Lesson 5 - Student Activity #2 Guide

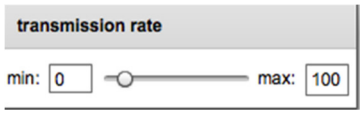
Modeling the Spread of Disease

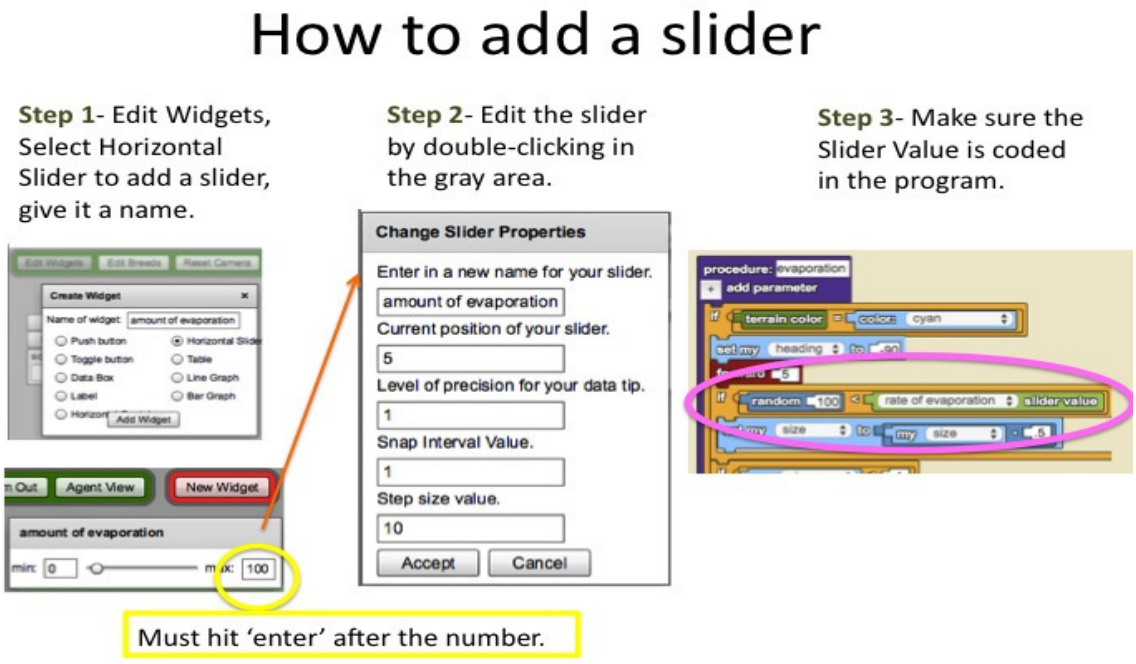
Part 1: Altering Colliding Turtles to create an Epidemic Model

Your challenge is to make the turtles spread disease to one another when they collide. You will learn how to use sliders to change a variable in a computer model.

Guidelines:

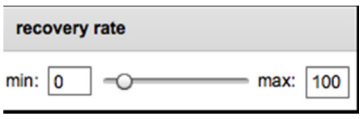
1. Remix your Colliding Turtles project or use the 'Epidemic Starter' model.
2. Name it 'Epidemic Model: *your name(s)*' *Don't forget to put both partners' names in the project title.*
3. Create 300 blue turtles and 5 red turtles
4. Create a transmission rate slider; set the maximum to 100.
5. Use the value in the transmission rate slider as the probability of passing on the disease.
   Note: you will need to use the random function to mimic rolling the 100-sided die.
6. Save and test your model.





Part 2: Customizing your model [adding in recovery]

Your challenge is to make the turtles recover from the disease.



1. Create a recovery rate slider.
2. Create a recovery procedure.
3. Use the value in the recovery rate slider as the probability of recovering from the disease at each step.

Recovery Procedure: At each step, a sick person has a chance of recovering so we will need recovery to be called when the 'forever' button is toggled. You will need to use the random function to mimic rolling the 100-sided die as we did in the transmission case.

Note: the "call recover" block needs to be within the "when forever toggled" loop.

Testing your model

- Save and test your model.
- Try changing the recovery rate. Did you see any new outcomes or patterns?
- Notice that even when the recovery rate is really low, the disease goes away. Why do you think that is? Is this realistic?

When you are done, save and share your project.