

TEKS-Based Activity for Grade 5

Eeks Beaks

Description:

In this activity, students observe and discuss the adaptations and restrictions of bird beak characteristics such as size and shape. They graph and interpret the information about beak models and their effectiveness with different food sources.

Time Frame:

3 lessons (45 minutes each)

Correlation to Texas Essential Knowledge and Skills:

During this activity, students will be exposed to the following Texas Essential Knowledge and Skills:

Note: Some TEKS statements below end with a ; or *and* and nothing thereafter—this indicates that further TEKS statements follow but are not included here.

(5.9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:

- (A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem;
- (C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.

Note: The TEKS listed here are the main content TEKS for this activity; however, this activity may also cover additional content and process skills included in other TEKS.

Materials:

Medium-sized container to represent stomach (1 per student group)
Materials to make models of beaks (chopsticks, clothespins, etc.) (several per student group)
Items to represent food (pennies, rocks, etc.) (several per student group)
Graphing paper and chart paper (enough for each group to have several pieces)
Stopwatch (1 for the teacher, or 1 per group)
Examples of bird beak adaptation (see Advance Preparation)

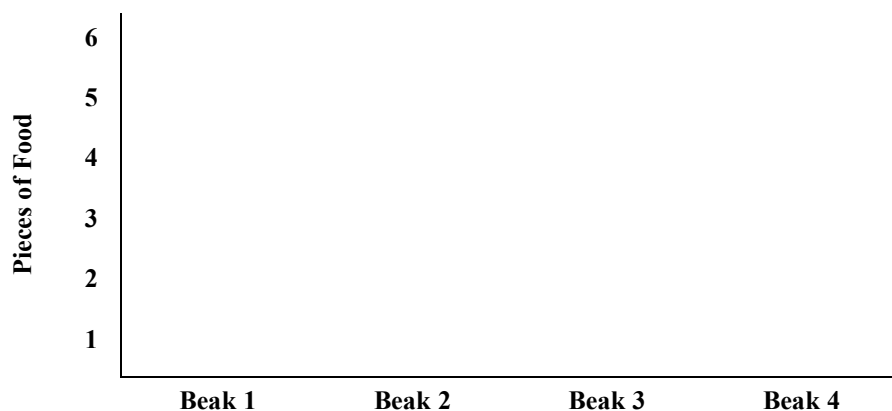
Advance Preparation:

1. Collect pictures showing bird beaks, models of beaks, and/or a video showing birds feeding in their natural environment. Searching online for “bird beaks” or “bird beak adaptations” yields many examples.

2. Collect a variety of tools to model beaks: clothespins, chopsticks, plastic spoons, tweezers, tongue depressors, popsicle sticks, scoops—any item that models the function of a particular beak.
3. Collect a variety of items to model food: rubber band, marbles, pennies, different-sized washers, toothpicks, rocks, dried beans, pasta, small artificial insects and spiders, etc.
4. Group similar food items together, placing about two dozen (if possible) of each item in a group. Each of these feeding stations should be located in areas easily accessible to all students.

Procedures:

1. Show bird pictures, models, and/or a video of birds feeding in their natural environment.
2. Use a tool to model a beak. Discuss how this tool functions like a bird beak, yet is different. Have students brainstorm what a bird with this type of beak would eat. Use pictures or beak model tools to extend the discussion.
3. Students will conduct a test of the effectiveness of beak models in collecting different food types. Discuss what type of data is to be collected and how data is to be recorded. A graph of beak effectiveness might look like this:



4. Divide the class into small groups. Each student should have a beak model, and each group should have a container to represent the stomach.
5. Have the student groups circulate through all the feeding stations. At each station, give students two minutes to practice transferring food to the stomach.

Note: Be sure to establish some acceptable procedures for food collection before dividing the class into groups. For example, all birds must feed in a safe and systematic manner. Food items are to be transported to the stomach using only the beak. The stomach cup may not touch the feeding station at any time. When time is called, only food items found in the stomach may be tallied.

6. After practice, each group of students has 30 seconds per beak model to collect and transfer food to the stomach. You may time the class all together, or allow students in each group to time themselves using a stopwatch.
7. Students record the amount of food transferred to the stomach at this station. Return food to feeding station before rotating to the next feeding station. Continue until all the groups have visited each feeding station.
8. After gathering data from every station, groups produce a graph of their combined data.
9. Display and discuss the graphs. Then compare and contrast the results between groups.
10. Combine group data to produce class graphs showing how much of each type of food each beak could pick up. Have the class discuss the results, comparing and contrasting the effectiveness of different beak types in acquiring food from different sources. Determine which beak characteristics would allow or interfere with the collection of each food type.
11. Lead a class discussion to determine what food each model might represent. Ask, “Where in the ecosystem would this food source be found?”