

WEEK 3 Lesson 2

Science and Engineering: Bird Beaks
Why do birds have different beaks?

S & E Big Ideas	<p>Animals have external parts that help them survive, grow, and meet their needs.</p> <p>Animals use their external parts to grasp objects, move from place to place, protect themselves, survive in their environments, and seek, find, and take in food, water, and air.</p> <p>The structures of bird beaks are directly related to what they eat.</p>
S & E Guiding Question	Why do birds have different beaks?
Content Objective	I can describe why birds have beaks of different sizes and shapes. (1-LS1-1)
Language Objective	I can discuss why birds have beaks of different sizes and shapes. (SL1.1)
Vocabulary	beak: the nose and mouth of a bird
Materials and Preparation	<ul style="list-style-type: none"> ● Bird Beak Investigation sheet, 1 for each child, plus teacher copy ● Bird Beaks poster, one copy for each investigation table ● Investigation Procedure poster, 1 copy printed as poster ● Investigation Table Labels (2-3 sets) ● 6-9 pairs pliers ● 6-9 tweezers ● 6-9 small paper cups, have extra on hand <p>Cut 2 slits down the sides to create a beak. Refer to the Bird Beak Investigation sheet for an image.</p> <ul style="list-style-type: none"> ● 6-9 cups, for “stomachs” ● stopwatch or timer <p>Break children into groups of 2-4. Group sizes will depend on how many sets of investigation tables are created.</p>

	<p>Prepare investigation tables. Depending on class size, make 2-3 sets of each table for a total of 6-9 investigation tables.</p> <ul style="list-style-type: none"> ● All tables: one pair pliers, one pair tweezers, one small paper cup with 2 slits, 1 cup to act as the bird’s stomach ● Table 1: Investigation Table, label “Fish in Water” <ul style="list-style-type: none"> ○ Place a large bowl of water in the center of the table. Just before investigations, place Swedish Fish in the bowl of water (leaving fish in water too long will make them slimy). ● Table 2: Investigation Table, label “Worms & Insects in Soil” <ul style="list-style-type: none"> ○ Place a large bowl of soil or dirt in the center of the table. Mix in rocks, cooked spaghetti (worms) and beads (insects). ● Table 3: Investigation Table, label “Seeds on the Ground” <ul style="list-style-type: none"> ○ Place a large bowl of dirt and rocks in the center of the table and mix in sunflower seeds and/or pistachios with shells on.
<p>Opening 3 minutes</p>	<p>Gather children in the meeting area with a Bird Beaks poster <i>We’ve been learning about the different ways animals use their body parts to help them survive, grow, and meet their needs. Today, we will think about parts that birds use to get their food. Take a look at these pictures of bird beaks. Remember, a beak is what we call the nose and mouth of a bird.</i></p> <p>Invite children to Turn and Talk. <i>How are these beaks different? How are they the same?</i></p> <p>Invite children to share what they noticed.</p>
<p>Investigation 15 minutes</p>	<p><i>Looking at those pictures, we noticed that birds have beaks that are different sizes and shapes. Today, we will conduct an investigation to find out <u>why</u> birds have different beaks. Today, we will investigate three different types of food that birds eat: insects and worms, nuts and seeds, and fish. We will try out different types of beaks with each food to figure out which beak is best for each food.</i></p> <p><i>You will work in small groups and will move to three different tables during your investigation. At each table, you will follow the same procedure.</i></p> <p>Show children the Investigation Procedure and Investigation sheet. Then, model how to test each beak at one of the tables.</p> <p><i>I’m going to model for you how you will complete the investigation. First I will go to my table and I will work with my group to decide who uses which bird beak first. Pretend I checked with my team and it’s okay for me to use the pliers first. When the timer begins, I’m going to try to move as much food as I can into my cup, which</i></p>

	<p><i>represents the bird’s stomach. I don’t want to get a bunch of rocks or dirt in my tummy so I have to be careful! In order to eat the sunflower seeds, I have to crack them open with my beak. So before putting them in the cup, I need to use the beak to break them open. If they aren’t broken open, I cannot put them in my cup or count them. When the timer goes off, I put my tool down and start counting how many pieces of food my bird was able to eat. Then I write it in the right box on my worksheet and make sure the rest of my team writes it down, too.</i></p> <p>Break children into their groups and when the first child from each group is ready, start the first timer for 1 minute. When 1 minute is over, have all children put down their ‘beaks’ and begin counting. After counting, they report out to the group how many pieces of food they were able to get with the beak they used, and everyone in the group records it. Continue with two more 1-minute rounds to have each group test all three beaks. Once all children have recorded the three tests on their papers, they should decide as a team which beak worked best for that particular food and circle that beak. Then, have children switch tables to test beaks with another type of food. Continue until all groups have tested beaks with all three foods.</p>
<p>Discussion 5 minutes</p>	<p>Gather all students at the meeting area with their investigation worksheets.</p> <p><i>During our investigation, we were trying to figure out why birds have beaks that are different sizes and shapes.</i></p> <p>Invite children to Turn and Talk</p> <p><i>Why do birds have different types of beaks? Use evidence from your investigation to support your ideas.</i></p> <p>Ask a few children to share what they learned from the investigation, and prompt for evidence when possible.</p> <p><i>What did you see that makes you say that? Do you think it always works that way? What’s your evidence? How do you know?</i></p>
<p>Closing</p>	<p><i>Today we learned that birds have different types of beaks because they eat different kinds of food. The structure of beaks depends on how the bird will use it. A bird that wants to eat fish might scoop them up with a big beak, while a bird that eats nuts and seeds needs a strong beak that can break them open. A long, skinny beak helps birds that like to eat insects or worms pick them off the ground or a leaf. In your science journal during stations, you will write and draw about how different animals use their parts to eat and drink, and you may include how birds use their beaks!</i></p>

Standards	<p>Practice 1: Asking questions and defining problems</p> <p>Practice 3: Planning and carrying out investigations</p> <p>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.</p> <p>SL1.1 I can discuss what I learn about how animals use their parts to move.</p>
Ongoing assessment	<p>During the investigation, watch for children who think the cup is best for everything. Do they understand that a beak like that means that the bird may also get dirt and rocks if they are trying to get seeds or insects?</p> <p>During the investigation and discussion, take notes about whether or not children are able to describe the following:</p> <ul style="list-style-type: none"> ● Different ways birds use their mouths to get food ● How each tool is like a particular bird’s mouth ● Which tool worked best with each of the ‘foods’ and why ● The difference between the way birds eat and the way humans eat

Notes