

Welcome to *The Great Logo Adventure!*

Logo is a great adventure for anyone from 2 to 102. The really fun part of it is that *you* are in charge. *You* control the action. *You* make all the decisions. And, yes, you make all the mistakes. But who cares? That's part of the fun, too.

To get you started, we asked our friends, Logy and Morf, to put together this new edition of their Sourcebook. Logy is the turtle who has been our mascot for more than fifteen years now. Morf is her long-time friend.

Use this age, whatever discover what



Sometimes he isn't too smart. But guy anyway.

book as your guide, whatever you want to do with Logo. You'll you can do with turtle graphics.

Then move on to Section 2 for The Great Math Adventure, Recursion, List Processing, Simulations, and lots more. That's where you'll discover many more parts of The Great Logo Adventure.

Some Logo History

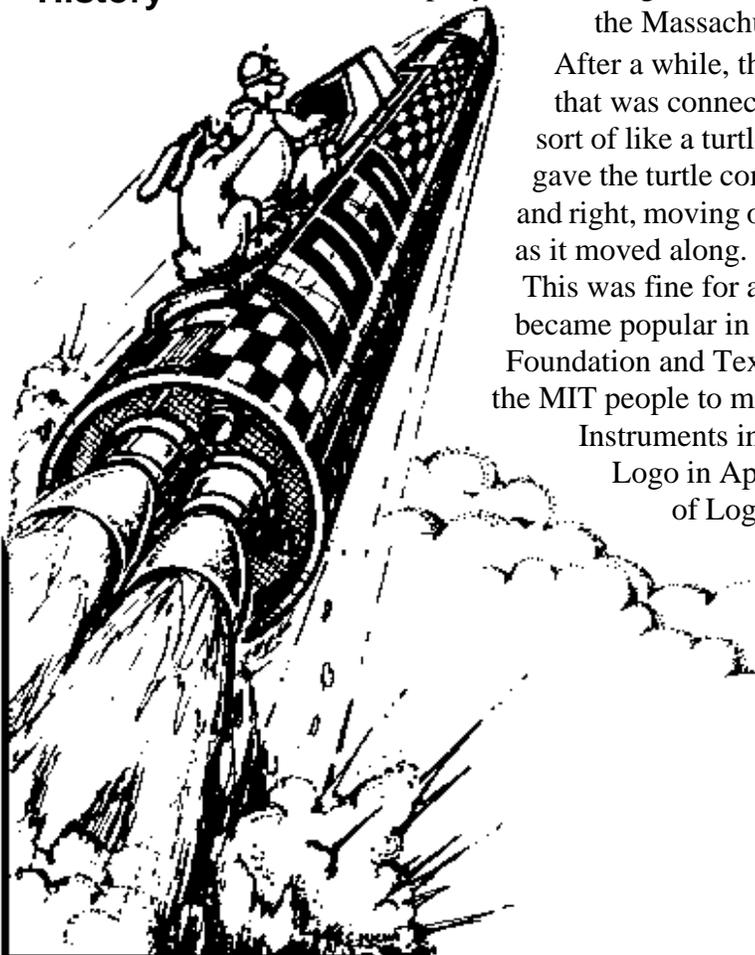
Logo got its start in the 1960s at Bolt, Beranek, and Newman, Inc., a company in Cambridge, Massachusetts, who worked with people from the Massachusetts Institute of Technology.

After a while, they added a small, round floor robot that was connected by wires to the computer. It looked sort of like a turtle. Using a small keyboard, young people gave the turtle commands to make it go forward, back, left, and right, moving over a big piece of paper, drawing pictures as it moved along.

This was fine for a while. But when personal computers became popular in the late 1970s, the National Science Foundation and Texas Instruments Incorporated both asked the MIT people to make Logo run on small computers. Texas Instruments introduced the first commercial version of Logo in April, 1981. In early 1982, the MIT version of Logo for Apple II computers was introduced.

Since then, many more versions of Logo for just about all personal computer have been introduced.

Now you have MSW Logo, Logo PLUS for the Macintosh, and other Logo packages. But before we go too far, why not show your parents or teacher the next page.



To Parents...teachers, too!

I've got what may be a surprise for you. This is *not* a book about programming.

It's a family activity book that shows you the fun you can have exploring the scope of your imagination. Logo and the computer are merely two of the tools you'll use.

The Logo Sourcebook relishes the value of play, the value of games and game design, the fun of discovery, especially the fun of discovering mathematics, graphics, language arts, and some other abstract ideas. The first half of the book presents an introduction to learning with Logo for younger children. The focus is on our friends, Logy and Morf, as they discover new ideas on and off the computer.

The second half is for those who want more from The Great Logo Adventure whatever their age. It digs into such things as recursion, math, two- and three-dimensional geometry, list processing, simulations, a brief look at artificial intelligence, and such. And, yes, you might just pick up a thing or two about programming.

What is Logo

Logo is best described as an educational philosophy expressed through an evolving series of computer languages. In recent years, Logo has evolved into Windows and other Graphic User Interfaces (GUI).

Logo is an interactive language for learners of all ages. It has borrowed the techniques of symbolic computation – the manipulating of words and ideas – from the LISP programming language. These techniques are combined with other powerful ideas such as the use of procedures, recursion, and the manipulation of programs as data to provide a unique interactive learning environment.

Don't get me wrong! This is not a book about "computer literacy," whatever the current and politically correct definition is supposed to be. And most certainly, it is not written in computerese.

It's a book about *self-literacy*, about young people of all ages using the computer and Logo as tools for self-discovery.

Young people from 2 to 102 begin by controlling the actions of a cybernetic turtle. These actions let them "see" how they are thinking. When the sequence of thoughts does not make the turtle do what they want, the descriptive nature of Logo allows them to easily retrace their thoughts to "debug" their thinking, or to pursue a new direction.

Multi-dimensional and multi-sensory activities done on and off the computer help young people develop a better insight into how to make things happen in the real world – be that on the computer or in their three-dimensional world. Along the way, they are introduced to some powerful ideas, about organizing, analyzing, and manipulating ideas.

Planting Some Seeds

Like the gardener, we plant some seeds on these pages. You are the one to feed these ideas, to nurture them, and to make them grow.

Be patient!

You may be tempted to rush over the details. Just remember that the younger the learners, the more dependent they are on imitation and repetition for learning. Time may be your enemy — but it's their friend!

So join your young people at the computer and read this book together. Cultivate their imaginations. Give them the time to explore. And don't be surprised if you are the one who ends up being cultivated.

“Why not just let a child explore on her or his own?”

There are those who advocate each child using his or her own computer. Programming and other creative activities tend to be solitary activities. Learning, however, is more fun as a group activity.

Allow me to offer an old Bamera proverb for consideration; from the drought-ridden country of Mali in West Africa.

“Mogho Kelen Te Sira Be!”



Loosely translated, this says that “one person cannot make a trail.” To accomplish a common task, the multiple talents of a group working together can be more productive than the finite talents of the individual. This is why the focus of this book is on groups and group activities.

OK, ready to start? Good! It's time to enjoy your very own Great Logo Adventure!

About the Author

Jim Muller has had a lifelong interest in translating high technology into understandable, practical, and enjoyable applications — especially for young people. He began working with Logo in 1979 while public relations manager for Texas Instruments Incorporated. They introduced the first commercial Logo package in April, 1981.

Also in 1981, Muller and his son organized the first Logo users group. What started as eight junior high students enjoying TI Logo around a ping-pong table in the Muller garage grew into the Young Peoples' Logo Association, Inc. (YPLA). Organized by and for all the young peoples of the world, the association quickly grew to 6000 members in 42 countries. In 1985, the YPLA joined CompuServe as The Logo Forum, where it remains active. Muller is now opening a Logo web page: <http://www.cyberramp.net/~jmul>.

In addition to a monthly newspaper, the YPLA published these books, some in multiple editions:

- * *1,2,3 My Computer and Me*
- * *The Turtle's Sourcebook*
- * *The Turtle's Discovery Book*
- * *The Misadventures of Mrtle*
- * *The Logo Library*
- * *Learning Logo On and Off the Computer*

and this interactive software:

- * *Logo Island Adventures*
- * *Voyages of The Turtle Shell*
- * *Escape From Logo Castle*
- * *DoodleBug Logo*

The Logo Forum offers product support from major Logo developers, 16 libraries of public domain and freeware Logo software, Logo utilities, projects, demos, and tutorials, and discussions among some 2,000 or so Logo fan(atic)s from around the world. Logy and Morf's web page offers similar services.

Acknowledgments

There are far too many! There's my son Larry and his friends. Without their curiosity and enthusiasm, the Young Peoples' Logo Association never would have happened.

Thanks to Prentice-Hall, Inc. for publishing our first series of books and for letting us reuse some of those ideas in this new series.

There are many, many young people from around the world who shared their own Great Logo Adventures with us. Some of those adventures are in this book.

Jack Kishpaugh, an inspirational quadriplegic with a totally infectious personality to whom all our books are dedicated, taught us the meaning and value of never saying "Never."

Thanks to Brian Harvey for developing the freeware package UCB Logo and most certainly to George Mills for putting it into the Windows environment as MSW Logo.

There's the late Charles Micha, the cartoonist who made The Great Logo Adventure come to life through his characters.

And, of course, there's Audrey Muller who survived the invasion of Turtle androids into her home and still managed to maintain a sense of stability all these years. A favorite quotation of ours states:

"He who has imagination without learning has wings but no feet."

Audrey has been stabilizing influence, providing the platform where we can plant our feet so that our minds can soar with the eagles.

Lastly, but certainly not the least important, special thanks to the many educators who helped develop and validate the YPLA approach to Logo, and from whom we learned so much. Dorothy Fitch, who helped edit this book, Judi Harris, Joan Randolph, and Kathleen Martin are but a few. More recently, there's been Jenny Betts of Brisbane, Australia, and Toby Epstein of the LaDue School District in St. Louis, Missouri. Through our cybernetic conversations, I've again discovered how much fun learning can be, on and off the computer.



The Logo We Speak

The Logo Sourcebook was written to support MSW Logo, a free Logo package developed by George Mills. It is based on UCB Logo developed at the University of California at Berkeley by Brian Harvey, a well-known Logo developer.

MSW Logo for Windows 95/Windows NT is provided free with this book. If you are running Windows 3.1, you can download the correct version of MSW Logo from George Mills' web site listed below, or send the MSW Logo diskette you received to the author with a self-addressed stamped envelope (make sure you have enough return postage). Be sure to specify the version you need:

WIN16 Kit: 386 with minimum of 4meg running Windows 3.1.
Enhanced Mode is strongly recommended.

WIN32s Kit: 386 with minimum of 4meg running Windows 3.1
with Win32s 1.30a.

WIN16s Kit: 286 with minimum of 2meg running Windows 3.1
in Standard Mode.

Got a question? Do you want the latest version of MSW Logo?

Contact George Mills at his home page: <http://www.softronix.com>.

Contact the author via e-mail at jmul@cyberramp.net or 76703.3005@compuserve.com. Also, Logy and Morf are starting their own Logo home page at <http://www.cyberramp.com/~jmul>. See you there.
