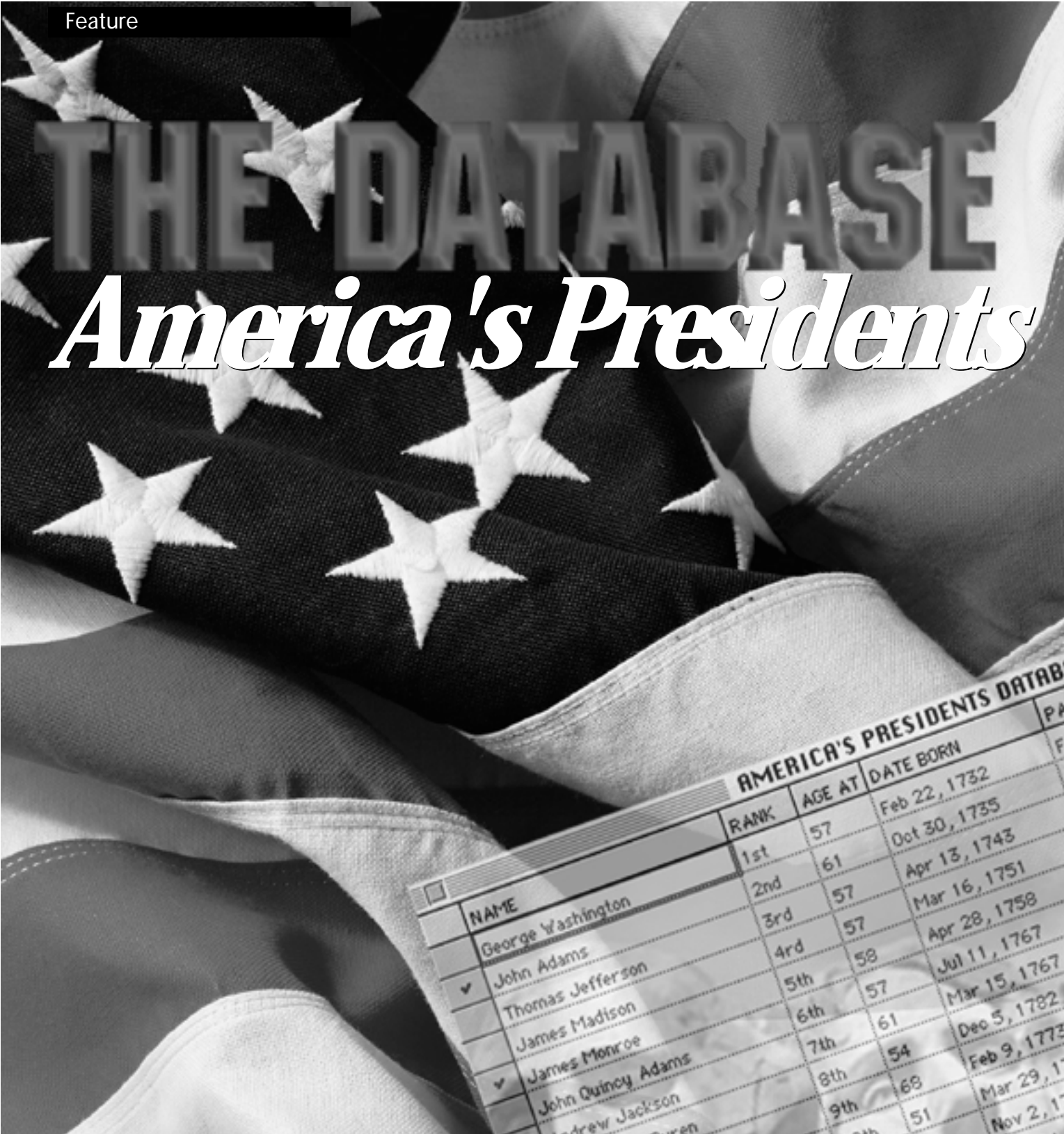


THE DATABASE

America's Presidents



NAME	RANK	AGE AT	DATE BORN
George Washington	1st	57	Feb 22, 1732
John Adams	2nd	61	Oct 30, 1735
Thomas Jefferson	3rd	57	Apr 13, 1743
James Madison	4rd	57	Mar 16, 1751
James Monroe	5th	58	Apr 28, 1758
John Quincy Adams	6th	57	Jul 11, 1767
Andrew Jackson	7th	61	Mar 15, 1767
...	8th	54	Dec 5, 1782
...	9th	68	Feb 9, 1773
...	10th	51	Mar 29, 17...
...	Nov 2, 17...



Getting kids to organize information actually isn't hard: They're naturally interested in categorizing what they find—putting like items with one another and separating the dissimilar from the similar. Just to show how you can take advantage of this interest, Beth Holmes describes in this month's feature article how she teaches students to organize information using a database on U.S. presidents.



As powerful technologies usher the information age into classrooms across the world, a host of “new literacies,” or essential skills, emerge as priority competencies for students who are bound for the high-tech world of work. The original literacies, the “Three R’s”—Readin’, Ritin’, and Rithmetic—were sufficient for a previous era, but we now need to include at least six new literacies. I have designated these 21st-century skills the “Six C’s”: *compute, communicate, conclude, confirm, categorize, and classify*. The first four of these new literacies are involved with problem solving, and the last two are concerned with information management.

What the New Literacies Require

Student mastery of each literacy depends on a new prerequisite skill: the ability to evaluate critically, organize, synthesize, and manage the vast information resources that are now accessible through our emerging technologies. Being able to manage information and data promises to be among the most challenging of these literacies, because today’s students will face enormous choices as they search through information resources. For this reason, they will benefit enormously from any early elementary activities and

technologies that help them collect, organize, categorize, and sort information. Even the youngest child should be able to examine large

amounts of information and determine and evaluate key concepts and ideas.

As a technology trainer for preservice and inservice teachers, I have discovered that most educators will quickly accept the new literacy challenges and adopt technology as a teaching and learning tool. To make sure that teachers handle such new tools well, practical ideas and projects that use technology for specific curricular objectives must be presented clearly. Teachers also must be given workable classroom-management strategies that will help them implement technology-based projects. Teachers are always eager to return to their classrooms to implement new ideas if their own hands-on training reveals realistic and manageable ways in which students can learn new information in exciting and empowering new ways.

The Database:

An Astoundingly Effective Tool

I introduce the database as a powerful tool for addressing a student’s need to make sense out of “collections” of information. In moving from preoperational thought to concrete operations, a developing thinker naturally seeks to make collections of various objects: stamps, butterflies, baseball cards, arrowheads, Barbie

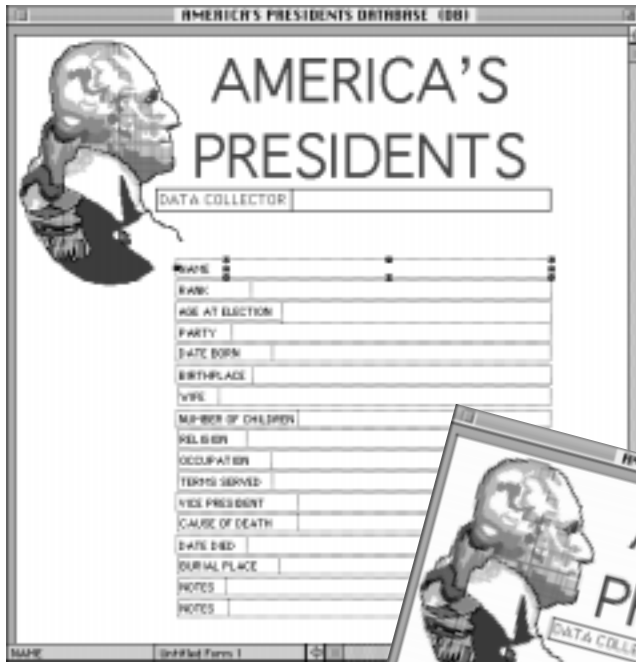
dolls, toy airplanes, soldiers, hats, and so on. Virtually any category of concrete object can be manipulated, classified, and stored for safekeeping.

The insightful teacher will channel children’s innate need to collect, moving them toward collections of information that focus on important and specific content areas. A good teacher also has success with more traditional projects that involve object collections—for example, leaf, insect, or rock collections. In today’s information age, teachers have a powerful tool that invites the electronic creation of rich collections drawn from the vast resources of the information superhighway and instant communication with experts around the globe. The database is the tool that makes these modern collections possible.

The database is a simple but powerful productivity tool that can help students refine the data-collection process. Basic database applications can be found in most popular productivity packages including ClarisWorks and Microsoft Works and Office. The activities presented here were created in ClarisWorks and Microsoft Works, applications that offer greater simplicity in database design than Microsoft Office’s Access. All database applications invite the user to begin a collection by defining data fields for the topic being collected.

A Sample Database Activity

I create and use an “America’s Presidents” activity to demonstrate how easily a



< Figure 1. The design view of the American President's database shows all of the categories. On this screen, you can lay out the data view, adding graphics and text as desired.



√ Figure 2. In data view, each screen shows a separate record.

database can be established and how simple but powerful it is for finding and sorting information and for printing reports.

Defining Database Fields

The first step in creating the presidents database is defining its fields. Each data field will represent a category of information that must be collected for each president. I identified and defined the following data fields: president's name, rank, age at election, political party, and other significant categories (Figure 1).

Once the data fields are established, a form or layout for presenting the data fields needs to be designed. A database should include a "data view" or "browse view." Such a view is important because it visually organizes categories of information in a way that creates a sense of order for the collection, especially for an elementary school user. The data view design for "America's Presidents," for example, is simple but effective in getting young students to participate in completing the collection (Figure 2). Figure 3 shows the final viewing option, the "list view."

An online tutorial, "A Step-by-Step Guide to Creating an 'America's Presidents' Database," is available at the L&L online supplements page (<http://www.iste.org/publish/learning/supplement.html>) to help you replicate in your own classroom the database and activities featured here.

Once the data view is complete, your students can begin a project that will bring the presidents of the United States to life. Allow each student to print a blank copy of the data view and select one or two presidents to research. In this way, each student knows exactly what information is to be gathered. When the data has been collected, the teacher has a "recording sheet" of each student's work; these sheets can be used to assess each student's ability to use multiple research tools to gather information.

Classroom teachers report that students, when they know they are responsible for adding to a classroom collection of information, are more diligent in doing detailed research and in ensuring that the information is accurate. This way each student has a chance to practice Marion Diamond's

AMERICA'S PRESIDENTS DATABASE (DB)					
NAME	RANK	AGE AT	DATE BORN	PARTY	BIRTHPLACE
George Washington	1st	57	Feb 22, 1732	Federalist	Pope's Creek, VA
John Adams	2nd	61	Oct 30, 1735	Federalist	Braintree, MA
Thomas Jefferson	3rd	57	Apr 13, 1743	Democratic / Republican	Shadwell, VA
James Madison	4rd	57	Mar 16, 1751	Democratic / Republican	Port Conway, VA
James Monroe	5th	58	Apr 28, 1758	Democratic / Republican	Westmoreland County
John Quincy Adams	6th	57	Jul 11, 1767	Federalist (1808), Democrat/R	Braintree, MA
Andrew Jackson	7th	61	Mar 15, 1767	Democrat	Waxhaw, SC
Martin Van Buren	8th	54	Dec 5, 1782	Democrat	Kinderhook, NY
William H. Harrison	9th	68	Feb 9, 1773	Whig	Berkeley, VA
John Tyler	10th	51	Mar 29, 1790	Whig	Greenway, VA
James K. Polk	11th	49	Nov 2, 1795	Democrat	Pineville, NC
Zachary Taylor	12th	64	Nov 24, 1784	Whig	Orange County, VA
Millard Fillmore	13th	50	Jan 7, 1800	Whig	Locke, NY
Franklin Pierce	14th	48	Nov 23, 1804	Democrat	Hillsboro, NH
James Buchanan	15th	65	Apr 23, 1791	Democrat	Mercersburg, PA
Abraham Lincoln	16th	52	Feb 12, 1809	Republican	Hardin County, KY
Andrew Johnson	17th	56	Dec 29, 1808	Democrat	Raleigh, NC
Ulysses S. Grant	18th	46	Apr 27, 1822	Republican	Point Pleasant, OH
Rutherford B. Hayes	19th	54	Oct 4, 1822	Republican	Delaware, OH
James A. Garfield	20th	49	Nov 19, 1831	Republican	Orange, OH
Chester A. Arthur	21st	50	Oct 5, 1830	Republican	Fairfield, VT

^ Figure 3. List view lists all of the records in order. You can sort on-screen to get different arrangements. This screen is sorted by rank.

“Each one, teach one” principle by providing essential and important information for their peers. The cooperative and collaborative design for this classroom project is both characterized by student engagement and strengthened by student ownership of the project. Once the students have completed their offline data cards, they are invited to add a new record to the class database of “America’s Presidents.”

Collecting Data. Collecting information on any subject is exciting when it becomes a class research project, especially when collecting is done electronically. The database’s real strength, however, comes when the collection is complete. Then the database tools can be applied to search the large body of information collected to identify trends, make generalizations, and extract trivia. I have successfully used student-designed “task cards” and “recording sheets” so that students will search for, collect, and report on information they extract from the “electronic collection.”

“Browsing Presidential Trivia” (on page 11) is a recording sheet that is designed to introduce students to the browse, sort, find, and match features of a database. Using the recording sheet, pairs of students can explore interesting presidential trivia while internalizing valuable content information and database skills. A thoughtfully constructed recording sheet such as this one will allow students to learn technological skills in the context of curricular activity. In this way, instructional time is focused on curriculum, while students learn skills in efficient use of technology as a result of actual use rather than as a separate curriculum area.

“What Were Their Jobs Before They Were President?” is a task card with three specific purposes and learning objectives (go to the *L&L* online supplements page to see this worksheet). First, the task card communicates the procedures to be followed to conduct an “and/or” search. Elementary students are fully capable of using these Boolean operators when they

are presented in a logical manner and in the context of relevant research. Second, the task card encourages students to explore the career paths of the presidents and draw conclusions about the experiential base that is needed for someone to perform presidential duties. Third, the task card provides written step-by-step instructions that ensure that students will assimilate important research and technological skills that will be transferable to future research projects.

“Marking Presidential Data and Marking Records for Printing” is a task card that has been designed for cooperative group work (posted online at <http://www.iste.org/publish/learning/supplement.html>). The task card presents complete written instructions for marking and printing within a database. These written directions help students work together to solve technological problems so that they can meet group academic goals. Multiple assignments within the task card encourage students to divide group tasks among themselves and to rely on each other as sources of information. Although the tasks are designed to promote inquiry and research, the questions’ open-ended nature invites students to think, conjecture, and propose conclusions based on factual data. The database is being used in powerful new ways to promote the “Six C’s” discussed at the beginning of this article: *compute, communicate, conclude, confirm, categorize, and classify*.

Advantages of the Database

A database application’s many features and functions allow students to arrange, sort, view, filter, and manipulate data in a variety of ways. Teachers can plan their lessons by using many of these features to create innovative activities that extend “America’s Presidents” beyond the ideas presented here. (“Classroom Tips: Using a Microsoft Works 4.0 Database,” posted online at <http://www.iste.org/publish/learning/supplement.html>, can help you expand these “America’s Presidents”

database activities by creating forms, reports, and using mail-merge functions with a database.)

The actual creation of a database as a large group lesson allows a teacher to provide instruction on structuring the elements of a story and model beginning technology skills for constructing a database. Constructing the data view as a whole group activity emphasizes the curriculum; the modeling of technology skills is only a side note, albeit an interesting one. With the database application projected on a large screen, a teacher can solicit student ideas about the “important parts” of a story. Through guided discussion, the students can be prompted to identify such story elements as characters, problems or conflicts, solutions to conflict, and supporting details for plot and characters.

The database’s flexibility as a tool for collecting information gives it almost unlimited potential for teaching and learning. Allowing students to collect information and then reassemble it in relevant ways with modern tools makes it far more likely that the students will be able to retain material than might otherwise have been considered boring or irrelevant. Go to the *L&L* online supplements page for further applications of the America’s Presidents database and other database activities. ■

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Resources

ClarifyWorks is available from Claris Corporation, 5201 Patrick Henry Drive, Santa Clara, CA 95052; 408/987-7000 or 800/747-7483; fax 408/987-7563; <http://www.claris.com/products/products.html>.

Excel and Works are published by Microsoft Corporation (<http://www.microsoft.com/microsoft.htm>) and are available at your local software retailer.

BROWSING PRESIDENTIAL TRIVIA

Browsing

In ClarisWorks, go to "View" on the top menu bar. Select "List View." Browse the America's Presidents database to discover facts about the presidents.

A. List the three presidents who had the most children.

President	Number of Children
1. _____	_____
2. _____	_____
3. _____	_____

B. Which presidents were or have been married more than once? Who were or are they?

Finding and Sorting

Go to "Tools" on the top menu bar. Drag to "Sort Records." Click the arrow in the first "Sort by" pull down menu." Select "Number of Children" and click "OK."

A. Did any president have a family with the same number of brothers and sisters that you have? _____

If your answer is yes, how many presidents? which presidents? _____

Go to "Tools" on the top menu bar. Drag to "Sort Records." Click the arrow in the first "Sort by:" pull down menu." Select "Age at Election" and click "OK."

B. Who were the three youngest presidents of the United States?

1. _____
2. _____
3. _____

Matching

Go to "Tools" on the top menu bar. Drag to "Match Records." Type the month and day of your birth in the "Find/Match" dialog box. Click "Match."

A. Do any presidents have the same birthday as you? _____

If yes, who was it? _____

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