

## Lesson 1 - Student Activity #1 Guide

### Papercatchers

Name:

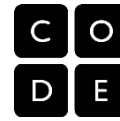
Date:

#### Instructions:

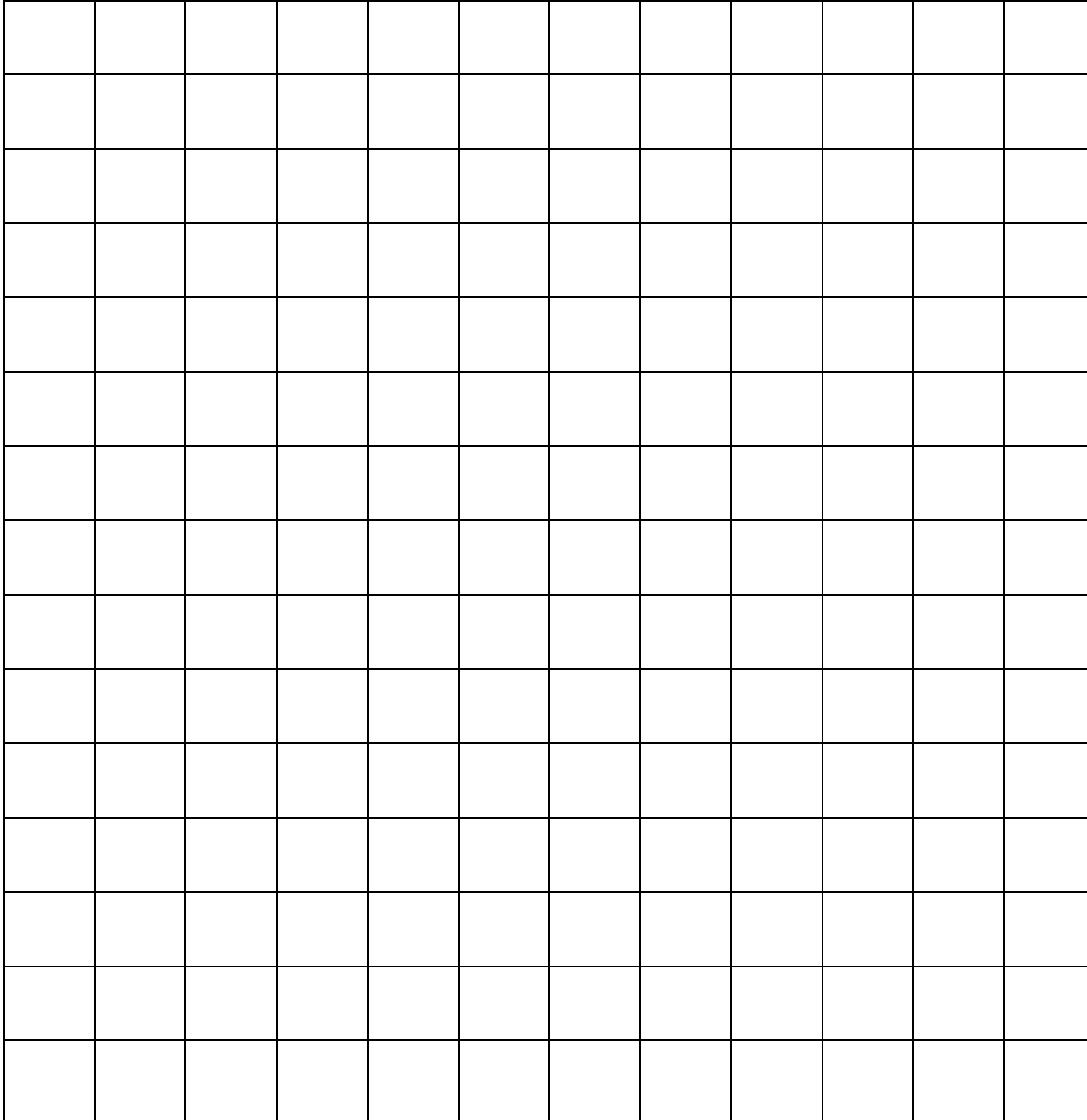
- 1) Copy the data collected during the Papercatchers activity into the table below.  
 Note that you may not be able to complete all 10 generations in class.

Generation	Round 1 – no paper		Round 2 - newspaper		Round 3 – sheet paper
	Population size		Population size		Population size
1	1		1		1
2					
3					
4					
5					
6					
7					
8					
9					
10					

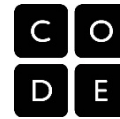
- 2) In this simulation of an ecosystem, what were the independent and dependent variables?



- 3) Using different colored pens or markers for each Round, create line graphs of the populations over time in generations. Make note of any carrying capacity or limits on growth in each round.



Remember to label your axes.

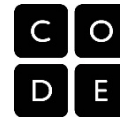


- 4) Predict the population sizes in each round (no paper, newspaper, sheet paper) if we could continue for 10 generations. (Remember that each new generation occurred when the current population did the ball toss and either died or brought another person in.)

Generation	Round 1 – no paper		Round 2 - newspaper		Round 3 – sheet paper
...	Population size		Population size		Population size
10					

- 5) Describe how you made the prediction using mathematical and scientific reasoning.





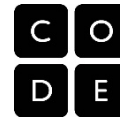
## Lesson 2 - Student Activity #1 Guide

### Looking under the Hood

Now we are going to get to know the code that makes up the base model!

- 1) Open your saved StarLogo Nova Rabbits and Grass base model.
- 2) Navigate to the code section.
- 3) Use the **Model Observation Form** as you and your programming partner take turns looking at the code. (Remember to use your **driver** and **navigator** roles and switch roles from time to time.) Complete the form by running the model and looking at the code.
- 4) Which part of the code have you and your partner been assigned?
- 5) Write down what the code in your assigned section does.
- 6) Diagram the program's execution loop.





## Lesson 2 - Student Activity #2 Guide

### **Designing and Running Experiments**

In this activity you will use your new model to run an experiment.

1. Use the **Experimental Design Form** to plan your experiment.
2. Record your data and analyze your results.

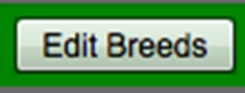
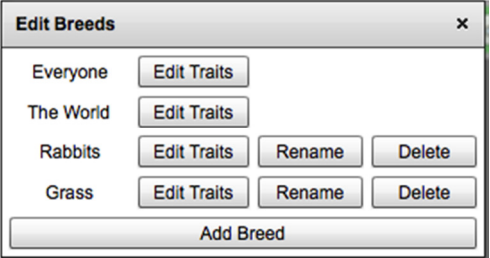
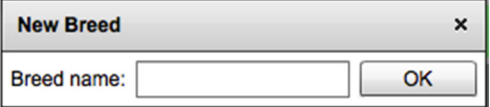
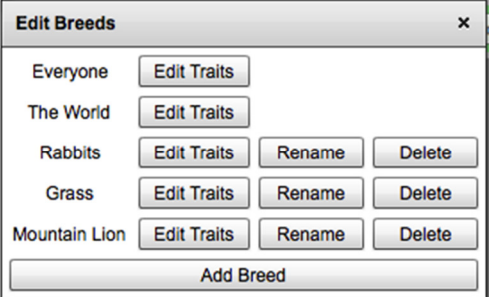
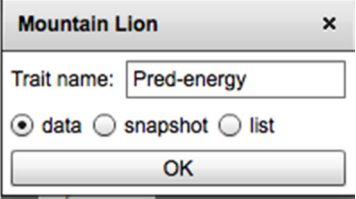
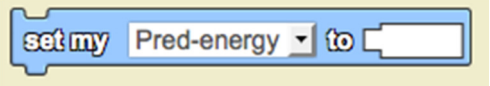




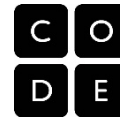
## Lesson 3 - Student Activity #1 Guide

### Adding a Predator

Use the instructions below to add a new breed:

	<p>Use the Edit Breeds button in the Spaceland area to create a new breed.</p>
	<p>Click on “Add Breed” to add a new breed.</p>
	<p>In the “New Breed” dialog box, give the breed a name and press OK.</p>
	<p>You will see the Breed on the next panel. (We added the breed called “Mountain Lion.”)</p> <p>Next, click Edit Traits next to the new breed label for “Mountain Lion.”</p>
	<p>Create a new trait (or variable) for the Mountain Lion breed called “Pred-energy.”</p>
	<p>The set my (trait) to (value) block is used to set an agent’s trait to some value. In this case, the Mountain Lion’s Pred-energy is being initialized.</p>





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