

**Grade Level:**

1st to 3rd

Time:

30 Minutes

Season:

All

Objectives:

Students will be able to...

- Describe scientific art and give examples
- Create a piece of scientific art on a specific topic

Materials:

- Drawing Lesson Reference, attached (printed)
- Drawing Lesson slideshow, attached
- Art supplies

Optional:

- Non-fiction picture book
- Map
- Plant identification or reference book

Scientific Art Drawing Lesson

OSD - Scientist in the Classroom

Summary

Students will investigate why scientific art is created through exploration of real-world examples. Students will identify characteristics of scientific art and use scientific art to learn about a subject. Students will practice creating their own scientific art.

Introduction

What is Scientific Art?

Science is the study of the world around us, from the smallest building blocks to the great expanse of space.

Art is the depiction of thoughts, feelings, and ideas through a visual or auditory medium.

Scientific Art is a partnership between science and art. It helps scientists communicate complex ideas and topics in an interesting and accessible way.

Scientific art is all around us. Picture books can be scientific art, maps are scientific art, even reference materials like a bird ID book are scientific art.

A Look at Scientific Art

What makes scientific art different than other types of art? A picture is not inherently scientific. Scientific art should be accurate to the subject including colors, patterns, habitat. Scientific art should also convey information such as habitat, range, parts, etc.

Using your own materials, or images marked with an anchor in the materials provided, see if students can identify which images are art and which are scientific art. How do you know which is art and which is scientific art? What is each piece of scientific art trying to teach?

Note that many have labels, but not all of them. This is important to point out as this lesson connects with our Nisqually Watershed Festival Poster Contest, and including words on the poster will disqualify art from the contest.

Learning About Birds Through Scientific Art

Referencing the images marked with an acorn, answer the following questions with your group. Answers may vary but should generally reflect the answers italicized.

- What is a bird? *Two-legged animal characterized by feathers, beaked jaws, hard-shelled eggs, and a specialized skeleton*



Introduction cont.

- What are its parts? *Birds are made up of several parts. The **wing** assists the bird in movement through air and water, producing lift and thrust in flight or used as flippers underwater. The **beak** is made up keratin (the same stuff as your fingernails!), can be a variety of shapes and sizes, and is used for feeding and courtship. The **tail** is used to help steer the bird in flight and may be bright in color or pattern to attract a mate. The **feet** are scaly and sometimes modified to assist the bird in movement (such as webbed toes on waterfowl) or hunting (such as talons on raptors).*

Native vs. Non-native Birds

Birds that live in an area naturally are called native birds. Birds that live in an area as a result of human intervention are called non-native birds. Native birds fill a unique role in their ecosystems, and many have cultural significance. Non-native birds are often brought in to control pests, are released pets, or are set loose for hunting. However, non-native birds can compete with native birds for resources like food and space.

Have you ever seen any of these birds?

Where?

Drawing Lesson

Every bird is unique, and each drawing will have different shapes, colors, and patterns. Below is a series of basic step-by-step instructions on how to create a piece of bird-themed scientific art. You may use the attached slideshow to accompany these instructions.

NOTE: These directions come directly from the Nisqually Watershed Festival Poster Contest Entry Form. If your group is not entering the poster contest, you may modify these steps to be less specific.

1. First, choose a native bird. Remember that it should live in the Nisqually Watershed!
2. Next, loosely plan where you want the main bird or birds to go on the page. Remember that you typically want the birds to take up a lot of space on the poster!
3. Add features to your bird—does it have wings outstretched? A long or short tail? What shape is its beak?
4. Now connect the shapes, erasing extra lines, to define your bird shape.
5. Now add details to your bird. Does it have patterns, patches, or markings?
6. For the background, think about where your bird lives. What type of habitat does it live in? What would be some things near your bird?
7. Add color to your art! Remember that lots of bright colors will make your art pop!



Closing

Scientific art is everywhere, and it's inspired by the world around us. We learned about how science and art work together to share information and even made some of our own scientific art!

Encourage students to submit their art to the Nisqually Watershed Festival Poster Contest. More info and a copy of the entry form can be found at:

nrep.nisquallyriver.org/Nisqually-watershed-festival

Vocabulary to Know

- *Scientific art* – a creative way to communicate scientific ideas
- *Bird* – a two-legged animal characterized by feathers, a beaked jaw, hard-shelled eggs, and a specialized skeleton
- *Beak* – a bony structure covered in keratin. Beaks can be a variety of shapes and sizes to suit the bird's feeding and breeding habits
- *Tail* – stiff feathers at the rear of the bird, used to steer in flight and sometimes brightly colored to attract a mate
- *Feet* – often scaly and sometimes modified to assist in moving or hunting, such as webbed in waterfowl or with talons in raptors
- *Native birds* – birds that live in an area naturally
- *Non-native birds* – birds that live in an area due to human interaction

Resources

- Cornell Lab of Ornithology (2025). *All About Birds*. <https://www.allaboutbirds.org/>
- Sibley, D. (2013). *The Sibley Guide to Bird Life & Behavior* (C. Elphick & J. B. Dunning, Eds.). Alfred A. Knopf.
- Paulson, D. R., Morse, R., Aversa, T., & Opperman, H. N. (2016). *Birds of the Puget Sound Region: Coast to Cascades*. R.W. Morse Company.
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