

Grade 2 Unit 7: PBL Birds

Unit Purpose

Think back to your most positive experience as a student—a time that was meaningful to you. Why did this leave a lasting impression? How did your teacher make this experience possible? What learning was embedded in this experience?

Talk with your colleagues about your experiences and memories. It's likely you'll find some consistent themes: working with peers, independence, choice, engagement, content-specific learning, and applying learning in a real-world context. Project-based learning offers all of this and more!

Watch [this video from PBLWorks](#) to see project-based learning in action. The teacher is knowledgeable and passionate about the topic. The children are making choices about what they do and how they do it, they're asking questions, reflecting, and interacting with peers and adults by discussing their ideas and feedback.

Project Based Learning (PBL) is a critical aspect of Success Academy's (SA) school design. Our scholars learn the thrill of becoming experts in a subject when they have extended time to immerse themselves in a fascinating topic from a cross-disciplinary perspective—including through field studies, art projects, and classes in science, reading, writing, and/or math. The culmination of PBL studies are museum presentations scholars can share with others—this allows scholars to demonstrate the learning and engagement they have achieved.

Children have a natural interest in animal life. It is an ideal subject in which to engage them. In this unit, scholars will:

- Identify and understand the behavior of common birds in and around New York City.
- Learn and understand how people observe and research birds and their behaviors.
- Learn to value the natural world.

This study requires students to observe the outside world. Like scientists, scholars will learn about birds through field observations, experimentation, and research. Research will be conducted into bird anatomy, diet, habitats, communication, nesting, and migration.

By the end of this unit, scholars will improve their reading comprehension and writing while building content knowledge about birds!

Pre-Work

Before launching the unit with your scholars, read all of the texts in the unit to ensure you have the necessary content knowledge to facilitate this study.

- Study the Gr2 end-of-year benchmark **nonfiction levels** from *Understanding Texts and Readers* by Jennifer Seravallo.
- Read the article “[Birds Are Vanishing From North America](#)” and discuss how and why birds are vital to ecosystems.
- Study and discuss the following unit books with your grade team:
 - *Birds! (True Books)* by Ann O. Squire
 - *Beaks* By Collard Sneed

Learning Objectives

- Participate in shared research and writing projects
- Explain how specific images and text features contribute to and clarify a text
- Identify what the author wants to answer, explain, or describe through the text
- Write informative/explanatory texts to convey and develop ideas clearly
- Produce clear, logical, and organized writing
- Demonstrate grade-level appropriate conventions of capitalization, punctuation, and spelling when writing

Guiding Questions and Essential Understandings

- How can we learn about birds as an ornithologist would?
 - Just as ornithologists, we learn by researching birds through observation, experimentation, field studies, reading, writing, videos, and bird experts.
- What makes a bird a bird?
 - Birds are a distinct class of animals. Only birds have feathers.
 - Many animals fly, but not all animals that fly are birds.

- Many animals have wings, but they are not all birds.
- Many animals lay eggs, but not all animals that lay eggs are birds.
- Why do birds have common names?
 - All birds have scientific ornithological names and common names.
- How and why have birds adapted?
 - Birds all have adaptations that allow them to thrive in their habitats:
 - Hollow bones
 - Different size and shape beaks
 - Different shape feet
- How do birds behave? What do they have in common?
 - Birds communicate, nest, and migrate.
- What makes a good habitat for birds?
 - Birds seek out habitats that can support them and allow them to survive.

Field Studies

- **Urban Park Rangers**
 - Observe a variety of habitats and birds on a guided tour with the urban park rangers.
- **Birdwatching at a Local Park.**
 - Observe the birds that live in New York City.
- **American Museum of Natural History**
 - Visit the Hall of Birds and study the birds on display to see their beaks and feet up close.

Projects and Writing Assignments

Projects are not the dessert; they are the main course of project based learning. Scholars will explore and learn about the birds through these exciting projects.

- **What Makes a Bird a Bird**

- Scholars will sketch a bird at the beginning of the unit and then compare their sketch to a watercolor bird at the end of the unit.
- **Bird Habitat Watercolor**
 - Each scholar draws and paints a watercolor painting of a bird habitat in New York City inclusive of the bird, background, and captions.
- **Birds Grow Chart**
 - The class will capture information about all the birds they study on a large grow chart.
- **Bird Collage**
 - Groups of scholars create a large bird, displaying its physical features using small pieces of construction paper.
- **Bird Beak and Feet Watercolors**
 - Scholars use watercolors to draw and paint zoomed in images of beaks and feet with captions to describe how the size and shape of the beaks and feet help the bird survive.
- **Bird Big Book**
 - Each scholar will research a bird of his choice using books, articles, and virtual field studies. He will publish a page in a class book that will be compiled by the teacher.

Week 1

Guiding Questions and Essential Understandings

- What is an animal scientist and how can we conduct research like them? What do we know and want to know about birds?
 - The first week of this unit is all about INQUIRY! Scholars see, think, and wonder about birds and the scientists who study them. Throughout this entire unit, you will be collecting information as a class on charts. These charts should be scholar-created!
- What makes a bird a bird?
 - Birds are a distinct class of animals. Only birds have feathers.
 - Many animals fly, but not all animals that fly are birds.
 - Many animals have wings, but they are not all birds.
 - Many animals lay eggs, but not all animals that lay eggs are birds.

Readings

- *Look Up! Birdwatching in Your Own Backyard* by Annette Cate
 - This book will introduce scholars to birdwatching and the best way to study birds. Read this book first, so scholars get a clear understanding of how to study birds. While reading, make sure to point out the unique structure of this

book. Model for scholars how to read the word bubbles and address additional text features throughout.

- This is not a book that should be read cover to cover, choose a few key sections. For example, these sections are great preparation for birdwatching:
 - Pages 6–7: Birdwatching in the city
 - Pages 8–9: General introduction on HOW to bird-watch
 - Pages 28–29: “Listen Closely” is a fun introduction to bird calls
 - Pages 30–31: “Time for a Field Guide!” explains what a field guide is
- *What Makes a Bird a Bird* by Mae Garelick
 - This text will explain that many animals fly, lay eggs, and have wings, but only birds have feathers. Read this book **after** you have completed the sort activity. Model thinking aloud and have scholars think about the question posed via the title as they read.
- *Feathers: Not Just for Flying* by Melissa Stewart
 - This text explains why birds need feathers to survive. Highlight how this nonfiction author organizes the information to communicate her idea.
- *Boy Who Drew Birds* by Jacqueline Davies
 - This nonfiction book tells the story of James Audubon, a pioneer in the study of birds. Discuss what the author did to make this nonfiction book interesting!

Writing Assignments and Project Work

- **Explore the Texts**
 - On the first day of the unit, divide the class into small groups, and give each group five to six books to build excitement and spark an interest in birds. Groups explore and discuss the books and pictures with their peers.
- **Be an Ornithologist**
 - As a class, introduce the term ornithologist as a person who studies birds. Watch [this video](#) about ornithology as a career. Then, scholars work in groups to create charts, listing different ways they can be like ornithologists and learn more about birds. Add this word and any other words that come up in this discussion to your bird word wall!
 - Then, read *Look Up! Birdwatching in Your Own Backyard* by Annette Cate.
- **Know/Want to Know T-Chart**
 - As a class discuss what scholars know and want to know about birds, have a few scholars come up to the [chart](#) and add what they know or want to know to the appropriate sides. Revisit and add to this chart throughout the study.
 - Alternative: Have scholars write in their journal what they know about birds and share with their peers. Then as a class, discuss and chart what they want to know.

- Alternative: Have scholars write their thoughts on sentence strips and add them to the chart.

- **Bird Sketch**

- Scholars draw their very first picture of a bird. This is not expected to be perfect but should be colored and hung up immediately. You will later use these to compare how much scholars have learned about birds by the end of the unit.



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- **What Makes a Bird a Bird Sort**

- This activity is a true inquiry and will allow scholars, by process of elimination, to discover what makes a bird a bird. Print [photos](#) of birds. (Laminate these for safe keeping.) Have scholars sit in a circle on the carpet and ask, "What makes a bird a bird?" If a scholar says that birds lay eggs, sort all the photos by animals that lay eggs and animals that don't lay eggs. If scholars say that birds fly, sort the photos by animals that fly and don't fly. Have scholars turn and talk to discuss. Eventually, you want to sort them into animals that do not have feathers and animals that do have feathers.
 - Once the sort is complete, discuss what makes a bird a bird. Scholars should be able to articulate that the only unique feature of a bird are the feathers. Many other animals fly, lay eggs, and have wings.

- Then, read *What Makes a Bird a Bird* by Mae Garelick as listed in the readings above.



- **Journal Writing: What are three new things you learned about birds?**
 - After completing the sort, scholars write in PBL Birds Journal, answering the question, “What are three things you learned about birds?” Once complete, have scholars swap their journal with a peer. Scholars comment on what was written.
- **Birds Word Wall**
 - You will start the word wall this week and will add new words everyday! As a class, decide which vocabulary words need to be added to the word wall. Explain to scholars that this word wall is a tool for them to refer to as they research, read, and write. Just as you model using a glossary in many of the nonfiction texts throughout the study, model using this word wall when faced with an unfamiliar word. Scholars write the words on index cards and display them. When applicable, scholars draw pictures to match. Examples of words to add are ornithologist, crown, migrate, field guide.

Additional Activities

- Introduce scholars to one of many songs about birds including Rockin’ Robin, Three Little Birds by Bob Marley, and Blackbird by The Beatles.

Week 2

Guiding Questions and Essential Understandings

Why do birds have common names?

- All birds have scientific ornithological names and common names. Common names were chosen for birds based on how they look, where they live, who discovered them, and what they eat.

Writing Assignments and Project Work

- **Neighborhood Birding**
 - Take a walk around the block! This will be scholars' first opportunity to go birding right in their own neighborhood. While outside, scholars use [this sheet](#) to tally how many and what kind of birds they see. Also, have them jot what each bird was doing.
- **Journal Writing: What do good birders do?**
 - Scholars reflect in writing about what good birders do. What did you need to do while birding in the neighborhood to collect good information on birds?
- **Common Name Inquiry**
 - While gathered on the carpet, scholars share out the different birds they know. Invite scholars to chart names of familiar birds. Examples are pigeon, robin, blue jay. Explain that birds usually have two names: a scientific name and a common name. Scholars will then work in groups to determine how birds got their common names such as blue jay.
 - Break class into groups.
 - Distribute five [photos](#) to each group.
 - Groups discuss how the birds in the photos got their names.
 - Groups share whole class.
 - Birds get their common names based on what they look like, people that discovered them, where they live, and what they sound like.
- **Design an Imaginary Bird**
 - Scholars create and draw their own bird, give it a common name, and include a description as to why that is the name.



- Starting our Grow Chart

- Before you meet with scholars, prepare an outline of a grow chart that scholars will complete over time.



- Use 5 × 8 index cards to create headings for the grow chart: “Date” “Location,” “Bird Name,” “Behavior/Special Features.”
- Tape the cards vertically to a large, open wall space. It could look something [like this](#) and will eventually grow to look something [like this](#)!

- Introduce the grow chart to scholars, explaining that this chart will “grow” throughout the unit. Each scholar will fill in a portion of the chart. Scholars capture the knowledge gained from their field trips and neighborhood birdwatching by adding the information about every bird they see to each part of the chart. This gives scholars an opportunity to share what they learned with the class and others and creates a resource to reference and add to throughout the study.
- Scholars talk with their group, read what they’ve written to each other, and revise when needed. Scholars add color to drawings and use details in their writings and illustrations. Provide ample blank 5 × 8 note cards for scholars to use as they work.
 - Share examples as they’re completed. Highlight neat and detailed writing and drawings and clear language.
 - Tape note cards to the chart as they’re completed with scholars as an exciting way to show them how their chart grows and becomes a learning tool with all their collaborative work

Week 3

Guiding Questions and Essential Understandings

What do birds have in common? How do birds behave?

- Birds have similar body parts that help them survive.
- Birds communicate, nest, and migrate.

Readings

- *Mockingbird: Noisy Mimic* by Natalie Lunis
 - Amazing photos and important information will engage scholars as they come face-to-face with mockingbirds. Use this text to teach scholars where mockingbirds live, how they stay safe, and the different ways their sounds help them communicate with each other—and tell other mockingbirds to stay away!
- *Why Do Birds Sing?* By Joan Holub
 - Read this text to teach scholars how and why birds communicate and build nests. Scholars will also learn about the other interesting things that birds do such as how they play!
- *Nest Full of Eggs* by Priscilla Jenkins
 - This book will take scholars through the process of nesting for a full year. Read this to help scholars understand how robins develop inside an egg, how they learn to fly, and their need to migrate. Discuss how the author organized this book similar to a narrative.
- *Mama Built a Little Nest* by Jennifer Ward

- This rhyming book explains hummingbirds' nests. Read this book to teach scholars that not all birds build their own nests. Certain birds find nests already made and claim them as their own.
- *The Sibley Field Guide to Birds of Eastern North America* by David Sibley
 - Read sections of this book before introducing the class book project. This book is a great model for the class book. This field guide includes images with descriptive captions pointing out the most important field marks on each bird. Each entry has the most important information about each bird such as nesting, behavior, food and feeding, voice description, and key identification features.

Writing Assignments and Project Work

- **Birds Class Book**
 - Scholars choose a bird they want to study and write about using this [list of birds](#). They conduct research, write, and draw their bird, which then gets compiled into a class field guide. This project will continue throughout the unit as new research is conducted. *Before starting this project, explore the *Sibley Field Guide to Eastern North American Birds* by David Sibley.
- **Neighborhood Trip**
 - If you do not have a field study this week, take a walk outside! During this time, focus on what birds are doing and listen carefully to bird sounds. Add any birds you see to the class grow chart.
- **Journal Writing: Bird Nest Inquiry**
 - During the Bird Nest Inquiry, scholars take notes about the birds and their nests in journals. Scholars determine how best to organize this information. Discuss how all authors make choices about how best to present their information to their readers. Model organizing the bird nest information in a few different ways: complete sentences, table, photo and caption.

Additional Activities

- Watch and discuss the following videos on bird behavior and nesting:
 - [Bird behavior](#) / [Bird behavior](#)
 - [Building a nest](#) / [Building a nest](#)
- Read [this news article](#) from AccuWeather about birds migrating.

Week 4

Guiding Questions and Essential Understandings

How and why have birds adapted?

- Birds all have adaptations that allow them to thrive in their habitats
 - Hollow bones
 - Different size and shape beaks

- Different shape feet

Readings

- “Bird Beaks” by Diana Noonan
 - This excerpt is a great introduction to bird beaks and the need for the different sizes and shapes. Read this text first to get scholars thinking about the pictures of the different beaks.
- *Beaks!* by Sneed Collard
 - Scholars explore a variety of birds; their habitats; and how their beaks help them build, eat, and survive. Ensure that scholars have access to this book as they work on their watercolor. This is also a great book to reference when scholars complete the bird collage in week 7.
- *Feathers: Not Just for Flying* by Melissa Steward
 - This book highlights how feathers are not just for flying. Beautiful watercolor illustrations showcase life-size feathers and compare them to everyday objects. Discuss how the author organizes the information in the text to teach readers about feathers.

Writing Assignments and Project Work

- **What Do Birds Eat Search?**
 - Give each scholar three Post-it Notes. Scholars explore the unit books by putting a Post-it Note to mark where a bird is eating in a picture or in text. Scholars share out the information they found. Scholars refer back to these Post-it Notes for their watercolor paintings and Big Book.
- **Beak Experiment**
 - Bird beaks are incredibly diverse. Beaks can be thick and strong to crush nuts, curved like a corkscrew to open shells, or even full of combs to make it possible to filter water. These differences arise from the adaptation of animals to their environment. Each bird has a beak that says a lot about what and how the bird eats. Scholars conduct an experiment using household objects to mimic bird beaks. Scholars attempt to pick up different items using the “beak.” After the experiment, scholars discuss that bird beaks are adaptations that ensure birds are able to eat in order to survive.
 - Work with colleagues to collect necessary materials.
 - Add the recording sheets to journals so scholars can reference as they write the page of the class book and for others to see during the museum.
 - Take pictures of the experiment to share at the museum.
- **Journal Writing: Beak Experiment Reflection**
 - Scholars write about the discoveries they made after conducting the beak experiments. What did you learn about bird beaks? This can be written in

paragraph form, in tables, or in pictures with captions.



- **Bird Beak Watercolor**
 - Scholars research, draw, and paint a close up of a bird beak of their choice. Then, they write a caption to describe:
 - The bird
 - The beak
 - The habitat
 - Why this beak is ideal for this bird
 - Ensure that scholars have access to many of the books to accurately draw the beak.
- **Double Entry Journal Writing: What do birds need to survive?**
 - Kids fold their journal page in half down the middle. They write on one side and their partner will respond on the other. Scholars (Partner A) write about what they think a bird needs to survive and why they think that. Scholars switch journals with a partner (Partner B). Partner B responds to what Partner A has written. This gives scholars the opportunity to share their thoughts with others through writing.

Week 5

Guiding Questions and Essential Understandings

How and why have birds adapted?

- Birds all have adaptations that allow them to thrive in their habitats.
 - Hollow bones

- Different size and shape beaks
- Different shape feet

Readings

- *Hawks* by Maria Cecilia McCarthy
 - Read this to understand how hawks use speed and keen eyesight to sneak up on prey, making it an aggressive hunter. This is also a great resource for any scholar writing about hawks for the class big book.
- *Falcons* by Ashley Norris
 - Read this to understand how falcons find their prey and swoop out of the sky to eat. This is also a great resource for any scholar writing about falcons for the class big book.
- *Owls* by Gail Gibbons
 - This book teaches about 140 types of owls, their habitats, and different adaptations making each owl unique. This is also a great resource for any scholar writing about owls for the class big book.
- *Penguins* by Seymour Simon
 - Scholars learn about the different types of penguins and their different habitats. Discuss the glossary and add words from the glossary to the word wall. This glossary is a great example for the class big book. This is also a great resource for any scholar writing about penguins for the class big book.

Writing Assignments and Project Work

- [Hidden in Plain Sight](#)



- Scholars discuss how and why birds use camouflage to help them survive. Add new vocabulary from this lesson (camouflage, prey, predator) to the word wall.
- **Bird Feet Study and Watercolor**
 - After reading the article “[Bird Adaptations: Feet](#),” scholars discuss adaptations and why animals need to adapt. In partners, scholars discuss and share out if all birds’ feet are the same and why or why not. As a class or in groups, scholars study photos of birds’ feet and chart what they notice.

- Explain that just like beaks, a bird's feet vary in shape and size, so the bird can survive in its habitat.
- Scholars draw, paint, and caption a close-up of a bird's foot. They include:
 - The bird
 - The foot type
 - The habitat
 - Why this foot is ideal for this birds

Additional Activity

- Birds and camouflage
 - Scholars draw and color a picture of a bird camouflaging itself with a caption describing the bird and why it camouflages.
- Watch [LIVE videos](#) from The Cornell Lab and engage scholars in a discussion about what they notice.

Week 6

Guiding Questions and Essential Understandings

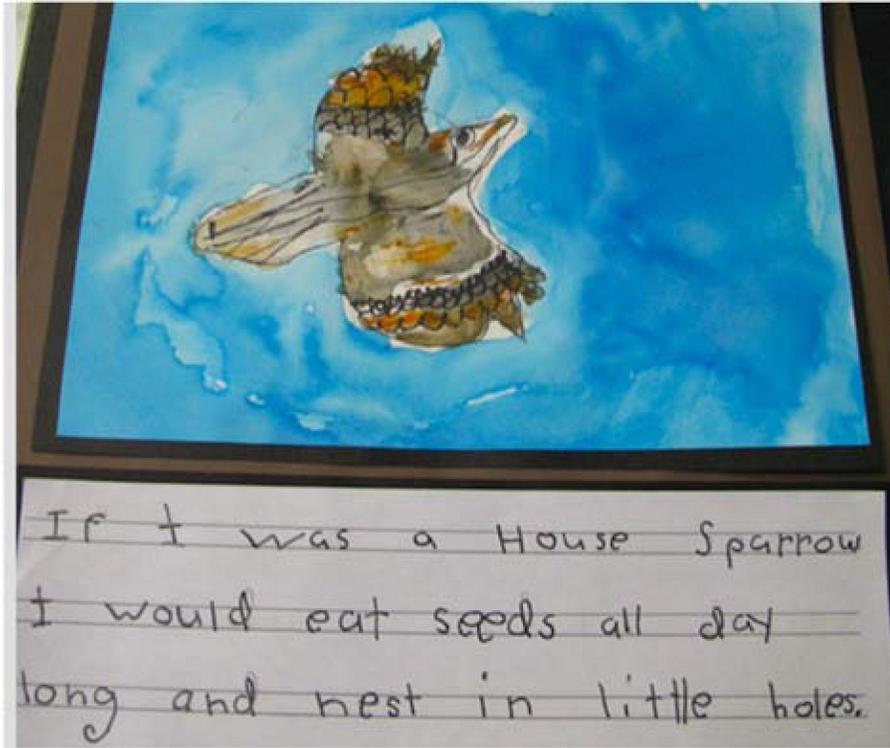
What makes a good habitat for birds?

- Birds seek out habitats that can support them and allow them to survive.
- New York City is a great habitat for many birds.

Readings

- *Place for Birds* by Melissa Stewart
 - This book explains bird habitats and how the habitats birds live in support their survival. This is also a great resource for learning about how humans impact bird habitats and how to protect them.
- *Let's Look at Pigeons* by Janet Piehl

- If I was a _____ I would live....



- Scholars pick a bird living in New York City and write about the bird's habitat and why that is the ideal habitat for that bird. They start "If I was a _____, I would live..... because....."

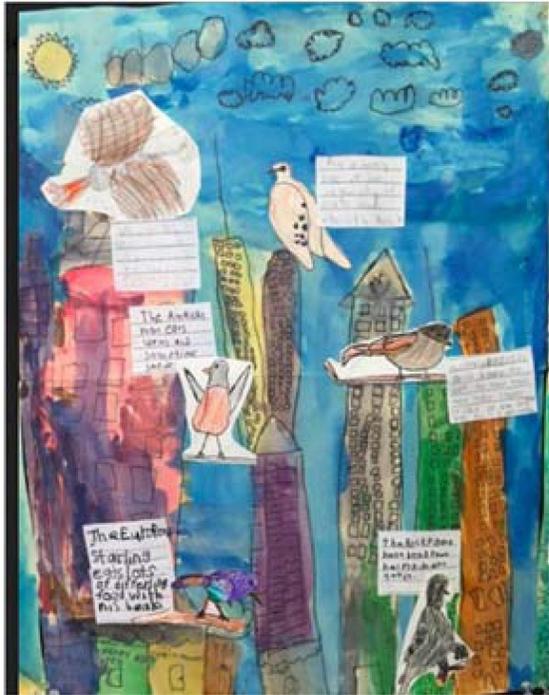
Week 7

Guiding Questions and Essential Understandings

- What makes a good habitat for birds?
 - Birds seek out habitats that can support them and allow them to survive.
 - New York City is a great habitat for many birds.
- How can we show others what we learned?
 - PBL Museum
 - Project Work
 - Oral Presentations.

Readings

- *Birds of New York City* by Cal Vornberger



- - Scholars learn that Central Park is one of the top ten birding spots in all of America! This book explores the many different types of birds and includes beautiful pictures of the birds in their habitat.
- *Birds of New York City Including Central Park and Long Island*
 - This pamphlet provides more information on the wide variety of bird species that frequent New York City and Long Island. From the colorful migrating birds to the winter waterfowl that crowds Long Island's north and south shores, this guide provides many photographs and will be helpful when creating the Big Bird Collage and finalizing the class big book.
- *Crow Smarts* by Pamela Turner
 - Scholars learn about the impressive brains of crows and how scientists study crows.
- *Pet Birds: Questions and Answers* by Christina Mia Gardeski
 - Read this book to learn about birds as pets and how to care for them.

Writing Assignments and Project Work

- **Finalize Grow Chart**



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- **Complete Big Book**
- **Complete NYC Watercolors**
- **Big Bird Collage**
 - In groups, scholars work together to create large bird collages of different birds studied throughout the unit.
- **Museum Preparation**
 - This is the most exciting part of the study. Scholars showcase all the work they have done and share their knowledge with others. All artwork, pictures, charts, and writing should be finalized and displayed for families and other classes to see.
 - Use this time to make exhibits colorful and inviting.
 - Prepare scholars to take an active role as a “Museum Educator” and present their expertise on bridges to museum visitors.

Week 8

Guiding Questions and Essential Understandings

How can we show others what we learned?

- PBL Museum

Readings

- *World's Biggest Birds* by Mari Schuh
 - Read this interesting book about the world's biggest birds— the condor and the ostrich.

Writing Assignments and Project Work

- **Show What You Know: Final Bird Drawing**
 - Scholars draw and paint their final bird drawing paying close attention to bird anatomy, details, markings, and colors.
 - Since this is a 2-day week, this can be done in week 7 if preferred.
- **Journal Writing: Unit Reflection**
 - Scholars reflect on their learning throughout this unit.

- **Museum Preparation**

- This is the most exciting part of the study. Scholars showcase all the work they have done and share their knowledge with others. All artwork, pictures, charts, and writing should be finalized and displayed for families and other classes to see.
- Use this time to make exhibits colorful and inviting.
- Prepare scholars to take an active role as a “Museum Educator” and present their expertise on bridges to museum visitors.

What Else Do I Need?

Note: You will read aloud some PBL-specific texts during the 30 min. Read Aloud to help build content knowledge. Use the rest of your Read Aloud blocks to read great non-PBL specific books.

- *Look Up! Bird Watching in Your Own Backyard* by Anette Cate
- *What Makes a Bird a Bird* by Mae Garelick
- *Feathers: Not Just for Flying* by Melissa Stewart
- *The Boy Who Drew Birds: A Story of John James Audubon* by Jacqueline Davies
- *Mockingbird: Noisy Mimic* by Natalie Lunis
- *Why Do Birds Sing?* by Joan Holub
- *Nest Full of Eggs* by Priscilla Jenkins
- *Mama Built a Little Nest* by Jennifer Ward
- *The Sibley Field Guide to Birds of Eastern North America* by David Sibley
- *Beaks!* by Sneed Collard
- *Hawks* by Maria Cecilia McCarthy
- *Falcons* by Ashley Norris
- *Owls* by Gail Gibbons
- *Penguins* by Seymour Simon
- *A Place for Birds* by Melissa Stewart
- *Let's Look at Pigeons* by Janet Piehl
- *Birds of New York Field Guide* by Stan Tekiela
- *Birds of Central Park* by Cal Vornberger
- *Crow Smarts: Inside the Brain of the World's Brightest Bird* by Pamela S Turner
- *Pet Birds: Questions and Answers* by Christina Mia Gardeski
- *The World's Biggest Birds* by Mari Schuh

More Outstanding, Non-PBL Specific Read Alouds:

- *Alice's Adventures in Wonderland* by Lewis Carroll (multi-day book; 2-3 weeks)
- *Dragons in a Bag* by Zetta Elliot (multi-day book; 2 weeks)