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Journal of the ISTE Special Interest Group for Logo-Using Educators

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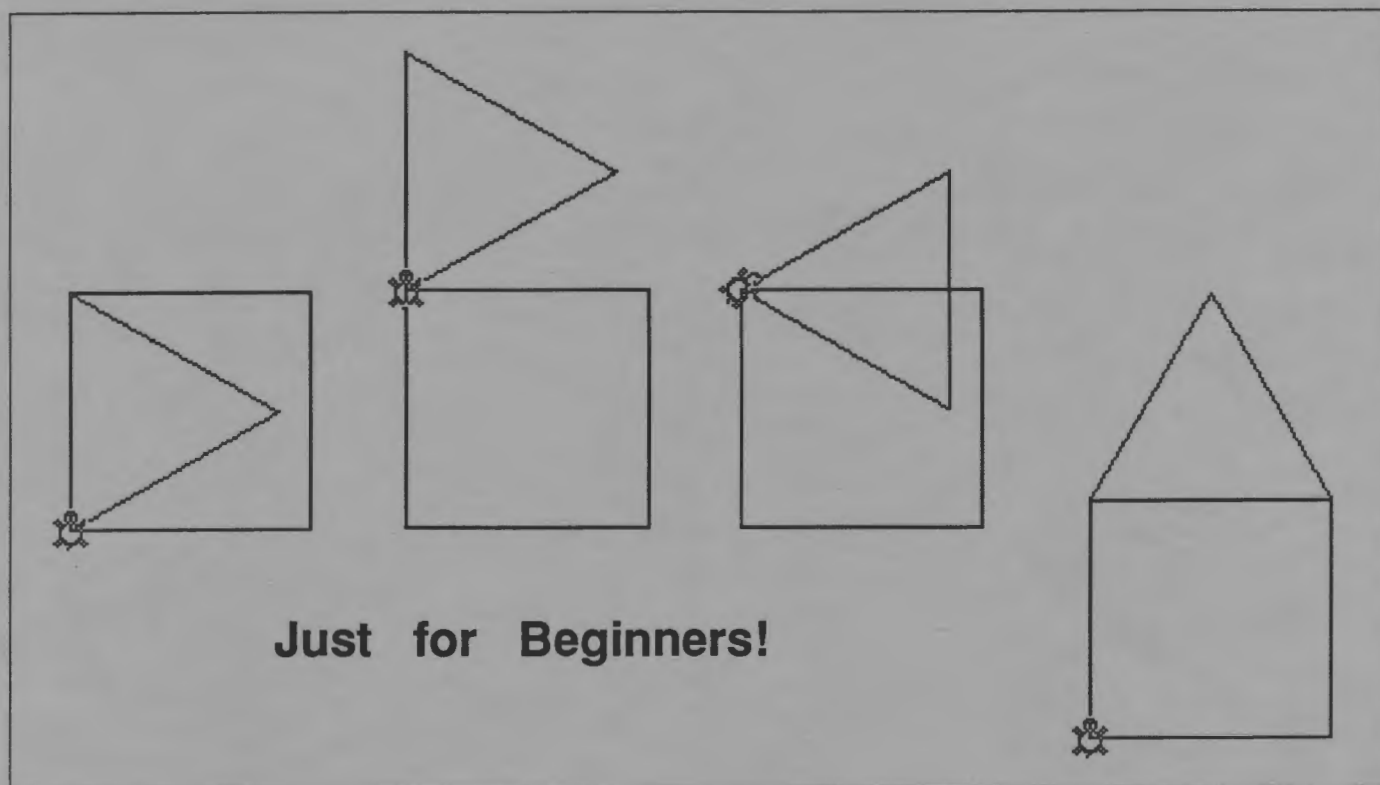
# LOGO EXCHANGE

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October 1989

Volume 8 Number 2

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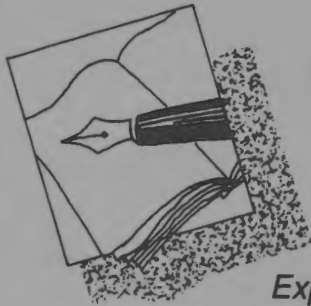
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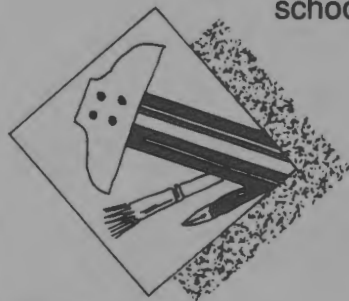
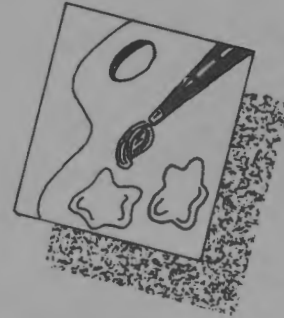
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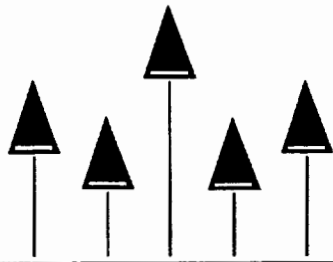
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# LOGO EXCHANGE

Volume 8 Number 2

Journal of the ISTE Special Interest Group for Logo-Using Educators

October 1989

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## Contents

|   |    |
|---|----|
| <b>From the Editor — On Beginning</b><br>Sharon Yoder   | 2  |
| <b>Monthly Musings — Upstart Startup</b><br>Tom Lough   | 3  |
| <b>Logo Ideas — You've Got Lego ® TC Logo. How Do You Begin? Try Traffic!</b><br>Eadie Adamson                | 4  |
| <b>The Turtle as Car</b><br>Diane Miller  | 8  |
| <b>Beginner's Corner — It's as Easy as...Abc</b><br>Dorothy Fitch   | 9  |
| <b>MathWorlds — Two Turtles in a Hot Tub:<br/>Part Two</b><br>Sandy Dawson, editor                            | 14 |
| <b>LogoLinX — Dot-to-Dot LinX</b><br>Judi Harris and Sue Eskridge   | 18 |
| <b>Logo &amp; Company — Multimedia for Beginners</b><br>Glen Bull, Gina Bull, Paula Cochran, and Chris Appert | 24 |
| <b>Search and Research — What's Hard About Beginning With Logo? The Research</b><br>Douglas H. Clements       | 26 |
| <b>Global Logo Comments</b><br>Dennis Harper, editor  | 31 |

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## From the Editor

### On Beginning

When is the last time you learned something new? Now I don't mean just a new tidbit of gossip or fact from the newspaper. Rather, I am thinking of the last time you immersed yourself in learning a new discipline. Perhaps you decided to master the art of French cooking. Or, maybe you took lessons on knitting or crocheting. You might even have gone to back to school to take a course in a subject new and different. Or, perhaps you decided to learn scuba diving or rock climbing. Take a moment to reflect on the most recent experience that you have had that involved learning about something completely new.

What were your feelings as you started this new venture? Were you nervous on that first class day? Did you watch your classmates to see if you were measuring up? Were there moments when you felt clumsy or inept or down right dumb? Later, as you mastered your new skill, what kinds of feelings did you have? Did you feel good about yourself? Did you bore your friends with tales of your victories however small? Has the new skill become a passion or simply a part of your daily repertoire? Did it broaden your horizons? What part will it play in your life in the future?

As you reflect on your new learning experience, think about your teacher. What part did he or she play in your experience? How much of what happened to you was because of you and how much was because of your teacher?

"Why," you ask, "all of these questions?" Ever since I returned to graduate school after 15 years away, I have felt that it is very important that teachers become students from time to time. That is, I think that teachers need to find themselves in a position where they are not the experts and are dependent on sources outside of themselves to learn. Better yet, I think they should be part of a class where others are learning the same skills.

Oh yes, it's a humbling experience. I recall finding myself in a graduate level probability class in which the professor expected me to remember all of my calculus, and worse, he expected me to know how to use a scientific calculator. (When I studied math in college, there *were* no hand held calculators!)

My experiences in graduate school made me much more able to empathize with my students. The same thing can happen to you. Whether you teach elementary or secondary students, teachers or teacher trainers, you need to remember what it feels like to feel inept, inexperienced, or even "dumb." You need to feel the frustration of not knowing what to do next. You need to keep in touch with not having all of the answers.

Johnny's tears of frustration and Mary's angry outburst make a lot more sense if you have had similar experiences recently.

Perhaps you are a beginner in using Logo. If that is the case, then you are in the midst of those moments of frustration and success as you try to master this new and complex discipline. Oh yes, it's easy to move the turtle, but then what? Your mind no doubt whirls with "How do I..." questions. Be patient. You *will* learn. But as you are learning, use your experience with the process to help you become more sensitive to your students' needs and frustrations.

If you are a more advanced user of Logo, you know that the learning in a Logo environment never ends. Just when you think you have "mastered" Logo, you discover some new corner that you know nothing about. Often those new bits of Logo are so different that they feel like learning something completely new. Logo really does help keep you in a learning and growing mode.

If you haven't learned anything completely new lately, put on your "to do" list to sign up for a workshop or course of your choice. While you are experiencing the learning of this new material, think carefully about your own students. Try to transfer your experiences to those of the people you teach. How can your experiences make you a better teacher? How can you be more sensitive to the needs of those you teach? How can you teach in such a way that fewer will experience frustration and failure?

As an adult learner, you have the experience of learning a lot of new things in your life. Bring that experience to your new learning environment. Can you step back from what you are learning and get a broader picture, or are you too immersed in the details? How can you give your students the broader perspective about the things that you teach them? How can you get away from teaching just "key presses" and move towards emphasizing higher order skills such as problem solving? Use your learning experience to transfer what you learned about learning to your own teaching. (Got that?)

Those of you who are experienced Logo users know that indeed the learning does go on and on in a Logo environment. Those of you who are just beginning can look forward to many exciting moments as your knowledge of Logo becomes richer. Use those learning experiences to become a better teacher!

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## Monthly Musings

### Upstart Startup by Tom Lough

From the beginning, Logo was a kind of upstart among computer languages. It empowered students and teachers alike. Logo users could reconfigure the language by naming procedures whatever they wanted. These procedures became new commands in effect. Moreover, Logo encouraged a procedural style of programming with its simple syntax. Over the years, this upstart Logo has spread into tens of thousands of schools all around the world. More and more teachers are starting to use Logo. So upstart is probably not a good word to use any more. But it contains the syllables we need for this month's musing.

Several of the earlier versions of Logo had a special type of file and a special variable called STARTUP. (Want a quick list processing challenge? How would you change the word UPSTART to STARTUP using the FIRST and BUTFIRST commands?) If a Logo disk contained a STARTUP file, it was loaded automatically into the workspace as part of the booting process. If a file contained a STARTUP variable, then certain procedures would be run automatically when the file was loaded.

For example, if a file contained procedures called STAR and COMET and a STARTUP variable defined as

```
MAKE "STARTUP [STAR COMET]
```

then the STAR and COMET procedures would be run automatically whenever the file is loaded.

Since this issue of *LX* is dedicated to those who are just getting started with Logo, it seemed fitting to think about suggesting a STARTUP variable for you. I wanted to find some ideas or processes which you could consider as you start up your own adventures in using Logo.

At the time of this writing, I was assisting with the instruction of Dennis Harper's *Logo in Paradise* course at the University of the Virgin Islands. Since several of the course participants were experienced Logo users, I thought I would ask them what advice they would have for teachers just starting up with Logo. They generously provided an excellent set of tips and ideas.

Here are their suggestions for your own STARTUP.

Glen and Gina Bull, Charlottesville, VA: Pay attention to your misconceptions and mistakes. Keep a journal of your learning experiences. Find a student and learn with him or her. Play, don't study.

Jim Crum, Orange, CA: Experiment yourself. Get familiar with the fundamental commands. Watch some experi-

enced students work with Logo. Try to understand what they are doing. Purchase a Logo version with a total site license, including arrangements to send disks home with students. Make Logo an integral part of the curriculum, so you can use it on a regularly scheduled basis.

Judy Cru, Orange, CA: Don't be afraid to start. Involve students from the beginning. You don't have to know everything before you start.

Mary Ann Gillis, Mobile, AL: Display lots of enthusiasm. Grasp one aspect at a time. Be patient with yourself.

Tom Lough, Simsbury, CT: Try to realize the full power of the ability to name procedures. Establish a Logo culture to the greatest extent possible. Make Logo matter. Explore a variety of procedure development styles, including top-down, bottom-up, and a combination. Provide your students with opportunities to share with and learn from each other. Include objects in the real world, such as robot turtles and sensors, as much as possible. Read every article in all the back issues of *LX*. Be willing to share your Logo experiences with others through articles in the *LX*.

Iliana Nikolova, Sofia, Bulgaria: Don't insist that students do exactly what you say. Give them [and yourself] the opportunity to make mistakes. Find a comfortable compromise between a strictly guided activity and completely free exploration. Give the students [and yourself] time to become confident. Gently encourage the students to program in a good style, splitting the operation into several small pieces.

Debbie Roth, El Paso, TX: Remember that the turtle is your friend. A turtle knows only four directions: FORWARD, BACK, LEFT, and RIGHT. You can't get lost.

Sandy Smolinsky, Chicago, IL: Don't panic. Keep it simple. Give the students written directions.

Connie Widmer, Cincinnati, OH: Have fun! Learn your primitives. Learn with your students. Read Papert, but read him critically.

Firmin Widmer, Cincinnati, OH: Walk out your proposed projects. Don't be afraid to make mistakes. That is when you really learn.

Oh, yes, I forgot to tell you, the STARTUP variable can have regular Logo commands associated with it, too. So,

```
MAKE "STARTUP [FD 100!]
```

Tom Lough, Founding Editor  
PO Box 394, Simsbury, CT 06070

## Logo Ideas

### You've Got LEGO® TC logo. How Do You Begin? Try Traffic!

by Eadie Adamson

As I thought about this "beginners" issue, I found myself reflecting on my own beginning experiences last year with LEGO® TC logo. I used LEGO® TC logo with four different groups with varying abilities during the year, so I actually had four "beginnings" to think about. I have come to some conclusions about my experiences that seem worth sharing.

I work in an independent school for boys. My students for these activities were sixth grade boys, many of whom had already had experience playing with LEGO® at home or at school when they were younger. Many were still fascinated by the prospect of building cars. Even though they were familiar with LogoWriter, the concept of connecting Logo and LEGO® was a new idea for all of them. We had only a limited time, approximately ten weeks for forty minutes twice per week. The idea of building things seemed to be uppermost in the boys minds. To me, on the other hand, the computer connection was the most fascinating idea.

As I think back through the year, I believe the most successful introduction which made the computer connection most clear was with the group of students that began by building traffic lights. Building a traffic light is one of the simplest building projects, a clear advantage if you wish to begin using the computer interface quickly. The building process can be completed in less than our typical class period, allowing time to experiment with the computer almost immediately.

I gave my students a help sheet for their traffic lights which also contained some initial programming challenges for them to try. (See the COPY ME page which follows.) We used this first, then continued to try out the ideas in the LEGO® TC logo *Getting Started* book for Project Three: the traffic lights, pages 16 - 34.

#### A Field Observation Trip

Since we are located in New York City, with many busy streets, we also decided to go out and observe and time the traffic lights. Results of timing were charted on a sheet I had prepared (see the COPY ME page which follows this column). You will probably want to adjust street directions for your own area. For this excursion we took stopwatches and also used digital watches which had times. The boys paired up, one to do the timing, the other to take notes.

#### Programming the Results

Results in hand, the next class involved setting up two sets of lights and writing procedures to reflect the information gathered on the observation trip. We elected to shorten the timing of the lights, but to do this proportionately. Since 10 equals one second, if a light was on for one minute, a value of 600, we simply divided by 10 as we programmed our lights. A typical sequence looked like this:

```
to red
talkto 1
onfor 60
end
```

```
to green
talkto 3
onfor 60
end
```

```
to yellow
talkto 2
onfor 20
end
```

```
to traffic
red
green
yellow
traffic
end
```

My students were already familiar with recursion and moved rather quickly to using it in the traffic light procedures. If your students are not yet using recursion, you will find that the student booklet with the section on traffic lights forms an excellent introduction. If you are new to LEGO® TC logo, you will also find the teacher's manual to be a very useful guide.

#### WALK and DON'T WALK

Some of us thought about making WALK and DON'T WALK signs as well. Using the LEGO® TC logo page on the screen along with a procedure which runs lights may be tricky, but it's fun to experiment with. When you run LEGO® TC logo commands, the computer screen remains unchanged. However, any procedure which calls a standard turtle graphics command will cause the page to flip to the front. In fact, adding a command as simple as ht to the beginning of a procedure, whether using the page or not, will make the page flip to the front. This can be a rather elegant way of using LEGO® TC logo when showing models.

# They have creativity in their little fingers.

Probably more than you realize. To help you capture some of that creativity, Randy Boone has compiled *Teaching Process Writing with Computers*.

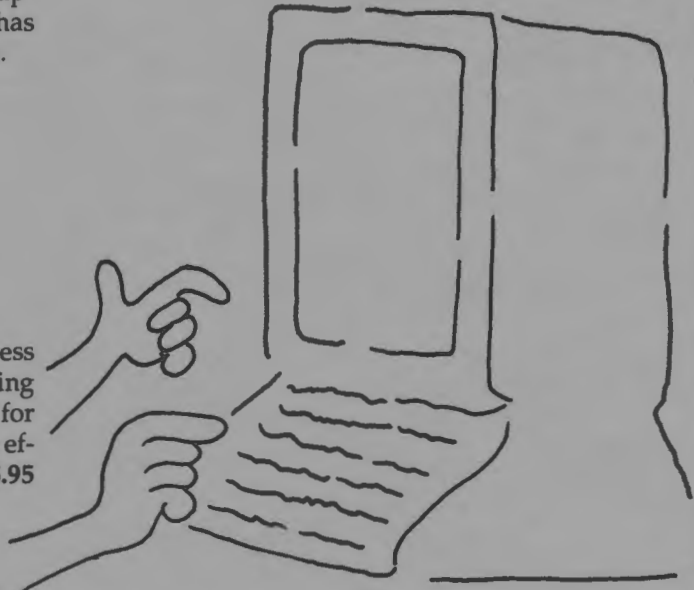
This collection includes:

- research and position papers
- lesson ideas
- keyboarding
- reviews
- articles from *The Computing Teacher* and *The Writing Notebook*.

Randy Boone highlights ideas for teaching process writing with computers in the introduction, making *Teaching Process Writing Computers* an ideal tool for university courses, inservice workshops, or as an effective resource for classroom teachers. **\$15.95**

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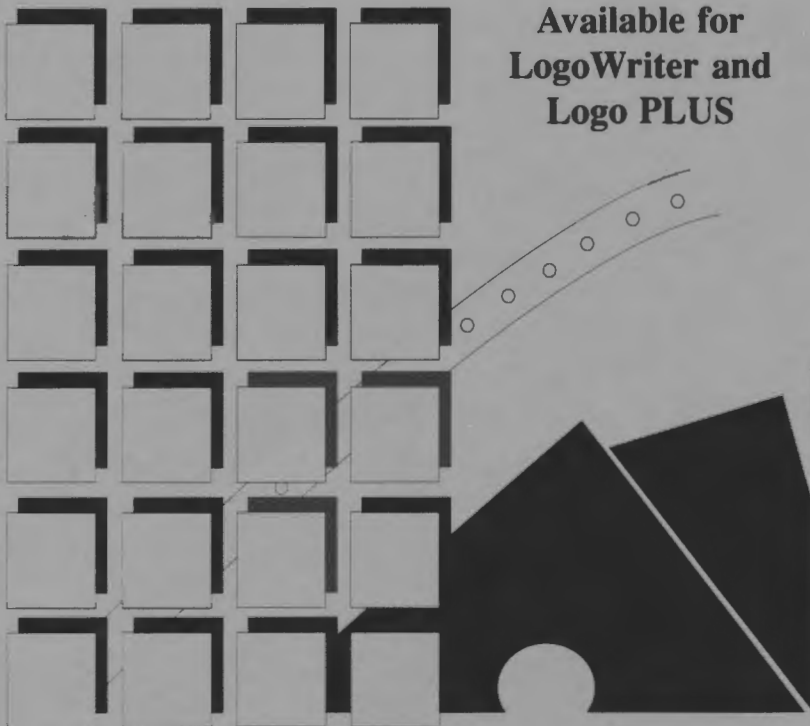
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## *Introduction to Programming in Logo*

by *Sharon Burrowes Yoder*

Designed for use either in teacher training or in an introductory secondary computer science class. Each section details new Logo primitives or programming concepts and ends with suggested open-ended activities for practice. Numerous appendices include key summaries, a quick reference containing all Logo primitives, and copies of shapes. Specify LogoWriter or Logo PLUS version when ordering. **\$14.95**

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Whether you're a Logo teacher, trainer, or enthusiast, you know that this powerful computer language has the potential to have a significant impact on how teachers teach and how students learn. ISTE's Special Interest Group for Logo Educators (SIGLogo) offers you a forum for the exchange of ideas, concepts, and techniques.

**What is SIGLogo?** SIGLogo is a professional organization that helps Logo Educators get ahead. We sponsor workshops, providing a support community for Logo-using educators. Novice or expert, you will find helpful information in each issue of our journal, *Logo Exchange*.

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