

	LOCAL BIRD	PENGUIN	OWL
BEAK Short or long? Curved or straight?	short + curved	long and straight	short + hooked
FEATHERS Short or long? Fuzzy or sleek?	long + sleek	short + wet looking	long ones + fluffy ones
FEET How many? Tall or short? Thick or thin?	2 feet thin + orange	2 feet short + webbed	2 feet short + spiny
COLOR Same color all over or patterned?	Red with black on its face	black and white	lots of brown spots on white
OTHER What other things do you notice?	loud	waddles	huge eyes



These four activities were designed for families with children in grades 3-5. They are, however, easily adapted to the classroom. Integrate them in ways that fit your classroom traditions and practices or choose some of our suggestions below to extend the learning!

The activities below were designed around the content of the Penguin Video on sheddaquarium.org/stayhome. For more videos and activities covering a broad range of subjects, stay tuned!



Teacher Guide

ACTIVITY 1: CREATE A SCIENCE JOURNAL



Scientists use science journals to record their observations, so they don't have to remember everything in their head. Science journals help you stay organized, remember your observations, and record data. Each scientist's journal looks different! Some might be filled with photographs or drawings, some might have graphs or tables, some might have lots of writing. Most science journals have a little bit of everything. This activity will help you create your own science journal; organize yours to suit your style!

- **Science journals can be a great way to create routines in the classroom, organize student thinking, and assess learning.**
- **It's important that science journals are created individually and vary from student to student instead of being designed and handed out by the instructor.** Some structure is okay, but make sure to leave space for students to draw, label, or organize their thoughts in their own way. This will allow students to have ownership over their own journal.
- **Make sure to introduce students to ways of recording in their journal.** Practice sharing and writing down observations, making tables, and scientific sketching. Encourage them to write curiosities, thoughts, questions, and wonderments down as well.
- **Allow students to view each other's journals.** Set expectations for offering feedback. Organize a gallery walk or journal swap and allow peers to offer compliments and feedback on each other's journals.

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ACTIVITY 2: BIRDS OF A FEATHER



STAY HOME WITH SHEDD AQUARIUM • BIRDS OF A FEATHER

DRAW A LOCAL BIRD
Take some time to observe a bird that you can see outside or look at pictures on the internet to help you.

DRAW A PENGUIN
Watch the Stay Home with Shedd penguin video again. Observe the penguins and draw one below. shedd.aquarium.org/stayhome

DRAW AN OWL
Watch this video of the Barred owl, Rainer, paying attention to his beak, feathers, feet and color. [video URL](#)

What similarities and differences can there be between these birds?	LOCAL BIRD	PENGUIN	OWL
BEAK Short or long? Curved or straight?	SHORT + CURVED	Long and straight	Short + hooked
FEATHERS Short or long? Fluffy or sleek?	long + SLEEK	Short & wet looking	long ones + fluffy ones
FEET How many? Tall or short? Thick or thin?	2 FEET thin + orange	2 feet Short + webbed	2 feet Short + pointy
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OTHER What other things do you notice?	loud	waddles	huge eyes

All birds, including penguins, have feathers, wings, two feet, a hardened beak, build nests and lay eggs. But not all birds look the same! Take a closer look at three different kinds of birds and see what similarities and differences you can observe.

- **Invite a few students to share a story about birds they have seen.** What were the birds doing? Where were they/what was their habitat? Ask to hear stories about birds in different habitats-- at a beach, in the backyard, on a pond—and ask them to describe the features of each bird.
- **This is a good warm-up activity to get in the habit of observing closely.** We can learn a lot about animals (and ID them!) simply by looking at them patiently and observing.
- **Have students discuss their bird observations with each other.** Did everyone notice the same things? Did someone notice something you didn't? What characteristics were most helpful in telling different birds apart?

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ACTIVITY 3: ADAPTATION EXPLORATION



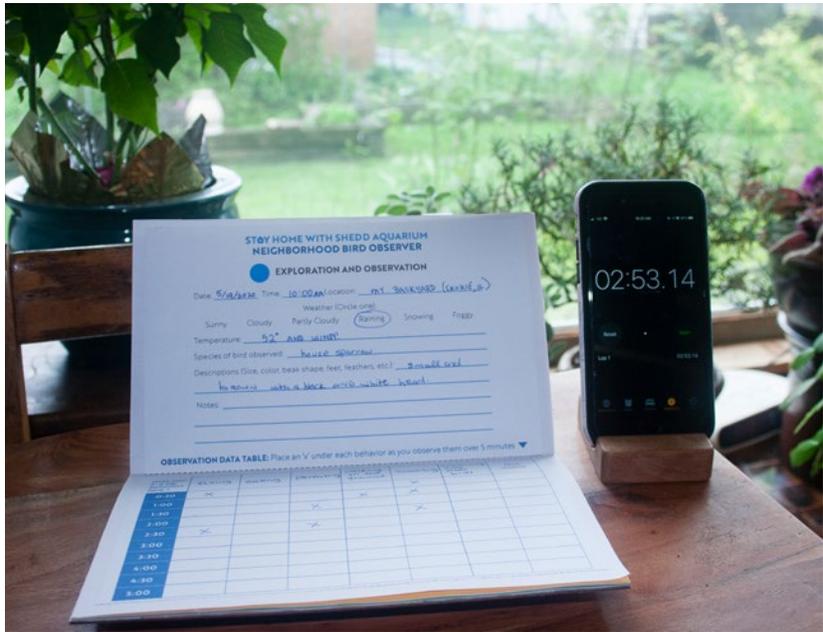
Penguins are birds, but they look very different from the birds we see in our neighborhoods. Let's get our hands dirty (or oily) and investigate some of penguins' unique traits! You will conduct four mini-experiments to learn about different penguin adaptations and record your findings.

- **To explore structure and function of penguin adaptations, students will carry out multiple small investigations.** You can set four stations to complete all of the investigations in one lesson or work each mini-investigation into a larger unit.
- **Students will record their predictions and observations during each exploration on a data sheet or in their science journal.**



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ACTIVITY 4: NEIGHBORHOOD BIRD OBSERVER



By monitoring animal behaviors, scientists can learn how an animal interacts with its surrounding environment and what it needs to survive. Scientists can also learn how changes in the environment affect an animal’s health and well-being. Today, we will observe some local birds to learn more about them.

- **Invite students to join you on a nature walk through the neighborhood or school yard with their science journals.** Prompt students to search for birds and record observations of some of the bird behaviors they witness. In addition, students can use their journals to sketch pictures of the birds and exhibited behaviors in the surrounding environment and/or draw closeups of unique bird features and label.
- **Turn and talk:** Once students have time to observe several bird species, return to the classroom and ask them to find a partner to discuss what they observed. What did they notice? Were they surprised by any specific behaviors? What did they learn? What do they wonder about? Did any observations remind them of anything they have seen in the past? As part of the conversation, students should choose a specific bird that they are most curious about for further exploration.

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- **Next steps:** Allow time for students to conduct research and gather more information on their species of interest. Ask students to create an observation sheet in their science journal to collect data on their chosen species that reflects their research. As part of the observation process, have students make predictions on different behaviors they might expect to see. Prompt students to go to an area in their community to conduct an observation focusing on their bird. If they are unable to access the outdoors, invite them to choose a species that can be viewed from a window.
- **Think-pair-share:** After students conduct their observations and return to class, invite them to find a partner with a different species selected and compare their observations. Some comparisons worth sharing could possibly involve foraging behaviors, including the different types of food their specific species eats, parenting activities such as building nests, incubating eggs or feeding their young and self-preening or bathing. Along with discussing bird behaviors, students could also engage in discussions about the size, placement and assorted nesting materials different species use depending on the season. Once students finish comparing birds, ask them to share their findings and highlight the most interesting aspects with the whole group.
- **An extension activity could include mapping the location of their observations.** Do they recognize any connections between their observations?
- **Encourage students to think about the human impacts on their species as well as identify ways to improve the habitat and protect the species.**



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NGSS & COMMON CORE CONNECTIONS:

Activity 1: Science Journals

Science journals can be used as a tool to address many of the standards and reinforce the below science and engineering practices and crosscutting concepts.

SCIENCE AND ENGINEERING PRACTICES	CROSSCUTTING CONCEPTS
Asking questions and defining problems	Patterns
Planning and carrying out investigations	Cause and Effect
Obtaining, evaluating, and communicating information	Structure and Function
Analyzing and interpreting data	Scale, proportion, and quantity

Science journals also connect to these Common Core ELA standards: [CCSS.ELA-LITERACY.W.3.2](#), [CCSS.ELA-LITERACY.W.4.2](#), [CCSS.ELA-LITERACY.W.5.2](#)
Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

[CCSS.ELA-LITERACY.W.4.2.D](#), [CCSS.ELA-LITERACY.W.5.2.D](#)
Use precise language and domain-specific vocabulary to inform about or explain the topic.



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NGSS & COMMON CORE CONNECTIONS:

Activities 2-4: Birds of a Feather, Adaptation Exploration, Neighborhood Bird Observer

Grade-Specific Standards:

	GRADE 3	GRADE 4	GRADE 5
Standard	3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	Activity 4: Neighborhood Bird Observer is an introductory activity to encourage students to begin thinking about ecosystem interdependence.
Science and Engineering Practices	Asking questions Obtaining, evaluating, and communicating information	Engaging in argument from evidence Constructing explanations	Engaging in argument from evidence
Disciplinary Core Ideas	LS4.C: Adaptation LS1.A: Structure and Function	LS1.A: Structure and Function LS4.C: Adaptation	LS2.A Interdependent Relationships in Ecosystems
Cross-Cutting Concepts	Patterns Structure and Function	Structure and Function Cause and Effect	Patterns Systems
Activity	Activity 2: Birds of a Feather Activity 3: Adaptation Exploration	Activity 2: Birds of a Feather Activity 3: Adaptation Exploration Activity 4: Neighborhood Bird Observer	Activity 4: Neighborhood Bird Observer