BEAK SELECTION EXPERIMENT

DO NOT WRITE ON LAB PAPER – RECORD IN SCIENCE NOTEBOOK

Introduction. The finches that Darwin studied on the Galapagos Islands had beaks of varying size and shape. Darwin believed that each finch was descended from the same ancestor and the variations between the beaks occurred due to competition for food. The unique form of each beak relates to the type of food that the birds are able to eat.

Purpose. This activity will demonstrate the advantageous traits on an organism's ability to survive.

Hypothesis: Select a hypothesis below to use:

- *If various tools are used to collect different types of food then (select a tool type) will be most effective at collecting (select a food type).*
- *If various tools are used to collect different types of food then (select a tool type) will be most effective at collecting food over all.*
- *If various tools are used to collect different types of food then (select a tool type) will be least effective at collecting food over all.*

Procedures

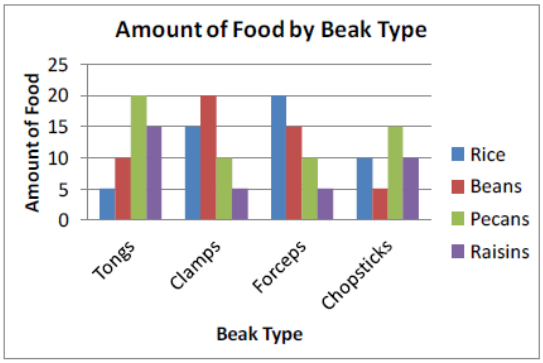
1. Pick up a type of beak (either chop sticks, forceps, beaker tongs or test tube clamps) and a stomach (small cup).
2. Each lab station represents an island and the type of food that grows on the island.
3. When the teacher gives you the signal begin to pick up food with your beak and place it in your cup until the teacher tells you to stop.
4. Count the amount of food collected and record it in your chart. Record your group members' numbers also.
5. Return all food to the tray and move to the next island
6. Repeat steps 3-5 until all islands have been visited.

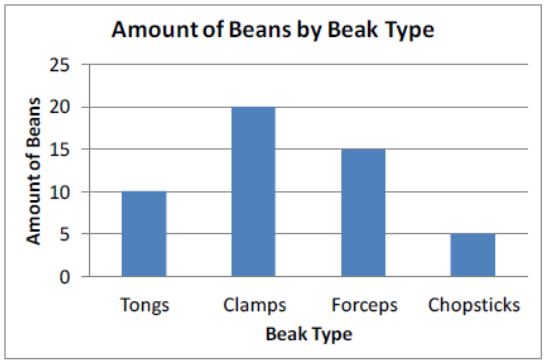
Results

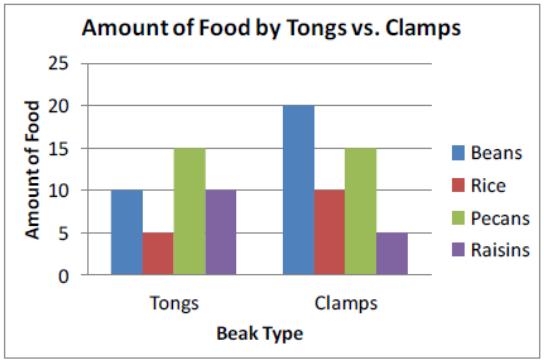
1. Students will create a table with five rows and five columns. In the first column, write the four different types of tools and in the first row, write the four types of food.

	Metal Bars	Paper clips	Beans	Rice
Chopsticks				
Beaker tongs				
Test tube clamps				
Forceps				

2. Graph your results. (Below are a few examples on how to graph your results)







Conclusion

Answer the following questions in complete sentences.

1. Explain which beak (finch) was the **most** successful for picking up each kind of food.

2. Explain which beak (finch) was the **least** successful for picking up each kind of food.

3. Which beaks (finches) were **most** successful overall? Why?

4. Which beaks (finches) were **least** successful overall? Why?

5. In doing so, explain whether or not your hypothesis was correct.

6. Identify and explain any strategies you may have developed in order to become a more efficient consumer.

7. Darwin's observation that the finches had similar physical characteristics supports that they all came from a common ancestor. Explain the process of natural selection using your own words using the finch's beaks as examples.