Use *Microsoft Word 97/98* to create a dictionary page template for your letter of the alphabet. Use WordArt (see previous page) to make a cool letter heading. Then Insert a Text Box for your name, the word, its definition, and a picture. Save as a *Word* Template. Then, when you or your classmates open a New document in *Word,* you can choose this page and fill it in with a word beginning with that letter!

2. On the computer, launch *Word*, go to File, and choose New. Open the letter template you need.

3. Click the first text box once so it is highlighted, and type in your name. Repeat this step to fill in the box for your word (be sure it's spelled right!) and what it means. For the text box that asks for a picture, select Insert, Picture, and Clip Art, and choose a special illustration that will help you and your classmates understand what the word means.

4. Go to File and choose Save. In Save In, choose the Our Class Dictionary folder, and open the folder inside for the letter your word begins with. Name your document for the word it represents and click Save.

5. Print out your page for your personal dictionary.

6. Keep adding words to the dictionary as you learn them.

STEP C

Play a Word Game

SOFTWARE: Microsoft Word 97/98

WHAT TO DO: When everyone has added words to the dictionary, try a game like one of these.

1. Scavenger Hunt: Challenge your friends to find five new words you've added to the dictionary. Make up clues based on what each word means, how it's spelled, or what it rhymes with. Open a new *Word* document and type in your clues. Leave a space after each one for answers. Print out several copies of the clue sheet and see who fills one in first!

2. Silly Sentences: Team up with three friends. Each player should give the others one letter each – with no repeats. Find one word in your class dictionary for each letter your teammates gave you. Then make up a sentence using all your words.

3. Quiz Whiz: Choose a partner. While your partner sits at the computer, sit with your back to it. As your partner calls out words from the dictionary, try spelling them out loud. Write down any you get wrong, then go back to the dictionary and study them.
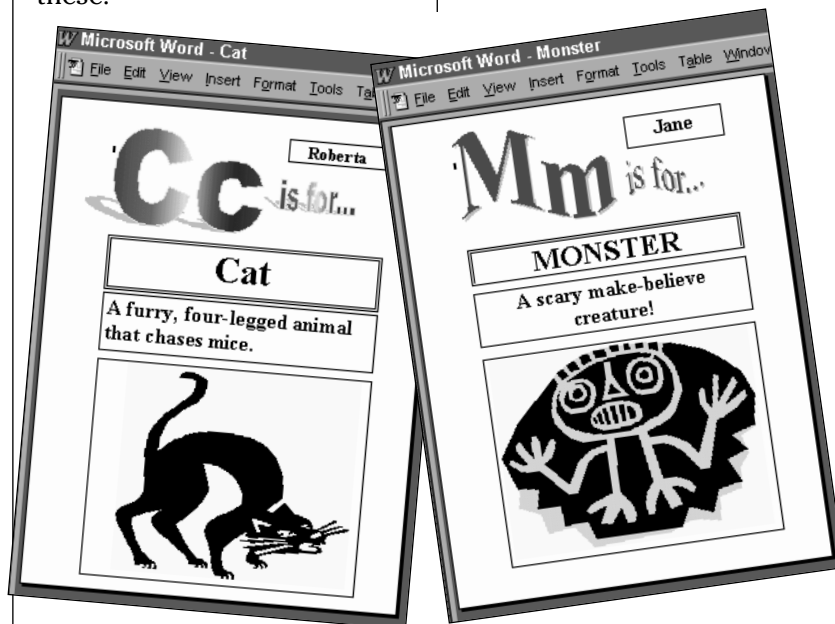
Use all your dictionary pages to play word games with your friends!

REQUIRED SOFTWARE

- MICROSOFT® INTERNET EXPLORER 4.0
- MICROSOFT® ENCARTA® 98/99 ENCYCLOPEDIA DELUXE
- MICROSOFT® WORD 97/98
- MICROSOFT® PUBLISHER 98

OPTIONAL SOFTWARE

- MICROSOFT® ENCARTA® 98/99 VIRTUAL GLOBE

THE YEAR OF THE RABBIT

Teacher Guide

SUMMARY

According to the Chinese lunar calendar, 1999 will be the Year of the Rabbit. The New Year will begin in mid-February, but you can launch this cross-curricular unit anytime. Your students will love it!

OBJECTIVES

♦ To introduce basic life science concepts involving small mammals, domestication, and biodiversity

♦ To prompt exploration of geography and world cultures

♦ To discover connections among favorites stories and characters

PREREQUISITE SKILLS

♦ Basic research skills using *Microsoft Internet Explorer 4.0* and *Microsoft Encarta 98/99 Encyclopedia Deluxe*

♦ Fundamentals of *Microsoft Word 97/98* text processing

♦ Introduction to *Microsoft Publisher 98* desktop publishing

TIME ALLOTTED

5 class periods

The Year of the Rabbit is coming!

HOW TO BEGIN

1. Write each of the following rabbit names on small slips of paper, enough for the whole class: cottontail, snowshoe rabbit, jackrabbit, Angora rabbit, lop rabbit, Siberian rabbit, Patagonian rabbit, and silver-tip rabbit. Put the names in a hat.

2. Gather together as many fiction and non-fiction books about rabbits as you can find in your school and classroom library. Try to include all of the books listed in the box on page 10.

3. Introduce your students to Chinese New Year, an ancient celebration set by the lunar calendar. It is celebrated in Chinese communities in late January or February. New Year is marked by the ascendance of a particular animal figure in the Chinese zodiac. February 16, 1999 will mark the new lunar year 4697. It will be the Year of the Rabbit.

4. Tell students that they will be spending the next week exploring the amazing world of rabbits from a number of different viewpoints. Ask them to come up one at a time and draw a rabbit name out of the hat. Students with the same rabbit name will form a "rabbit family," working together to research that particular rabbit but also to find out about make-believe rabbits and what rabbits stand for in different cultures. They will share their findings with the other students, then collaborate as a class to create a Web site to share what they've learned with the world.

5. Provide each rabbit family with a copy of the Student Activity and have them get to work.

6. While students are conducting research, set up a Year of the Rabbit bulletin board or display area to showcase their work.

Student Activity

DESCRIPTION

Celebrate the Year of the Rabbit by finding out about all different kinds of rabbits - real rabbits, storybook rabbits, and more. You'll be working as part of a group named for one particular kind of rabbit, and sharing everything you discover with your whole class.

STEP A

Meet Your Rabbit Family

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0, Microsoft Word 97/98, Microsoft Encarta 98/99 Virtual Globe (optional)

WHAT TO DO: Now that you've been assigned to a rabbit family, your first task is to find out more about the type of rabbit you're named for. Here's how.

Rabbits, Rabbits, Rabbits

Electronic Zoo/NetVet Rabbits Page
http://netvet.wustl.edu/rabbits.htm

Wonderful World of Bunnies
http://www.ece.utexas.edu/~nbeach/bunny.html

The Hazelford Warren - a rabbit role-playing adventure!
http://www.rit.edu/~nrw3338/hazelford.html

The ShowBunny Gallery
http://www.showbunny.com/gallery.htm

Photos of more than 40 breeds
http://members.aol.com/arbanet/arba/web/photo.htm

Judd Cooney/Oxford Scientific Films
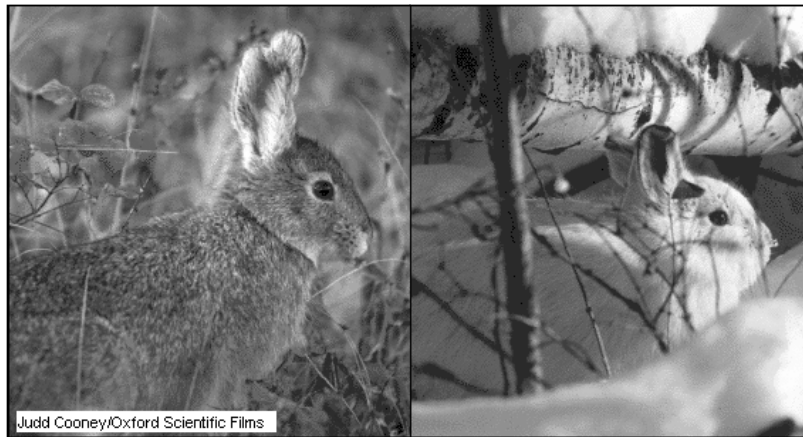
You'll find fascinating facts about rabbits and hares in *Encarta Encyclopedia Deluxe*, such as the Snowshoe Hare's ability to change the color of its coat to match the season.

1. Open a new *Word* document and type in the following questions: What is our name (regular and scientific)? What do we look like? Where do we live? What sets us apart from other rabbits? What's wonderful about being this kind of rabbit? What's hardest?

2. Launch *Encarta Encyclopedia*. Click on Encyclopedia Articles. In the Pinpointer tool that pops up, type in Rabbits, then click on Rabbits and Hares. Read the article and look at the pictures. If there is material you want to save, go to Options, and choose Copy. Paste your findings into your *Word* document after the appropriate question.

3. Next, launch *Internet Explorer* and search the Internet for more information about your rabbit family. You might start with one of the sites listed in the box on this page. When you find sites with lots of material about your particular kind of rabbit, add them to your Favorites. You can also print out material from Web sites, or copy and save it in your *Word* file. Be sure to keep track of your sources so you can credit them in your final report.

4. OPTIONAL: Launch *Virtual Globe*. Based on the information you have so far, call up maps of the areas where your rabbit family lives. Copy and paste these maps into your *Word* document. Just for fun, check out the article that describes Australia's rabbit problem. Go to Find, choose World Themes, and select Introduced Species. Scroll down to the subhead "Invited Guests." Double click on the picture titled "Animal Weeds." Rabbits, rabbits everywhere!

5. Use the information you've found so far to answer the questions you started with.

STEP B

Spread the Word

SOFTWARE: Microsoft Word 97/98, Microsoft Publisher 98

WHAT TO DO: In this step, your group will translate all you've learned about your rabbit family into an easy-to-read format to share with the rest of the class.

1. Launch *Publisher*. In the Catalog that appears, choose Publications by Wizard. With your teammates, look over the designs for Newsletters and Brochures. Which one might work best to present the information about your rabbit family?

2. Choose a Publication. Click Start Wizard and follow the steps. When you are finished, import text and photos from your *Word* document. In some cases, you may want to go back to your sources and gather additional material.

3. Edit your text to fit the format you chose. If it's a newsletter, you'll want to come up with a clever name, such as the Cottontail Courier. If it's a brochure, you might want to title it "All About Angoras." Whichever format you use, include a dateline that says, "Year of the Rabbit-1999/4967."

4. Edit and format your material to make it as interesting as possible.

5. When your first draft is complete, save your work and print out a copy for your teacher to review.

6. Revise your work as needed, then print out again and make copies to share with the class. Your teacher may also want to display a copy on a special Year of the Rabbit bulletin board.

STEP C

Storybook Rabbits

SOFTWARE: Microsoft Publisher 98

WHAT TO DO: Now your group will explore famous rabbits in fiction.

1. Look through the books your teacher has gathered, and make a trip to the library to find other fiction books featuring rabbits. With your group, choose one book or story to focus on. If possible, pick a rabbit tale that features a rabbit from your family.

2. Read the story together, paying particular attention to the main rabbit character. Keep notes about how this character looks and acts.

3. When you are finished reading the book, discuss the story and its characters with your teammates. If you were recommending this book to a friend, how would you describe it?

4. Launch *Publisher*, go to Publications by Wizard, and choose Flyers. Select a design that you think will work best to convey the information about your fictional rabbit.

5. Use one text box on the flyer to give basic information about the book (title, author, publisher, date of publication). Use other text boxes to provide a description of the main rabbit character, a summary of the plot, and your group's comments about the book.

6. If possible, scan the book cover or an illustration from the book to include in your flyer. Or you could use one of your rabbit pictures from Step A, or draw your own illustration inspired by the book.

7. When your flyer is complete, print it out for your teacher to check. Revise and print again to display on the Year of the Rabbit bulletin board.
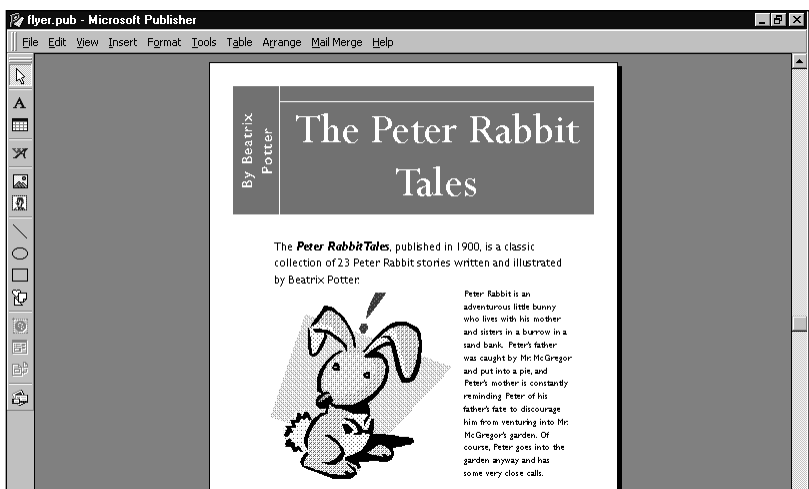
Use *Publisher* to create a flyer describing your favorite fictional rabbit.

STEP D

Famous Rabbits

SOFTWARE: Microsoft Internet Explorer 4.0, Microsoft Publisher 98

WHAT TO DO: Now it's time to explore more rabbit characters, familiar and not-so-familiar.

1. In your group, brainstorm a list of all the rabbit characters you can think of, from movies, cartoons, stories, folktales, nursery rhymes, and more. Don't forget Bugs Bunny, the White Rabbit from Alice in Wonderland, and Thumper from Bambi. Jot down a sentence or two about each character. Is the rabbit smart, even a little wily? Timid? Curious? Quick?

2. Share your list with the class. Together, think about the traits rabbit characters seem to share.

3. Now you'll track down rabbit characters in folk tales around the globe to see if these same traits hold true across cultures. As a group, choose one of the following culture areas to focus on: Native American, African American, Western European, Russian/Eastern European, African, Latin American, or Asian. If two groups choose the same area, your teacher can assign you to one or the other.

4. Use *Internet Explorer* to check out the Web sites listed and search for others containing folktales from your selected part of the world. Your

school or town librarian can help you find more.

5. When you've read several folktales, choose your favorite. Launch *Publisher*, go to Publications by Wizard, and choose Advertisements. Create an ad for your folktale rabbit, "selling" the character's most prominent traits. Illustrate with clipart. Print out and fine-tune.

Storybook Rabbits

Watership Down and **Tales from Watership Down** by Richard Adams. The adventures and further adventures of a group of rabbits searching for a place where they can live in peace.

The Peter Rabbit Tales by Beatrix Potter. There are 23 stories altogether. For an online version of one, see http://www.tcom.ohiou.edu/books/kids/beatrix/p1.htm

The Velveteen Rabbit by Margery Williams. A stuffed toy rabbit comes to life.

Folklore Rabbits

Myths & Fables from Around the World
http://www.afroam.org/children/myths/myths.html

Animals Myths and Legends
http://www.ozemail.com.au/~oban/

Aesop's Fables
http://etext.lib.virginia.edu/subjects/kiddielit.html
Click on Aesop, then choose "The Lion and the Hare" or "The Hare and the Hound"

6. Next, perform your folktale for your class. Within your group, choose one person to be the narrator and the others to act out the characters' parts.

7. After all the stories have been told, talk with your classmates about the different ways rabbits are seen around the world.

8. Add your folktale advertisements to the Year of the Rabbit bulletin board.

STEP E

A Hopping Web Celebration

SOFTWARE: Microsoft Publisher 98, Microsoft Internet Explorer 4.0

WHAT TO DO: Now it's time to share your Year of the Rabbit celebration with the world.

1. As a class, plan a World Wide Web site that presents all your findings about rabbits. You'll need a home page that lists the contents of the site with links to individual pages for your rabbit family information, book flyers, and rabbit folklore ads.

2. Once you've decided on a basic structure, your teacher will assign your group to work on one aspect of the site.

3. The home page can be developed in *Publisher*. Choose Web Sites from the Publications by Wizard catalog, select a design, then follow the steps to create the home page.

4. Each group should go back to the publications it created in Steps B, C, and D. Open each one, go to File, and Save as HTML. Preview the pages and make any needed adjustments, then link them to the home page according to the overall design.

5. When your Web site is complete, test and preview it using *Publisher* and *Internet Explorer*. Your teacher will then post your site on your school's Intranet.

NO FLAKES LIKE SNOWFLAKES!

Teacher Guide

SUMMARY

Few things are as awe-inspiring as snowflakes, those miniature masterpieces of symmetry. This activity invites students to explore snowflakes from the inside by making their own.

OBJECTIVES

♦ To integrate math, science, art, and computer skills

♦ To provide students with experience in key concepts of geometry, including symmetry, angles, and scale

♦ To expose students to the structure of snowflakes (regardless of weather conditions!)

PREREQUISITE SKILLS

♦ Basic grasp of *Microsoft Paint* tool box

♦ Computer mouse skills

♦ Introduction to concepts of symmetry, angles, and hexagons

TIME ALLOTTED

1-2 class periods

HOW TO BEGIN

1. Connect your computer to an overhead projector or large monitor so the whole class can see. Launch *Internet*
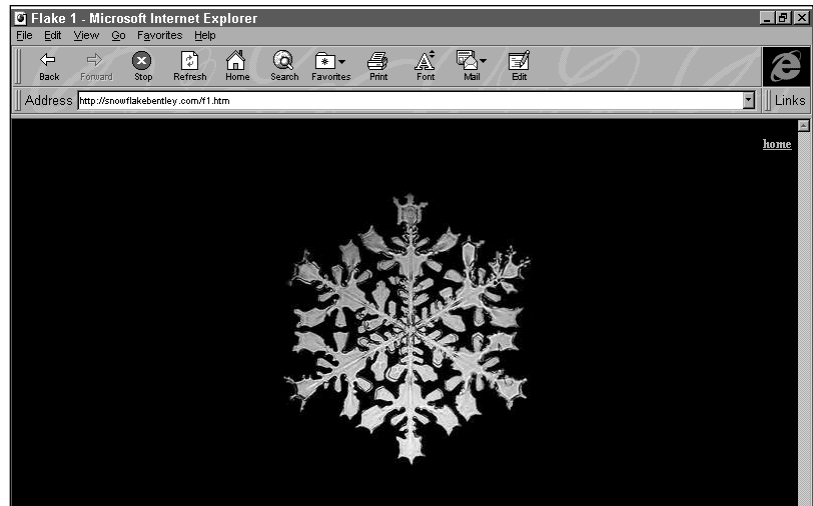
Find stunning snowflake images with *Microsoft Internet Explorer 4.0.*

Explorer, and go to the "Snowflake" Bentley site (http://snowflakebentley.com/) or any other listed in the box on the first Student Activity page. Choose one snowflake image to have on-screen during the following discussion.

2. Ask your students to brainstorm all the attributes of snowflakes they can think of. For example, they might call out "cold," "white," "lacy," and "no two alike." Record their suggestions on the board.

3. Add the following snowflake attributes to your list, discussing each one with your students:

♦ Snow is formed by ice crys-

tals that gather around dust or other particles below freezing.

♦ Snowflakes are made up of many crystals that multiply from one seed crystal.

♦ Snowflakes look white because of reflections off the crystals' many faces.

♦ Snowflakes have six sides or six points.

♦ Most have symmetry – vertical, horizontal, or both.

♦ No two snowflakes are alike.

4. Divide your class into pairs. Tell the pairs that they will be using the computer to create their own snowflakes.

► # *Student Activity*

DESCRIPTION

Ever looked at a snowflake up close? There's a whole world of math and science in one of those lacy designs. Here's your chance to explore it firsthand.

STEP A

In Search of Snow

SOFTWARE: Microsoft Internet Explorer 4.0

WHAT TO DO: With your partner, search for pictures of snowflakes to inspire you.

1. Launch *Internet Explorer*, and check out one of the Web sites listed below. Look for close-up shots of snowflakes that show how they are constructed and how different they are from one another.

2. When you find snowflake

SNOWFLAKE SITES

"Snowflake" Bentley
http://snowflakebentley.com/

This Web site aims to provide a comprehensive resource of everything related to Wilson "Snowflake" Bentley (1865-1931), an American farmer who spent most of his life producing photomicrographs of snowflakes--at his Jericho, Vermont farm. The Snow Crystal Gallery includes 18 beautifully magnified snow crystals.

Microscopic Snow Images
http://www.lpsi.barc.usda.gov/emusnow/

Images obtained by snow researchers using a low temperature scanning electron microscope at the Beltsville Agricultural Research Center in Maryland. Some of them even move!
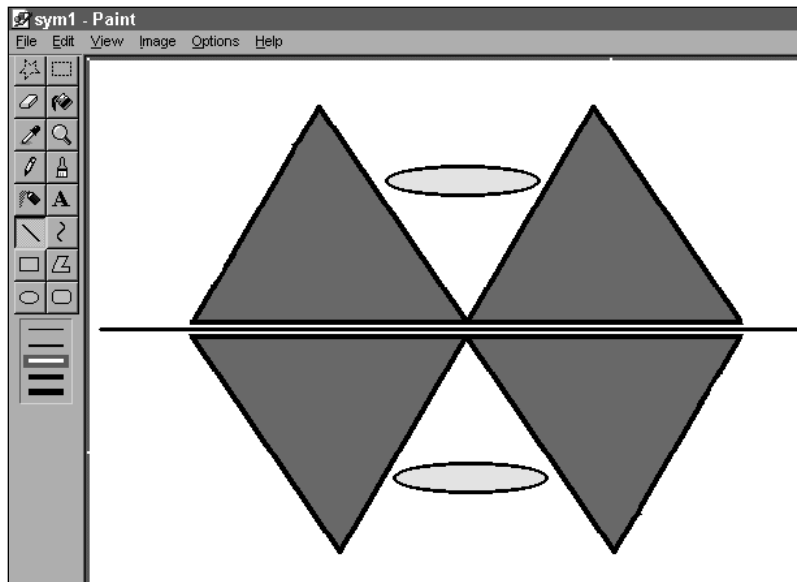
With *Microsoft Paint*, make a design and create its mirror image.

pictures you like, print them out. You can also save them for future use by pointing to them with your cursor and using your right mouse button to Save As Bitmaps.

3. Add pictures from magazines and books to your snowflake collection.

4. When you get ready to create your own snowflakes, use your collection to get ideas for shapes and patterns.

STEP B

The Symmetry Mirror

SOFTWARE: Microsoft Paint (Windows 95/98 accessory)

WHAT TO DO: One important fact about snowflakes is that most of them have symmetry. That means that if you cut a snowflake in half, the two halves would be exactly alike

or mirror images. Symmetry is important in math, as a way of understanding different shapes. It's also important in science, because many shapes in nature, including snowflakes, are symmetrical. Symmetry is important to artists for the same reasons. Follow these steps to understand more about symmetry.

1. Go to Start, choose Programs, then Accessories, and launch *Paint*. Go to the File menu, and click on New.

2. From the toolbar, choose the Line tool – the one with the diagonal line icon. (Hint: As you hover your cursor over each tool, its name appears.)

3. Holding down the left mouse button, drag your cursor across the screen to draw a straight horizontal line, dividing the screen into two halves.

4. Have one partner on your

team use the shape tools (rectangle, ellipse, rounded rectangle, or polygon) or the freehand tools (pencil, paintbrush) to create a design above the line. Your design should have several different curves or angles. Save the design as Sym.

5. The second partner should select the entire above-the-line design by choosing the Free-Form Select tool (the button with the the star shape), holding down the left mouse button, and drawing carefully around the design. Go to Edit, choose Copy, then Paste. Drag your copied design below the horizontal line directly beneath the original.

6. Next, to get the mirror-image effect of symmetry, with your copied and pasted image still selected, click on Image in the menu bar, and then choose Flip/Rotate. Select Rotate by Angle, and click on 180. This will rotate your image and leave it upside-down. Depending on your design, you may need to choose Flip/Rotate again and click Flip Horizontal to get a true mirror image.

7. Save your design as Sym1. Try a few more for practice.

STEP C

Make a Flake

SOFTWARE: Microsoft Paint (Windows 95/98 accessory)

WHAT TO DO: Now that you know a little more about symmetry, put that knowledge to work making a snowflake.

1. In *Paint,* open a New file. Draw a straight line across the middle of the page horizontally.

2. With your partner, use the shape and drawing tools to create one ray of a snowflake, using your snowflake gallery for inspiration. You might use the polygon tool to create a long diamond as the base of your design. Then use the ellipse or curved line tools to embellish it. Use the eraser tool to get rid of any mistakes or extra lines you don't want. Save your design as Snow1.

3. Next, use the Free-Form Select tool to carefully select your design. Holding down your left mouse button, draw around the design as closely as possible without cutting into it. Go to Edit, Copy, then Paste. Drag the copy away from your original design so you have room to work on both.

4. Select your copied design again, go to Image, and choose Stretch/Skew. Click on Horizontal Skew, and type in 40. Your copy will now angle to the right at 40 degrees. Save your work.

5. Select your copy again,

Copy and Paste it, and move it to a different part of the screen. Select this third ray again, go to Image, choose Flip/Rotate, and click Flip Horizontal. Your third ray will now be angled at minus 40 degrees - the mirror opposite of the second ray. Save your work.

6. Now Free-Form Select and drag each ray to bring all three of them together as one design. Use the Eraser tool and the other drawing tools to fine-tune what is now the top half of your snowflake. Erase your horizontal guideline as well.

7. When your half-snowflake looks the way you'd like it, carefully select it using Free-Form Select, Copy and Paste it, and move it to the bottom of the screen. Go to Image, choose Flip/Rotate, and Rotate it 180 degrees as in Step 2.

8. Move this bottom half-snowflake into place against the top half. Use Zoom and the eraser to clean up any loose or overlapping lines.
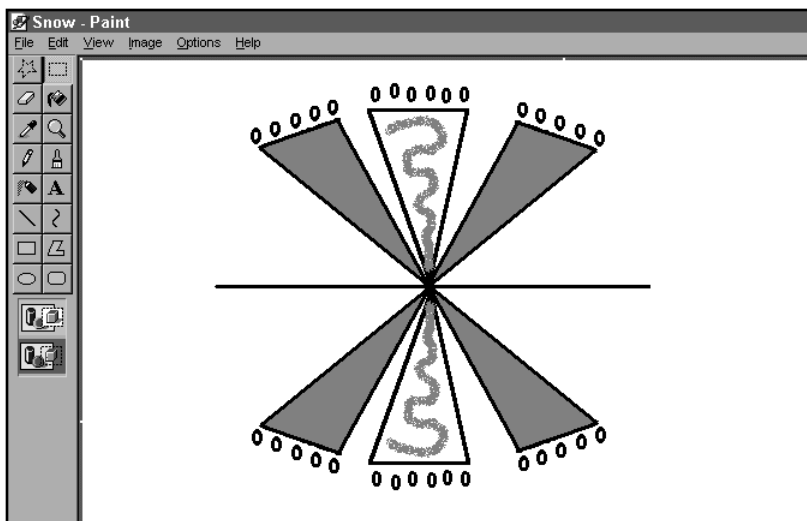
Use *Microsoft Paint* and symmetry to create a six-pointed snowflake.

You might want to embellish the center of your snowflake with another design – just make sure it's symmetrical! Save and print.

STEP D

Start a Flurry

SOFTWARE: Microsoft Paint (Windows 95/98 accessory)

WHAT TO DO: Okay, snow-masters: time to try your hands at a few more flakes.

1. Look back through your snowflake gallery and notice how many different kinds of flakes you see. Choose one that's doesn't look at all like the one you made in Step C. Open a new *Paint* document, and try to re-create it.

2. Experiment with different ways to create the snowflake's six-pointed symmetrical design. Can you create three long rays with identical ends, then cross them? Could you make two vertical halves to join together? What happens when you try different angles for your skews and flips?

3. Between the two of you, create six very different snow-flakes you're happy with. Save each one under a unique name.

STEP E

A Cooperative Snowstorm

SOFTWARE: Microsoft Paint (Windows 95/98 accessory), Microsoft PowerPoint97/98

WHAT TO DO: Now you're going to join forces with your
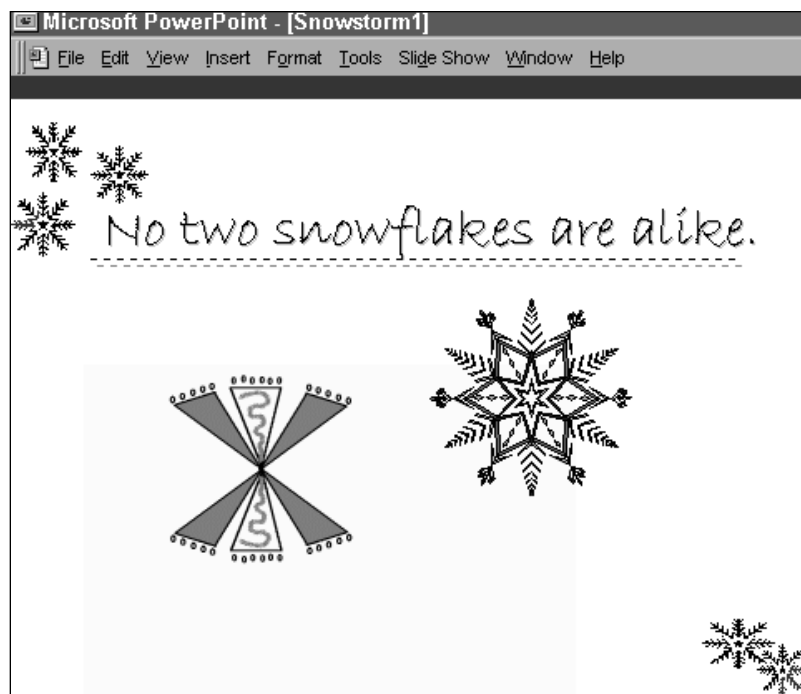
Show off snowflakes and snow facts with *Microsoft PowerPoint 97/98.*

classmates to create a presentation about snowflakes that acts like a snowstorm.

1. Launch *PowerPoint,* and choose Blank Presentation.

2. Start with a Title slide. Choose a background that fits your snowstorm theme (marble is nice!), and give your show a title like "It's Snowing in Math Class!"

3. Now each team can take turns Inserting slides to show off its best snowflakes. The easiest way to set each page up is to choose the blank slide and Insert a Picture, choosing the snowflake from the file where all the snowflakes are saved. Teams who want to add text to their slide can Insert a Text Box. Be sure to save your presentation after each slide is complete.

4. Next, go to View and chose Slide Sorter. As you click on each slide, choose a Transition

that goes with the snowstorm idea. Checkerboard Down at Slow speed works nicely.

5. On slides with more than one element, you can animate each element as well. For example, Text could Fly from Left, while your snowflake Crawls from Top.

6. If you want your presentation to truly act like a snow-storm, go to SlideShow, choose Slide Transition, and click Automatic, so that the slides will advance on their own. Try a three-second interval between transitions.

7. After you've saved your work, go back to Slide Show, choose Set Up Show, and select Loop Continuously. Save again.

8. Set up your classroom computer where all can see it, launch your *PowerPoint* file, and go to Slide Show. Choose View Show, and let it snow!

WEIGHTS AND MEASURES

▶ *Teacher Guide*

SUMMARY

Students learn best when they make a personal connection to the subject at hand. In this activity, they become their own raw data to analyze, compare, and convert.

OBJECTIVES

♦ To master the gathering, averaging, and graphing of data

♦ To practice conversion to metric measures

♦ To gain fluency in use of technology tools for math operations

PREREQUISITE SKILLS

♦ Basic introduction to *Microsoft Excel* spreadsheet

♦ Exposure to metric system

ADDITIONAL MATERIALS NEEDED

♦ Scale for measuring students' weight

♦ Tape measure for measuring students' height

TIME ALLOTTED

2-3 class periods

	A	B	C	D
1	Name	F/M	Weight	Height
2	Andy			
3	Bob			
4	Junie			
5	Mark			
6	Marlene			
7	Michele			
8	Patrice			
9	Steve			
10	Average			

Start by setting up a *Microsoft Excel 97/98* worksheet for your class.

HOW TO BEGIN

1. Launch *Excel*, open a new workbook, and create these headings: Name, F/M, Weight, Height.

2. Enter each of your students' names on a separate row under Name.

3. Save as Class Data.

4. Position the scale and tape measure near the computer on which this spreadsheet is loaded.

5. Gather students around this computer, and explain that each person will work with a partner to weigh and measure themselves, then enter their results in Class Data. When all the data is complete, each student will get a copy of the Class Data workbook to analyze, compare, graph, and convert, following the steps in the Student Activity.

6. After students have completed Step A, make a copy of the filled-out worksheet for each student, or save it in a common folder on your network so each student can copy it for use on his or her own workstation.

Student Activity

DESCRIPTION

Ever wonder how tall the average kid your age is? Or how much you'd weigh in Paris? Here you'll find the answers to both those questions – and more!

STEP A

Measure It!

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO:

1. Go to the computer/weights and measures station your teacher has set up.

2. Find your name in the *Excel* workbook your teacher created. Under F/M, type F if you're a girl or M if you're a boy.

3. Weigh yourself on the scale, and enter your weight in the Weight column next to your name.

4. Choose a partner, and have him or her use the tape measure to find your height in inches. Enter this number in your Height column.

5. Let your partner find and enter his or her own weight. Then measure his or her height and enter this figure. Save the worksheet.

METRIC MEASURES

1 inch = 2.54 centimeters

1 foot = 1/3 of a meter, or
        0.305 meters

1 pound = 453.592 grams

Microsoft Excel - ClassData				
File Edit View Insert Format Tools Data Window Help				
AVERAGE ▾ ✗ ✓ = =D2/12				
A	B	C	D	E
Name	**F/M**	**Weight**	**Height**	**Height/Feet**
Andy	M	90	54	=D2/12
Bob	M	99	59	4.9
Junie	F	100	60	5.0
Mark	M	105	63	5.3
Marlene	F	92	62	5.2
Michele	F	85	56	4.7
Patrice	F	78	50	4.2

Add columns and create formulas to convert your measurements.

STEP B

Convert It!

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO:

1. When everyone has entered weight and height data, you'll get your own copy of the class *Excel* workbook.

2. Go to cell E1 and type the heading, Height/Feet. In cell E2, create a formula to convert the first student's height in inches to height in feet by typing =(D2/12), which means "divide the figure in cell D2 by 12." Press Enter, and double-check the figure you see. You can now AutoFill this same formula to convert all the heights to feet by clicking in cell E2, pointing to the "handle" in its bottom right corner, and dragging to the end of column E. To simplify your results, click at the top of column E, go to Cells, click on the Number tab, choose Number from the list, and type 1 for Decimal Places. If you get stuck, use the Help menu.

3. Now add three more columns: Weight in Grams, Height in Centimeters, and Height in Meters. Use the information in the Metric Measures box to create formulas that will convert each student's measurments into these metric numbers. Don't forget that "=" starts a formula, and that there's usually more than one way to solve a problem!

4. Save and print your work. Pair up with a classmate to share and check results.

STEP C

Average It!

SOFTWARE: Microsoft Excell 97/98

Find more great lessons at: www.microsoft.com/education/curric/activity

WHAT TO DO: What's the average height and weight in your class? Here's how to find out.

1. In your copy of the class *Excel* workbook, add a row at the bottom of the class list. In the Name column, type Average.

2. In the Weight cell that shows weight in pounds, create a formula that will find the average weight of all the students in your class. (Remember, you find the an average by adding up all the values and dividing by the number of values.)

3. Check your results to make sure your formula is correct. If it is, AutoFill it across the row. Save and check your work.

STEP D

Break It Down!

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO: Now you'll figure out separate averages just for boys and for girls.

1. Select all your cells, including your headings. Go to Data, select Filter, and choose AutoFilter.

2. A small box with an arrow will appear in the lower right hand corner of each top cell. In the F/M column, click on this small box, and a menu will appear. Select F.

4. Now, the only data you'll see is for the girls. Select all the cells, go to Edit, and choose Copy.

5. At the bottom left corner of your screen, you'll see a set of tabs marked Sheet 1, Sheet 2,

Sheet 3, and so on. Click on Sheet 2. (If no tabs are there, go to Insert, and choose Worksheet.) This opens a new "page" in your *Excel* workbook.

6. Click on the top left cell of your new worksheet, go to Edit, and select Paste. Now you have a separate data set for girls only.

7. Go back to Sheet 1, click on the filter box in the F/M column, and select (All). All class data will reappear.

8. Now, repeat the steps above, but choose M. Paste your boys' data in Sheet 3.

9. In Sheet 2, add a row labeled Average, and repeat the procedures from Step C to find the girls' averages. Do the same for the boys in Sheet 3. Save and check your work.

STEP E

Graph It!

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO: Now "see" how your class numbers chart out.

1. To graph all the heights in your class - including the average - select the Name column, then press Ctrl and select the Height column. Go to Insert and choose Chart. The Chart Wizard will step through creating your chart. Click on each of the tabs and experiment with the effect of each option. Click on Next when you're happy with what you see. Click Finish, and Save as Chart1. Save and print.

2. Now try creating a few other charts. How about one that compares girls' weights to boys' weights? A chart of all class heights in centimeters? One that graphs weight and height together?

3. As a wrap-up, discuss the kinds of data you might add to your *Excel* worksheet in the future. Maybe you want to do the whole project again in six months to see how much you've all grown!
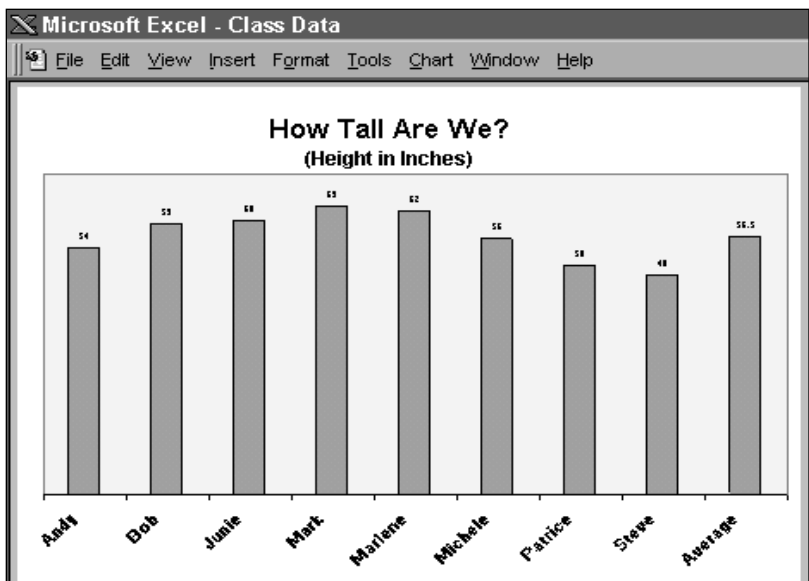
Create a graph to see at a glance how your class measures up!

DO VAMPIRES REALLY EXIST?

Teacher Guide

SUMMARY

Sometimes the most offbeat subjects inspire the best math lessons. In this activity, students will see how math skills and computer tools come in handy for exploring the truly scary subject of vampires.

OBJECTIVES

♦ To identify and extend a number pattern into very large values

♦ To create and interpret a graph

♦ To compare a math model with real-world statistics

PREREQUISITE SKILLS

♦ Basic familiarity with *Microsoft Excel 97/98,* including creating simple formulas and using Chart features

♦ Ability to multiply numbers by 2 (through 100)

TIME ALLOTTED

1 class period

HOW TO BEGIN

1. Launch *Excel* and set up a new worksheet with headings and formatting like the example on this page. (Hint: Double-click on the top of the

Microsoft Excel - Vamp1

B11 =

	A	B	C
1	**Week**	**Number of People Bitten**	**Total Number of Vampires**
2	0	0	1
3	1	1	2
4	2	2	4

Use *Microsoft Excel 97/98* to set up your vampire math model.

vertical line between columns to fit column widths to your headings.) Enter no data yet.

2. Using *Internet Explorer*, go to http://www.census.gov/cgi-bin/ipc/popclockw and add it to your Favorites list.

3. Gather your class together, and ask what students know about vampires from movies, books, and TV shows. Kids will probably report such facts as: vampires only come out at night, they sleep in coffins, they

ASSUMPTIONS

✓ **One vampire does exist.**

✓ **That vampire must suck one person's blood each week to survive.**

✓ **Once a person is bitten by a vampire, he or she becomes a vampire.**

can turn into bats, they live forever, they drink blood to survive, and you become a vampire if you are bitten by one.

4. Tell students that they can now use mathematics to prove once and for all if vampires really exist.

5. Write the assumptions, below, on the board. Be sure students understand them for the sake of the model.

6. On your worksheet, type in the statistics for Week 0 as shown above. With your class, type in stats for Week 1 (1 person bitten, 2 vampires at large) and Week 2 (2 more people bitten, 4 vamps on the prowl). Tell kids they will be responsible for filling in the rest.

7. Save the worksheet, divide your class into pairs, and have each pair work with a copy of the worksheet plus a photocopy of the Student Activity.

Student Activity

DESCRIPTION

Is math powerful enough to keep vampires away? Find out as you and your partner finish building the spreadsheet model your teacher started. What you discover may be shocking!

STEP A

Bites Per Week

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO: Using the *Excel* worksheet your class started, work with your partner to fill in statistics through Week 8, using the following basic steps.

1. If there were 4 vampires at the end of Week 2, how many people would get bitten in Week 3? (4) And how many vampires would that make, total? (8)

2. How many people would those vampires bite in Week 4, creating how many more of their kind?

3. You get the idea now. Carry it through to the end of Week 8. How many bloodsuckers do you end up with? (256)

STEP B

Graph Those Vamps!

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO:

1. Select your data in Column C, go to Insert, and choose Chart. Using Chart Wizard, select a type of chart that shows data over time. The chart below is one example. Click Finish.

2. Move your chart to the right side of your worksheet, so you can look at it side-by-side with your data.

Create a graph to get a vivid picture of the vampire population boom.

3. What kind of trend does your chart show? Where might the pattern go from here?

4. Print out your data sheet and your chart to have on hand for the next step.

STEP C

Formula, Bloody Formula

SOFTWARE: Microsoft Excel 97/98

WHAT TO DO: Now you're going to get *Excel* to count seven more months worth of vampires for you – in mere minutes!

1. Look again at your statistics through week 8. In math terms, what is the relationship between vampires at the end of one week and the number of people bitten the next?

2. Here's another way of looking at it: What pattern do you see from week to week in the number of people bitten? What about the week-to-week vampire numbers?

3. With your partner, create a formula for Columns B and C in Week 9 (that's cell B11 and C11, respectively) that will extend the pattern of Weeks 0-8.

4. Implement your formula, and check to be sure that the pattern continues.

5. Now you can use Excel's AutoFill feature to complete your worksheet. For Column A, highlight cells A9 and A10, point to the "handle" in the lower right corner of A10, and drag it through A37.

6. Now fill in Column B by using AutoFill to drag the formula through week 35 (cell B37). Fill Column C by dragging the formula in C10 down through C37.

7. Format your vampire stats by selecting Columns B and C, going to Format, choosing Cells, and selecting Numbers on the list. Type in 0 decimal places, and select Use 1000 Separator. Save your work.

8. How many vamps are there at the end of Week 35? If your formulas are correct, you should show 34,359,738,368. Say that number out loud: 34 billion, 359 million, 738 thousand, 368. That's a lot of living dead!

Check your worldwide vampire census against the real thing.

SCARY-NET: SPOOKY STUFF ON THE WEB

Once you've done your vampire math, use *Internet Explorer* to check out these thrills and chills.

Halloween Eternal
http://home.rmci.net/gatemi/
It's all Halloween, all the time on this activity-filled site.

Haunted Halloween
http://www.banzai-net.com/haunted _hofp/
This online magazine includes Halloween humor.
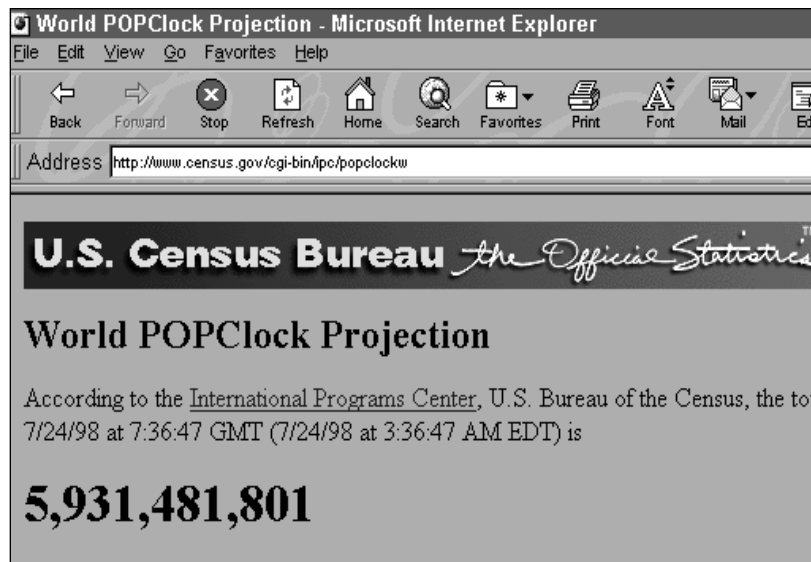
Halloween Net
http://www.halloweennet.com/
Haunting tips and tricks, ghost stories, even scary foods for the holidays!

The Yuckiest Site on the Internet
http://www.yucky.com/yucky/
Gross science, including worms, bugs, and more.

STEP D

Vampire Reality Check

SOFTWARE: Microsoft Internet Explorer 4.0, Microsoft Excel 97/98

WHAT TO DO: So how does your vampire census match up against the actual world population? Here's how to find out.

1. Launch *Internet Explorer*, and go to http://www.census.gov/ cgi-bin/ipc/popclockw, the U.S. Census Bureau's World POPClock. (Your teacher may have already added it to Favorites in *Explorer.*) This gives an up-to-the-second projected count of the world's human population, based on actual numbers plus estimated births and deaths.

2. What number is showing in bold type? It should be about six billion, give or take a few million. Select this number, go back to your *Excel* worksheet,

and paste it into cell C38.

3. In cell D38, type in the label People on Earth.

4. Save and print your sheet.

5. Reconvene as a class to discuss your findings. According to your mathematical model, how many of the world's people are actually vampires? (Every single one of them – and then some!) At which point in your chart did the entire population of Planet Earth become vampirized? (Between Weeks 32 and 33.) Could this possibly be true? Congrats! You have just constructed what mathematicians call a "proof by contradiction."

6. Just for fun, copy your data sheet, paste it in a new worksheet, and start with three vampires instead of just one. Enter values manually for the first few weeks, then create a formula to extend the pattern. How long does it take vampires to take over the world in this scenario?

EXTREME WEATHER!

Teacher Guide

SUMMARY

From El Nino to killer heat waves, weather extremes capture headlines and the popular imagination. This science and geography activity builds on kids' natural fascination with weather disasters.

OBJECTIVES

♦ To develop students' understanding of basic meteorology and related earth science topics

♦ To reinforce geographical knowledge

♦ To build analytical and communications skills through class presentations

PREREQUISITE SKILLS

♦ Basic understanding of how weather works

♦ Intermediate electronic research skills using tools like *Microsoft Encarta 98/99 Encyclopedia Deluxe* and *Microsoft Internet Explorer 4.0*

♦ Fundamentals of *Microsoft Word 97/98* and *Microsoft FrontPage 98*

TIME ALLOTTED

3-5 class periods
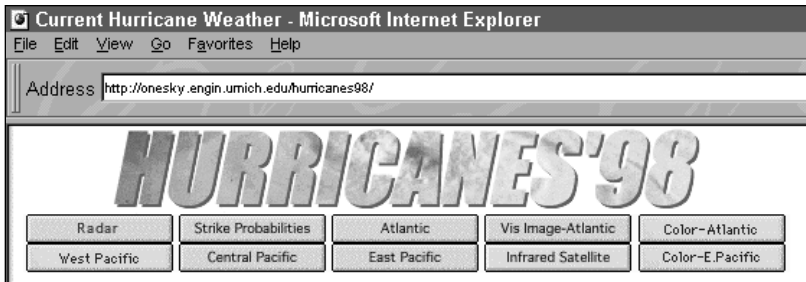
Your students will research exciting weather sites on the Internet.

HOW TO BEGIN

1. Start with a class discussion of weather extremes students have experienced personally. Ask your class: If a science reporter were to interview you about the worst weather you've ever witnessed, what would you say? What made that weather so remarkable?

2. Next, brainstorm a list of other kinds of extreme weather. Encourage students to think of as many examples as they can, from storms they've heard about on the news to events they remember from history.

3. If kids include events such as earthquakes or volcanoes on the list, go back when your brainstorming is over and ask them to think carefully about whether these disasters really fall under the heading of "weather." Together, develop a working definition of weather that includes the concept of the atmosphere and the impact of such factors as temperature, humidity, cloudiness, precipitation, wind, and pressure. Direct students toward an understanding that extreme weather, then, involves one or more of these factors occurring with unusual force or quantity.

4. Have each student choose the three most personally fascinating forms of extreme weather and list them on a sheet of paper. Collect the papers and divide your class into teams of three or four, according to weather choices.

5. Explain that each group will now become a crack team of meteorologists with special expertise in tracking, analyzing, and explaining its chosen weather extreme via a Web page for whole-class viewing.

▶ *Student Activity*

DESCRIPTION

Here is your mission: To figure out what makes extreme weather act the way it does, find the most awesome examples of its power, and then create a Web page to explain it all to your classmates. Ready to take the weather world by storm?

STEP A

A Storm is Born

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0, Microsoft Word 97/98

WHAT TO DO: Get to the heart of your weather extreme.

1. Launch *Word,* open a New document, and type in the heading "Causes of [Your Storm]." Save the *Word* document with a file name related to your kind of storm.

WEATHER SITES

The Weather Channel
http://www.weather.com/education/

National Weather Service
http://www.nws.noaa.gov/

University of Michigan Weather Underground
http://groundhog.sprl.umich.edu/

Weather World 2010
http://ww2010.atmos.uiuc.edu/(Gh)/
home.rxml

Memorable Weather Events
http://ww2010.atmos.uiuc.edu/(Gh)/
arch/cases/home.rxml

W Microsoft Word - Tornado

File Edit View Insert Format Tools Table Window Help

TORNADO TEAM
ONE FOR THE RECORD BOOKS

http://ww2010.atmos.uiuc.edu/(Gh)/arch/cases/960419/home.rxml

One of the most memorable tornado outbreaks in Illinois history occurred on April 19, 1996. During the day, 33 tornadoes were reported as supercells erupted and moved across the state during the afternoon and evening hours. Wind estimates in excess of 170 mph were associated with some of the stronger tornadoes, one of which ripped through nearby Ogden, IL.

Department of Atmospheric Sciences
University of Illinois at Urbana-Champaign

Close-up picture of the tornado featuring a spinning debris cloud rotating below the condensation zone. At this time, the tornado was parallel along US HW 36. Only a car, lights, one is falling over because

WW2010
University of Illinois

Open a *Microsoft Word 97/98* document to collect and organize the facts, photos, and graphics you find in *Microsoft Encarta 98/99 Encyclopedia Deluxe* and on the Internet about your chosen weather extreme.

2. Launch *Encarta Encyclopedia*, go to Encyclopedia Articles, and use the Pinpointer to find your weather.

3. As you read through the articles you find, look for explanations of what causes your extreme weather. Copy new facts you find – along with any graphics or photos – and paste them in your *Word* document.

4. From within your *Encarta Encyclopedia* article, click on the More Information About This Subject icon in the top right corner of your screen. Choose Web Links, and explore the Internet for more information about your kind of storm. (You can also try some of the sites listed in the box on this page.) When you find new facts, copy and paste them in your *Word* document.

5. Look for pictures, diagrams, and other images to help explain your extreme weather. Save these images by clicking your right mouse button, choosing Copy, then pasting them in your *Word* document. Keep track of your sources!

6. Add the best sites to your Favorites folder.

7. Discuss your findings as a group. Then, in your *Word* document, click on View, go to Toolbar, and choose Drawing. Use these tools to sketch a diagram showing how your storm works. Use Help if you need it.

STEP B

Map the Zone

OPTIONAL SOFTWARE: Microsoft Encarta Virtual Globe 98/99 (Windows only)

WHAT TO DO: If you have *Encarta Virtual Globe,* use this optional step to find out more about the geography of your killer weather.

1. Launch *Virtual Globe*, click on Learn About the Earth, and scroll down to The Physical World. If your weather fits the general category of Monsoons, Tropical Storms, and Tornadoes, go to that article for lots of facts and maps. Otherwise, read through Seasons: Climate, Stars, and Earth Changes. Copy pertinent facts for your *Word* file under a heading called "Weather Zone."

2. Go to Map Styles on the Toolbar, choose Natural, and check out the Climate, Eco-region, and Temperature maps of your storm hot zones. Use the About This Map feature to interpret the data you're seeing.

3. When you find maps you want to keep, go to Options and choose Copy. You can then paste your maps into your *Word* file.
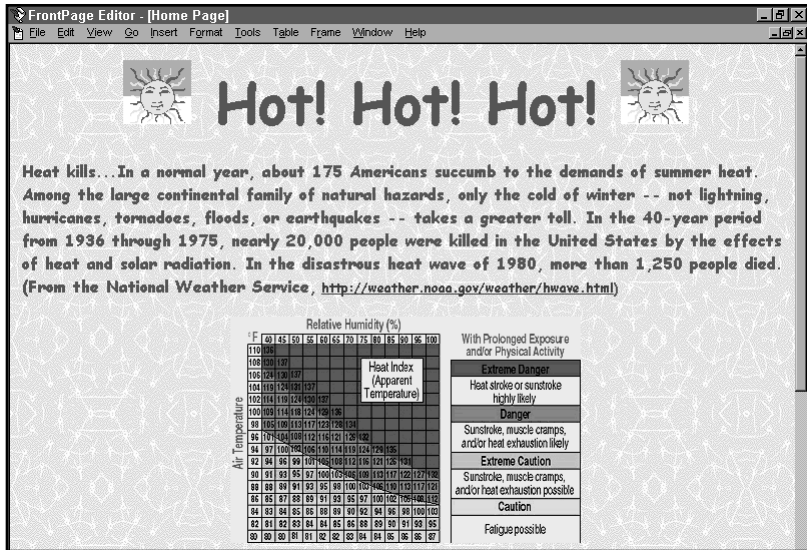

Use *Microsoft FrontPage 98* to turn your facts into a Web page.

STEP C

One For the Record Books

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0, Microsoft Word 97/98

WHAT TO DO:

1. Go back to *Encarta* and Favorite Web sites to look for "worst ever" occurrences of your extreme weather. You may discover that "worst" has many meanings. Is the worst blizzard the one with the most snow, the highest winds, or the longest duration? In your *Word* document, set up a new heading called "Record-Breakers" to save these facts.

2. Pick one record storm to explore further. Search the Web for articles reporting on the storm as it happened.

STEP D

Stormy Webber

SOFTWARE: Microsoft Word 97/98, Microsoft FrontPage 98

WHAT TO DO: Pull all of your work together as a Web page.

1. Open your *Word* file. Organize the facts you've gathered (you might find the Outline option in the View menu helpful for this). Rewrite the material in your own words, as though you were were explaining it to a friend.

2. When your editing work is complete, go to the File menu, and choose Save As HTML.

3. Launch *FrontPage*, choose New FrontPage Web, and click on One-Page Web. Name your web after your storm.

4. When the Navigation screen appears, click on Themes to choose a color scheme, font, and button style. Click Apply.

5. In the File menu, choose Import. Find the HTML file you created from *Word*, and import it. This page will now appear in the list of files on your Web.

6. Go to File and Open your home page. Choose Insert, select File, and choose your *Word* HTML file. The text will flow into your home page.

7. Add a Heading at the top of your home page, and smaller Headings for each subtopic (such as Causes, Zones, and Record-Breakers). Insert a Navigation bar to link your subtopics. Experiment with Animation effects from the Format menu, and Insert some Active Elements such as a Marquee of fun storm facts.

8. When your Web is complete, invite your classmates to test it out. Then work with the other teams to create one big Weather Web. Publish it to your school intranet.
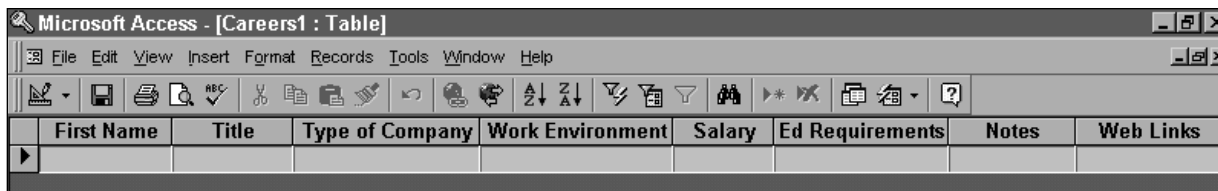
OUR BRILLIANT CAREERS

Teacher Guide

Microsoft Access - [Careers1 : Table]

File Edit View Insert Format Records Tools Window Help

First Name	Title	Type of Company	Work Environment	Salary	Ed Requirements	Notes	Web Links

Use field names like these to set up a *Microsoft Access 97/98* careers database for your students.

SUMMARY

Whether your students are geared up for the world of work or just beginning to think about careers, this activity will open their eyes to the possibilities.

OBJECTIVES

♦ To introduce students to possible future careers

♦ To encourage groundwork for future career choices

♦ To explore emerging careers

PREREQUISITE SKILLS

♦ Basic research skills using *Microsoft Internet Explorer 4.0*

♦ Introduction to *Microsoft Access 97/98*

TIME ALLOTTED

2-3 class periods and ongoing

HOW TO BEGIN

1. Prepare the database by launching *Access* and choosing Blank database. When prompted, save the database as Careers.

2. Click on the Tables tab, and then click New. Choose Table Wizard and click OK. Under Sample Tables, choose Employees. From the sample fields, choose FirstName and click the single right arrow to add it to your table. Repeat with the following fields, in this order: Title, DepartmentName, OfficeLocation, Salary, Address, Notes, and EmailName.

3. Select DepartmentName and click Rename Field. Rename as Type of Company, and click OK. Repeat this process to change OfficeLocation to Work Environment, Address to Education Requirements, and EmailName to Web Links. Click Next.

4. On the next screen, save your table as CareerTable, and select "No, I'll set the primary key." Click Next, and choose FirstName as your Primary Key, and then select "Numbers and/or letters I enter when I add new records."

5. Click Next, and choose "Enter data into a table using a form the wizard creates for me." Click Finish. A blank data form will appear on the screen.

6. Using a projector or large monitor, present the data form to your students. Explain that they will spend the next few class periods finding out about careers that interest them and entering information into the class database. Each student will do at least three records, and then all will search and analyze the data together.

7. First, though, the class will collaborate on the final design for your database. With the blank data record showing, go to View and choose Design View. Click on Format, and choose AutoFormat. Preview each format and choose one together. Choose View, and go back to Form View. Print out a blank record, then close the Form. Photocopy the blank record and hand out with the Student Activity pages.

Student Activity

DESCRIPTION

Remember back when you had an easy answer for the question, "What do you want to be when you grow up?" In this activity, you'll focus in on three or more careers you might really want to pursue – including one that doesn't quite exist yet!

STEP A

Browse the Possibilities

SOFTWARE: Microsoft Internet Explorer 4.0, Microsoft Access 97/98

WHAT TO DO: Some students your age have an inkling of what they might want to do for a career – but not all do. And even those who are fairly certain should keep this in mind: Experts predict that in the future most people will change

WORK IT OUT

Bureau of Labor Statistics- Occupational Outlooks
http://stats.bls.gov/ocohome.htm
Official statistics about the job market and occupational trends.

JobSmart
http://jobsmart.org/
Lively career guides (including hot jobs) and salary information.

StudentCenter/AboutWork
http://www.aboutwork.com
Careers and what they're really like, plus reviews of job Web sites.

Career Mosaic
http://www.careermosaic.com/
Includes Career Resource Center with job trends and tips.

Microsoft Access - [CareerTable]

File Edit View Insert Format Records Tools Window Help

First Name	Martha1
Title	Astronaut
Type of Company	Government or private
Work Environment	Outer space!
Salary	$60,000.00
Ed Requirements	Advanced degrees in science or engineering
Notes	More opportunities may open up as private companies consider space ventures
Web Links	www.nasa.gov

Fill in a *Microsoft Access 97/98* data record for each career choice.

---

careers more than five times in the course of their working life. It pays to have a few possibilities to choose from!

1. Use *Internet Explorer* to check out some of the Web sites listed on this page, many of which include information about specific kinds of careers. Browse through the headings and job titles, and choose at least two that appeal to you.

2. Explore these career possibilities in depth, keeping in mind the kinds of information you'll need for your class database. You'll want to know the kind of company this job might be part of, what the work environment is like (such as in an office or outdoors, formal or relaxed), what the salary range is, and what kind of education and/or training is required. In addition to the information you find in career sites, you might check out Web sites for professional associations, online articles about people in this field, and actual job listings from around the country. Print out

the best information you find, and keep track of your sources.

3. Launch the *Access* database you created as a class. Click the Forms tab, and choose the form you created together. If you are the first to use the database, you will see a blank record. Otherwise, go to Insert, and choose New Record. (You can also click the right arrow with star in the bottom left corner.) Fill in one new record for the first career you've explored. Enter your name with a 1 after it in the FirstName field. Repeat for your other careers, using a 2 after your name, then a 3, and so on. Review your records by clicking the left and right arrows in the bottom left corner of the screen. Save your work.

STEP B

Jobs of the Future

SOFTWARE: Microsoft Internet Explorer 4.0, Microsoft Access 97/98

Get an at-a-glance view of careers by sorting in Table format.

WHAT TO DO: By the time you're ready for your first career, who knows what new opportunities you might have that aren't yet a glimmer in a career counselor's eye?

1. Several of the Web sites you visited have information about future job market trends and emerging careers. Go back and check these out. See anything that interests you? Find out all you can about these jobs-to-be.

2. Think about trends that are changing people's lives: the amazing growth of the Internet, say, or the aging of the Baby Boom generation. Then think about the number of times you've said, "I wish someone would figure out a way to…" Produce jeans that really fit you, for a reasonable price? Let you get around town quickly without a car? Make sure everyone has a decent place to live? Think about the kinds of jobs that might spring up to meet those needs.

3. Since your future jobs don't yet have salary ranges or educational requirements, you'll need to make some guesses. Start with the kind of training the job might entail, and how many people would need its services. Generally, the harder the training and the more in demand the work that's produced, the higher the salary.

4. Now enter your future job(s) in the *Access* database. Include an (F) after the job title. In the Notes field, explain what this job will be all about and why it's intriguing.

STEP C

Mine Your Data

SOFTWARE: Microsoft Access 97/98

WHAT TO DO: Once everyone in class has entered at least three job records, explore your Careers database.

1. Open your database, click the Forms tab, and select your class form.

2. If you have a particular job you're interested in, click on the Title field in the first record you see. Go to Edit, choose Find, and type in a keyword; in the match criteria, choose Any Part of Field for the widest return. Click Find First. If more than one record is retrieved, you can click Find Next to view each one. Print out at least one record that interests you.

3. If you'd rather just browse, click on the Title field, go to the Toolbar, and click AZ. Now all the records are arranged alphabetically by title. Use the arrows at the bottom left to step through the database. Print one or more records. (You can also get an at-a-glance view of all the records by closing the Form, selecting the Tables tab, and opening your CareerTable. Select any column by clicking at the top, and use the AZ or ZA buttons on the Toolbar to arrange the data. You can also go to Edit, choose Find, and search for a keyword. A small arrow will appear to the left of each match.)

4. Think about other job criteria that are important to you. Are you looking for the highest salary? In either Table or Form view, select the Salary field, go to the Toolbar, and click ZA. The records are now arranged with the highest salaries first. Do you want to work outdoors? Select the Work Environment field, go to Edit, choose Find, and use "outdoors" as your match criteria.

5. Talk to the students whose entries you've selected to find out more about these careers.

6. Finally, choose three careers – one you researched originally, one you've learned about from another student, and one from the future – and give an oral report to the class about them. Invite suggestions for other jobs you might like.

THE ART AND SCIENCE OF FRACTALS

Teacher Guide

SUMMARY

This activity introduces students to the fascinating world of fractal images and the mathematics behind them. Students will be exposed to fractal geometry, history and concepts, explore fractal sites on the Web, create their own fractal designs, and publish a calendar that displays their favorite fractal art.

OBJECTIVES

♦ To stimulate students' interest in fractal geometry and related fields

♦ To develop students' awareness of connections between art, mathematics, and nature

♦ To allow students to publish calendars that reflect their work and creativity

PREREQUISITE SKILLS

♦ Basic knowledge of *Microsoft Encarta 98/99 Encyclopedia Deluxe* and *Microsoft Publisher 98*

♦ Web navigation with *Microsoft Internet Explorer 4.0*

♦ Exposure to fundamental concepts of middle school math and geometry
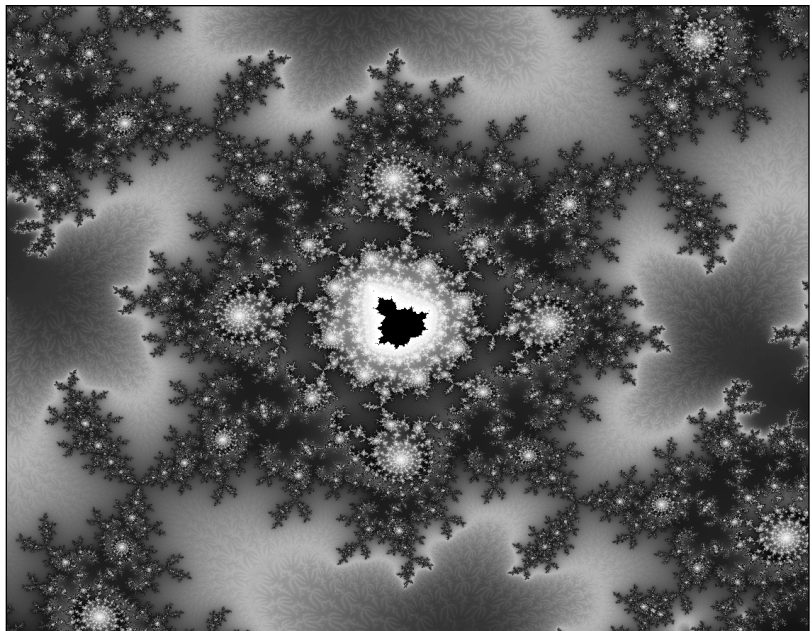
***Fire and Ice,** from the fractal art gallery of Uwe Krueger and Heinz Wolf.*

TIME ALLOTTED

Approximately 2-3 class periods

HOW TO BEGIN

1. Ask the students if they have ever noticed the realistic landscapes, such as craggy mountain ranges, in some 3D computer games. Ask if they have ever wondered how those landscapes were created.

2. Introduce the concept of fractals as a mathematical way of modeling real world features, a method used to create realistic virtual realities and stunning digital art.

3. Tell students that they will be using *Encarta Encyclopedia* and *Internet Explorer* to learn more about fractals and see examples of fractal art.

4. Tell students that they will be able to capture and publish their favorite images in a calendar they will create with *Publisher*.

Student Activity

DESCRIPTION

In this activity, you'll team up with a classmate to investigate the world of fractal geometry. You'll learn what fractals are, discover how they relate to the natural world, and get an introduction to the mathematical principles behind them. Then you'll explore fractal Web sites, tour online fractal art galleries, and publish your favorite fractal image as calendar art to share with your family, friends and classmates.
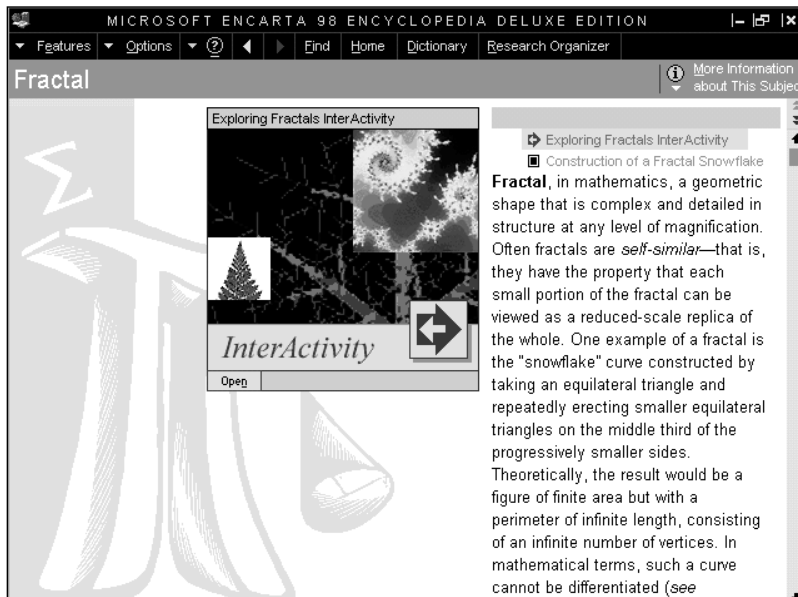
STEP A

Get the Big Picture

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0

WHAT TO DO: Team up with a classmate, then:

1. Open *Encarta Encyclopedia* and click Encyclopedia Articles in the opening screen. Click Find in the menu bar to open the Pinpointer. Type Fractal in the search box to locate the Fractal article in

Microsoft Encarta 98/99 Encyclopedia gives you the facts on fractals.

the title list, then click on it to go to the Fractal article. Read the text and explore the interactive exercises and the snowflake example.

2. When you're done, check your understanding by defining "fractal" for your partner in your own words. Discuss self-similarity and infinite complexity as they relate to fractals.

3. List at least 3 examples of natural structures that can be modeled with fractal geometry.

FRACTAL FACTS

Fractals are geometric shapes that are complex and detailed in structure at every level of magnification.

Fractals exhibit the following characteristics:
1) Self-similarity - Each small part of a fractal is a reduced replica of the whole.
2) Fractional dimension - The dimension of a fractal must be used as an exponent when measuring its size.
3) Formation by iteration - Fractals can be formed by applying a single operation that increases complexity (such as bisecting a line) over and over again.

Though based on abstract mathematics, fractals have practical applications in computer graphics, digital imaging, and modeling complex natural structures.

STEP B

Make a Famous Fractal

SOFTWARE: You don't need any! But you will need triangular gridpaper.

WHAT TO DO: You don't need a supercomputer to make a fractal - just paper and pencil. We're going to make a famous fractal called the Sierpinski Triangle in several increasingly complex versions, or iterations, to illustrate how a fractal can be represented at various levels of complexity. (Special thanks to Cynthia Lanius at Rice University for permission to include this exercise, ©1996-1998 Cynthia Lanius.)

1. Draw an equilateral triangle with sides of 2 triangle units each. Connect the midpoints of each side. How many equi-

Find more great lessons at: www.microsoft.com/education/curric/activity

lateral triangles do you now have? Shade out the center triangle.

2. Draw an equilateral triangle with sides of 4 triangle units each. Connect the midpoints of the sides and shade the triangle in the center as before. Notice the three small triangles that also need to be shaded out in each of the three triangles on each corner.

3. Draw an equilateral triangle with sides of 8 triangle units each. Follow the same procedure as before, making sure to follow the shading pattern. You will have 1 large, 3 medium, and 9 small triangles shaded. Use your artistic creativity and shade the triangles in interesting color patterns.

4. Combine your triangle created in step 3 with those created by other teams to form a larger Sierpinski Triangle for display in the classroom.

STEP C

Take a Closer Look

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0

WHAT TO DO:

1. Follow links from the *Encarta Encyclopedia* article or the list on this page (using *Internet Explorer*) to explore fractal sites on the Web.

2. For a "hands on" demonstration, try the interactive demo in the *Encarta Encyclopedia* article. Or visit the fractal microscope (http://www.ncsa.uiuc.edu/Edu/Fractal/
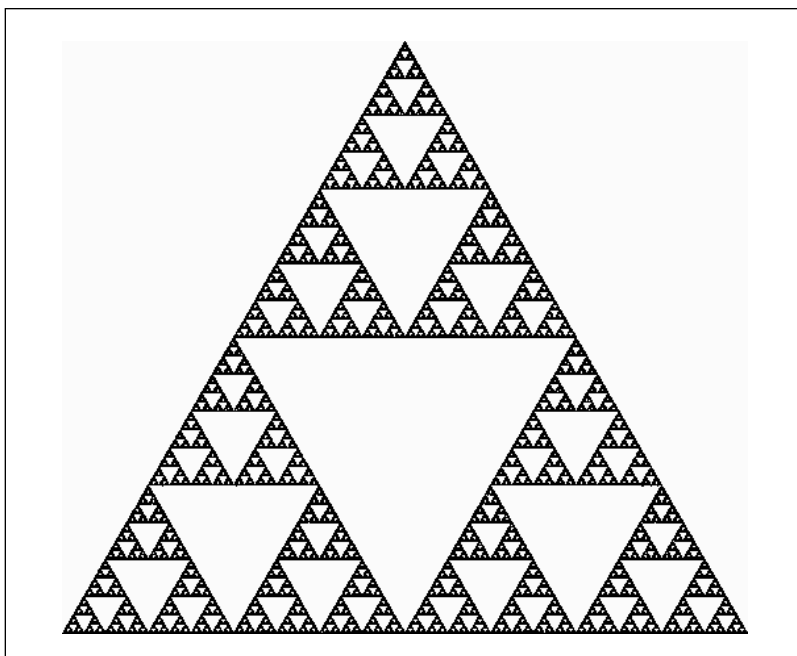
The iteration of the Sierpinski Triangle can be repeated indefinitely to create increasingly complex fractal images.

Fractal_Home.html) or animated fractals (http://www.mth.uea.ac.uk/mpeg.html) Web sites. Notice how detail emerges at each level of magnification.

3. Save images you like by placing the mouse pointer on them, clicking the right mouse button, and selecting Save Picture As from the popup menu. Name

the pictures and save them to a diskette or hard drive.

STEP D

Create a Fractal Calendar

SOFTWARE: Microsoft Publisher 98

FRACTAL WEB SITES TO CHECK OUT

http://www.shodor.org/master/fractal/ - Links to an introduction to fractals and to a fractal microscope that lets you "zoom in" on infinite complexity!

http://math.rice.edu/~lanius/frac - An easy-to-follow discussion of fractals designed for students, including examples, explanations and related links.

http://aleph0.clarku.edu/~djoyce/julia/explorer.html - An interactive site that lets you create your own fractal images.

http://fas.sfu.ca/0/cs/research/projects/FractalCal/cal.html - A collection of fractal calendars with detailed descriptions of how the images were created.

http://www.fractals.com/fractal_gallery/uwe_krueger/room1.html - The mother of all online fractal art galleries. Stunning images; BIG downloads.

http://www.mth.uea.ac.uk/mpeg.html - Really cool animated fractals!

http://life.csu.edu.au/complex/tutorials/tutorial3.html - All the fractal math you ever wanted, plus great links to other fractal sites.
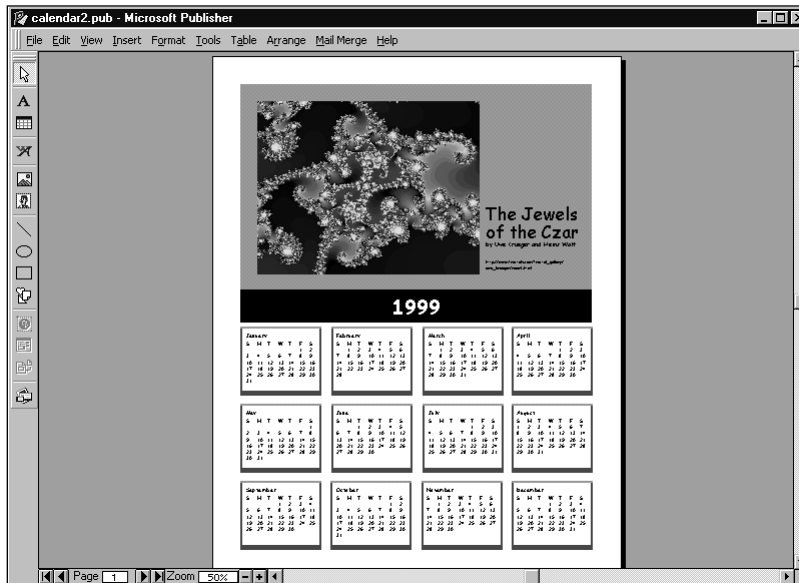
Use *Publisher* to create a calendar that displays your favorite fractal art.

WHAT TO DO: Select your favorite image from the fractal art you downloaded from the Web to publish as your calendar art. Here's how:

1. Launch *Publisher*. Click the Publications by Wizard tab, then click Calendars.

2. Select one of the Full Page Calendar templates that provides space to insert your own graphic. Art Left Calendar and Art Right Calendar are good choices.

3. When the Calendar Wizard appears, click Next to begin the process of customizing your calendar.

4. Choose a color scheme that will complement the colors of the fractal image you've chosen.

5. Select Portrait orientation to give your image more room at the top of the page.

6. Select Yearly so that your calendar will span twelve months.

7. Click the Change Dates button to change the year your calendar spans (January to December 1999, for example).

8. Click Finish when you're done. Then choose Hide Wizard from the View menu to give yourself more room to work.

9. Insert the fractal image you've chosen in a picture box at the top of the calendar.

Note: The text and picture boxes may be grouped. To alter or delete them separately, you will need to select Ungroup Objects from the Arrange menu.

♦ Select the existing picture box, or create a new one.

♦ Select Picture/From File… from the Insert menu to locate your saved fractal file and insert it into the picture box.

♦ Restore the image's original colors, if necessary, by selecting the image and then selecting Recolor Picture/Restore Original Colors from the Format menu.

10. Be sure to credit the source of your fractal in a text box beneath the image.

11. Save your work. Print copies to share with your classmates, friends and family!
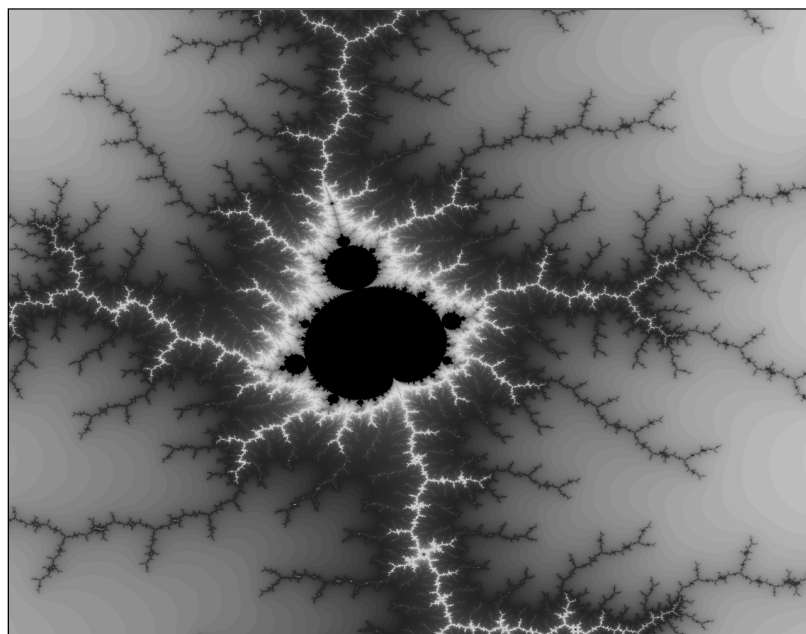
***Genesis*, from the online fractal gallery of Uwe Krueger and Heinz Wolf.**

LITERARY SCAVENGER HUNT

Teacher Guide

SUMMARY

The classics of English literature have been read, discussed and analyzed by generations of American school kids. But that doesn't mean that learning about them can't be a fresh and fun experience for today's students. In this activity, students learn about literature in a new way by searching the Web in a scavenger hunt for information about books and authors. Fact gathering is just half the fun, though. When the hunt is over, students will publish their answers in an interactive slide show for presentation to the class.

OBJECTIVES

♦ To stimulate student interest in learning about literature

♦ To develop students' confidence and resourcefulness in searching the Web

♦ To allow students to answer questions and solve problems creatively and interactively

PREREQUISITE SKILLS

♦ Knowledge of literature appropriate for grade level and scavenger hunt questions

♦ Experience browsing and searching the Web

American Literature Online

A Compilation of Web Sites and Other Connections

Chronological Index--Scroll & Click

Scavenging on the Web can be rewarding - if you know how to search.

♦ Fundamentals of *Microsoft Internet Explorer 4.0*, *Microsoft Word 97/98*, and *Microsoft PowerPoint 97/98*

TIME ALLOTTED

2-3 class periods

HOW TO BEGIN

1. Before class, you'll need to develop a list of questions for the scavenger hunt. Sample questions are provided in the student activity section, but you might want to modify this list to reflect your particular curriculum. If so, here are a few guidelines:

♦ Clear, concise questions with brief answers are best for this activity.

♦ Questions can pertain to literature that the students have already encountered

in the classroom, but should also introduce new material.

♦ Make sure that the answers can be found in the available sources.

2. For the scavenger hunt, group the students in teams of two. Give each team a set of the Student Activity pages and the list of questions. Set a deadline for the hunt itself (such as one class period), and tell the students that they will have additional time to create their *PowerPoint* shows.

3. Inform students that each team will have the opportunity to present their finished *PowerPoint* presentation to the class. Students will then vote to decide the winning team. Remind the students that they should base their vote on content as well as design of the presentations.

Student Activity

DESCRIPTION

If "classic literature" makes you think of dusty old books, think again. How about word-searchable Web sites and hypertext? In this activity, you and a classmate will team up in a literary scavenger hunt on the Web. Then you'll present your findings in the form of an interactive slide show.

STEP A

Stalk Your Quarry

SOFTWARE: Microsoft Word 97/98, Microsoft Internet Explorer 4.0

WHAT TO DO: You have your questions...now track down the answers! Carefully formatting your questions and answers in *Word* will make it a lot easier to create your slide show later.

1. In *Word*, type a neat list of all your scavenger hunt questions, with paragraph returns and no blank lines between them. (Don't number the questions - you can do that later in *PowerPoint*.) Save this document. You'll use it for the table of contents in your slide show.

2. Create a separate document to collect your answers. Start by copying your question list into this document. As you find your answers, enter them as paragraphs directly beneath the questions, with no blank lines in between. At the end of each answer, include the full URL of the location where you found it.

SAMPLE QUESTIONS FOR THE HUNT

1. Name two novels by Ernest Hemingway. When were they were published?
2. Who wrote *Travels with Charlie*? Describe Charlie.
3. Define the "American dream" and give an example from a novel you've read.
4. Who wrote *The Lord of the Flies*? Briefly describe the setting and theme.
5. What do the protagonists in *The Scarlet Letter* and *Fahrenheit 451* have in common?
6. What is the nature of the conflict in *To Kill A Mockingbird*?
7. Who wrote *1984*? What is the protagonist's greatest fear?
8. Name two plays by Arthur Miller. Give a one-sentence description of each.
9. Where does a symbol of God appear in *The Great Gatsby*?
10. Name a nature writer from the school of American Romanticism.

3. Indent your answer paragraphs by clicking on each one and then clicking the Increase Indent button in the Formatting Toolbar. When you're done, your questions should be flush left, your answers indented, and all your text should be Normal style (as indicated in the Formatting Toolbar).

4. Start your search at the Web sites listed on this page. Be alert: You may run across the answer to one question while looking for another.

5. Keep your answers brief - no more than a few sentences.

SITES TO CHECK OUT

American Literature Online - a chronological list of links to authors, books and topics in American literature: http://www.missouri.edu/%7Eengmo/amlit.html

University of Delaware Library Guide to English and American Literature - more great links: http://www2.lib.udel.edu/subj/engl/internet.htm

Library of Congress - search the stacks by subject, title, or author: http://lcweb.loc.gov/homepage/lchp.html

STEP B

Show Off Your Catch

SOFTWARE: Microsoft Word 97/98, Microsoft PowerPoint 97/98

WHAT TO DO: Now you'll convert your questions and answers into a *PowerPoint* presentation.

1. Open your *Word* document. From the File menu, choose Send To and select Microsoft PowerPoint.

2. *PowerPoint* opens, displaying your newly created slide presentation in Outline view. Select Slide in the View menu and look at your slides. Each slide should have a question in the title box at the top and the corresponding answer in the text box below. Adjust font size and text box dimensions, where necessary, to make questions and answers fit.
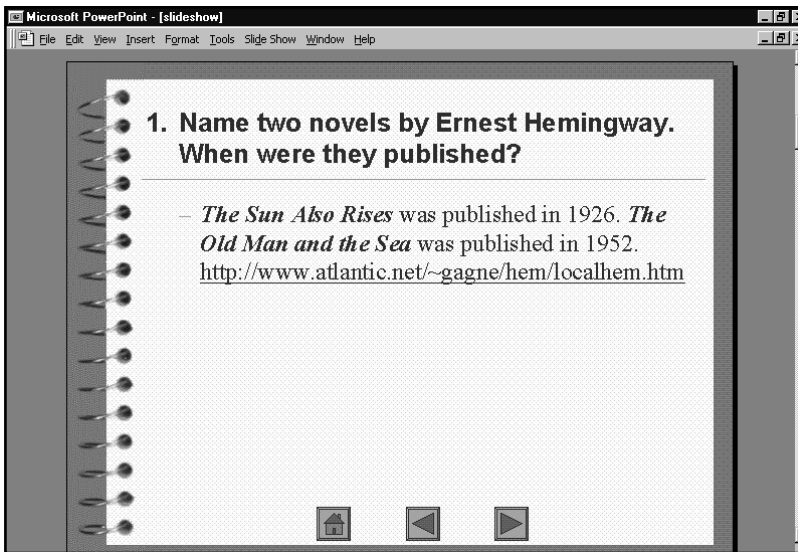
3. From the Format menu, select Apply Design. Select a design you like and click OK. (You can repeat this later to change the design, if you want

1. **Name two novels by Ernest Hemingway. When were they published?**

– *The Sun Also Rises* was published in 1926. *The Old Man and the Sea* was published in 1952. http://www.atlantic.net/~gagne/hem/localhem.htm

Action Buttons make it easy to navigate through your *PowerPoint* show.

to.) To make additional color changes, you can select Background and Slide Color Scheme from the Format menu.

4. Try animating your answers. Select Slide in the View menu, and click on the answer text in slide 1. From the Slide Show menu, select a Preset Animation option. Preview your animation by selecting View Show from the Slide Show menu.

5. Now animate all your slides. You can even use different animation options on each slide!

STEP C

Make It Interactive

SOFTWARE: Microsoft Word 97/98, Microsoft PowerPoint 97/98

WHAT TO DO:

1. First create a few slides for your interactive Table of Contents. Choose New Slide from the Insert menu. The New Slide dialog box appears. Select the Bulleted List AutoLayout and click OK. A new blank slide will be added to your presentation. Repeat this process to create two or three new slides. With either Outline or Slide Sorter selected in View, drag your new blank slides to the beginning of your show.

2. Go to your first slide in Slide view. Click in the title box and type a title for your show.

3. Now go to your *Word* document that listed the questions only. Copy the list and Paste it into the text box on slide 1.

4. The list of questions will probably be too long to fit on one slide. Cut the remaining questions from the bottom of the list and paste them into the text box on the second slide. Repeat this process to accommodate all the scavenger hunt questions. Print a Handout version of your slide show (6 slides per page) to refer to for the following steps.

5. Now you can add a button next to each question in the table of contents that will link directly to the chosen slide.

♦ Go to the beginning of your show and select Slide in the View menu. Select Action Buttons in the Slide Show menu, and choose the Custom (blank) button. The mouse pointer becomes a crosshair with which you can draw a button next to a question in the table of contents.

♦ When you are finished drawing your button, the Action Settings dialog box opens. On the Mouse Click tab, choose Hypertext link to slide, and select the slide that corresponds to the question you are linking. Click OK to close the Action Settings box. To test your link, switch to Slide Show mode (in the View menu).

♦ Repeat this process for all of the questions in your table of contents.

6. Add three more navigation buttons to each slide:

♦ A Home button for jumping back to the table of contents from anywhere in the show.

♦ Previous and Next buttons to let you move forward or backward through the show.

♦ To place these buttons on every slide, select Master, Slide Master from the View menu. Select the Home, Previous and Next buttons from the Action Button choices. Place them at the very bottom of the Slide Master so they won't overlap your text boxes. When you're done, test them by selecting View Show in the Slide Show menu.

7. Now you can present your scavenger hunt results in an exciting, fully interactive *PowerPoint* show. Present it to your class with pride!

DESERT STORM, REVISITED

▶ *Teacher Guide*

SUMMARY

Although the Persian Gulf War unfolded less than 10 years ago, it may be ancient history - or even lost history - for your students. This activity will bring the war into focus for today's young people, while building on their distance from the conflict with an objective debate about its merits.

OBJECTIVES

♦ To help students develop an understanding of the Persian Gulf War as an example of late 20th century world conflicts

♦ To challenge students to consider the pros and cons of America's role in "Desert Storm"

♦ To provide students an opportunity to present a formal debate on a topical issue
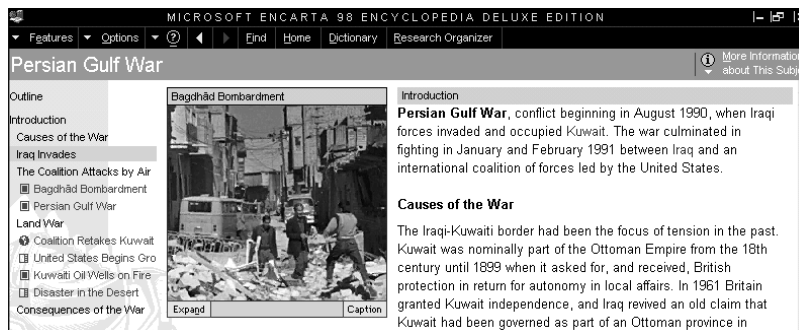
PREREQUISITE SKILLS

♦ Research skills using *Microsoft Encarta 98/99 Encyclopedia Deluxe* and *Microsoft Internet Explorer 4.0*

♦ Ability to develop a *Microsoft PowerPoint 97/98* presentation - including maps, charts, and photos - as a visual aid to a debate

TIME ALLOTTED

3 class periods

Use *Encarta Encyclopedia Deluxe* to begin researching the Gulf War.

HOW TO BEGIN

1. Create a classroom library of print materials, videos, and other non-computer resources focusing on the Gulf War. If you know anyone who served in the armed forces during the war, or who played some other significant role, you might arrange to have them visit your class.

2. Ask students to think about where they were and what they were doing in fall of 1990 and spring of 1991. Ask them what they remember about the Persian Gulf War, also known in America as Operation Desert Storm. Students may recall hearing about Saddam Hussein or General Colin Powell for the first time, or they might remember seeing the bombing of Baghdad on television. Record their memories on the board.

3. As a follow-up question, ask students what they think the consequences of the war have been, including any lasting effects they see today.

4. Now pose this challenge to your students: Imagine you have traveled back in time to serve as youth advisers to President George Bush. To give him the advice he needs, you have to understand the facts - and then take a strong position. You'll develop both by staging a series of debates.

5. Divide your class in half, randomly. Designate one half as pro, the other as con. Within each half, have students form debate teams of 3 or 4 members each. Set a date for your debates, hand out the Student Activity pages, and remind students to approach their task seriously: The leader of the free world is counting on them.

Student Activity

DESCRIPTION

Whether or not you remember the Persian Gulf War, the events are recent enough to make for a compelling - maybe even passionate - discussion about the conflict and its consequences. In this activity, you and your teammates will imagine being asked to travel back to the early 1990s to help America's leaders make the best decision possible. You will bring the benefit of hindsight, careful research, and intelligent debate to the task.
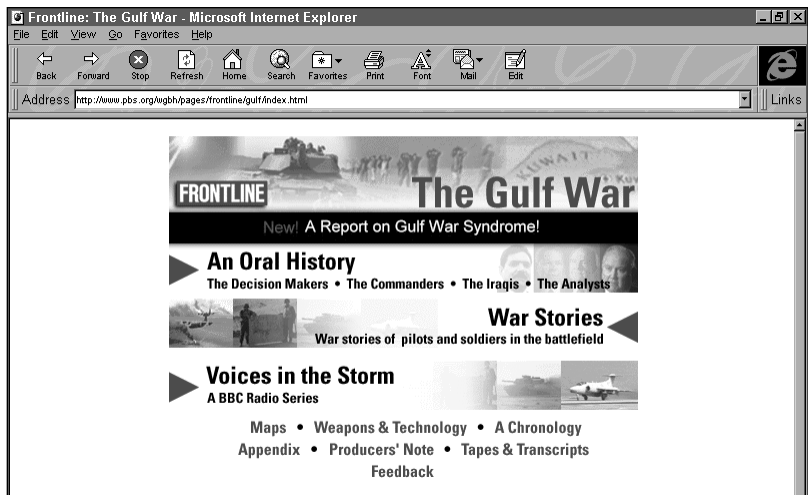
STEP A

Fact Finding

SOFTWARE: Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0

WHAT TO DO:

1. Within your team, divide up the work of gathering basic facts about the Persian Gulf War. You may want one or two people working with the print

Internet Explorer **makes it easy to tap the wealth of war info on the Web.**

resources in your classroom or school library, while the other half of the team uses the computer. Halfway through your research, you'll switch media.

2. Team members doing electronic research should start by launching *Encarta Encyclopedia*, clicking on Encyclopedia Articles, choosing Find, and using Pinpointer to locate the extensive article called Persian Gulf War. From there, you can explore related articles and follow Web links using *Internet Explorer*.

3. Focus first on pulling together background details and chronology about the war. Make sure you're comfortable with the geography of the Gulf region, and that you can name all the key players on both the Coalition side and the Iraqi side.

4. Next, look for facts, analysis, and commentary about issues like those listed in the box on this page, keeping in mind realities of 1990.

5. In addition to making careful notes with thorough citations of your sources, be sure to copy and save any maps, charts, pictures, and other visual aids that might help your case in the debate.

6. After one class period of research, convene as a group and share your findings. Identify gaps to fill and leads worth following. Swap research tools (computer/non-computer) for your second research period.

DESERT STORM: QUESTIONS TO CONSIDER

✓ What are America's own interests in the Gulf?

✓ What are America's responsibilities to the world?

✓ What impact does the end of the Cold War have on regional conflicts?

✓ What could be the cost, in economic, political, and human terms, of taking action in a conflict like that developing in the Gulf? What could be the cost of not taking action?

✓ What should be the goal of action in the Gulf?

✓ What military resources might be necessary?

✓ How might technology affect this conflict?

✓ What might be some unintended consequences of such a war?

STEP B

Framing Your Arguments

SOFTWARE: Microsoft PowerPoint 97/98, Microsoft Encarta 98/99 Encyclopedia Deluxe, Microsoft Internet Explorer 4.0

WHAT TO DO:

1. After your research is complete, convene as a team to begin developing your debate position. Ideally, each member of the team should propose at least one argument either for or against - depending on the side you've been assigned - American involvement in the war. Discuss all of the arguments on the table, and choose the three or four strongest. These will form the heart of your debate.

2. Now you need to create the *PowerPoint* slides that will serve as visual aids for your debate. Look carefully at the list of required slides in the box on this page. Your whole team could collaborate on all the slides, or you could divide up the work by topic.

YOUR SLIDES MUST INCLUDE:

✓ Title Slide
✓ Chronology and Overview - 2 slides (all teams must prepare these, but only one team chosen randomly will present them)
✓ Summary of Argument
✓ 3-4 Arguments - 1 slide each
✓ As part of argument slides or as separate slides:
    -Map
    -Photo
    -Spreadsheet or Graph
✓ Conclusion
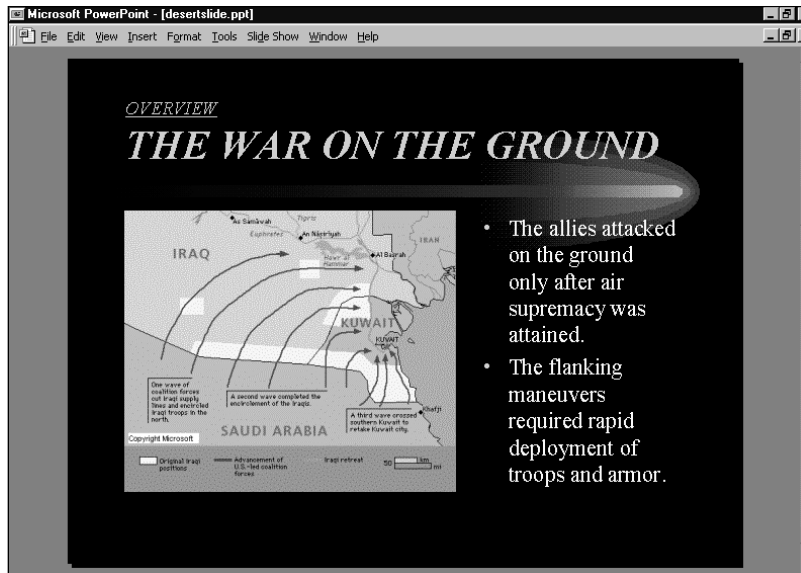
Use *PowerPoint* to add powerful visual impact to your presentation.

3. When your slides are complete, review them in Slide Show. Decide which member of the team will present each slide and practice your presentations.

STEP C

Staging the Debates

SOFTWARE: Microsoft PowerPoint 97/98

WHAT TO DO:

1. Each con team should put its name on a slip of paper in a hat with the others. Each pro team will draw a slip to see which con team they will debate.

2. Your teacher will assign one pro-and-con pairing to begin the debates.

3. The first debaters should meet to coordinate their initial presentation. Each team should print out its chronology/overview slides and determine what key factual points they can agree on. The teams

can then open a new *PowerPoint* presentation, Copy and Paste their relevant slides into it, and merge their points. Each team should name one member to make this initial presentation.

4. Following the overview, each pair of teams will debate each other in turn. All debates will follow the same protocol: First the pro team will present its arguments, which the con team will respond to. Then the con team will make its presentation, followed by the pro team's response. Each team can take one minute at the end of the debate to summarize.

5. At the end of the debate, each student should write his or her own final stand on a slip of paper. Your teacher will then lead a wrap-up class discussion focusing on students' opinions and whether they changed as a result of research and debate. How will your class advise President Bush? Should America

---

     Find more great lessons at: www.microsoft.com/education/curric/activity

MICROSOFT TEACHER RESOURCES
Helping teachers integrate technology into the classroom

In and Out of
the Classroom

These self-paced guides use real-life classroom examples to help teachers and students master Microsoft desktop applications, including:

Office 97 Professional
Office 98 Macintosh Edition
Word 97
Excel 97
PowerPoint 97
FrontPage 98
Publisher 98
Windows 95 & 98
Works 4

Available for download now at:
http://www.microsoft.com/education/k12/learn.htm.

Productivity in the Classroom

These classroom-tested lessons integrate a variety of Microsoft software applications, including FrontPage 98, Office 97 and Office 98, Internet Explorer 4.0, and Encarta 99 Encyclopedia Deluxe Edition. The lessons span the spectrum of k12 subjects and include separate teacher and student activity pages. Download at http://www.microsoft.com/education/curric/activity.

Online Tutorials

These easy-to-use tutorials are designed to show teachers how to use Microsoft software in the classroom. They were created in partnership with ACT360 Media (http://www.actden.com), developers of interactive, online courses for teachers and students. Available tutorials include:

IE4 in the Classroom, http://www.actden.com/ie4/
Outlook Express in the Classroom, http://www.actden.com/oe/
PowerPoint in the Classroom, http://www.actden.com/pp/
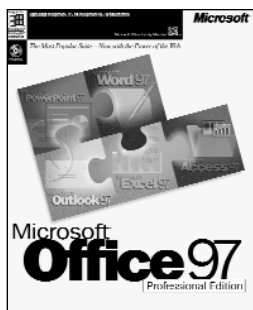**FrontPage in the Classroom**, http://www.actden.com/fp/

"Workshop in a Box" Kits

Managing the transition from the Macintosh to the Windows platform and from ClarisWorks 4.0 to Microsoft Office 97 & 98 is easy with these leader-led, hands-on workshops. Workshops kits available online include *Moving from Mac to Windows*, *Moving from ClarisWorks 4.0 to Microsoft Office 97*, and *Moving from ClarisWorks 4.0 to Microsoft Office 98* (for the Macintosh). These kits can be downloaded at http://www.microsoft.com/education/k12/learn.htm.

Access these FREE resources and more at:
http://www.microsoft.com/education/k12/training.htm

Microsoft® Office 97, Professional Edition for Windows and Microsoft® Office 98 Macintosh Edition (Academic Editions)

Office 97/98 integrates intelligent applications with the power of the Web. Easily insert hyperlinks between Office documents or out to the Internet. Save your documents as HTML to create Web pages instantly. *Office 97, Professional Edition for Windows* includes: **Microsoft Excel 97, Word 97, PowerPoint 97, Outlook 97, Access 97,** and **Microsoft Bookshelf Basics**. Office 98 and Windows Standard Editions do not include *Access 97* or *Bookshelf Basics.* Office 98 includes *Outlook Express* instead of *Outlook*.

Windows 95, **MacOS**; earlier version available for Windows 3.1 Estimated Academic Price: $199.00, Professional Edition and Office 98; $159.00, Standard Edition. Volume pricing is available.
http//www.microsoft.com/office/
http//www.microsoft.com/macoffice/

Cross-platform productivity tools for the office and the classroom
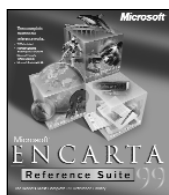
Microsoft® Encarta® 99 Reference Suite

Encarta 99 Reference Suite for Windows combines Microsoft's *Encarta 99 Encyclopedia, Encarta 99 Virtual Globe*, and *Bookshelf 99* to create the world's most comprehensive desktop reference library. (Complete suite available for Windows 95 only; *Encarta 98 Encyclopedia* and *Bookshelf 98* are available separately for the Macintosh.)

Microsoft® Encarta® 99 Encyclopedia, Deluxe Edition - This newly updated version of Microsoft's award-winning, interactive multimedia encyclopedia for students and teachers turns any classroom into a resource-rich research library. The *Deluxe* edition features Research Organizer, a tool that teaches students research skills and information literacy while helping them turn *Encarta i*nformation into top-notch papers, reports, and presentations. **http//www.microsoft.com/encarta/**

Microsoft® Encarta® Virtual Globe, 1999 Edition, the essential geographic reference companion to *Encarta 99 Encyclopedia*, brings you the world as never before with realistic 3-D maps, engaging multimedia, and authoritative content. For quick facts, schoolwork, or armchair travel, *Encarta 99 Virtual Globe* is the newest way to visit and learn about places, people, and cultures around the globe. **http://www.encarta.msn.com/evg98/evghome.asp**

Microsoft® Bookshelf 99 Reference Library provides ten quality desk reference works and other multimedia resources to enrich your writing, including dictionary, thesaurus, famous quotations, and more.
http://bookshelf.msn.com/na/default.asp

Windows 95, **MacOS** (*Encarta 98 Encyclopedia* and *Bookshelf 98* only); earlier versions available for Windows 3.1 Estimated Retail Price for *Encarta 99 Reference Suite*: $99.95; Estimated Academic Price: $64.95, for *Encarta 98 Encyclopedia Deluxe*; $54.95, *Bookshelf 98*.

Microsoft® Internet Explorer 4.0

The fast, easy, and safe way for teachers and students to discover the World Wide Web. Includes Internet e-mail, makes quick work of graphic displays, provides easy access to Favorite sites and popular search engines, and supports filtering and security systems for student safety.
Windows 95, Windows NT, Windows 3.1, and Macintosh
FREE to download
www.microsoft.com/ie/download

Microsoft® Publisher 98 (Academic Edition)

Create effective, high-impact publications and World Wide Web sites with Publisher 98. It's perfect for all your classroom and home projects. In just minutes, you and your students can turn ideas into professional-looking publications, in print and online. *In and Out of the Classroom with Publisher 98*, a teacher activity guide, is included in the Academic Edition of Publisher 98.
Windows 95; earlier version available for Windows 3.1
Estimated Academic Price: $69.95.
www.microsoft.com/publisher/

Microsoft® FrontPage 98 (Academic Edition)

Microsoft FrontPage makes creating professional-quality Web sites effortless with powerful new functionality, support for the latest Web technologies, and great integration with Microsoft Office. It's never been easier to develop and maintain your own professional Web sites!
Windows 95; earlier version available for MacOS
Estimated Academic Price: $69.95.
www.microsoft.com/frontpage/

Estimated prices are subject to change without notice.

SUPPLEMENT TO SCHOLASTIC INC.   098-81601