

Botanical Illustration with Watercolor Activity

ONLINE Collection: Herbarium, prairie flower photographs in field guide

Objective: students will understand that the anatomy of flowers as depicted in watercolor drawings is used to illustrate written scientific descriptions, and, from the hands of an artist, is an artistic composition as well.

Audience: 1) botany and art students 2) watercolor artists and students 3) upper elementary to middle school students and their teachers.

Time Required: multiple class periods

Materials:

sketch paper, hard pencils, and eraser

tracing paper

painting paper and watercolors and brushes

tissue knife or razor blade to dissect plant material

fresh plant material (picked or purchased); or field trip to a garden, prairie, meadow, etc.



Motivation:

Read this description of an aster species from a Drake University Web site to students.

“Flowering heads have from 8 to 30 (average 12) blue to lavender, or white, ray flowers that surround a central cluster of dark lavender disc flowers. Involucral bracts are long and lance-shaped, with green tips. Leaves attach individually. The lower leaves are broadly heart- or arrow-head-shaped, and have winged petioles. Upper leaves are narrowly lance-shaped and attach without petioles. Lower leaves measure up to about 15 x 6 cm, and have conspicuous teeth. Upper leaves measure up to 4 x 1.5 cm, and have either smooth margins or some inconspicuous teeth. Stems and leaves are covered with very small hairs. This species occurs in woodland settings from September through October. Native to N. A.”

Ask how many students can visualize the plant from the description. Ask in what ways an illustration, either photographic or painted, might help readers understand the text better if they are unfamiliar with the species. Discuss how accurate a scientific drawing needs to be. How can an artist achieve accuracy when drawing from live plant materials? Are there tools available, such as ruler, compass, grids to help artists be accurate?

Procedure:

- Students will choose a plant and draw it with a hard-lead pencil onto tracing paper. They will measure and plan an arrangement of a plant pose onto it to fit all the parts while maintaining a pleasing composition. Use botanical sources for examples. All their erasures and corrections will take place on this sheet until their drawing is satisfactory in scale, proportion, shape, and accuracy.
- The second step is to darken with softer lead pencil the lines of the drawing on the BACK of the tracing paper. This will act as carbon paper for transferring their drawing to final paper. They will place the tracing paper over the final paper, use a hard, sharp pencil to draw over the main lines of the drawing again, transferring a light line onto the lower paper.
- Students may experiment with painting washes, shading, and textures with small brushes. Use scratch paper of the same weight and texture as the final painting paper. Consult botanical drawing reference sources for examples and techniques for creating washes, shading, and textures.
- Painting begins in watercolor with small brushes and light washes. Any white areas should be unpainted white paper. Build up layers of wash. Let surface dry before adding textures. A fan or hair-dryer can speed drying.

Notes:

1) If using live plant materials, it will not be possible to show all phases of the plant simultaneously (bud, bloom, fruit), and it may not be possible to show roots if plant has been cut or is in the ground. Adapt your drawing to show only those parts visible. Pay attention of number and type of leaves, petals, length and girth of stems (internodes), and colors. Consult leaf type diagrams and anatomy graphics.

2) Preliminary self-assessment: between the sketch and final drawing phases, students should compare their drawing of the identified plant to a **written** description of their plant, found either online or in a field guide. All the applicable basic parts (leaves, stem, bloom) should appear. Check for accuracy, scale, and proportion. This written description can be used as label copy for their display.

Publication:

Mount the finished paintings and display them with labels telling the name of the artist, name of plant (common and Latin names), medium, date, and text description. Have student(s) create a wall panel describing botanical illustration as an introduction for viewers at the beginning of the exhibit.

Assessment:

Students should be able to explain the purpose and characteristics of botanical illustration, how their painting meets that purpose and those characteristics, and how a botanical illustrator is both a scientist and an artist. They should also identify the parts of their plants, how these parts function, and (optionally) how they are adapted to the plant's environment. This assessment can be oral or written.

Illinois State Board of Education Goals and Standards Addressed:

Visual Arts: Goal 25: understand the processes and materials of art

26.B.2d Demonstrate knowledge and skills to create works of visual art using problem solving, observing, designing, sketching, and constructing.

26.B.3d Demonstrate knowledge and skills to create 2- and 3-dimensional works and time arts (e.g., film, animation, video) that are realistic, abstract, functional, and decorative.

26.B.5 Common for all four arts: Create and perform a complex work of art using a variety of techniques, technologies, and resources and independent decision making

Science: scientific illustration as a career

12.A.1a Identify and describe the component parts of living things (e.g., birds have feathers; people have bones, blood, hair, skin) and their major functions.

12.A.3c Compare and contrast how different forms and structures reflect different functions

12.B.2b Identify physical features of plants and animals that help them live in different environments

References:

Blunt, Wilfrid and William Stearn. 1992. *The Art of Botanical Illustration: An Illustrated History*. Dover Publications, Inc.

Saunders, Gill. 1995. *Picturing Plants: An Analytical History of Botanical Illustration*. University of California Press.

West, Keith R. 1996. *How to Draw Plants: The Techniques of Botanical Illustration*. Timber Press.