

Bird Beak Bonanza

objectives from North Carolina standard course of study:

4th Grade Goal 1: The learner will make observations and conduct investigations to build an understanding of animal behavior and adaptation.

1.02 observe and record how animals of the same kind differ in some of their characteristics and discuss possible advantages and disadvantages of this variation.

1.03 observe and discuss how behaviors and body structures help animals survive in a particular habitat.

students will work in pairs or small groups while they explore stations.

Materials: markers for teachers, chart paper, pencils for students, sheets of paper for students, Beaks! By Sneed B.

collard, III, various pictures of birds, 8 plastic containers, 4 pencil top rubber erasers, small container of water, needle nose pliers, eye dropper, spatula, 1 bag of tiny marshmallows, standard size letter envelope, 5 sets of tweezers, 2 sets of chop sticks, whole walnuts, 2 nut crackers, tongs, 2 slotted spoons, grapes, string, strainer, a tablespoon, uncooked white rice, small log with a hole drilled in it, a teaspoon, regular sized pliers, 1 brown and serve roll, channel lock pliers, 2 straws, plastic cereal bowl, 1 cup of dry oatmeal, 1 package of gummy worms, flat head screwdriver, signs at each station, science notebooks, pencils, concept map worksheet for each student, concept map cut-out sheet, scissors, glue

- students will sit on the floor and teacher will walk to each station and pick up the tools that represent beaks. students will predict how the tools from the stations represent beaks and how birds might use them. They will also predict why some

birds have beaks that are different from other birds. Teachers will have 8 stations set up for students to work at with their partners to explore the various "beaks" and foods. Each station will have a special type of "food" that fits one of the 8 beaks described. At each station, there will be 3 different tools. There will also be a sign at each station that tells what type of food is represented. (Example- station #1: Fish in shallow water, station #2: Flying Insects) students will be working together without direct instruction. After dividing the class, they will explore the stations in 6 minute intervals. From the three tools at each station, students are going to decide which is most efficient for the specific food type. They should really try each tool.

- station #1: Rubber erasers in a container of water to represent in a shallow water area (fish-eating beak).
Tools- needle nose pliers, eye dropper, spatula Bird examples: Great Blue Heron, Kingfisher

- station #2: Tiny marshmallows tossed and caught in the air to represent flying insects (insect-catching beak). **Tools-** envelope, tweezers, chopsticks **Bird examples:** swallows, whip-poor will, Flycatchers
- station #3: whole walnuts to represent seeds with hard coverings (seed-eating beak). **Tools-** nut cracker, tongs, slotted spoon **Bird examples:** sparrows, Rose-breasted Grosbeak, Northern cardinal
- station #4: Bunch of grapes hanging from a string from the ceiling to represent fruit hanging on a tree (fruit-, insect-eating beak). **Tools-** tweezers, strainer, nut cracker **Bird examples:** Cedar waxwing, Brown Thrasher, American Robin
- station #5: Large container with tiny marshmallows to represent aquatic plants and animals (water and mud-sifting beak). **Tools-** slotted spoon, tablespoon, chopsticks **Bird examples:** Mallard, Canada Goose
- station #6: Rice scattered on and in a small log with a hole drilled it to represent insects in a hollow tree (chiseled beak). **Tools-** tweezers, teaspoon, pliers **Bird examples:** woodpecker, Nuthatches, Brown Creeper
- station #7: Brown and serve roll to represent a mouse (preying beak). **Tools-** channel lock pliers, tweezers, straw **Bird examples:** Hawks, owls, Eagles
- station #8: Cereal bowl filled with dry oatmeal with gummy worms on the bottom to represent worms buried in mud

(probing beak). **Tools-** tweezers, straw, screwdriver **Bird examples:** sandpipers, snipe

Ask students questions as you roam the room....why do birds have different shaped beaks? were your predictions you made earlier correct?

After trying to pick up the items with the different types of bird "beaks", students will make a list on paper explaining which bird beaks work the best for picking up the different items.

say something like... "You found out while taking part in the stations that some tools worked better to pick up items than other tools. It's the same with bird beaks. Birds have different beaks for a reason." Ask students to work together to come up with an explanation as to what advantage each "beak" had in picking up the various types of "food". what particular features made one tool "fit" better than others? continue by saying... "The straw did not work as a beak in any station. can you think of a bird whose beak would function like a straw? An

important way to identify birds is the shape of their beak. we learned that bird beaks can be learned for many different types of things. what other ways do you think birds used their beaks besides eating?"

After experimenting with the items they were given to represent bird beaks and foods, the teachers will lead a classroom discussion on animal adaptations. what does it mean to adapt? **Adaptation** means organisms change to better live in their environment. Have any of you had to adapt to a situation? Expected answers: yes, I changed schools before. I changed rooms with my brother.) Animals have to adapt just like humans. Animal adaptations are any body shape, process, or behavior that allows an organism to survive in its environment. Animals change over time to adapt to their environment. Just like we found out in our stations, birds have many different

types of beaks depending on what they eat and where their food source is. Birds also used another part of their body to obtain food. what part do you think that is? (Expected answers: wings, features, eyes, feet) You are right; a bird's feet help them eat. one example is how the eagle uses his feet. He has talons. **Talons** are sharp, curved feet that are used to catch prey. **Prey** is an animal that is hunted and eaten by another animal. The talons form a grasping grip that enables them to catch, hold, and carry heavy weights below their bodies and away from their wings. why do you think birds such as herons have long toes and legs? (Expected answers: they walk in the water to find their food and the water might be deep) That's right. They are wading birds. Their feet keep them from sinking in soft mud while wading in ponds and streams.

(There is a follow up activity on bird feet, webbed/nonwebbed.)

To assess, use a concept map worksheet as the summative assessment, students will organize information according to what they learned in the bird beak stations. There will be five circles labeled as slotted spoon, nutcracker, envelope, pliers, and tweezers. Teacher will make sure that all students have "Bird Beaks" written as the topic. Based on their explorations during the station activities, students will write about what they discovered under the correct tools as they were used to represent the various bird beaks. They will answer questions on the bottom of the concept map worksheet based on the North Carolina standard course of objectives covered. Question 1 based on objective 1.03: How can an animal such as a bird, use its body structure to help them survive in a particular habitat? Question 2 based on objective 1.02: If a pelican and woodpecker switched beaks, what disadvantages would they both encounter in their natural habitats?

-A second assessment will be the labeling worksheet where students will label each type of beak, based on its purpose.