Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Battle of the BEAKS Lab

**Purpose**: In this lab, you are going to work through three different scenarios to see which beak type will be the most beneficial, most harmful, or just indifferent to the birds.

**Materials:**

Beaks (4): spoons, tweezers, wooden sticks, paper clips

Food (4) : paper disks/pennies, toothpicks, rubber bands worms, cheerios/beans/pasta. Cups

**Procedure:**

1. In groups of 3-4, each person receives a “beak shape” and a cup (as your stomach).
2. When teacher says “GO”, you have 30 seconds to pick up as much food as you can with your beak.

* Rules: You can only pick up ONE food particle at a time – NO scooping.
* “Stomach” cup must remain upright at all times.
* No fighting over food with others.

1. When teachers says “STOP” students will empty their stomachs and count the contents. Record data in chart below.
2. Replace food items and rotate to another food source and repeat steps 2-4 until all food items have been recorded.

Before you begin, make a prediction on which beak type will capture the most food. Why do you think this?

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**Part A: Amount of food collected with your beak type:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Food Type | | | |
|  | Toothpick Stick Bugs | Cheery/Beany Beatles | Rubber band Caterpillars | Penny/ Disk Butterflies |
| Beak: |  |  |  |  |

1. Which food was your beak best at feeding at? Compare to the same beak type of other groups. Was this consistent with the other beaks of your type?
2. Which food was your beak worst at feeding at? Was this consistent with the other beaks of your type?

**Part B: Competition with other beak types**

Most environments contain a variety food but there is also competition between different beak types. Are all beak types equal to each other? Which is the best? Which is the worst?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Beak type | Toothpick Stick Bugs | Cheery/Beany Beatles | Rubber band Caterpillars | Penny/ Disk Butterflies | Total Food |
| Spoon |  |  |  |  |  |
| Wooden sticks |  |  |  |  |  |
| Paperclip |  |  |  |  |  |
| Tweezers |  |  |  |  |  |

**Part C: Environmental Change**

There has been a temperature change in the forest and only the stickbugs and caterpillars survived to feed on.

|  |  |  |  |
| --- | --- | --- | --- |
| Beak type | Toothpick Stick Bugs | Rubber band Caterpillars | Total Food |
| Spoon |  |  |  |
| Wooden sticks |  |  |  |
| Paper clip |  |  |  |
| Tweezers |  |  |  |

**Conclusion:**

1. In Part B, which beak collected the MOST amount of food in total? Explain why you think this beak did so well.
2. In Part B, was there another beak type that was competing for the same food source as you?
3. In Part C, which beak is considered to be an adaptation? What is your evidence?
4. In Part C, which beak or beaks would be considered poorly adapted? What your evidence?
5. Explain you think will happen to the populations of the BEST competitor and the worst competitor in next generation and then by 10 generations.
6. In a new environment, suppose butterflies were four time more nutritious than all other food sources. How would this affect future populations of the best competitor vs the second best?
7. Graph your data of the different bird beaks and how successful they were from Part B. You decide the best way to represent your data. Don’t forget to labels and use colour.

**Graph Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

