Bird Beak Lab Activity

Background Information

An adaptation is a characteristic that helps a plant or animal survive in its environment. Bird beaks have adapted for many things such as eating, defense, feeding young, gathering nesting materials, building nests, preening, scratching, courting, and attacking. The size and shape of a beak is specific for the type of food the bird gathers. For example, cardinals have heavy thick bills used to crack seeds, and hummingbirds have thin bills to sip nectar. The different shapes of beaks allow easier access to these various food supplies. If an environment is altered, organisms within the area might not survive. Adaptation to a particular environment occurs over time as organisms best suited to the environment survive and reproduce, passing their inherited traits to the next generation.

Research Question: Which beak tool will work best for gathering the food source at each station?

Materials: 25 3 oz. paper cups (one per person at each station), cut rubber bands = worms, dried peas = berries, dry macaroni = beetles, red colored water = nectar, rice = small bugs. Simulated beaks: (one at each station), 5 spoons, 5 clothespins, 5 sets of chopsticks, 5 scissors, and 5 eye-droppers. Timer (set for 20 seconds)

Procedure:

Groups of five students: Pretend that you are a bird. There are five different stations that represent different food sources. At each station, there are five different tools that will act as your "beak." You will need to determine which beak works best for each type of food. Each person tries each beak once. Rotate beak tools after 20 seconds.

1. For each station, write down your hypothesis: Which beak do you think will work best for the food source at this station?

2. Foods are represented by cut rubber bands = worms, dried peas = berries, dry macaroni = beetles, red liquid = nectar, rice = small bugs. See how much food (number of pieces or ml of liquid) you can gather in 20 seconds with the first beak. You can collect the food in a cup that represents your bird stomach.

3. Enter the data in the table. Write down how many pieces of food that you gathered. Do this three times and average the three trials.

4. Repeat steps 2 and 3 for the second and third beaks.

5. Rotate through all five stations.

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Results: Data— Complete the data table below for *each station:*

Station #____ Hypothesis: I think that _____.

Station #	Beak 1: Spoon	Beak 2: Clothespin	Beak 3: Chopsticks	Beak 4: Scissors	Beak 5: Eyedropper
Person 1					
Person 2					
Person 3					
Person 4					
Person 5					
Average					

Graph: The average amount of food pieces consumed for each type of beak.

Analysis and Conclusion:

1. Do all birds have the same beak? Why or why not?

2. Which beak worked best for each food source, and why?

3. How do your results for the beak tools compare with your hypotheses? Give possible reasons for the differences.

4. Based on the information you have gathered, describe what a beak that can effectively pick up and crack small seeds might look like.

5. Now that we talked about bird beaks and their adaptations, think about other wild animals. Pick an animal and explain in writing two adaptations that it has for the environment in which it lives.