

# LESSON 1:

# BEAK ADAPTATIONS

Students will learn how birds' beaks are adapted to the foods they eat.

## OBJECTIVES



Can you understand the specific purpose of different bird species' beaks?

## SUPPLIES

### TEACHER PURCHASES

- Bunch of grapes
- Sunflower seeds with shell
- Large pack of gummy bears
- Swedish Fish
- Chocolate Pudding
- Water Bottles (if no sink access in classroom)



### LESSON KIT #1

- Spoons (1 for each student)
- Straws (1 for each student)
- Chopsticks (1 pair for each student)
- Clothespins (1 for each student)
- Bowls (8, 2 for each group of 3-4 students)

**Remember:** Check the class allergy list before purchasing supplies, and never purchase ingredients that were processed in a facility that also processes peanuts.

## OTHER SUPPLIES

The remaining supplies for this experiment can be found in the following locations in your bin

### PENCIL BOX

- Scissors (1 per student)
- Pencils/Markers (for extension activity)

### HANDOUTS FOLDER

- Bird beaks handout (1 for each group)

### FOLDER

- Printer paper (for extension activity)

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### HOOK

🕒 2-3 min

- What do we have on our bodies that help us eat?
  - (Discuss - teeth, mouth, hands, fingers, tongue)
- How are our teeth especially helpful? What foods can we eat because we have teeth? Give examples.
  - (Crunchy foods - pretzels, carrots. Meats - steaks, chicken.)

### DISCUSSION

🕒 3-5 min

- Look at the objects at your table. Take turns picking up each object and studying them or pretend to use them the way you normally would.
- Give adequate time for each student to handle each object at the table.
- Now imagine each of these is the shape of a certain bird's beak. What foods do you think they could easily pick up? Discuss ideas as a table, then as a class.

### HYPOTHESIS

🕒 3-5 min

- Looking at these objects, imagine each is the shape of a bird's beak. What foods might each eat?
- Fill out the Hypothesis section of the Scientist Worksheet. Can also complete it together as a class using whiteboard to draw the Scientist Worksheet.

### EXPERIMENTATION

🕒 10-15 min

Now let's envision us as birds and see these "beaks" in action.

Pass out: plate of dates or grapes, plate of sunflower seeds in the shell, bowl of little water and gummy bears, bowl of colored water, and large bowl of Swedish fish in pudding - for each table.

- Which objects work best to obtain what is on the plate or in the bowl?
- Which grabs the seeds best, the fish in the pudding, which can grab the water best?

Give plenty of time for experimentation.


## TAKE AWAY

- We call these bird beaks adaptations.
- The birds' beaks have changed slightly over many years to make them the perfect shape and size for what they need to do.

## EXTENSION


- Today we learned about cardinal, hummingbird, avocet, macaw, and spoonbill beaks.
- Think of another bird with a unique beak. What does it look like? What diet does that bird have?
- Draw an illustration of this bird and clearly show its beak helping it obtain food.

## OBSERVATION

 10-15 min


- Looking at the 5 birds, which object do you think matches each bird beak?
- How is their beak perfect for the foods they want to eat?
- Show students the photos of the 5 birds.
- Discuss as a group, and then in their Observation box, have them match up the "beaks" to the bird.
- What food that a bird might eat do they think each plate or bowl on your table represent?
- Discuss the functions of each beak together.
- See next page for explanation and answers

## CONCLUSION

 5-7 min

- Fill out Hypothesis/Observation/Conclusion charts on the white board together as a group.
- Instruct students to clean their stations. Make sure to leave the classroom the way you found it.

## ASSESSMENT

 3 min

- As each student is leaving, ask them to tell you one example of a bird, a detailed description of their beak, and how that beak is adapted to obtaining a particular food they eat.

## SCIENTIST'S WORKSHEET

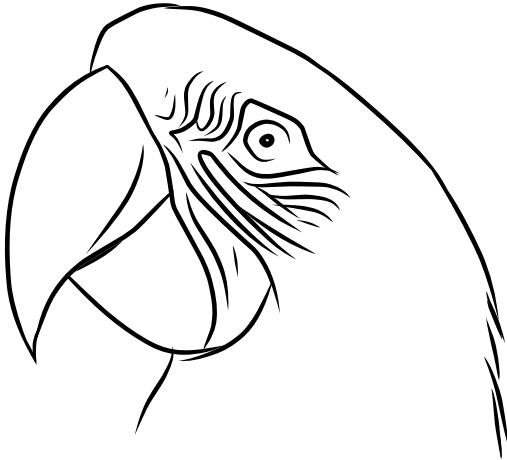
Tip: Can draw or write the following down on whiteboard!

Hypothesis	Observation	Conclusion
Looking at these objects, imagine each is the shape of a bird's beak. What foods might each eat?	Looking at the 5 birds, which object do you think matches each bird beak? How is their beak perfect for the foods they want to eat?	Was your hypothesis correct?

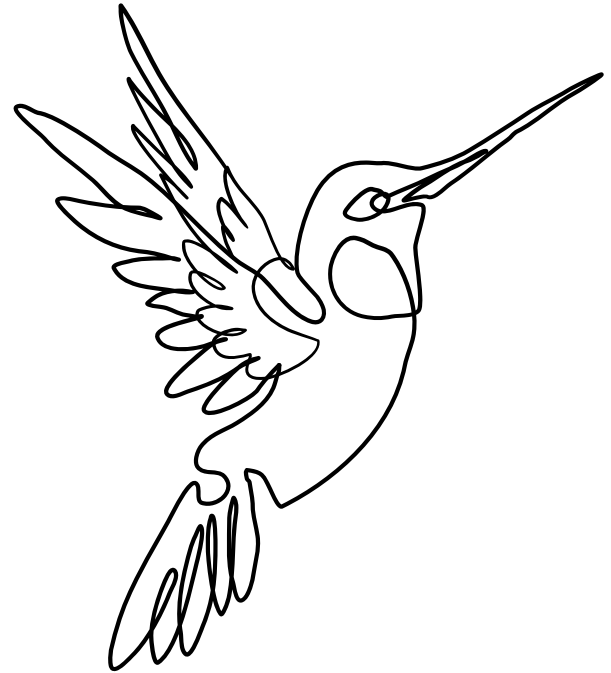
## EXPLANATION AND ANSWERS

Bird	Beak Object	Food
<p>Macaw</p> 	<p>Scissors - can peel/tear fruits</p> 	<p>Fruit like large grape</p> 
<p>Avocet</p> 	<p>Chopsticks - can pick prey up out of mud</p> 	<p>Fish in pudding</p> 
<p>Hummingbird</p> 	<p>Straw - suck up the nectar</p> 	<p>Bowl of Water</p> 
<p>Cardinal</p> 	<p>Clothespin - break open the seeds</p> 	<p>Sunflower seeds with shell</p> 
<p>Spoonbill</p> 	<p>Spoon - can easily scoop up multiple prey</p> 	<p>Gummy bears in water</p> 

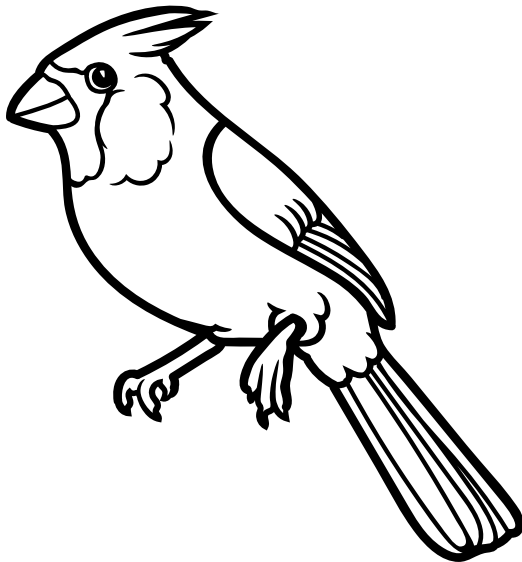
**MACAW**



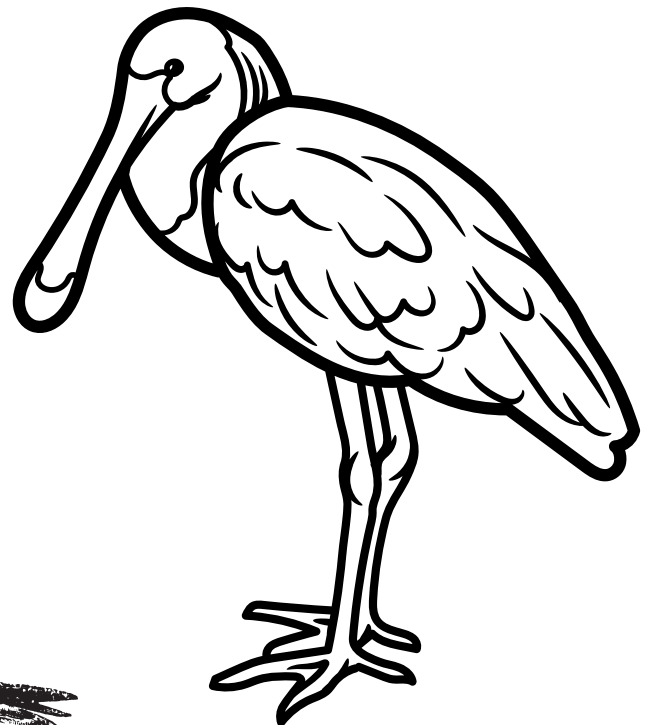
**HUMMINGBIRD**



**CARDINAL**



**SPOONBILL**



**AVOCET**

