

Arts-Integrated Unit: Maine Owl Books - Habitats and Adaptations

Suggested Grades: 4-5 Content Area(s): Science, Literacy, Nonfiction Writing Arts Area(s): Observational Drawing, Bookmaking Unit Length: 4-6 weeks Classroom hours: 10-12

In this collaborative unit designed by Side x Side teaching artists and classroom teachers, students study owls and their lifecycle, including adaptations, locomotion, and habitats. They also learn observational drawing, detailed scientific drawing, and watercolor painting techniques. Using thoughtful design principles, students combine their creative components, including owl puppets and written research, into a handmade single sheet book.

Key Features

- Aligned with Common Core and Next Generation standards, Maine Learning Results in Visual and Performing Arts, and integrated with school and grade level curriculum.
- Program Kickoff and presentation with teaching artists and the Center for Wildlife owl experts, including live owls and specific Maine species.
- Literacy focus on scientific research and nonfiction writing to demonstrate learning; writing concise, informative sections on specific native Maine owls.
- Arts focus on observational scientific drawing, watercolor painting techniques, and single sheet book design and fabrication.
- Field study with observational scientific drawing of owl habitats using Side x Side Project Journals.
- Program Celebration of Learning event displaying handmade informational books featuring scientific illustrations through a gallery walk and Q&A.
- Detailed program documentation: lesson plans, supply and resource lists, arts and content connections.

Side x Side ignites academic excellence in education through comprehensive arts-based programs bringing critical thinking, creativity and innovation into the classroom. Through community partnerships with the University of Southern Maine, local school districts and artists, professionals and colleges, Side x Side integrates science, technology, literacy and the humanities with the arts to enhance school curriculum.

Side x Side programs are funded by the US Department of Education through an AAEDD grant.





sidexside TEACHING & LEARNING SNAPSHOT

Integrated Unit of Study: Maine Owl Books: Habitats and Adaptations

Grade or Specialty, Unit Length	Designed by:
4th grade, 4-6 weeks/10-12 classroom hours	Teaching Artist: Jill Osgood

Description/Big Idea:

Students will demonstrate their knowledge of Maine Owls, their habitats and adaptations through written research, scientific drawing, field observations and watercolor painting culminating in handmade books. They will identify important vocabulary including predator and prey, life cycle, locomotion, diet and behavior. Students will explore local spaces to observe where owls survive and thrive recording observations in Project Journals.

Resources + Materials:

Center for Wildlife field experts with live owl presentation, Project Journals, bookmaking supplies and exhibition space.

Learning Goals and Standards:	
 Academic content/SEL areas (english, math, science, etc.) Based on the scientific writing literacy unit, students will learn: research and recording skills reading non fiction for comprehension how to write detailed factual information from research organize information and facts for readability Present information to an audience I can (in kid language): research and record information about my owl organize my research to share with others write clear and complete sentences about my research use a field journal for my research 	 Arts Discipline (poetry, performance, sculpture, etc.) Through drawing, watercolor and bookmaking techniques students will learn: Scientific drawing as a tool to learn and understand body parts / adaptations how to draw from observation in nature how to make and design a single sheet style book Watercolor techniques w/crayon resist and salt. collage, flaps, pop-ups, main character puppet I can (in kid language): draw from observation in nature use scientific drawing to illustrate what I know learn new painting skills to show texture, pattern and colors of my owl habitat make a single sheet book to organize and display my research
Core Curriculum Standards: NEXT GENERATION SCIENCE STANDARDS Students who demonstrate understanding can: HS-LS4-4. Construct an explanation based on evidence for how natural selection leads to adaptation of populations. COMMON CORE STATE STANDARDS Reading Standards for Informational Text: CCSS.ELA-Literacy.RI.4.1–4.10 Writing: CCSS.ELA-Literacy.W.4.1–4.10	Core ART Standards: NATIONAL CORE ART STANDARDS Anchor Standard 1: Generate and conceptualize artistic ideas and work based on observation in nature. VA:Cr4.1.4a Anchor Standard 2: Organize and develop artistic ideas and work while balancing experimentation and safety, freedom and responsibility while developing and creating. VA:Cr2.2.4a Anchor Standard 6: Convey meaning through the presentation of artistic work. VA:Pr6.1.4a Anchor Standard 10: Create works of art that reflect community cultural traditions. VA:Cn10.1.4a

Celebration of Learning and assessments:

Students will participate in a gallery walk and Q & A with family and school community. Formative assessments throughout the unit activities will guide learning.





UNIT OVERVIEW

Students will demonstrate their knowledge of Maine owls and their habitats and adaptations through research, scientific drawing, field observations, and watercolor painting compiled into handmade books.

BIG IDEA

Bookmaking and illustration can help us better understand scientific concepts.

LEARNING GOALS

Students will understand:

- How art and science provide processes for discovering and demonstrating knowledge.
- How to read non fiction texts; comprehend, synthesize and write detailed factual information from research.
- How to present and share information and knowledge with an audience of peers and school community.
- How to think like an artist and scientist through field research and scientific drawing.
- How to use watercolor techniques and bookmaking to describe owl habitats and adaptations.
- How bookmaking and drawing can provide an organized method to demonstrate and support written research and information about owl species.

GRADE LEVEL: Third or Fourth Grade

ART FORM: Scientific Drawing and Mixed Media Bookmaking

INTEGRATED SUBJECTS: Literacy, Science, Writing

Project Kick-off:

The project will begin with a presentation from experts at the <u>Center for Wildlife</u> and feature live owls. Students will be introduced to basic observational drawing techniques, learn unique facts about Maine owls, ask questions, and take notes in their Project Journals. Timeframe: 1 hour

Lesson 1: Observational Drawing

Students will learn how to observe in nature looking for owl habitat clues, drawing details of the landscape, and recording research in their Project Journals: 1.5 hours

Lesson 2: Watercolor Resist

Students will learn how to use crayon resist and watercolors on large paper, creating a painted habitat diorama: 1.5 hours

Lesson 3: Scientific Adaptations

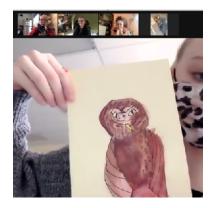
Students will use owl mounts to observe and record specific characteristics of owls: 1 hour

continued...

Teaching Tip: The Center for Wildlife offers virtual lessons. Your local Audubon or wildlife center may have animal mounts available for classroom use to support drawing from observation.







Lesson 4: Single Sheet Books

Students will learn about book design and layout to support their writing: 2 hours

Lesson 5: Collage

Students will use collage to enhance the owl habitat pages of their book: 1 hour

Lesson 6: Title Page & Illustration

Students will create a title and illustration for the book cover: 1 hour

Lesson 7: About the Author (optional)

Students will learn to write biographically: 1.5 hours

Lesson 8: Building the Book

Students will complete their books with their writing and drawings: 1 hour

Celebration of Learning

Students will teach their peers and community about Maine owls: 45 min–1 hour

Did you know?

This unit includes many opportunities to strengthen fine motor skills, follow multi-step directions, and work collaboratively with peers.

SEL LESSON CONNECTIONS

Side x Side's model of arts integration authentically aligns with Social Emotional Learning benchmarks through three primary developmental areas: self-management, self-expression and relationship skills. Through the creative process, students experience a range of opportunities to notice and learn about themselves in new ways. Many project components involve communication and collaboration, developing a broader sense of social awareness and forging deeper relationships. Students gain valuable flexible and varied skills when approaching a core subject in a creative way. We strive to incorporate communication and community building skills in everything we do.



Bookmaking: Maine Owl Books



LESSON 1: Observational Drawing

MATERIALS

Per student:

- project journal
- pencil
- eraser

To share:

- exemplar of scientists' drawings
- reference books on owls and habitats

VOCABULARY

texture shape pattern color shades scale snag water source scat debris habitat ecosystem diurnal raptor talon

LEARNING GOALS

Students will learn:

- How to look and listen closely for evidence of potential owl habitats.
- How to record observational data in Project Journals.
- How to draw from observation including shape, texture, shade, line, and scale.
- How scientific information can be expressed visually.

Timeframe: 1.5 hours

Students will learn how to observe in nature looking for owl habitat clues, drawing details of the landscape and recording research in their Project Journals.

INSTRUCTIONS

Step 1: Introduction

Discuss how scientists study in the field and the importance of note taking and drawing from observation. Stress using four senses (sight, sound, smell, and touch) to take in the environment. Review things to look for: nests, snag, scat, water, tracks, fur, feathers, pellets. Share how observation drawing is another way of seeing and learning.

Step 2: Draw Outdoors

Students should get their project journal and pencil out of their portfolios (large envelopes) and follow the group to the wooded habitat. Have students find a spot to sit quietly for 10 minutes (or a length appropriate for the group) and listen, smell, touch, and see what is immediately around them. Instruct them to draw one thing in their line of vision and record their sensory input.

Teaching Tip: Outdoor space can include an urban park or waterway. Emphasis on observation outdoors can be applied to a variety of settings.

Step 3: Draw & Describe Evidence

Have the group look for a piece of evidence to share with the group and discuss. Take another few minutes to draw that piece of evidence and make a list of adjectives describing it: rough, straight, thin, brittle (stick).



SEL SKILL: SOCIAL AWARENESS

is the ability to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, and contexts.

This includes feeling compassion for others, understanding broader social norms for behavior, and practicing self-awareness while in nature.







LESSON 2: Watercolor Resist

MATERIALS

- Per student:
- smocks
- crayons (dark colors & whites)
- large paper (Canson Mi Tientes) 19"x25" colored
- watercolors
- · watercolor brushes

To share:

- exemplar watercolor image with crayon resist and salt
- newspaper/plastic tablecloths
- containers for water
- salt in shakers
- paper towels

VOCABULARY

line movement depth hot and cool colors shades

LEARNING GOALS:

Students will learn:

- How to use crayons as resist for watercolors.
- How to manipulate watercolors to create patterns.
- How to mix and apply watercolors to create patterns found in natural habitats.
- The importance of sequence and steps in art-making.
- The importance of taking care of tools.

Timeframe: 1.5 hours

Students will learn how to use crayon resist, salt, and watercolors to create the habitat and background for the book that will showcase their research and drawings.

INSTRUCTIONS

Step 1: Introduction

Describe how to use watercolors and show examples. Demonstrate crayon resist and salt techniques. Show examples of how salt and crayon resist can be used to illustrate habitats.

Step 2: Watercolor Painting

Prepare the space for watercolor painting. Distribute materials to students. Remind students to put their names on their paper before painting. Have students reference their project journals. Discuss the field trip(s) and reflect on notes taken and observations of natural spaces. Brainstorm ways these could be represented with textures and color.

Step 3: Make Designs

Allow students ample time to make designs with crayon and paint. Check in with students to support creative risk taking and persistence. Set paintings aside to dry flat.



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LESSON 3: Scientific Adaptations

MATERIALS

- Per student:
- project journal
- pencil
- eraser
- several pieces of heavyweight paper

To share:

- exemplar of artist drawings
- cups or circles to trace for detail drawings
- reference books on owls

VOCABULARY

posture anatomy balance talons feather eyesight hearing movement adaptation

LEARNING GOALS:

Students will learn:

- How to look closely.
- How to illustrate adaptations.
- How to label illustrations with scientific terms.
- How to persist in drawing.
- How to highlight scientific components.
- How scientific information can be expressed visually.

Timeframe: 1 hour

Students will use owl mounts to observe and record specific characteristics and adaptations of owls including the internal (behavioral) and external (specific body parts) structures that enable these animals to function to support survival, growth, behavior, and reproduction.

INSTRUCTIONS

Step 1: Introduction

Observational drawing helps students see the animal and all of its parts. As Maine naturalist, writer, and artist Bernd Heinrich says, "The buds are of exquisite design, but to see them truly I have to draw them, and to draw them I have to see them." Explain how class time will be used to observe and draw, paying close attention to the adaptations that support the owl's survival. Demonstrate how zooming in on details focuses attention on key species adaptations. Remind students to keep their materials together in their large envelopes or portfolios.

Step 2: Observe & Draw

Ask students to observe in silence for at least one minute before putting pencil to paper. Pass out drawing paper. Instruct students to draw the whole owl paying close attention to the outside shape and the proportions. *Optional: Draw a breakdown of owl shapes on the whiteboard.*

Note:

If owl mounts are not available, use the Center for Wildlife reference.



SEL SKILL: SELF-MANAGEMENT

is the ability to regulate one's emotions, thoughts, and behaviors effectively in different situations. Making large-scale watercolor paintings requires careful listening, body control, and impulse management. Students can link content and self-expression through color and texture using paint, crayons and salt.





Step 4: Choose an Adaptation

Once the full owl drawing is complete, have students choose one adaptation to focus on: strong talons, sharp beak, flight feathers, coloring for camouflage, ear tufts, different types of feathers, etc.

Optional: Students can use cups to trace a circle and draw key details within the circle.

Step 5: Refine

Observe, reflect, and refine with students, discussing how to draw details with shading and cross hatching, foreground and background, and how to draw body positions.

Teaching Tips:

- 1. Have students rotate around the room to different owls or around one owl, drawing on all sides.
- Not all students' specific species will be available as mounts. Have students draw an owl with similar characteristics: height, ear tufts, talons.
- 3. Have students draw a diagram to represent the life cycle of an owl.

Fun Fact:

Owls are widely protected under the <u>Migratory Bird Treaty Act</u> and it is illegal to have in your possession any part of an owl, including their feathers.





LESSON 4: Single Sheet Books

MATERIALS

Per student:

- project journal
- pencil
- fine point Sharpie
- eraser
- colored pencils
- watercolors
- heavy-weight paper

To share:

- reference slides for drawing
- · reference books on owls
- string, ribbon, or yarn
- glue or paste
- scissors

VOCABULARY

book arts fold crease hinge margin bone folder flush layout design

LEARNING GOALS

Students will learn:

- How to look closely for shape and detail.
- How to create a movable puppet for the main character.
- How book components support organization of information.
- How artistic choices highlight scientific details and content.

Timeframe: 2 hours

Students will learn how to fold their single sheet with watercolor painting into a book form. They will learn how book design can support their writing by creating an owl puppet, flaps, and pockets.

INSTRUCTIONS

Step 1: Introduction

Discuss how the main character in a book tells the story. The owl puppets will become the storytellers of student research. Show an example of a book with a movable puppet, flaps, and pockets. Discuss how organization in the book will support understanding. Have students plan where they will put the information and the ways flaps and pockets will help the reader understand the scientific research. Using the slide <u>presentation</u>, describe the steps of drawing simple shapes and combining them to form the complete owl.

Teaching Tips:

- 1. Have students look at their observational drawing and research to understand the components that will be placed in the book. (See checklist.)
- 2. Use sticky notes with book page numbers for organizing writing and drawings.
- 3. Encourage students to look at the outside shape of the owl, focusing on overall form.
- 4. Have students who finish early help their peers.
- 5. Have left-handed scissors available.



Fun Fact:

About 700 years ago people used simple books with moving parts to teach about anatomy or make astronomical predictions. These pop up and flap books were made for adults, not children!







Step 2: Draw and Color the Owl

Hand out heavy-weight card stock. Have students use their project journals to reference notes and drawings. Have students draw simple shapes; circle for the head, oval for the body, cone for the beak. Be sure the shape is appropriate to their particular owl species. The puppet should be approximately 2–3 inches in length. When the drawing is complete, have students trace over the pencil lines with Sharpie and erase any extra pencil marks. The Sharpie will help bring out the shape of the owl. Have students color their owl with crayon, colored pencil, or watercolors.

Step 3: Create Book Structure

While the owls are drying, have students fold their painted watercolor sheets into their book structure. See instructions for <u>single sheet</u> bookmaking. Then have students look at their materials and consider the order they will go into the book. Discuss where flaps and pockets might go to organize information. Cut and glue these into the book.

Step 4: Create Puppets

When the owl paintings are dry, cut around the shape to create an owl puppet. Have students write their name and owl species on the back. Students can choose string, ribbon, or yarn and glue an 8-inch piece of it to the back of each owl. The completed puppets will be added to their books in the final stage.

Step 5: Reflect

Discuss reflection, peer feedback, and revisions. Weave this practice of reflection and feedback throughout.

Extra Time?

Crayon resist can be used on the puppets.



LESSON 5: Collage

MATERIALS

- Per student:
- book form
- project journal
- To share:
- exemplars of collaged and cut paper in books
- collage materials
- scissors
- colored pencils
- · glue or paste
- cut ribbons
- newspaper/tablecloths for tables

VOCABULARY

camouflage habitat crumple paste tear feathered edge

LEARNING GOALS

Students will learn:

- How to represent natural elements through collage.
- How bookmaking can help us understand scientific concepts.
- How attention to detail is important in creating and completing projects.

Timeframe: 1 hour

Students will use collage to highlight the owl habitat pages of their book, creating nests, snags, water sources, and food.

INSTRUCTIONS

Step 1: Introduction

Discuss how collage adds textures and depth to two-dimensional work. Show examples of collage used in books. Have students examine their books and reference field notes in their Project Journals. Where can collage materials be added to demonstrate owl habitats such as a snag or water source?

Step 2: Place and Glue

Spread out collage materials and have students look at the pages of their books. Instruct them to begin laying materials in place before gluing. Use glue or paste to attach collage materials. Stand books upright to dry, making sure the pages do not stick together.

SEL SKILL: SELF-AWARENESS

is the ability to accurately recognize one's emotions and thoughts and their influence on behavior. Bookmaking requires planning, organizing, and understanding one's strengths. Setting goals while blending content with drawing and design builds content knowledge and selfconfidence.

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LESSON 6: Title Page and Illustration

MATERIALS

Per student:

- book form
- · project journal
- pencil
- eraser
- heavy-weight paper or card stock

To share:

- scissors
- rulers
- glue or paste
- fine point Sharpies

VOCABULARY

scientific name title page scientific illustration

LEARNING GOALS

Students will learn:

- The importance of the title page to inform and entice the reader.
- How adding elements to a book form reveal understanding of a scientific concept.
- How attention to detail is important in creating and completing projects.

Timeframe: 1 hour

Students will create a title including the scientific name of their owl species on card stock and select an illustration for the book cover.

INSTRUCTIONS

Step 1: Introduction

Discuss the difference between drawing and scientific illustration (<u>definition</u>). Have students choose a drawing from the *observation lesson* to be used on the cover of the book. Demonstrate how book covers provide information to entice the reader. Share examples of nonfiction book covers.

Step 2: Identify

Have students lay out drawings and research from their portfolios including their project journals. Have them identify their owl species' scientific and common names.

Step 3: Create Guide

Using rulers and heavy-weight paper, and very light pencil marks, create either 1) lines to use as a guide to write on, or 2) a rectangle to write the title(s) in.

Step 4: Create Title

Have students work carefully in pencil, writing the titles, then tracing over in Sharpie. When they are finished they can carefully cut out the title.



LESSON 7: About the Author (Optional)

MATERIALS

Per student:

- heavy card stock
- pencil
- eraser
- To share:
- glue or paste
- fine point Sharpies

VOCABULARY

autobiographical timeline inspiration focus historical data audience

LEARNING GOALS

Students will learn:

- How to write about themselves in third person.
- How information about the author supports audience engagement.
- The importance of peer revision and feedback.
- The role of the author and artist to inform us visually.

Fun Fact:

We would never know that J.K. Rowling, author of the Harry Potter series, is obsessed with charm bracelets unless she wrote an "About the Author" piece. Who knew?!

Timeframe: 1 hour

Students will add a final page about the author, learning to write biographically. This page will be the last page of the book.

INSTRUCTIONS

Step 1: Introduction

An "About the Author" section can be added to more deeply explore writing skills. Students can include a brief description of themselves, age, grade, and where they live. They can then add interesting facts: favorite things, favorite places, or a fact that someone would not be able to tell when looking at the student.

Step 2: Write

Share examples of "About the Author" sections. Make up your own to share. Have students write in pencil about themselves, highlighting fun facts, what helps them be creative, biographical information, etc. (I like to include personal anecdotes and experiences that the author has had with an owl, if any.)

Step 3: Refine

Have students refine their writing, checking spelling and grammar. Students should trace over any pencil writing with a Sharpie. Author writing can be mounted on decorative paper before being glued in books.

Teaching Tips:

- 1. For students that are struggling, have students work in pairs and write about each other.
- 2. Polaroid type pictures can be a nice addition to the "About the Author" page.
- Add a funny fact about what helps you write in your author section (do you listen to music? Do you write in a special spot? Do you have to use a special pencil?)

LESSON 8: Building the Book

MATERIALS

Per student:

- project journal
- portfolio
- To share:
- glue or paste
- pencils
- Sharpies

VOCABULARY

critique publish series edition signature scientific research

LEARNING GOALS

Students will learn:

- How to sequence information.
- The importance of peer revision and feedback.
- The role of the author and artist to inform us visually.
- How drawings and illustrations can support nonfiction writing.
- How attention to detail is important in creating and completing projects.

Fun Fact:

BIBLIOSMIA is the enjoyment of the smell of old books!

Timeframe: 1 hour

Students will paste writings and all drawings/illustrations into the book, finishing up any remaining pieces.

OWIS

INSTRUCTIONS

Step 1: Introduction

Building artist books requires patience and thoughtful planning. Students should take their time and use their checklist to be sure they have all the components before they begin.

Step 2: Gather Components

Have students gather all components of their books including writing. Show an exemplar of a handmade book with all components, including an "About the Author" section.

Step 3: Layout

Instruct students to lay out all their components, taking time to try different configurations. Check in with students who may need to make additional pieces, and add them to the book pages.

Step 4: Gluing and Finishing Touches

Have students glue or paste pieces carefully in their books, including additional collage materials and all supporting writing. When complete, have them check in with the teacher. *Be sure to dry the books standing up so that pages do not stick together.*

Teaching Tips:

- 1. Have a rubric or checklist for components of the book.
- 2. Students who have finished early can add a table of contents or a glossary of terms.
- 3. For students that are struggling, have them work in pairs.



CELEBRATION OF LEARNING

Timeframe: 45 minutes – 1 hour

Students will teach their peers and community about Maine owl species using their books as a visual aid.

Book Share

The Celebration of Learning is an opportunity for students to share their visual knowledge and answer questions about their owl species with the wider school community. There are many ways to host a Celebration of Learning. Possibilities include a library gathering with books displayed, a classroom share with younger students and parents, or an assembly with individual students sharing their books. Due to the detailed nature of the books, it is best to showcase them in a public spot where they can be seen and held.

SEL SKILL: RESPONSIBLE DECISION-MAKING

is the ability to make constructive and respectful choices about personal behavior and social interactions based on consideration of ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others. The Celebration of Learning is an opportunity to demonstrate knowledge acquisition visually and collaboratively. It is a chance for students to work together making strong choices to represent their creative work.



gr 4 Standards Addressed

STANDARDS: Please note, these are standards and skills that best align with the arts integration lesson plan and do not limit the use of others. Teachers should select standards that best align with their content approach.

CORE CURRICULUM

SCIENCE

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

ELA

CCSS.ELA-LITERACY.RL.4.1;RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

CCSS.ELA-LITERACY.SL.4.1

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacherled) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.L.4.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

ELL

All science units are designed with these four high leverage principles in mind:

- 1. Understand and address the academic language demands of the lesson.
- 2. Build upon students' background knowledge.
- Design & scaffold learning opportunities in every lesson that integrate reading, writing, speaking, listening.
- 4. Provide opportunity for student participation through meaningful discourse and structured collaboration.

NATIONAL CORE ART STANDARDS nationalartsstandards.org

VA:Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.

VA:Cr2.3.3a Individually or collaboratively construct representations, diagrams, or maps of places that are part of everyday life.

VA:Pr5.1.2a Distinguish between different materials or artistic techniques for preparing artwork for presentation.

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