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

**I Will Survive**

**Background**

Remember that traits and characteristics are things such as color, shape, size. For animals, a trait may include things like the shape of teeth, coloration or wing size. This activity will model how traits affect the ability of certain organisms to survive.

You will be given a type of tool to represent a bird beak. You will then compete for food with other "critters" (your friends.) You will have several rounds to gather food and during each round, the amount of food you need to gather will increase.

**Materials (your group may have some but not all beak options)**

|  |  |  |  |
| --- | --- | --- | --- |
| Tweezers (beak) | Spoons (beak) | Scoopulas (beak) | Clothes Pins (beak) |
| Tongue Depressors (beak) |  | Collection cups or Containers | Stop Watch |
| Uncooked Beans (food) | Uncooked Rice (food) | Uncooked Popcorn (food) |  |

**Procedure**

1. Each group member will be given a different “beak” tool. Assign one group member to be the timer using the stop watch.
2. Use a tray on your table as your workspace.
3. Pick out your collection container and place it at a corner of your workspace.
4. Dump the first food (beans) out on the TRAY. You will have 60 seconds to collect as much “food” as you can and put it in your container. You are competing with the other “beaks” at your table.
5. Count your beans and compare the number you collected to the number needed to survive. Enter this number in your data table. Did you survive?
6. Collect all food pieces and return them to their original container.
7. Repeat process with popcorn. Put popcorn away.
8. Repeat process with rice. Put rice away.
9. Collect your lab partners’ data in the table on the next page and construct a graph (10).

**Data Tables #1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Record your beak type here:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| Round # | Type of “Food” | Amount of Food Needed to Survive | Amount of food collected | Did You Survive? |
| 1 | Beans | 15 |  |  |
| 2 | Popcorn | 20 |  |  |
| 3 | Rice | 25 |  |  |
| Data from other group members: | | | | |
| Round # | Type of “Food” | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ |
| 1 | Beans |  |  |  |
| 2 | Popcorn |  |  |  |
| 3 | Rice |  |  |  |

**Date Tables #2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Record your beak type here:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| Round # | Type of “Food” | Amount of Food Needed to Survive | Amount of food collected | Did You Survive? |
| 1 | Beans | 15 |  |  |
| 2 | Popcorn | 20 |  |  |
| 3 | Rice | 25 |  |  |
| Data from other group members: | | | | |
| Round # | Type of “Food” | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ |
| 1 | Beans |  |  |  |
| 2 | Popcorn |  |  |  |
| 3 | Rice |  |  |  |

**Date Tables #3 (Extra)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Record your beak type here:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| Round # | Type of “Food” | Amount of Food Needed to Survive | Amount of food collected | Did You Survive? |
| 1 | Beans | 15 |  |  |
| 2 | Popcorn | 20 |  |  |
| 3 | Rice | 25 |  |  |
| Data from other group members: | | | | |
| Round # | Type of “Food” | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ | Beak:\_\_\_\_\_\_\_\_ |
| 1 | Beans |  |  |  |
| 2 | Popcorn |  |  |  |
| 3 | Rice |  |  |  |

**10. Use the graph paper provided to draw a bar graph that compares the amount of food you collected for each type of food to the amount of food collected by other beak types in your group. You only need to create a graph for ONE data table. You will need to share data with your group to have an accurate graph! Make sure you label your graph (title, axes) and include a legend if needed! (Graph on back of paper)**

**Analysis Questions (Use your data tables AND graph to answer these)**

1. Why would beak shape affect food gathering?
2. What traits beside beak shape might affect food gathering?
3. Which beak type of all the different types in your group was the most successful at gathering food?
4. What would happen if all of the bird types in this activity flew to an island where no birds had been before and the only food available was dried con? Which birds would be most successful? Which birds would be least successful? WHY?
5. Explain how this lab supports the theory of natural selection.

**Scoring Guideline**

|  |  |  |
| --- | --- | --- |
| **Category** | **Possible points** | **Points earned** |
| Data tables thoughtfully completed | 10 |  |
| Questions thoughtfully and correctly answered | 10 |  |
| Graph correctly and completely presented | 5 |  |
| Total | 25 |  |