Microworlds
by Terrapin Inc.
and Logo Computer Systems Inc.

If it weren't for these guys, I'd be doing something else right now. Thank you for creating such wonderful tools for learning! This past year Terrapin and Logo Computer Systems have been busy creating microworlds. A description follows. IC

Congratulations to our Logo makers for producing some microworlds for exploring mathematics! Terrapin recently published *Logo Innovations* which is a collection of 16 creative activities that students can use to learn in all curriculum areas. Most of the activities involve some mathematics, but the ones that I feel would be of most interest to a math teacher are:

Iso-The Amazing Isosceles Triangle
 explore introductory geometry with Logo
Logo Minature Golf
 used the turtle as a golf ball in a game of estimation and strategy
Mandalas
 Use coordinates and variables to create interesting designs

Proportions
 Explore mathematical relationships visually
Vectors
 An activity for secondary math class

> **Note:** *Logo Innovations requires Terrapin Logo or Logo PLUS.*

If you want the activities above and are interested in the others, the good news is that they all come on one disk at a very reasonable price. Contact: Terrapin Inc., 376 Washington St., Malden, MA 02148 (617/322-4800)

Terrapin Inc. will also be publishing another microworld called *Logo Math: Tools and Games.* This package written by CLIME member Henri Picciotto includes 14 programs that support the secondary math curriculum. (see Henry's article on page 3.)

Logo Computer Systems Inc. published Brian Silverman's *The Phantom Fish Tank*. Inspired by John Conway's Game of Life, this microworld is inhabited by objects in the form of patterns on the screen and are given life by a set of rules that govern how old patterns give rise to new patterns. The user makes up a set of rules, puts some patterns on the screen and says "go". What happens irresistably evokes biological images and metaphors. Fish Tank is available from LCSI. Call 800-321-5646 or (514) 455-5636 (from Massachusetts or Canada.) Δ

A Compendium of Math Microworlds

These microworlds are available to you on disk. See insert page for details.
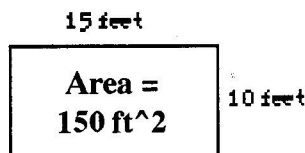
Unit Arithmetic
by Dan Watt

Dan has contributed some procedures that allow you to multiply or divide numbers with units and maintain the integrity of those units.

Useful Procedures:
UNIT.MULT will mutiple two numbers and handle the units appropriately..

Example: PR UNIT.MULT [15 ft] [10 ft]

```
        15 feet
  ┌──────────────┐
  │   Area =     │ 10 feet
  │   150 ft^2   │
  └──────────────┘
```

will print out the result: [150 ft^2]

The procedure UNIT.DIV will divide the second input into the first.

UNIT.DIV would be handy for a problem like this:

A car travels 100 miles in 6 hours. What was the average speed?

PR UNIT.DIV [100 miles] [6 hours]
16.667 miles per hours

What ways can you use these procedures?