This activity was designed by Karissa Killian in partnership with the Great Salt Lake Institute at Westminster College. It was updated to its current form by Bridger Layton.

Bird Beak Adaptation Activity for Bird Festival

Participants will be able to understand:
- What an adaptation is
- Different species of local birds
- Various bird food sources
- Various bird beak functions
- How the environment in which birds live influences these factors
- How these factors influence a bird's lifestyle

Materials:
1. Beaks – You will want an even mix of beak types, and enough total beaks for every participant to have one.
   a. Ladles
   b. Slotted spoons or forks
   c. Chopsticks
   d. Tongs
   e. Clothespins
   f. Tweezers or toothpicks
2. Stomachs
   a. Ziploc bags or Paper Cups
3. Food sources
   a. Swedish fish
   b. Jelly beans
   c. Gummy worms
   d. Twizzler chunks
   e. Sunflower seeds
   f. Good & Plenty licorice
   g. Nerds
4. Mediums to imitate the environment/habitat
   a. Small baking pan or shoebox – will imitate food floating on water
   b. Sugar – will imitate food in water
   c. Rice – will imitate food in mud/dirt
   d. PVC pipe with holes in it – will imitate food in holes in the ground
   e. Empty bowl – will imitate food in the open air
5. Bird Information Cards (available in the Accompanying Resources section on the GSLI webpage)
   a. Use these cards after the activity to discuss how the birds of the GSL have adapted their beaks to their food size.

Set-up:
1. Create 10 different stations with different food and medium combinations. Below are the recommended combinations. These combinations represent a variety of environments from which birds source their food (i.e. floating on water, in the water, out of dirt or mud, etc.). Different beak types will be better suited for gathering certain types of food.
   a. Place Nerds in a small baking pan
   b. Place Nerds on a bed of rice
   c. Place Good & Plenty on a bed of rice
   d. Put gummy worms into the PVC pipe with holes in it
   e. Put Good & Plenty in an empty bowl
   f. Mix Swedish Fish into sugar
   g. Mix jelly beans into sugar
   h. Mix gummy worms into rice
   i. Mix sunflower seeds into rice
   j. Mix Twizzler chunks into rice

2. If you are facilitating this activity in the field, you may want to consolidate your stations. This can be done by placing several different mediums on one or two large trays, and several different food types in each medium. (i.e. combine stations above where different foods are placed in or on the same medium)

3. Print off the bird information cards (available in the Accompanying Resources section for this document on the GSLI webpage)

Instructions:
1. Have participants choose a beak type
2. Give them a stomach
3. Instruct them to visit each station that will have a container with candy in some sort of inedible material (rice, sugar, etc.).
4. Explain that they will have three tries at each station to obtain as many food items as they can, while limiting their collection of inedible materials.
   a. If you have consolidated your stations for a field-friendly facilitation, you will want to give students more than three tries. Pick a number based on your timeline and group size.
5. Participants can only use one hand (to hold their beak).
6. After participants have visited each station, have them return and show you what food they were able to collect.

Wrap Up:
7. Have a conversation about why they were successful with certain types of food and not with others.
8. What features did their beak have that allowed them to pick up certain types of food? This will allow you to explain what an adaptation is to them.
9. Have a conversation about why birds have different beak shapes.
10. Discuss the purpose of the inedible material. What medium were they most successful in and why? Explain that birds are adapted to certain habitats or environments, but not others.
11. Ask if they changed the way they used their beak to pick up certain types of food and how birds also behaviorally adapt in order to obtain food in different situations.
12. Use the bird information cards to discuss how the birds of the Great Salt Lake have adapted (particularly their beaks) to better fit their food source.