GENERATIONGENIUS
ALWAYS QUESTION. ALWAYS WONDER.

LESSON PLAN

EXTERNAL ANIMAL PARTS
GRADES K–2

SUMMARY

Students test different bird “beaks” to see which are best suited for different “foods”. Duration: 45 minutes.

NEXT GENERATION SCIENCE STANDARDS CORRELATION

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow and meet their needs.

Science & Engineering Practices	Connections to Classroom Activity
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Make observations (firsthand or from media) to collect data that can be used to make comparisons.	• Students will conduct an experiment to test different beak structures to see which shapes work better with specific foods.

Disciplinary Core Ideas	Connections to Classroom Activity
LS1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)	• Students will use different objects to act as beaks and attempt to pick up different “foods” such as rice (seeds) and rubber bands (worms).

Crosscutting Concepts	Connections to Classroom Activity
Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)	• Students will find that some beak shapes are better suited for picking up certain foods.

ENGAGE

Show a picture of the attached pelican. Ask students, "Do you know what kind of bird this is?" After a student says "pelican" (or provide this if no one knows) ask, "What do you notice about this pelican?" "What made you think it was a pelican?" Most likely they will point out the beak since it's a unique structure.

Ask, "How do you think that beak helps it?" The goal is to get them to see that the shape of the beak enables the pelican to scoop up lots of ocean water in hopes of catching fish to eat. Segue to the lesson by telling them that today they will be investigating different types of animal body parts such as beaks, tails and claws.

MATERIALS

- Paper plates
- Small cups
- Toothpicks
- Spoons
- Tweezers
- Rubber bands
- Mini marshmallows

DIY Activity

- Pair of scissors
- Roll of tape
- Bag of chips
- Water bottle
- Piece of paper
- 6 Plastic cups
- Shoe with a lace

EXPLORE

Put students in groups of three. Each group will need a plate that has a mixture of rice, mini marshmallows and rubber bands. Each group will also need three "beaks"; tweezers, a toothpick and a plastic spoon. *(Be sure to mention being careful with the toothpick and tweezers so that they don't poke themselves or someone else.) Depending on the time you have, you can either let each member of the group try one of the beaks, or you can let each member try all three.

You will time each round of "eating" for 30 seconds. Students will take turns being the bird and see how many of the different "foods" they can pick up with their beaks and put into a small cup (one piece at a time is a good rule). They can record data on a piece of paper or in a science notebook. Their data should have the tool they were using and the number of each type of food they were able to pick up. A table like this could be drawn on the board for them to copy:

Beak Type	Rice	Rubber Bands	Mini Marshmallows
Spoon			
Toothpick			
Tweezers			

EXPLAIN

Have students share their results from the experiment. Some follow-up questions might be, “Which tool was the best at picking up rubber bands? How about the rice? And the mini marshmallows?” “What about the structure of the beak helped pick up the mini marshmallows?” Be sure to have students use “evidence” from their data.

Discuss which type of food each of the different “beaks” in today’s experiment simulated. (Accept any reasonable answers here; rice might be seeds or bugs, rubber bands might be worms, and the marshmallows might represent berries.)

ELABORATE

Share the attached images of real birds with beaks structured in similar ways to the “beaks” they used in the activity.

- **Spoon:** The pelican has a spoon like structure so that it can scoop up a big mouthful of water in the hopes of catching fish.
- **Toothpick:** The sword-billed hummingbird has a very long pointy beak which allows it to reach the nectar of some unique flowers that other birds and insects can’t reach.
- **Tweezers:** The oystercatcher lives in beach environments and uses its beak to pick creatures off rocks in tidal areas.

WATCH THE GENERATION GENIUS EXTERNAL ANIMAL PARTS VIDEO AS A GROUP

Then facilitate using the Discussion Questions.

Ask students to think of other structures that animals have that help them to survive. Make a list on the board and discuss each one. Students should come up with things like claws, ears, legs and tails. As you list each one, be sure to ask students how that structure helps the animal.

EVALUATE

Students can play the online Kahoot! quiz game located below the video which provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz or the exit ticket questions. All these resources are located below the video in the Assessment section.

EXTENSION

To emphasize that beaks have specific functions, discuss other functions of beaks besides obtaining food. Ask, “What other function does a beak serve?” (Beaks are used for building nests, feeding their young and even defense in some cases.) Conclude that beaks are necessary structures of a bird for growth and survival.

BEAK PHOTOS