

## Beaver Pond Exercise 4: Trends in Bird Populations

To understand a trend it is often best to create a line graph. This allows you to look at the line from left to right and immediately see what the trend is. For instance, a line that trends downwards represents a decline in bird populations. The trend is also called the "slope" in mathematical terms. Slope is defined as the "rise over the run"- the change in the y-axis divided by the change in the x-axis.

**For instance, let's pretend you are studying mammals.** You might make tick marks like this as you are filling in your table while you are looking at the mammals:

### Mammal Populations

Group name:	Year 5	Year 35	Year 65	Year 95	Year 125
<i>Mammals</i>					
Species: <i>Meadow Vole</i>	IIII	0			
Species: <i>Field Mouse</i>	II	IIII			
Species: <i>Deer</i>	IIII	II			

- Now it is your turn. Use this data table to record your findings.

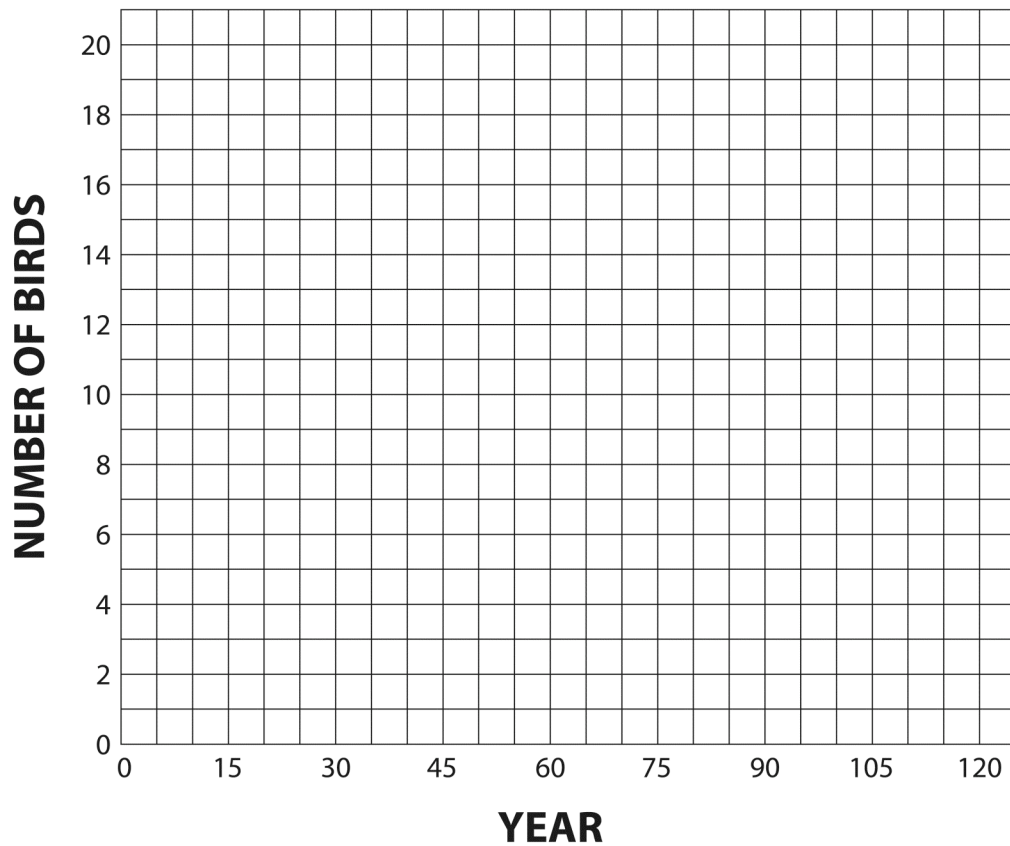
### Bird Populations

Group name:	Year 5	Year 35	Year 65	Year 95	Year 125
Species:					
Species:					
Species:					

2. Using different colored markers or different symbols (like ■, ◆, ●), add each bird's population to the graph below. Fill in the legend (the box below your graph) with the bird species names and the symbol or color you used.

Make sure to find the correct year on the x-axis and then draw your symbol at the correct height on the y-axis. When you've drawn all the data on the graph, connect each species' symbols with a ruler and you can then analyze your trends!

## BIRD TRENDS



Legend	Symbol or Color
Species:	
Species:	
Species:	

3. Look at your line graph; determine which bird population had the most stable (least rising or falling) population over time. \_\_\_\_\_

\_\_\_\_\_

4. Which of your bird species had the highest population? During what year did this occur? \_\_\_\_\_

\_\_\_\_\_

5. The angle of each trend line indicates the speed of population growth or decline, so a steep line indicates very rapid change. Which bird's population grew the most rapidly over time?

\_\_\_\_\_

\_\_\_\_\_

Now, choose one bird species from your graph and do some detective work to see what drives its specific population trend.

6. What is your chosen bird? \_\_\_\_\_

7. RESET your simulation and use the GO, STOP, STEP 5 or STEP 25 buttons to advance time. As you go, watch the vegetation graph in the lower right screen. Is there a plant species that rises and falls over time similarly to your chosen bird? Write about your findings below:

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