

Bird Beak Buffet

Why are bird beaks so unique?

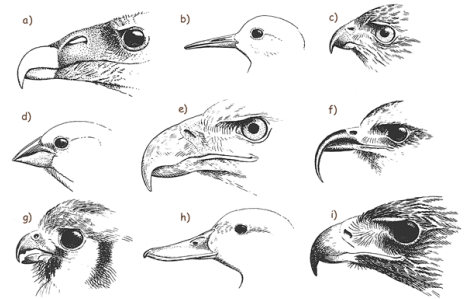
Grade Level: 3-5

Time: 45-60

NGSS Connection: 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some less well, and some cannot survive at all.

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.



In this lesson students learn about bird beaks as an example of an adaptation. Students experiment with different beak models and record data on the effectiveness of each model at collecting different “foods”.

Objectives: Students will be able to...

1. Understand that birds have different types of beaks and the beak type reflects the kind of food eaten.
2. Understand that birds occupy different niches in the environment that allows many birds to live in the same area.
3. Define adaptation.

Materials:

Bird Beak Buffet Kit: contains an assortment of implements and foods and collection cups.

Writing materials for recording data

Timer

Vocabulary: Adaptation, niche, habitat

Introduction:

Ask students if they have seen birds in their yard. Are they all the same? How can they tell them apart? What information can they use to identify them? Adaptations are everything an organism needs to survive and are suited to a particular environment. Humans can use technology to adapt but animals must rely on body type or behavior to adapt (our intelligence is an adaptation!). An animal’s adaptations can give us clues about how and where it lives and can also be used to identify different species.

Why are there so many different types of birds (compare birds to humans, for example)? Consider the consequence if all birds were the same – nesting in the same places and eating the same foods. There would be a lot of competition for the things they need to survive. Instead, birds fill different niches (a **niche** is the special place a species has in its community and includes how it lives, what it eats, what eats it). In this way a single tree could support several different bird species.

A bird’s beak is an important adaptation that is used for obtaining food. Birds in general eat a wide variety of foods from live prey to berries. Thus, bird beaks are highly varied. A bird’s beak is one of the ways we are able to identify different bird species.

Optional Technology Tie-in: you can find YouTube videos of birds in action to review examples of how different birds use their beaks.

In this activity students will be assigned a tool representing a bird’s beak. Each beak is specialized and will work better with some foods than others. Students will use their beak to collect different foods and record data on the success of

their attempts. Since we don't get to choose the adaptations we are born with, students will receive a randomly selected beak 😊

Activity (20min): Set up the rules for behavior – Keep beaks to yourself, listen to instructions, don't scatter food!

- Divide students into 6 groups.
- Each group receives one paper plate and the assorted bags of "food." Each student receives a tool (beak) and a cup (stomach). Each group should have at least one of each beak type.
- Show students the variety of food options and have each student fill-out the first page of the Bird Adaptations Data Sheet.
- Have one person in each group dump the first type of food on the paper plate. What real food type might it represent?
- Students are then given 30 seconds to see how much food they can gather with their beak and put into their cup. No stealing of food from other birds and no scattering of food off the paper plate, please! If students are so efficient they run out of food, modify the activity such that once they get 5 pieces of food in their cup they dump it back to the plate and keep going. This keeps plenty of food on the plate for everyone.
- Have each student record how many food pieces they ate on the data sheet. Compare to their teammates with different beaks.
- Pack-up the food. Do several more trails using different food. Students keep recording the results on the data sheets.
- Once finished, put materials away and answer the final questions on the data sheet.

Post Discussion/Data interpretation:

- Students could choose to graph their results to help interpret their data.
- Which beak worked best for which type of food?
- Can students guess a bird their beak might represent?
- What would make this activity easier or harder, similarly, what do birds encounter that makes collecting food more challenging?

http://projectbeak.org/adaptations/beaks_test.htm (computer quiz match the beak with the food)

<https://www.youtube.com/watch?v=IFZ8NMBDCJw> (video of bird with explanation)