Modeling...*continued from page 21*

cal relevance.

Many national studies and recommendations published by prestigious commissions urge computer use in the teaching of math. We have purchased the equipment, trained our kids and at least one teacher, and tried hard. Is learning improved over what it would have been? I'm not sure, but this doesn't stop me from trying.

Notes: Here are some of the procedures we used.

```
to road
tell 0 ht pu setpos [-120 -65] pd
setc 3 fd 240
end

to displayshape :n
setsh :n print :n
make "key readchar
 displayshape :n +1
end

to truck
tell 1 ht pu setpos [-130 -55] seth 90 st
make "truck 1
end
```

For clarity, we shall use :TRUCK or other object name as input to TELL instead of the turtle number. Normally, the line would be TELL 1 FD 3. We will say TELL :OBJECT instead of TELL "turtle number in all cases.

```
to doit
road truck heli missile move
end

to fire
tell :truck fd :ts
tell :heli fd 5
tell :missle seth 180 fd 6
end
```

Some suggested changes:

In TRUCK make the distance the truck moves random. Put this instruction in TRUCK: *make "ts 3 + random 5* This means: name a variable :ts for TruckSpeed and assign a value of 3 plus a number from 0 to 4. In HELI and MISSILE add *make "hs :ts + 2 + random 4 print :hs* Here the variable is named :hs for HeliSpeed and its value is the TruckSpeed :ts, plus 2, plus a random number from 0 to 3. In MISSILE add *make "mh 135 + random 45.* Then, in MOVE add this instruction, *if key? [tell "missile setheading :mh fire]* Δ

Inspi...*continued from page 16*

numbers end with a zero or have a zero in the one's place. Older students should define these numbers as the multiples of 10.

5 clusters. These numbers are the odd numbers except the odd multiples of 5.

10 clusters. These numbers are even numbers except the multiples of 10.

Many clusters. Younger students will notice that all these numbers have a 5 in the one's place. The older students should define these numbers as the odd multiples of 5.

The final step is to give students an INSPI which has not been entered and have them predict the number of clusters that will be drawn.

A variation of INSPI is to change the incremental number 10 to a different number and see what effect that has on the number of clusters. What's interesting here is that there no clear answers. It's a real problem. Δ

Innumeracy...*continued from page 18*

schools (where math is almost universally taught by innumerates) should hire math specialists. (3) Teachers should use more humor when teaching.

I was disappointed that Paulos did not share more ideas about what educators can do to improve this problem. But he has gotten the ball rolling. So, I guess, it's time for other people (like us) to take his baton and implement ways to fight innumeracy. If nothing else, hopefully the book will raise the consciousness of many people as to the problems with math education. So it's good to see that *Innumeracy* is currently on the New York Times best seller list. Δ

Fractions...*continued from page 19*

5. It would help your students most if you made some pattern block microworld "challenge cards" that suggest more specifically what fractional relationships you would like them to draw, or problems you would like them to explore. These should be closely tied to the fraction work that you are covering in class, for the most benefit to be reaped by the users.

6. You are most heartily encouraged to amend and append the procedures that comprise this tool to more closely meet the needs of your students, curriculum, and teaching methods. Δ