Adaptation Investigation Lab: Feeding Frenzy

Problem: As we have been studying and learning about Earth's biomes, we have discovered that the desert biome has limited water and limited vegetation. The plants and animals in that environment have special **adaptations** that allow them to survive in such harsh conditions. Imagine you are a researcher and you have discovered several new species of birds. You would like to populate the desert with these new species, but you're not sure if they will survive. Your job is to determine which beak type (bird) is better adapted for the available food source in the desert. The beak with the better adaptation for the food source available will lead to the best chance of survival for the new birds. Also, you must determine which food source would be better for all of the different beak types.

Question: Which beak or beaks are better suited for the available food source in our desert?

Research:
Observe and analyze each different beak type, then test each beak type to determine the ideal combination of beaks and food.

Materials:
Spoon beak (tape on ends)
Blue forcep beak
Craft stick beak
Clothes pin beak
Toothpick beak
Straw beak
Various beans (seeds/food source)
Timer (phone)

1. Hypothesis: The bird with the _____beak will gather the most food in its environment and therefore it will have the best chance of survival over the other birds/beaks.

2. Form a hypothesis (in a complete sentence) about which beak will gather the least amount of food.
_____
_____
_____

Experiment:
1) Set timer for one minute.
2) Use one "beak" to pick up **ONE** seed at a time.
3) Place **ONE** seed at a time into the mouth (graduated cylinder).
4) Record the amount of seeds gathered by reading the final volume on the cylinder or count the number of seeds gathered for each beak trial.
5) Once all data has been recorded rank the beaks in order of most effective to least effective.

3. Collect Data: Complete experiment and fill in data chart.

Feeding Frenzy Data Chart

Beak Type	Time (min)	Volume or # Beans	Ranking

4. Analyze your data:

Which beak was the most effective? (Justify your answer) _____
_____
_____

Which beak was the least effective? (Justify) _____
_____
_____

Compare and contrast 3 beaks. _____
_____
_____
_____

How can you adapt the experiment or the beaks to affect a better outcome? _____
_____
_____
_____
_____

5. Conclusion: Was your hypothesis correct? Explain why or why not. _____
_____
_____
_____
_____
_____