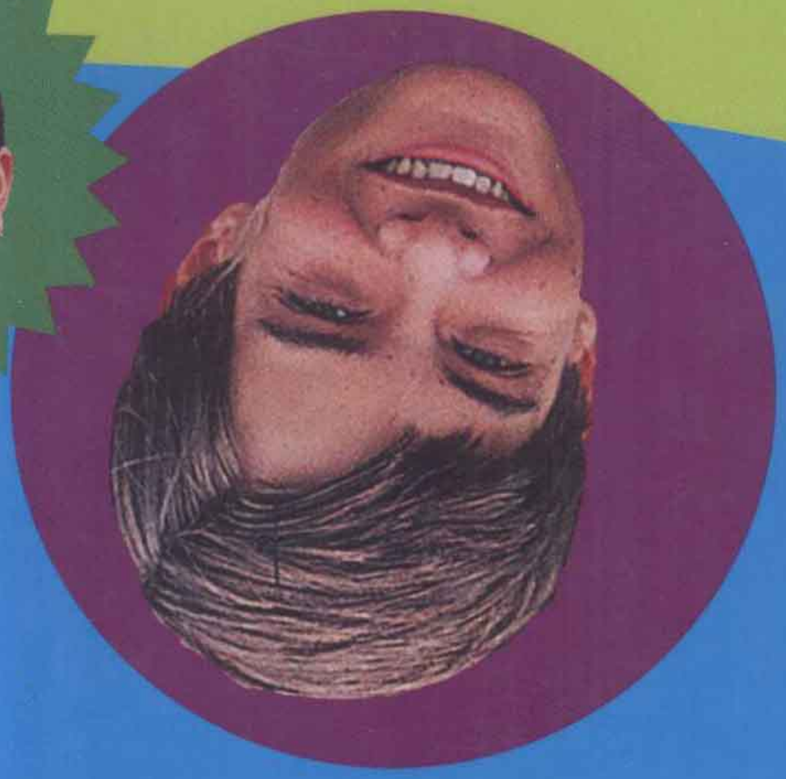

Kids Computers & Homework

how you and your kids
can make schoolwork
a learning adventure

James G. Lengel and Diane S. Kendall

Kids, Computers, & Homework

JAMES G. LENGEL

AND

DIANE S. KENDALL

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Kids, Computers, & Homework

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This book is dedicated to Molly and C.J. and all the other kids who use their computers to do their homework.

introduction

From Browser to Builder

- If you are a passenger, this book will help you become a pilot.
- If you are a player, this book will help you become a creator.
- If you are an admirer, this book will help you become an architect.
- If you are a reader, this book will help you become an author.
- If you are a browser, this book will help you become a builder.

The personal computer is the invention of our time. Just as in previous generations when television, movies, radio, the telephone, and the light bulb transformed our society, the computer is changing the way we work and the way we live, and the way our children do their homework. Computers will soon be in about one out of every two American homes. Each new computer household moves into the midst of a revolution in the way we deal with information.

But like other revolutions, this one has the potential to go off in different directions. Do we want our home computers used to watch cartoons and sitcoms? Or to interact with excerpts from the latest adventure movie? Today, three of the four best-selling software titles for home computers are of the shoot-'em-up variety.

A home computer is now capable of much more than playing games. It can read CD-ROMs, connect to the Internet, compose digital photographs, and produce live-motion video. Many of them come equipped right from the factory with the software tools for students to create their own desktop publishing and multimedia homework projects. This book teaches parents and their kids how to create simple essays and multimedia slide shows, all designed to produce more interesting and better-quality school assignments. Each chapter presents several cogent ideas for turning a homework assignment into a creative computer project, as well as step-by-step instructions on building each part.

We wrote this book to help families move toward using their computers as ideally envisioned—as a source of information and a tool to enlighten and alleviate some of the burden of everyday tasks and homework. We want to inspire you to use the computer for both practical and creative purposes.

Why This Book?

A few years ago, my daughter's English teacher refused to accept her homework essay on Roman aqueducts. Nothing was wrong with the grammar, syntax, length, or spelling. The problem was the teacher. She required that "All first drafts must be written by hand." My daughter had to copy her essay from the nicely printed pages into longhand on yellow lined paper!

Miss Ring, a good teacher, taught my daughter how to write. But because Miss Ring did not grow up with a word processor she didn't know how it fit into the process of good writing.

We wrote this book to help parents, teachers, and schools learn about the positive aspects of the new technologies. We also want to show how the computer can be a valuable addition to the student's set of homework tools.

More recently, another daughter completed an assignment showing the major population centers of Australia by using an electronic atlas on CD-ROM. When she went to hand in her paper, her

classmates turned on her and told her that she couldn't submit it because it "looked too good." Yet most of her classmates do in fact own fully equipped home computers, many of them with the same atlas and printer. The problem was that they and their parents did not know how to apply the computer to complement day-to-day schoolwork.

We wrote this book to help parents understand how computers can help with homework; to help children take full advantage of their home computer for schoolwork; and to help teachers learn how to alter their assignments for students who have computers at home.

One Sunday afternoon I watched four children, aged six through eleven, play Sega Genesis in the living room. I mistakenly thought that the device, built around a computer chip and digital technology, was called "Nintendo," but I was sharply corrected. The hardware setup and TV, which cost almost as much as a home computer, dominated the room and the minds of the children. As they watched, a little birdlike character appeared to move across a landscape of roads and bridges. The mesmerized children controlled it so as to avoid fatal pitfalls and violent enemies.

We wrote this book to help those kids realize that there are more significant ways to apply computer technology to their lives.

But the chief motivation for this book was to help kids move from browsing through the information to building their own ideas. We have watched many kids, in many homes and schools, find in the computer a powerful tool for discovering new ideas and expressing their own thoughts. We have watched them increase their self-esteem as they present their computer-generated works to others; we have listened to them engage in informed discourse with online pen pals; we have witnessed in them a new spirit of openness to learning and exploring new ideas.

We wrote this book so that their experiences could be shared by as many kids as possible. And we wrote this book to support the parents who love them and just need a few clues to help them more fully experience this age of digital wonders.

A Progressive Approach

This book starts simply, with assignments that just about any student can accomplish with the most basic home computer setup (plus a printer). From there we lead you step by step through more substantial tasks that take fuller advantage of the computer's capabilities. We also expand the range of subject matter, from a one-page composition, to a science lab report, social studies research project, and artistic presentation.

As we progress through the chapters, we introduce and teach you how to use many of the peripherals that expand the computer's power. Printer, CD-ROM, scanner, microphone, modem, video digitizer: we show how all these devices—many of them now standard or accessible equipment—can be employed in the completion of homework assignments.

We also explain how to use the software programs that come preloaded on most home computers, especially integrated software programs such as ClarisWorks or Microsoft Works. At the same time we add instruction on using specialized software (such as Kid Pix) and the electronic encyclopedias to help with homework. In later chapters we show how online services, music software, and even the Internet can be put to good use for school assignments.

The homework examples in the first three chapters can be produced on any home computer with a printer. Assignments outlined in chapters 4–6 require access to a CD-ROM drive as well as a modem. Later chapters discuss more sophisticated projects that incorporate the use of a scanner, microphone, digital camera, photo CD, and video digitizer—some of which you may have or have access to or might consider purchasing.

The two most popular types of home computer are those running either the Macintosh or the Windows operating system. These account for over 90% of computers being purchased today. Wherever possible, we show homework examples using cross-platform software—that is, software published in both Macintosh and Windows versions. Where necessary, we explain how the programs work

differently on the two platforms. You will be able to re-create just about all the projects in this book with an up-to-date Macintosh or Windows computer.

An up-to-date Windows or Macintosh computer should have, at a minimum:

- 8 megabytes of random access memory (RAM)
- a hard disk drive of at least 230 megabytes
- a mouse
- 8-bit video (256 colors)
- 13-inch color monitor
- Windows: Windows 3.1 or higher operating system, 386 or better processor
- Macintosh: Macintosh System 7 or higher, 68030 or better processor
- a printer

By following this book chapter by chapter and working with your child on various projects, you will gradually increase your child's ability to think creatively about schoolwork and make use of more powerful and complex computer software and peripherals. If the examples in the later chapters seem beyond your capabilities, don't worry—just follow the book and we'll take you every step of the way.

contents

part

1

Author, Author!

chapter 1

It All Starts with an Idea

Writing is hard work. All of us remember how frustrating it was to sit down with a blank piece of paper, hoping the words would flow by themselves. Students in school today have the same problem. They are expected to write every day in several different subjects as well as come home to do book reports, essays, research reports, and more. It's not easy, but the computer can help them get the thinking process off the ground.

Thinking can also be a struggle, but it's the most important step in learning to write well. Once we start to think, the words begin to flow—and one sure way to jump-start the thinking process is through *brainstorming*. With a little instruction from you on how to get started, your child can learn to apply this thought-provoking method of creating and organizing ideas when tackling a variety of school assignments.

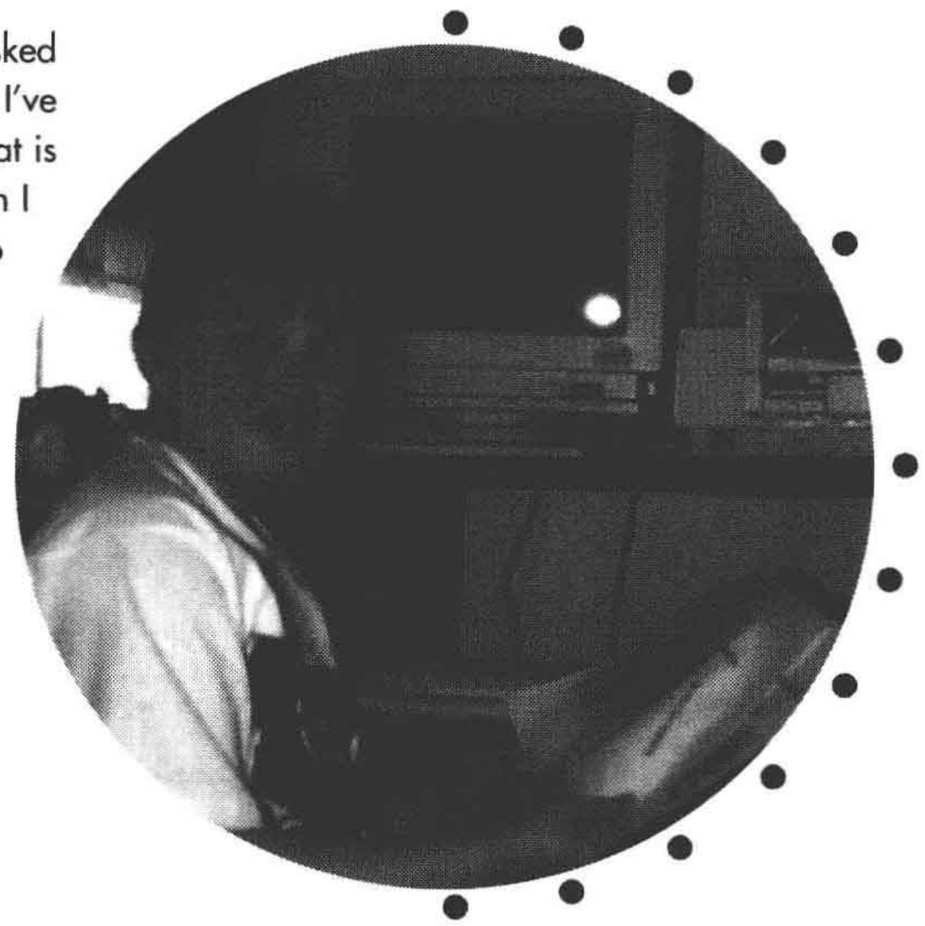
brainstorming—let your brain think of as many ideas as possible, get them down, and share them with others.

This chapter looks at how you can help your kids use the computer as a tool to stimulate and organize the brainstorming process as the first step toward creating a well-written document. We begin with a familiar school writing assignment that C.J., our fictitious sixth-grader in middle school, must complete and demonstrate how she uses her computer step by step to do so. Along the way, we review a variety of software and techniques that can help any student in any

grade carry out the thinking, brainstorming, and organization process essential to successful writing.

How Did She Do That?

At first I could not believe Ms. Flores asked us to write an autobiography! After all, I've only been around for eleven years—what is there to tell about me—C.J.? But when I sat down at the computer and began to make a quick list of the ten most important things that ever happened to me, I found that there were lots of things I've done, places I've gone, and people I've met. My storyboard quickly got longer and longer. I've already got at least twenty things to write about in my autobiography!



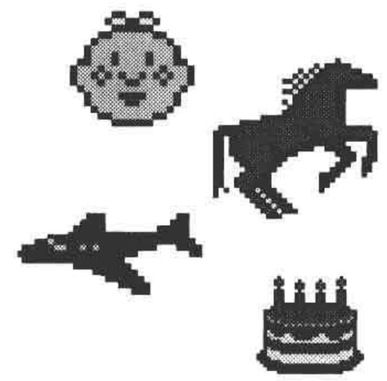
Every year, it seems as though one of our kids is given an autobiography report to do as a school assignment. If you think about your last parent-teacher meeting at school, you will probably remember seeing some kind of bulletin board displaying student autobiographies, complete with pictures. It's a common assignment, and there are a couple of good reasons for it. First, an autobiography assigned at the beginning of the school year is a good way for the teacher and classmates to get to know each other. An autobiography is also used to help develop kids' self-esteem as they approach adolescence. This is not an easy assignment for students of this age. They do not often think of their lives as a story, and they seldom reflect rationally on the personal events that got them to where they are. Many students find themselves incapable of organizing their thoughts to the task—some

never even get past the first sentence! This is where the computer, as a tool, can be used in some interesting ways to overcome these blocks to writing and to turn this sometimes fearsome task into an opportunity for thinking and communicating.

C.J., our student pictured at the beginning of this chapter, just completed the first phase of her autobiography. She ordered the major events of her life and the most important aspects of her personality onto a *storyboard*. Each frame of this storyboard contained an important event or interesting juncture in her personal history, represented by graphics and text. Each frame denoted one paragraph or chapter in her autobiography. Later in this project C.J. turned this storyboard into a written document and then into a multimedia presentation.

***storyboard*—a set of panels or frames that depicts a plot, facts, or characters in sequential scenes—like a comic strip.**

C.J. constructed this storyboard using Kid Pix, a drawing program from Brøderbund, available on her computer. First she drew pictures of some of the events in her life that she could remember, using the mouse as a paintbrush or employing the "rubber stamps" that Kid Pix provides. Her first pictures were simple line drawings, but they were more than adequate to represent the various events she was thinking about. As she browsed through the collection of stamps, she culled some of the familiar items she found there—a baby's face to represent her birth, a horse for the summer she spent on her grandparents' farm, and an airplane and birthday cake for her trip to Disney World. Using the stamps was inspiring and easy. She quickly added the stamp to the screen, then wrote some simple words describing the event. As she created each frame, she saved it with simple descriptive words such as "birth" or "first pet" to identify the frame for future reference. After a break from her work, she came back to the Kid Pix program, opened each frame, and wrote a longer description for each picture. On one frame she recorded her own spoken description of the event, using the computer's microphone and Kid Pix's recording feature.



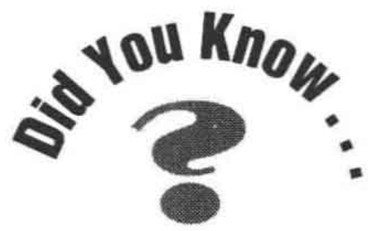
Brainstorming is an essential first step in the act of writing, and the computer can be invaluable here. As C.J. created the scenes of her life, she was using the computer as a brainstorming tool, an aid to remembering ideas and recording them quickly. Note that her ideas were represented by both words and images. For writers of all

KidPix

Kid Pix from Brøderbund is a basic drawing program for kids. All kinds of easy-to-use tools let the child draw lines, boxes, and circles; fill in colors, patterns, and mixtures; paint in various styles; and add text and erase. There's also a Hidden Pictures feature and a Pages feature from a coloring book. Rubber stamps let kids add icons to their pictures. Kids can also record an oral description of what they've drawn on each screen. (This recording works with all Apple Macintosh computers but requires the addition of a sound digitizer to an MS-DOS or Windows computer.) Kid Pix also includes a Slide Show feature that lets kids put their work into a presentation for display on the computer screen, complete with either previously recorded sounds or sounds of their own creation, short animated movies of miscellaneous things such as spooky ghosts or jumping dogs, and even a chance to add transitions between slides. Pictures created in Kid Pix can be printed or exported into word-processing documents. Newer versions of the program also include the ability to import photos from photo CDs and videotape, work with animated stamps, play with digital puppets, and create animated pictures with tools that have a life of their own. Whether you have an old or new version, this program has aged well, has a good future, and is flexible enough to be used in a variety of ways.

ages, images are an important source of ideas. Too often we expect students to be able to sit with a blank sheet of paper and instantly create a string of words. Better writing often comes by starting with ideas and images. When Albert Einstein was asked how he began his thinking, how he came up with the ideas for his writings, he explained that he constructed *pictures in his mind*, images that moved around one another. It was by thinking about these images that he crystallized his ideas. Only later did he write them down.

It All Starts with an Idea



All of us learn through images. When we hear words, we paint pictures in our minds of what the words mean. When we think of events or feelings, we think first of an image, and later we describe it with words. Child development research has found that without well-developed images to represent ideas, the child cannot later develop the more abstract concepts necessary for full adult understanding.

Onward and Upward

Like Einstein, C.J. next committed her ideas to paper. She printed out her storyboard pages and showed them to her older brother and to her parents. They suggested some parts of her life that she had not included—a writing contest she'd won and her soccer team's championship season—so she returned to Kid Pix and made a few new pages. Then she took all these printed pages and sorted them on the dining room table. She put them as best she could in chronological