



Puffin chick Growth

Making Data Tables and Graphs

From Mr. Sapora
Productions

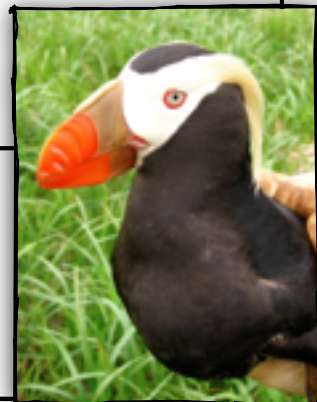
Observations:

You are a biologist studying puffins. You notice that some puffin chicks (baby puffins) are much larger than others, even though they hatched at the same time.

You begin to look for clues and observe that some adult birds are bringing back fish for their chicks to eat, while other adult birds are only bringing back squid.

Question:

Does feeding puffins chicks only fish make them grow larger?



Hypothesis: write your hypothesis here...

You and your co-worker decide to set up an experiment to determine if puffin chicks eating only fish do grow larger.

Eight puffin chicks are monitored in this experiment:

* Chicks 1, 2, 3, and 4 were fed only fish for 4 weeks (table 1)

* Chicks 5, 6, 7, and 8 were fed only squid for 4 weeks (table 2)



The chicks were measured once a week for four weeks. The following tables show the results:

Table 1: Puffin weight for weeks 1, 2, 3, and 4 - chicks fed only fish.

Week	Weight of puffin chicks in grams				Total growth:
	1	2	3	4	
Puffin 1	50 g	75 g	150 g	175 g	
Puffin 2	50 g	125 g	175 g	200 g	
Puffin 3	40 g	60 g	150 g	185 g	
Puffin 4	40 g	100 g	165 g	200 g	
Average:					

Table 2: Puffin weight for weeks 5, 6, 7, and 8 - chicks fed only squid.

Week	Weight of puffin chicks in grams				Total growth:
	1	2	3	4	
Puffin 5	50 g	65 g	125g	140 g	
Puffin 6	40 g	60 g	120 g	150 g	
Puffin 7	40 g	55 g	100 g	140 g	
Puffin 8	50 g	100 g	155 g	170 g	
Average:					

Determine the average weight for chicks 1-4 by adding up the weight of each chick and dividing by four. Do this for each week and record this data on Table 1. Do the same for chicks 5-8 for each week and record this data on Table 2.

Line Graph - Average height over time

- 1. Label the X-axis** on your graph with the **time** period of the puffin chick growth experiment.
(The X-axis “reaches” from right to left and should be labeled with the **times of measurement**).
 - What are the units for the X-axis? _____ (label them on your graph)
- 2. Label the Y-axis** on your graph with the dependent variable from the puffin chick growth experiment.
(The y-axis is reaching up-ward “Y to the sky” and should be labeled with the **dependent variable**).
 - What are the units for the Y-axis? _____ (label them on your graph)
- 3. Determine the appropriate scale** for each axis and make grid marks that fit the scale on each axis.
 - How many small squares separate each unit on the x-axis? _____
 - How many small squares separate each unit on the y-axis? _____
- 4. Plot the average weight** of the puffins from Table 1 for each week of growth. Use a solid line (——) to connect the data points.
- 5. Plot the average weight** of the puffins from Table 2 for each week of growth ON THE SAME GRAPH. Use a dotted line (-----) to connect the data points.
- 6. Create a legend/key** to the **right of the graph** showing which group of puffins are represented by each line (dotted line or solid line) on your graph.
- 7. Title your graph.** (Remember a good title combines the information from both the X and Y axis)

Dependent

Responding

Y-axis

Manipulative

Independent

X-axis



Bar Graph - Average puffin chick growth vs. food type

- Determine how much each chick grew** during the 3 week period.
(Use the week 4 weight and subtract the week 1 weight.) Write the **total growth** of each chick in the space provided on data table 1 and 2.
- Calculate and record the overall average growth for chicks 1-4** by adding up the total growth from each chick and dividing by four.
- Calculate and record the overall average growth for chicks 5-8.**
- Label the X-axis** on your graph with the independent variable from the puffin chick growth experiment. (The X-axis “reaches” from right to left and should contain the **independent variable**).
 - What is your label for the X-axis?

- Label the Y-axis** on your graph with the dependent variable from the puffin chick growth experiment. (The y-axis is reaching up-ward “Y to the sky” and should be labeled with the **dependent variable**).
 - What are the units for the Y-axis? _____ (label them on your graph)
- Determine the scale for the y-axis** variable and draw the appropriate grid marks.
 - How many small squares are between each grid mark on the y-axis? _____
- Draw the bars** for **both groups** of puffin chicks.
(Remember, the bars should be evenly spaced on the graph.)
- Title the graph.**

