

Bird Adaptations

Teacher's Guide

Subject: Integrated Science (Life; Earth)

Topic: Animal Adaptations

Summary: The students will observe birds in their natural habitat. They will record distinguishing characteristics of each species and determine what the adaptations are used for.

After completing the field lab, students will be able to:

Objective(s):

1. Compare and contrast different bird species
2. Describe how 3 bird species feed
3. Identify birds using distinguishing characteristics

Ecosystem(s): Coastal Area

Equipment:

- Binoculars
- Field guides
- Worksheets

Background:

- Vocabulary: Adaptation, Determining Characteristics, Behavioral, Physical,
- Reference Material: Flying Wild Avian Antics pg 251; Our Fair Feathered Friends, Texas State Aquarium; Life Science Text book. McDougal 6.2, 13.3,
- Equipment Training: Binoculars

Procedure (Engage; Explore; Explain)

1. Engage the students by asking a specific question that gets to the heart of the activity: show the students the bird reference chart. How are these birds alike? (Feathers, beaks, etc.) How are they different? (Sizes, legs, colors, beaks, etc) why do some birds have long legs? Short legs? Webbed feet? Beak shapes? How are these birds like us? How are they different? Use the students' answers to ascertain what they already know, clarify any misconceptions, and then ask them to formulate their own hypothesis relating to their own expectations of the outcome of the lab.
2. Before moving to the beach area, explain how to properly use the binoculars.
3. Students will team up into partners switching the tasks of observing the birds and writing descriptions.
4. Explore the pre-determined beach area. The students will first find a bird with their eyes then answer the list of questions about the bird using the binoculars.
5. Explain After completing the lab, allow the students to answer the discussion questions as a group and explain their answers relating them to the concepts, processes and skills associated with the activity. Students should record their answers individually. At this time, facilitators can introduce/explain the specific concepts and explanations in a formal manner.
6. Elaborate back in the classroom adaptations. Use bird ID book to identify birds that were not identified in the field.
7. Evaluate what the students have learned using pre-post test, discussion questions and journal prompts.

Sunshine State Standards:

Science: SC.D.1.3.1, 3, 4; SC.D.2.3.2; SC.F.1.3.1, 7; SC.F.2.3.2, 3; SC.G.1.3.2; SC.G.2.3.2, 4; SC.H.1.3.4; SC.H.2.3.1 **Language Arts:** LA.A.1.3.3; LA.C.1.3.1, 4 **Social Studies:** SS.A.6.3.2; SS.B.2.3.6, 9

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Student Data Sheet

General Information

Full Name:		Date:	
Science Teacher:		Time:	
Latitude:		Longitude:	

Student Hypothesis and Rationale

If animals adapt to survive in their environment then the birds that are observed in the same environment will have (choose one: similar / different) adaptations because _____

Field Observations/Measurements/Data

	Bird # 1	Bird # 2	Bird # 3
Where is the bird observed? (land, air, water)			
What is the bird's behavior? (flying, swimming, standing, eating, walking)			
Using your binoculars look closely at the bird. What is the first characteristic that catches your eye?			
What is the bird's coloration? -Head -Body -Tail	-Head -Body -Tail	-Head -Body -Tail	-Head -Body -Tail
How is the bird's beak shaped? How do you think the bird catches its food?			
What is the body shape of the bird?			
What is the tail shape of the bird?			
What are the bird's legs like? Choose one: Long legs, short legs, talons,			

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Assessment

1. How was the beak shaped for bird # 2?

2. Did all three birds have the same beak shape? How do you think each bird catches its food?

3. Was your hypothesis supported by your data? Whether your hypothesis is supported or not, what can you infer from your observations, measurements, and results?



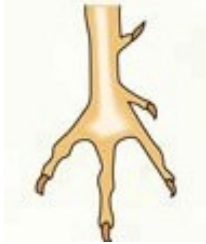









4. What characteristics or traits might be common in a bird that lives in a cold and snowy environment?






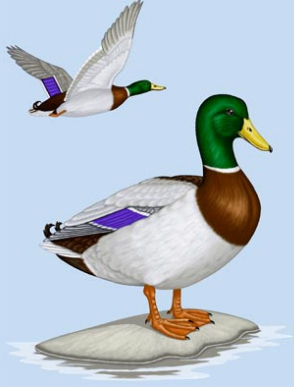




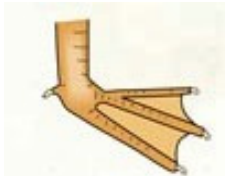

5. Some birds are particularly adapted to feed on insects that live within washed up seaweed. What would happen if the dried seaweed on shore was removed because some people thought it was unattractive or smelled bad?

6. Think about the observations you have just made. Did the activity raise new questions? Write a short question (start with “What, Why, Where, When, or How”) about something you want to learn more about.

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Body shapes Reference Chart

Beak	Body	Feet	Tail
 <p>Straining</p>	 <p>Long legs medium/ large body</p>	 <p>Grasping / Catching</p>	 <p>Notched Tail</p>
 <p>Catching Fish</p>	 <p>Short legs small body</p>	 <p>Wading in marsh</p>	 <p>Rounded Tail</p>
 <p>Probing</p>	 <p>Small legs Stream line body</p>	 <p>Running</p>	 <p>Forked Tail</p>

Beak	Body	Feet	Tail
 <p>Tearing</p>	 <p>Very short legs Small body</p>	 <p>Clinging / Stability</p>	 <p>Squared Tail</p>
 <p>Grasping</p>	 <p>Thick short legs Fat round body</p>	 <p>Walking</p>	 <p>Pointed Tail</p>
 <p>Pecking</p>	 <p>Medium legs Muscular body</p>	 <p>Wading</p>	 <p>Fan-shaped Tail</p>