

Day 2

NetLogo:

Start simple

Create turtles
Get turtles moving
Hatch/die turtles

More difficult

Create turtles in random locations
Turn left/right/reverse depending on the color of the patch
Virus simulator with healthy/sick/innoculated turtles

Difficulties:

Transferring from Scratch to NetLogo, the students encounter the never ending “syntax” errors. They missed a bracket or typed a code word incorrectly. Perhaps a variable was spelled incorrectly. This can be very frustrating for any of us. This is when test, test, test is very important. Check one line at a time. Make one change at a time.

WarmUp & Assignment handouts

Project to work on: Chain Reaction

This program is to start with all the patches being yellow traps. A ball is dropped onto the center patch. The patch color is changed to brown (triggered). A new ball is created, and both balls bounce off in a chain reaction landing on other patches. If the ball lands on a brown patch, the ball dies. If the ball lands on a yellow patch, a new ball is created, and both balls bounce off. This continues until there are no more balls.

Programming steps: *Check each step for errors along the way.*

Interface:

1. Buttons needed: setup, go once, go
2. Add a slider *max-distance* (0.0 to 10.0)

Code:

1. You will need a global variable *traps-triggered*
2. *setup*
 set *traps-triggered* to zero
 set all patches to yellow
 create one turtle of the default-shape “circle”
 set the color of the turtle to white
 reset-ticks
3. Write a function *move* to move the turtle in a random 360 direction a random distance set by the *max-distance* slider. This function needs to be called from the *go*.
4. *go*
 call the *move* function
 add a test before the move to check the pcolor.
 If brown, then die.
 Else set to brown, increment *traps-triggered*, hatch a new turtle and move both turtles.
 add a test at the beginning of *go* to stop the program if there are *not any?* turtles.
5. Interface tab:
 settings: max pxcor 80, max pycor 80, turtle size 4
 add two plots: Traps triggered using *traps-triggered*
 Balls in the air using *count turtles*