Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_

Bird Beak Lab

Purpose: As we look at adaptive radiation as it pertains to Darwin’s finches, it is important to understand that the changes within the beaks of the finches occurred due to the different food items each species of bird adapted to eating. Today we will simulate how different beak types are advantageous towards different food items.

Hypothesis: The best type of beak for catching food will be \_\_\_\_\_\_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Materials:

Cups wax paper rubber bands beans paper clips

String spoons tweezers laundry clips

Procedure:

1. Each group will receive a bag with supplies in it. Each bag will be filled with a mix of the different food items and beak types.
2. Each group member will have a chance to be a beak type and the group timer (only 3 students at a time will be beaks).
3. Lay out the wax paper on the table. Pour the “food” onto the wax paper to prevent it from spreading too much around the table. Each bird student will also get a beak.
4. Time the birds for one minute as each bird places as much food into their cups.
5. Count the different food items obtained by each student and record on the data table.
6. Rotate beak types and timing responsibilities. Repeat steps 3-5 until each student has had a chance to be a timer and a beak.
7. Put all the food, beaks, and wax paper back into the bag. Return supplies to your teacher.
8. Fill in the data analysis and conclusion questions that follow.

Data Table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Beak Type** | **Beans** | **String** | **Paper Clips** |
| Tweezer 1 |  |  |  |
| Tweezer 2 |  |  |  |
| Tweezer 3 |  |  |  |
| Tweezer 4 |  |  |  |
| Laundry Clip 1 |  |  |  |
| Laundry Clip 2 |  |  |  |
| Laundry Clips 3 |  |  |  |
| Laundry Clips 4 |  |  |  |
| Spoon 1 |  |  |  |
| Spoon 2 |  |  |  |
| Spoon 3 |  |  |  |
| Spoon 4 |  |  |  |
| Total Food Collected |  |  |  |

Data Analysis:

Created a bar graph showing the average amount of food collected with the 3 different beak types.

Bird Beak Analysis Questions:

1. Which food item was the easiest to get between the three different types of food? (Which had the greatest overall total?)
2. Which food item was the easiest to get with the tweezers? With the laundry clips? With the spoon?
3. What did you find difficult about this lab?
4. How does each beak type affect the type of food you go after? Did you notice your group members using certain beak types to get a certain type of food? Why do you think this happened? How does this relate to natural selection?
5. As a finch, would you rather have a scooping beak, grasping beak, or a pointed beak? Why?
6. If all the beak types were the same, do you think there would have been competition for particular food items? Why or why not?