

*Seymour Papert:*

**ON LOGO**



**An eight-part video/diskette based learning system for teachers**

Produced by Media MicroWorlds, Inc., St. Louis, Missouri  
Elizabeth Farmer Schwartz, executive producer  
William J. Schwartz, director

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## **Acknowledgments**

### **Created by**

Seymour Papert

### **Researchers and Developers**

Elizabeth Schwartz  
Wynter Snow  
John Berlow  
Harry Nelson  
Donna Bearden  
Marian Rosen  
Alice Adcock

### **Video Production**

William J. Schwartz  
Daniel Svezia  
Schwartz & Associates, St. Louis  
Rosenthal Productions, St. Louis

### **Special Assistance**

Harriette Arkin  
Judy Bachman  
Mary Buback  
Students of the Ladue School District, St. Louis  
Students of the Community School, St. Louis

## Information for Workshop Leaders

The learning system, **SEYMOUR PAPERT: ON LOGO**, can be used for individual study or the basis for a course or workshop series. Being modular, the materials can be implemented in a variety of ways....depending upon your needs, goals, and schedule. Typical sessions are suggested, but the learning process is envisioned as ongoing...becoming more in-depth for some, beginning or extending for others.

The guidebook outlines the rationale and goals for the entire program, presents background information, readings and citations on educational uses of computers, particularly as they relate to learning styles and thinking skills. Also included are summaries of the videotapes and suggested resources for broadening the learning experience.

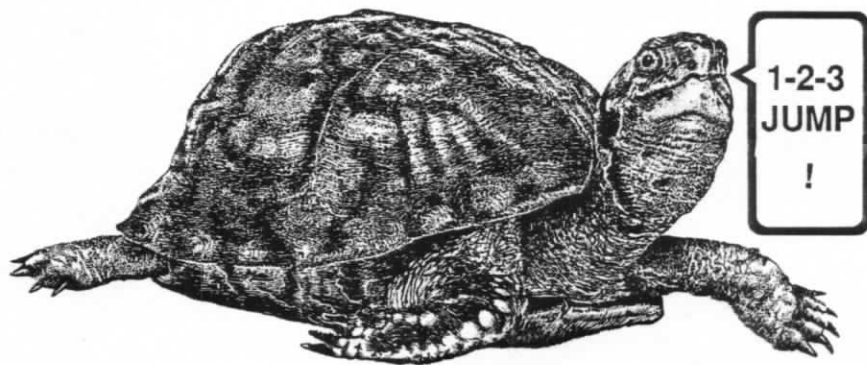
### Summary of the Video Tapes

The learning system contains eight video tapes, divided into two parts. The first, "New Mindstorms" is more philosophical in nature and can be used with beginners as well as the more sophisticated. The second part, "Hurdles", visualizes specific issues and explains technical skills that have proven to be more difficult for teachers to learn from manuals or experimentation.

The video tapes are not intended to be viewed only once. Rather, the learning system has been developed using a spiral approach in that the learner should watch, practice and review again and again for real understanding. Neither is the learning system intended to be an all-inclusive tutorial for mastering Logo. Manuals which come with your chosen version of Logo should be available for reference and sufficient time must be given to hands-on practice at the computer. As competency and understanding increase, other suggested materials should be used to enhance the learning experience.

# Hurdles

*Logo Grammar*  
*Naming and Variables*  
*Images of Recursion*  
*Digging Deeper*



The **Hurdles** series is designed for the teacher with some Logo experience who needs additional training in order to use the more powerful aspects of the language. Papert demonstrates "how-to" at the computer and also explains many of the underlying principles through visual metaphors. With extended practice and review, the learner can overcome several programming "hurdles" which are often the most misunderstood and difficult to master.

Ideally suited for the individual, the video format allows the learner to study complexities over and over again at their own convenience...and the accompanying disks and print extend the video instruction by providing guidance for hours of hands-on practice at the computer.

The materials can also be used in group situations such as workshops and courses and allow the instructor to accommodate individual rates of learning within the group.

**Tape 1: LOGO GRAMMAR.** Many teachers learn the elements of Logo in an intuitive way without understanding the structure of the language. But the time comes when going further requires a grasp of its grammar. Here Papert explains the structure using metaphors and models in a way that is engaging and easy to remember.

**Tape 2: VARIABLES AND NAMING.** Papert introduces "dots and quotes" with the making of muffins in the kitchen as he believes that most books teach variables in a way that is meant for the mathematically sophisticated. This tape offers a more accessible and friendly way to think about these elements.

**Tape 3: IMAGES OF RECURSION.** Not only do we see children "acting out" recursion and other vivid demonstrations, Papert also gives insight into solving problems. Images and mental models make the idea of recursion understandable. The tape also uses recursion as a powerful idea for heuristic thinking.

**Tape 4: DIGGING DEEPER.** Papert extends his collection of "powerful ideas good to know" about computing. His goal is to plant the seed for independent intellectual growth in programming, in Logo and in information-processing models.

*All demonstrations on the screen are on the accompanying diskettes and may be studied, modified, and extended. Diskettes are compatible with specified versions of Logo.*

## **"Hurdles"**

The "Hurdles" materials provide for many hours of hands-on individualized work at the computer, extending the learning experience far beyond a course or a workshop.

### **Program Outcomes**

Depending on the time spent with the materials, teachers should:

1. be able to understand and personally use each technical skill as well as see how these skills can be "tools to last for a lifetime"
2. recognize Logo's extensibility
3. discover new and more powerful ways to use Logo with students
4. discover new and more powerful ways to use Logo for themselves

## **For the instructor**

Please preview the videotapes and materials before beginning a course. Tailor the lessons based on the expertise of the participants. If teachers have been using Logo for quite some time, the materials should be used in one manner; if they are beginners, quite another. If the emphasis in the school is "thinking skills" rather than "syntonic learning", more time should be spent extending that experience.

## **What you will need**

The classroom should contain a large screen television or monitor with the appropriate play device.

An overhead projector and screen will be needed for transparencies.

At least one computer with data diskettes should be in the room for demonstration. Computers must be provided for each participant when hands-on learning is required. Unlimited access for practice should be available at other times.