

GROWTH AND CHANGES IN ANIMALS: What Kind of Beak is it?



The Big Eco Idea: Birds have distinct characteristics.

Description Of the Task

While participating in the hands-on/minds-on activities, students will work in small cooperative learning groups to identify and classify various types of birds and how their beak types determine what kind of food they eat.

Curriculum Expectations:

SCIENCE & TECHNOLOGY-Understanding Life Systems: Growth and Changes in Animals

- 2.2 observe and compare the physical characteristics and the behavioural characteristics of a variety of animals, including insects, using student-generated questions and a variety of methods and resources
- 3.1 identify and describe major physical characteristics of different types of animals
- 3.2 describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment

Lesson Title: What kind of beak is it?

Unit: Science-Growth and Changes in Animals

Grade: 2

Time: 65 minutes (total)

- 20 minutes for the Introductory Activity (Schema Activation – Bird Pictures and Story Book)
- 25 minutes for the Enhancing Activity (What Kind of Beak is it Activity)
- 20 minutes for the Culminating Activity (Birding Around Game)

Groupings

- Students working in small cooperative learning groups
- Students working individually
- Students working as a whole class

Teaching / Learning Strategies

- Discussion
- Science learning log/journal
- Brainstorming

Assessment Strategies

- Science learning log/journal
- Questions and answers
- Observation

Assessment Recording Devices

- Rubric
- Anecdotal record sheet
- Checklist

Resources Required:



Materials

Introductory Activity

- **BLM 1.1.a** – Pictures of Various Types Birds
- **BLM 1.1.b** – KWLI Chart
- Big picture book of your choice about birds (why they have beaks)
- White board with markers or chart paper

Which Kind of Beak is it Activity

- **BLM 1.2.a** –What Kind of Beak is it Task Card
- **BLM 1.2.b** – Bird's Beak Student Worksheet
- **BLM 1.4.f** – Checklist for What Kind of Beak is it
- Plastic containers with lids (all the same size – Ziploc circular containers works well – 15 in total: 3/Group)
- Water
- Food colouring (red – 1 bottle)
- Sand (to fill 5 plastic containers)
- Square sponges (thick to be able to hide plastic spiders in them – 1/group)
- Cooking tongs (5 – 1/group)
- Plastic tweezers (5 – 1/group)
- Plastic pipettes (5 – 1/group)
- Plastic serving spoon with drainage lines (5 – 1/group)
- Plastic insects (various types – enough for 10 containers)
- Plastic spiders (enough to be placed in 5 sponges)
- Paper towels (1 roll)
- White labels
- Permanent marker

Birding Around Game

- **BLM 1.3.a** – Birding Around Game Questions
- **BLM 1.3.b** – Birding Around Game Pictures
- **BLM 1.3.d** – Birding Around Task Card
- **BLM 1.4.a** – Science Learning Log/Journal Rubric
- **BLM 1.4.b** – Science Learning Log/Journal Student Criteria
- **BLM 1.4.c** – Anecdotal Record Sheet
- **BLM 1.4.d** – Rubric for Birding Around Game
- **BLM 1.4.e** – Science Learning Log/Journal Page
- Container (1)
- Various noise makers/buzzer (1/group)
- Velcro



Black Line Masters (BLM)

- **BLM 1.1.a** – Pictures of Various Types Birds
- **BLM 1.1.b** – KWLI Chart
- **BLM 1.2.a** – What Kind of Beak is it Task Card
- **BLM 1.2.b** – Bird's Beak Student Worksheet
- **BLM 1.3.a** – Birding Around Game Questions
- **BLM 1.3.b** – Birding Around Game Pictures
- **BLM 1.3.d** – Birding Around Task Card
- **BLM 1.4.a** – Science Learning Log/Journal Rubric
- **BLM 1.4.b** – Science Learning Log/Journal Student Criteria
- **BLM 1.4.c** – Anecdotal Record Sheet
- **BLM 1.4.d** – Rubric for Birding Around Game
- **BLM 1.4.e** – Science Learning Log/Journal Page
- **BLM 1.4.f** – Checklist for What Kind of Beak is it

Preparation:

1. Photocopy all Black Line Masters (**BLM 1.1.a, BLM 1.1.b, BLM 1.2.a, BLM 1.2.b, BLM 1.3.a, BLM 1.3.b, BLM 1.3.d, BLM 1.4.a, BLM 1.4.b, BLM 1.4.c, BLM 1.4.d, and BLM 1.4.e**) prior to the activity.
2. Laminate all the Task Cards (**BLM 1.2.a** and **BLM 1.3.d**), Bird Pictures (**BLM 1.1.a**), Birding Around Game material (**BLM 1.3.a, BLM 1.3.b**)
3. Organize all the materials, especially the containers filled with water, sand and food colouring/water mixture prior to beginning the learning activity. Insert plastic spiders into sponges, and add plastic insects to water containers and sand containers.
4. Label all equipment with white labels for identification purposes.
5. Review safety procedures with students before facilitating the What Kind of Beak is it Activity.
6. Have enough paper towels and a floor mop available in case of spills.
7. Arrange desks in groups of 4 so that students are facing each other.

Vocabulary:

- Seed-eating beak
- Meat-tearing beak
- Physical feature/characteristic
- Probing beak
- Adaptation
- Insect digging beak
- Tweezers
- Humming Bird
- Insect-eating beak
- Sifting beak
- Blue Jay
- Cardinal
- Birds of prey (Owl, Hawk, Falcon, Eagle)
- Tongs
- Waterfowl (duck species)
- Blue Heron



Print and Websites

Swinburne, Stephen. (1999) *Unbeatable Beaks*. Henry Holt & Co.

Collard, Sneed B. (2002) *Beaks!* Watertown MA: Charlesbridge Publishing.

Fernbank Science Centre. Bird Beaks.
http://fsc.fernbank.edu/birding/bird_beaks.htm

Teaching / Learning:

Lesson Plan Progression

A) Introductory Activity: Schema Activation – Bird Pictures and Bird Story Book	Time	Assessment Techniques	Key Questions
<p>Activate Prior Knowledge: Whole class discussion on the Carpet –</p> <ol style="list-style-type: none"> 1. Introduce the topic of birds. Ask students to name some types of birds. Record responses on chart paper or on the white board. As students give their responses, have them locate the corresponding bird picture and tape it next to the appropriate text. 2. Ask students the following questions: <ul style="list-style-type: none"> • Why do birds have beaks? • How do birds use their beaks to get food? • Do all birds have the same beak? Why not? • Do all birds eat the same food? • Can you give me an example of a bird and the beak that it has? Describe or draw what it looks like. Either select individual students to come up to the board to draw their bird or have everyone draw a picture in their Science learning log / journal. 3. Show students the title of the big story book. What do they think the book is about? Ask them what a fact is. Write definition on white board. 4. What kinds of bird facts do you think would be found in this book? 5. Optional Step: Introduce the KWLI Chart (BLM 1.1.b) and fill in the “What do I know” and the “What do I want to know” columns with students. This learning task can be completed as a whole class or individually. The enhancing activity takes a long time to finish so the KWLI does not have to be used. 6. Read story, discuss findings and complete the “What did I find out” and the “What did I find interesting” columns. 	20 min	<p>Observations: Observation notes will be made during discussion.</p> <p>Questions and Answers: Questions led by the teacher or student. Ask students to recognize and recall specific facts and ideas. Ask students to retell and summarize information.</p>	<ol style="list-style-type: none"> a) Can you name some different types of birds? b) Why do birds have beaks? c) How do birds use their beaks to get food? d) Do all birds have the same beak? Why not? f) Can you tell me or draw an example of a bird and the beak it has? What kind of food does it eat? g) What did I find out about birds? h) What did I find interesting about birds? i) What do all birds have in common?
<p>B) Enhancing Activity: Hook – What Kind of Beak is it Activity</p> <ol style="list-style-type: none"> 1. Organize students in small cooperative learning groups of 4-5. Have desks arranged so that they are facing each other. 2. Each group is given a set of kitchen utensils (spoon, tongs, tweezers and pipette) to be placed in the centre of the desks. These tools represent different types of birds' beaks. Explain to students that each tool is supposed to be a bird's beak and that birds use them the same way that they will be using them. Explain and model how to use each utensil if needed prior to beginning. 3. Explain to the class that they are going to be given 3 different plastic containers that represent a type of environment. Discuss each environment (container filled with water = ocean, lake, or river; container with sand = sandy environment; coloured water = nectar inside a flower; and sponge = tree) and type of food found in each place. 4. Give each group the first container filled with sand and buried plastic insects. The activity works better if the container is given to one student at a time, rotating to the next student in the group until everyone has had a turn. 5. Each student selects one kitchen utensil (bird's beak) and tries to use the tool to pick up as many insects as possible. Once they have had a chance to use their selected beak, they then pass it to the person sitting next to them. Each group member should have only a few minutes to complete the task. 	25 min	<p>Anecdotal Record Sheet</p> <p>Checklist</p>	<ol style="list-style-type: none"> a) Which beak works better at picking the insects out of the water? b) Which beak works better for picking the insects out of the sand? c) Which beak works better at sucking out the nectar? d) Which beak works better at getting the insects (spiders) out of the tree (sponge)? e) Which type of bird has a beak that works like a spoon?

<ol style="list-style-type: none"> 6. Once the sand/insect container has been distributed around the group, students put the lid back on it and raise their hand to notify the teacher that they require the next container. 7. This process gets repeated for every container. The order of the containers should be the following: <ul style="list-style-type: none"> • Container # 1 = sand/insects • Container # 2 = water/insects • Container # 3 = coloured water (In this case, the object is to choose the beak that works best to “drink” the nectar) • Container # 4 = sponge/spiders 8. As students are using the kitchen tools, they should be thinking about what kind of bird would have that beak and how successful that beak is for picking out as many insects as possible or “drinking” the nectar in a short time frame. Remind students that birds have to work efficiently to get their food because of predators. 9. Once students have completed each container, they then record their findings on their data sheet (BLM 1.1.a) 			<p>f) Which type of bird has a beak that works like tongs, tweezers, pipette, and a spoon?</p>
<p>Culminating Activity (Wrap Up Activity): Birding Around Game Activity-</p>	<p>20 min</p>		
<ol style="list-style-type: none"> 1. Whole Class Discussion - Students remain in their cooperative learning group to discuss their findings from the above learning task. 2. Explain to the class that they are going to remain in their groups to play the Birding Around Game. 3. Play the Birding Around Game: A series of questions will be read and pictures will be shown to the class. Students are to discuss each question as a group and then use their noisemaker to signal that they have the answer. The first group to sound their noisemaker with the correct answer will receive a point. 4. Either the teacher or selected students can read the questions. If students are reading the question, make sure that you indicate to the class that they can't begin discussing their answers until that particular student returns to his/her group. 5. The group with the highest points can select a fun activity for the entire class to do. 	<p>5 minutes</p> <p>15 minutes</p>	<p>Rubric Science Learning Log/ Journal – Completed worksheets glued into book and assessed</p>	

Adaptations:

All accommodations must take into account the student’s Individual Education Plan. All of the learning tasks and activities are created to accommodate the needs of students at different ability levels. The lesson plan includes pictures and/or examples of a step-by-step process, lists, and graphic organizers to enhance learning. The series of pictures are used to break tasks into easier, more understandable steps. Many of the learning activities provide opportunities for peer or group interactions, encouraging the use of cooperative learning/social skills and risk taking. Adaptations can be made in the following manner:

- Alternatives to written tasks (culminating task and the KWLI Chart), such as drawing, pointing to the correct answers, and fill-in-the blanks could be done as well. The use of keypads, word processors and writing software to support the writing task may also be used as alternatives.
- Reduction in the length or number of written responses
- Students should be given extended timelines for task completion if required, particularly for the worksheet.
- All materials, equipment, and manipulatives should be labelled with text and visual aids.

- Students can show the bird pictures instead of reading the written Birding Around Game questions if they feel more comfortable.
- If students have difficulty discussing the questions, they can be responsible for the noisemaker/buzzer.
- Also, a series of pictures can be given to the students for each of the questions to aid in determining the answer. Students can hold up the pictures for the answer to each question if they have difficulty verbally saying the name of the bird.

Teacher Reflections: