UNIT 1: Ornithology, Kindergarten

Unit of Study

An Inquiry into Birds: Viewing the World through the Lens of an Ornithologist

Grade Level: Kindergarten  Date: Winter

Beliefs that Underpin this Inquiry

- Children are naturally curious.
- Make time for “mucking about”; this is where inquiry is born.
- Inquiry starts by looking closely.
- Inquiry investigations start with children’s “I wonder” questions.
- Students need to contribute resources to foster questions and investigations.
- Learners should be immersed in their learning while looking through the lens of mathematicians, scientists, readers, writers, ornithologists, etc.
- In this unit, the lens of ornithology should surround all of their learning (for example, daily sign-ins, math graphs, the books they read).
- Teachers learn alongside children.
- Using authentic tools is an important part of the investigation.
- Resources should be used in strategic ways.
- Learners should use the language of scientists both in print and in conversation.
- Establishing rituals to enhance learning is an important aspect of classroom life.
- If you learn deeply about one organism, you can apply what you learn to other living organisms.
- Children should be changed both through the process of learning and by their new knowledge.
- Learners scaffold upon their knowledge over time and then transfer this knowledge, making new applications.
Questions to Frame this Particular Inquiry

- How can mathematicians help us to understand birds?
- How can scientists help us to understand birds?
- How can artists help us to understand birds?
- The study of ecology contains several systems. What are the relationships between birds and the environment? What are the relationships between birds and man?
- Why does it matter to me and what social action might we take as a result of this study?

Method(s) or Investigation(s) that will Promote Authentic Inquiry

How might students learn the skillfulness of inquiry? Given the questions posed, would observations, interviews, experiments, surveys, controlled studies, or other methods best support this inquiry?

- Read nonfiction books.
- Identify and write “wondrous” content vocabulary on classroom charts.
- Sketch live birds, environments, and habitats in a sketch journal.
- Interview specialists and visit the aviary at a local zoo to gather knowledge.
- Collect and graph data of bird frequency counts at home and at school.
- Learn to categorize the physical aspects of feathers.
- Make observations, record facts, and make classroom displays of new learnings.

Key Demonstrations and Engagements throughout this Inquiry

What are the primary teaching and learning strategies to be employed?

- Read nonfiction as a whole group, independently, and with a partner.
- Sketch feathers, nests, habitats, and bird attributes.
- Notice what nests are made from.
- Categorize the materials and construct a nest.
- Construct a graffiti board.
- Create a class web about birds for reference.
- Highlight wondrous words in context of nonfiction read-alouds.
- Include nonfiction big books of penguins and other birds in class read-alouds.
- Revisit “I wonder” questions to foster connections and intertextual ties across the unit of study.
- Establish a morning meeting ritual of discussing newspaper articles or magazines that feature birds.
- Have an ongoing book to read daily (such as The Days of the Ducklings by Bruce McMillan).
- Create mathematical story word problems connected to what you are learning about birds and authentic stories that reflect math as a genuine tool for learning.
- Sing songs and recite poetry that highlight birds.
- Establish an area for bird watching using binoculars for class data collection.
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- Listen, identify, and mimic authentic bird calls. Use an audio cassette, CD, or book with computer chip of sounds to learn the sounds.
- Visit the website of a zoo’s aviary. Send questions to the zoo’s ornithologist through e-mail to enhance the use of experts.
- Write thank you letters to the ornithologist or anyone else who contributed their expertise.
- Create classroom Investigation Stations featuring different multiple sign system perspectives.
- Watch and discuss the film, March of the Penguins.

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<th>Envisioning Possible Touchstone Experiences</th>
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<td>Just as touchstone texts are accessed throughout units of study in reading and writing workshop and revisited over and over again to deepen and broaden learning, touchstone experiences are foundational to units of study in the sciences and social sciences. Field studies, visits to the pond, author studies, summer inquiries, science experiments, teaching/learning projects, genealogy projects, and expert projects are a few examples of touchstone experiences. Given the key demonstrations and engagements planned, which one might best serve as a touchstone experience?</td>
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- Visit your local zoo and work with the staff to explore the birds and make connections to recent learning. Have a grand conversation with the staff ornithologist. This visit should be toward the end of the unit so that the children have plenty of background knowledge and experiences. If they have one, visit and walk through a natural bird exhibit so that the students can be close to the birds—they will probably even land on them!
- Bring a live bird into the classroom to observe and sketch.
- Keep a class Bird Journal so that everyone can contribute and document a variety of information. Be sure to share it and access it regularly.

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<th>Strategies, Skills, Content, and Concepts to be Addressed Through Demonstrations, Engagements, and Touchstone Experiences</th>
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<td>What standards will be uncovered through this inquiry?</td>
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Language

- Understand how author’s choice of words affects the meaning of the text in nonfiction materials.
- Create responses to literary texts through a variety of methods such as writing, creative dramatics, and the visual and performing arts.
- Read independently for pleasure and for information.
- Summarize the central idea and details from informational texts read aloud.
- Exemplify facts in texts read aloud.
- Create responses to informational texts through a variety of methods, such as drawings, written works, and oral presentations.
- Recognize a table of contents and an index.
- Use vocabulary acquired from a variety of sources.
- Use oral poems and songs to build fluency.
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• Use prior knowledge and life experiences to construct meaning from texts.
• Create written work that has a clear focus, sufficient detail, coherent organization, and effective use of the conventions of written Standard American English.
• Write for a variety of purposes and audiences.
• Access and use information from a variety of texts and sources.
• Understand graphic features, such as illustrations and graphs.

Math
• Make nonstandard measurements and identify measuring devices.
• Collect and organize data in graphic displays.
• Interpret data and make predictions.

Science
• Classify based on attributes.
• Use positional and directional words to describe location and movement.
• Demonstrate an understanding for one’s surrounding environment.
• Use process and inquiry skills embedded throughout the content areas: wonder, observe, measure, classify, report, predict.
• Demonstrate an understanding for characteristics and life cycles of organisms.

Strategies for Reflecting on and Documenting Learning

How might we demonstrate growth and change? What are our new questions?

“Share out” orally and publicly using sheets of documented shared information from class questions and the initial “mucking around” in nonfiction texts:
• Nonfiction writing
• Graffiti boards
• Collective webbing of vocabulary
• Student-created “I wonder” questions
• Example of the language of scientists, artists, and mathematicians
• Sketches
• Written conversations
• Learning celebrations
• Written responses to books, such as Feathers and Fools or Crow Boy

Take action on what we have learned:
• Create bird sanctuary on school campus
• Investigate and obtain National Wildlife Federation Backyard Habitat status
Daily Newspapers and Magazines

Texts:

Science Kit:

Film: