

## Logo Activity 6 Using Random

Everything you have told the turtle to do so far has been exact: "FD 50" or "RT 56". It is possible to have the turtle behave in ways that you can not totally predict. You can use Logo to create random numbers. Random numbers are numbers that have no apparent pattern to them. The RANDOM command is used to create these numbers. If you type:

```
RANDOM 50
```

Logo responds with:

```
YOU DON'T SAY WHAT TO DO WITH some number
```

This response occurs because RANDOM is a reporter. It returns a value; it reports it back to Logo. Try the command again. It will report a different value. To make use of the RANDOM reporter, you must tell Logo what to do with the number it produces. For example, try typing:

```
FD RANDOM 100
```

Repeat this statement a few times. The turtle moves forward different amounts each time. FD RANDOM 100 reports a different number between 0 and 99 each time and then the turtle moves forward that number of "turtle steps". If RANDOM 100 reports "11" then the turtle moves forward 11 turtle steps.

You can send the turtle on a random walk by typing something like:

```
REPEAT 50 [FD RANDOM 100 RT RANDOM 90]
```

It is possible to randomly generate a value between two numbers like 5 and 13.

```
PRINT (RANDOM (13 - 5 + 1)) + 5
```

The following formula will help you create such statements.

```
(RANDOM (largest value - smallest value + 1 )) + smallest value
```

Name \_\_\_\_\_

## Logo Assignment #6:

- 1) The computer has 16 preset colors (0-15) that can be used for different background colors. Create a procedure that changes the background's color each time a side of a square is drawn. Copy your procedure here.
  
- 2) Interesting designs can be made by changing the pen color (i.e. SETPC 2) before each side is drawn. Create a procedure that makes a circle with 36 sides each a different color. Report the procedure here!
  
- 3) Create a REPEAT command that can be used to print out 100 random values that range between 0 and 9. You may have to scroll up in the Commander window to see the values generated. Report the command here.
  
- 4) In this problem, create a REPEAT command the sends the turtle on a random walk (as previously discussed) with a random pen color at each move. Copy the command below.