

Teacher's Guide

The Boy Who Drew Birds: A Story of John James Audubon

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Hands-On Activities

The Boy Who Drew Birds: A Story of John James Audubon

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In the fall of 1804, John James Audubon was a boy who wanted to know if the small birds nesting near his Pennsylvania home would return the following spring. Despite obstacles, he designed an experiment that would give him the answer he was seeking. In so doing, he became the first person to band a wild bird in North America. He also learned something about bird migration that even the most distinguished scientists of the day did not know.

Classroom Activities Linked to History and Social Science

America in 1804

The Boy Who Drew Birds takes place in early rural America from the fall of 1803 to the spring of 1805. America at that time was a vast, awkward, struggling, magnificent country, still recovering from the Revolutionary War. Upon his arrival in America, John James Audubon discovered a world of wildlife, unspoiled scenery, and unexplored lands.

1. Read sections of *Diary of an Early American Boy: Noah Blake 1805* (Ballantine Books, ISBN 0345321006) to your students. This book, with its many illustrations, will give students a fine sense of the setting for *The Boy Who Drew Birds*.
2. Using Noah Blake's diary as a model, have your students write an entry in the imaginary diary of John James Audubon. They may choose any day of the year 1804 to describe. Be sure their entries include such details:
 - At what hour did Audubon get out of bed?
 - What were his morning chores (if any)?
 - What did he eat for breakfast? Who made the breakfast and where was it served?
 - How did he spend his day?
 - What tools did he use?
 - What were his observations and concerns?



Extinction Is Forever

When John James Audubon first came to America, the country was teeming with wildlife. People of the day hunted without regard to conservation; it was nearly impossible to think that a species could be hunted into extinction. By the end of his life, Audubon realized how limited American wildlife was. He wrote: "A true conservationist is a man who knows that the world is not given by his fathers, but borrowed from his children."

1. Read books, such as those from the following list, to discover the names of North American animals that were alive in Audubon's time but are extinct now.
 - *The Best Book of Endangered and Extinct Animals*, by Christiane Gunzi
 - *Endangered Species*, by Sonia Benson and Rob Nagel
 - *Swan Songs: Poems of Extinction*, by J. Patrick Lewis
 - *Extinct Species*, published by Grolier
 - *The Race to Save the Lord God Bird*, by Philip Hoose
 - *Endangered Animals of North America, a Hot Issue*, by David Goodnough
 - *Gone Forever! An Alphabet of Extinct Animals*, by Sandra and William Markle
2. Have each student choose one animal from the list and write a short illustrated report that includes:
 - When the animal became extinct.
 - Why the animal became extinct.
 - The animal's habitat and life habits (eating, parenting, hunting).
 - One reason why the student wishes this animal were still alive.
3. After the students have completed their individual reports, have the class as a whole write a list of actions that can be taken to prevent more animals from becoming extinct (saving habitat, reducing pollution, controlling hunting).

Bird Banding / Invite a Speaker

John James Audubon was the first person to band a bird in North America. His simple experiment helped prove that phoebe birds return to the same nest each spring, and their offspring nest nearby.

1. Visit the website of the Bird Banding Laboratory: The North American Bird Banding Program (<http://www.pwrc.usgs.gov/bbl/>) to learn more about bird banding as it is practiced today.
2. Contact the Bird Banding Laboratory to locate the nearest banding center and/or to contact a nearby bird-banding volunteer.
3. Plan a field trip to a bird banding center or invite a bird-banding volunteer to visit the class. Be sure the students have prepared a list of questions to ask the bander.

Cartography

In Audubon's day, mapping the Earth's geography was a work in progress. Some land areas were still uncharted. Others, like the route from Nantes, France, to Philadelphia, Pennsylvania (shown on page 6 of The Boy Who Drew Birds), were well known.

1. Visit Brooklyn CUNY's Maps Home Page (<http://academic.brooklyn.cuny.edu/geology/leveson/core/linksa/maptop.html>) for a terrific introduction to the study of cartography. This illustrated guide explains scale, distance, direction, contour, and topography.
2. Have each student draw a map of an area (his/her bedroom, a playground, his/her backyard, the town square). The map must be drawn to *scale* and must include a *legend* and a *compass rose*.
3. Now have each student write a set of directions to guide a fellow traveler over the terrain. For example, "Begin at the closet door, travel three feet northeast, two feet north, and six feet west." Does the traveler end up where the cartographer expected?

Collectibles

John James Audubon loved to collect things: birds' nests, lichen, tree bark, bones. He kept his collections in his special attic room, his musée (a French word meaning "museum").

1. Talk with your students about why people collect things (to learn about a subject, to invest in something that will become more valuable, to occupy one's time). What sorts of things do people collect? (stamps, antique dolls, spoons, paintings, bottle caps, cars)
2. Have each student choose something to collect. Set a time limit (several days, several weeks, several months). At the end of the project:
 - Who has the largest collection?
 - Who has the most valuable collection?
 - Who has the weirdest collection?
 - Has anyone "caught" the collecting bug?



Classroom Activities Linked to English Language Arts

Letter to the Editor / Persuasive Argument

At the beginning of John James Audubon's life, the idea of conserving the world's resources and wildlife hardly existed. By the end of his life, the conservation movement was firmly established and would grow over the years. One organization that is dedicated to conservation is the Massachusetts Audubon Society. Founded in 1896, it is the oldest Audubon Society in the world.

1. Read the picture book *She's Wearing a Dead Bird on Her Head*, by Kathryn Lasky, to your students. It tells the story of the birth of the Massachusetts Audubon Society.
2. Ask your students to imagine that they are friends of Harriet Hemenway and Minna Hall. They, too, are horrified by the fashionable hats that sport exotic birds' feathers. Have your students write a letter to the editor of *The Boston Globe* protesting the use of feathers on hats. Make sure your students follow the structure of a good persuasive argument:
 - Introduction
 - State your case
 - Examine and refute the opposition
 - Reconfirm your position
 - Conclude that your position is superior

For more on persuasive arguments, link to the San Diego City Schools' website (<http://projects.edtech.sandi.net/staffdev/tpss99/processguides/persuasive.html>)

Audubon, Audubon, Audubon— Read and Compare

The Boy Who Drew Birds tells one story of the life of John James Audubon. Other books present a different view of the painter, naturalist, and writer. By drawing on a variety of sources, students can gain a fuller image of the complicated individual who was Audubon.

1. Read the following three picture books to your students:
 - *The Boy Who Drew Birds*, by Jacqueline Davies (Houghton Mifflin, 2004, ISBN 0618243437)
 - *Audubon: Painter of Birds in the Wild Frontier*, by Jennifer Armstrong (Abrams, 2003, ISBN 0810942380)
 - *Into the Woods: John James Audubon Lives His Dream*, by Robert Burleigh (Atheneum, 2003, ISBN 0689830408)
2. Have your students create a Venn diagram that groups facts found in only one book, facts found in two books, and facts found in all three books.

3. Ask your students to describe the Audubon character depicted in each book. Does he seem active in one book and dreamy in another? Does he seem passionate in all three books? Curious? Do the portrayals of Audubon seem to contradict each other? Ask your students why they think this might be the case.

Classroom Activities Linked to Science and Technology

Nesting

All birds build nests, but not all bird nests look the same. Birds use a variety of materials and techniques to build their nests. Students can gain a hands-on appreciation of the work involved in nest building by making one of their own.

1. Read several picture books (fiction and nonfiction) to your students that focus on birds' nests. (A complete bibliography of nest books, originally appearing in the November 2004 issue of *Book Links*, can be downloaded for free at the author's website: <http://jacquinedavies.net/booklinks.html>)
2. Ask your students if they've ever watched a bird build its nest. Do they think nest building is hard work?
3. Go to the author's website (<http://jacquinedavies.net/storybookcove.html>) for step-by-step instructions for building a bird's nest. You will need the following materials:
 - corrugated cardboard
 - nesting materials: twigs, dried grass, feathers, yarn, pine needles, cotton balls
 - white glue
4. Have your students build nests following the instructions. How do the nests differ? How are they the same?

Plant a Bird Sanctuary / Service Learning Project

In Audubon's day, wildlife existed on its own terms in the wild. There was no need to coax or encourage species to flourish. Today, many types of animals are threatened by humans' encroachment on their natural habitats. Your students can help counteract the ill effects of encroachment by creating a bird sanctuary on school grounds.

1. Visit the Atlanta Audubon Society's website to learn more about planning a bird sanctuary (<http://www.atlantaaudubon.org/pages/sanctuaryprogram.htm>).
2. Contact your local Audubon Society and enlist the help of a volunteer to advise you how best to create a bird sanctuary that is appropriate to your area.



3. Have your students write up a list of local birds they hope to attract to the sanctuary.
4. With your students, plan the bird sanctuary, taking into account these necessities:
 - shelter
 - food
 - water
 - nesting sites
5. Work with your students to build the bird sanctuary—planting shrubs, constructing feeders and nesting boxes, and keeping the sanctuary protected from predators.
6. Have your class keep a life list (see page 8 of this Guide) of birds they see in the sanctuary. Were they able to attract all the birds from the list they originally wrote?

New House Construction

During his lifetime, John James Audubon witnessed the extinction of the passenger pigeon. He also watched other species of animals once abundant in North America become endangered, and this fueled his desire to help conserve animals in the wild. He wrote: “To destroy the nest of a bird, or to deprive it of its eggs or young, is an act of great cruelty.” Conversely, one way to help boost the populations of local birds is to provide safe nesting sites for the birds to lay their eggs and raise their young.

1. Visit the Crafty Birds website (<http://www.craftybirds.com>) to access free plans for building birdhouses.
2. Have your students build one of the models of birdhouses and hang it on school property or in their backyards.
3. Have your students keep a diary of bird activity around their birdhouses. Do birds nest in the house? What kind of bird? Is there evidence of egg-laying activity? What else do your students observe about the birds?

All About Phoebes

“John James scrambled up the bank and approached the limestone cave, wondering what he would find today. Just the empty nest of a pewee [phoebe] bird, as he had found the last five days? Or would there be—” Throughout his life, Audubon felt a special connection with the phoebe bird, the first bird he befriended after arriving in America.

1. The scientific name for the birds that Audubon studied in *The Boy Who Drew Birds* is *Sayornis phoebe*. The common name is the eastern phoebe. Encourage your students to learn as much as they can about this bird. Two good places to begin research are:

- the website of the Smithsonian National Zoological Park (http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Featured_Birds/default.cfm?bird=Eastern%20Phoebe)
 - the website of the Cornell Lab of Ornithology (http://birds.cornell.edu/programs/AllAboutBirds/BirdGuide/Eastern_Phoebe_dtl.html)
3. Divide your students into groups and have each group write a short, illustrated report on a different aspect of this bird: physical appearance, habitat, food, nesting, migration, raising their young.
 4. If you live east of the Mississippi River, challenge your students to find a phoebe nest in the wild. (Remember that phoebes always nest near water and under cover—for example, under a bridge or the eave of a roof.)

The Scientific Method — Unleashed

Aristotle observed that small birds disappear in the winter and return in the spring. From this observation, he surmised that small birds spend the winter underwater or in hollow logs. He never attempted to test this theory; he simply observed and then made an educated guess. Since Aristotle's time, scientists have adopted a new way of creating theories: the scientific method. Audubon used the scientific method when he speculated on the return of his phoebe birds and devised an experiment to prove his theory.

1. Introduce your students to the four steps of the scientific method:
 - *Step 1: Observe* and describe a phenomenon. (Example: Small birds disappear in the fall, and similar looking birds return in the spring.)
 - *Step 2: Formulate a hypothesis* to explain the phenomena. (Example: “I think the same small birds come back to the same nesting area each spring.”)
 - *Step 3: Use the hypothesis to predict* the outcome of a test. (Example, “I predict that if I tie a string to the leg of a baby bird in the fall, that same marked bird will return to the same nesting area in the spring.”)
 - *Step 4: Perform an experimental test* to see if your prediction comes true. (Example: “I tied a string to the leg of a baby bird, and the same bird returned to the same nesting area.”)

The most important feature of the scientific method is *prediction*: A sound theory must be able to predict the results of a test each and every time that the theory is tested.

2. Have your students choose a phenomenon to observe. (For example, observe ice as the surrounding temperature rises above and falls below 32°F.)
3. Have your students formulate a hypothesis about the phenomenon (“I think ice melts when the surrounding temperature is above 32°F, but stays frozen when the surrounding temperature is below 32°F.”)

4. Have your students make predictions based on the hypothesis. (“I predict that ice will melt when placed in a warm oven, but will stay frozen when placed in a cold freezer.”)
5. Have your students test the theory and write up the results of the test.
6. Now, have your students test each *other’s* theories. Do the theories hold, or are they disproved?
7. As an extension, have your students follow the four steps of the scientific method to study a phenomenon with which they are *not* familiar (for example, magnetism, electrical circuitry, flotation of different materials).

Keeping a Birding Life List / Observation Skills

John James Audubon was an ardent observer and note-taker. He kept whole journals full of notes that described the location, appearance, and behavior of the birds he had seen in his lifetime. Many birders keep such a “life list” to chronicle the birds they have seen during their lives.

1. Work with your students to create a way to capture information about the birds they observe. They can designate and decorate a special notebook; create a chart on a poster-size piece of paper, or decorate a file box that can hold individual index cards. A life list should include the following information:
 - the date of the sighting
 - the time
 - the place
 - the weather
 - a description of the bird’s call (not easy to do!)
 - the shape and size of the bird
 - any field marks (like a black cap or white-tipped wings)
 - the species (the student should make an educated guess after studying a field book)
 - notes about the bird’s behavior
 - a drawing of the bird
2. Encourage your students to fill their life lists with as many birds as they can find. Keep a master life list for the entire classroom. Are most of the students seeing the same types of birds? Why or why not? Are there any local birds that are *not* being seen by your students? Why might that be?

Birds on the Wing: Studying Migration

Phoebe birds migrate south in the fall and then return to their northern nesting sites in the spring. Many birds are mighty migrators.



1. Introduce your class to the subject of migration by using one or more of the following resources:

- *On the Wing: American Birds in Migration*, by Carol Lerner (HarperCollins, 2001)
- *How Do Birds Find Their Way?*, by Roma Gans (HarperCollins, 1996)
- National Geographic's website (<http://nationalgeographic.com/magazine/cranecam/>)
- The U.S. Fish and Wildlife Service's website (<http://www.npwrc.usgs.gov/resource/othrdata/migratio/migratio.htm>)
- The Nutty Birdwatcher website (<http://www.birdnature.com/migration.html>)

2. Divide your class into groups and assign one of the following birds to each group:

- arctic tern
- sandhill crane
- peregrine falcon
- Canadian goose
- American robin
- cinnamon teal
- ruby-throated hummingbird

3. Challenge your students to learn all they can about their group's bird. Have each group prepare a short oral report with visuals. Construct a class map of the Western hemisphere and chart the path of migration for each bird studied.

Classroom Activities Linked to the Arts

The Art of Audubon

John James Audubon devoted much of his life to identifying and painting the birds of North America. The watercolors he painted, which were then reproduced as lithographic prints in his famous book The Birds of America, are some of the most beautiful, evocative, detailed wildlife paintings ever created.

1. Introduce your students to the work of John James Audubon using a large-format art book such as *John James Audubon: The Watercolors for The Birds of America* (Villard Books/Random House, 1993). You may view many of the lithographic prints created from Audubon's watercolors online at the website of art dealers Haley & Steele (www.haleysteele.com). You can also find some online images of his original watercolors at the website of the New-York Historical Society (www.nyhistory.org)
2. Begin a conversation with your students: What do they notice about Audubon's paintings? Are they lifelike? Are they static? Are they beautiful? Are they gory? Do these paintings seem more like the work of an artist or a scientist (or both)? How does Audubon use setting (background, plant life, objects) to tell us more about the birds he painted?

3. Have the students, using pencil and watercolor, copy a painting of Audubon's.
4. Have your students paint an original watercolor of a bird that is in the style of John James Audubon. (Students may choose to work from a photograph of a bird, a stuffed model of a bird, or a live bird.)

Mixed Media Collage Art

Melissa Sweet used watercolors and gouache, pen and ink, pencil, and collage to create her paintings for The Boy Who Drew Birds. She painted on handmade and antique papers, and she affixed unusual objects — dried flowers, nails, feathers, bones, tree bark, quills, and preserved animals (such as frogs, lizards, and snakes) — to her paintings.

1. With your students, carefully examine the artwork in *The Boy Who Drew Birds*. Ask your students: Does the artwork feel alive? How does collage add vibrancy to the paintings? Is it really *art* if the artist doesn't paint it? Why or why not? Discuss the following statement: Art is about choice.
2. Brainstorm with your students some painting subjects that might be well-suited to the medium of collage. Talk about what kinds of things you might include in a collage for a particular subject.
3. Have your students create an original collage painting. Exhibit the paintings and have each student explain why he or she included the objects in the painting.

Drawing Birds in Nature

Early in his career, John James Audubon was frustrated by the challenges of drawing live birds in nature. He was determined to capture on paper the nuances and postures of birds as they existed in the wild. He wrote: "One day while watching the habits of a pair of pewees at Mill Grove, I looked so intently on their innocent attitudes, that a thought struck my mind like a flash of light, that nothing after all would ever answer my enthusiastic desires to represent nature, than to attempt to copy her in her own way, alive and moving!"

1. School your students in the basics of drawing small birds. Most small birds' forms are made up of a few basic shapes: the head (a circle), the body (an oval), the beak (a triangle), the tail (a triangle). Show students how changing the relative sizes of these basic shapes yields very different bird outlines.
2. Take your students out into nature. If your students can walk to nearby woods, by all means go there. If there is a bird sanctuary or aviary nearby, plan a field trip.



3. Have your students, working in pencil, draw birds that they observe in nature. Are the birds on a branch? Near a nest? In flight? Encourage your students to identify and capture *one detail* about the bird: the shape of the beak, the coloring on the wings, the position of the eye.
4. When your students return to the classroom, have them use watercolors to color in their pencil drawings.
5. Be sure to discuss with your students what they think of the experience. Did they find drawing wildlife fun? Frustrating? Humorous? Enraging? What would they do differently if they were to try again?
6. If possible, have your students make several trips to draw live birds in nature. (It took Audubon a lifetime to complete his work.)

Classroom Activities Linked to Social Competency

Making Friends Across a Language Divide

When John James Audubon arrived alone in America at the age of seventeen, he didn't know a single person nor did he speak English. He was able to make friends because of his naturally outgoing personality and his willingness to speak unabashedly in tangled-up English–French.

1. Perhaps your class has had the experience of welcoming a new student who does not speak English. If so, use this experience as a jumping-off point for the following exercise. If not, ask your students to imagine such a situation.
2. Talk with your students about how the new student might be feeling. Together, write up a list of descriptive emotions, such as frightened, curious, angry, friendly, lonely, excited.
3. What are some activities your students can think of that might alleviate some of the difficult feelings on the list? (shaking hands, smiling, inviting the student to play)
4. How might the students communicate with the new student? (pictures, hand gestures, acting out activities, borrowing a foreign-language dictionary)
5. Have your students role play the experience.

