

Name: _____ Date: _____ Period: _____
 Week # _____

Battle of the Beaks

On the Galapagos Islands, a small chain of islands located off the northwest coast of South America, a population of finch birds exist. These birds have very similar body structures; however, their beaks come in many different sizes.

In this activity, you will be a play the role of a finch bird fighting for a limited food source. Your group members will simulate other finches with slight variations in the shape of their beaks. In order to take on the role of a bird, each person will receive a different tool to mimic a beak, and paper clips will be used to represent food.

1. Examine the beaks and the matching tools in Figure 1. What type of tool do you think will be most successful in this activity? Explain your answer.





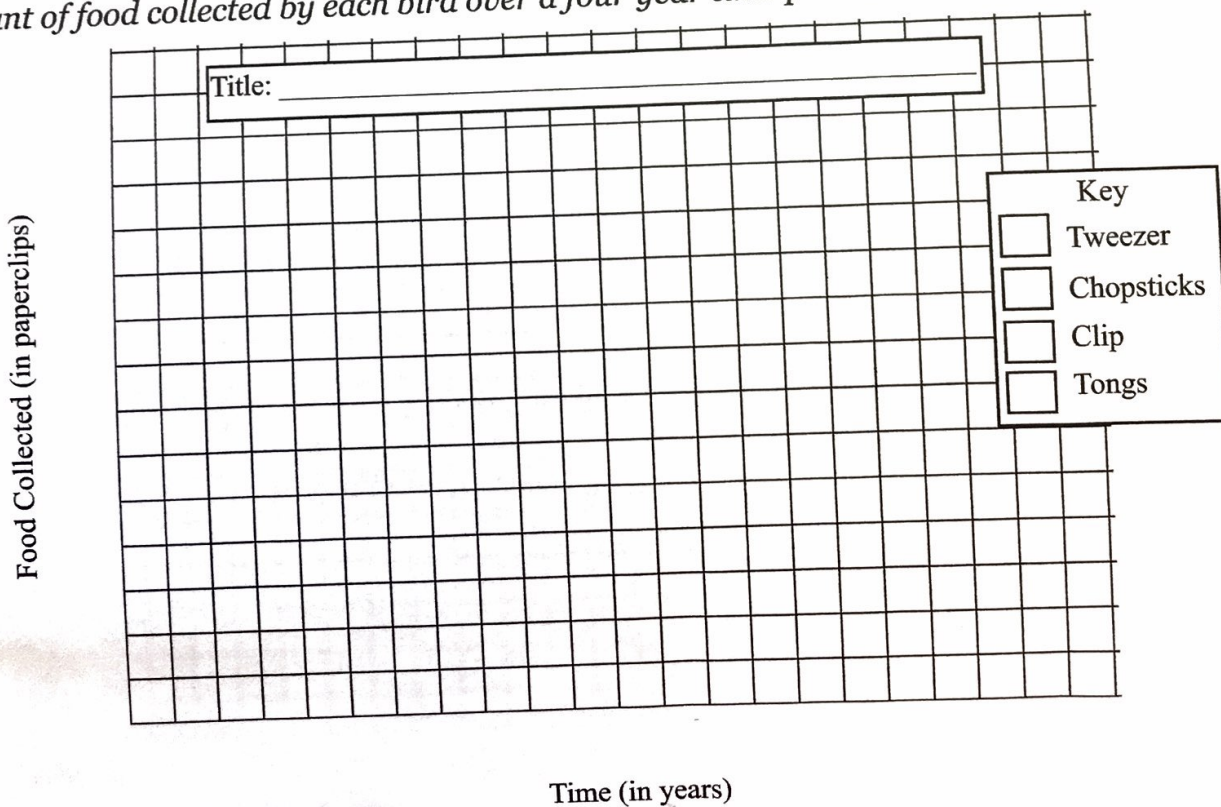
Beak		Amount of Food Collected (in paperclips)			
Shape	Tool	Year 1	Year 2	Year 3	Year 4
	Tweezer				
	Chopsticks				
	Clip				
	Tongs				

Figure 1

Directions: Use the data your group collected to create a line graph that represents the amount of food collected by each bird over a four year time period.



Name: _____ Date: _____ Period: _____

2. If the amount of food collected determines survival, which bird(s) have the best chance of survival?

Over a 25 year time period, the birds on the island reproduce and have a large number of offspring. Not all of these offspring will survive due to a limited amount of food. The surviving birds reproduce with each other and the offspring inherit traits similar to their parents.

3. Predict what type of bird beak(s) will be seen in the population after 25 years.

A scientist named Charles Darwin discovered this population of finches on the Galapagos Islands. He took an interest in the population and began to study them. During his time on the islands, he developed his theory of **natural selection**. Darwin came up with four conditions that must occur in order for natural selection to occur: (1) there must be variation in a population, (2) variation must affect survival, (3) variation must be heritable, and (4) more offspring are produced than can survive. Darwin hypothesized that if these conditions are met, evolutionary changes will occur.

In the table below, identify how the finch population met each of the four conditions necessary for natural selection to occur.

Darwin's 4 Conditions for Natural Selection	Application to the Galapagos Finches
Variation in a population.	
Variation must affect survival.	
Variation must be heritable.	
More offspring are produced than can survive.	

4. Complete the summary to show how natural selection occurred in the population of finches.

"The finches with _____ beaks have an increased chance of survival because _____.

These finches are more likely to _____ and pass this trait onto their _____. Over a long period of time, the population of finches will change so that _____."