

Field Notes

Method

Students will practice taking field notes while observing an invasive plant.

Getting Ready

1. Find samples of field notes on the Internet or at a library. See references in *Finding Out More!* on page 37.

Introducing the Activity

Sketching is a great pastime, but that's not all it is! Sketching can help people relax, record valuable information, express deep feelings, and remember details. Sketching is particularly valuable for people who enjoy spending time outdoors.

Field biologists engage in a more precise form of sketching and writing called field notes. Writing good field notes is a skill that can only be developed and improved through practice. The notes that field biologists make record their observations so they can remember them more fully and refer back to them as needed. Field notes can provide qualitative and quantitative data for use in asking and answering research questions.

Doing the Activity

1. **Think about the value of field notes.** For hundreds of years, scientists, naturalists, and explorers have been making sketches and jotting down observations to document new species, rare species, and unusual variations in species. Lewis and Clark didn't just explore, they documented amazing plant and animal life for people who would never see the western areas of our continent! Look at the works of Lewis and Clark, Audubon, or other early explorers, which are available on the Internet and in books.
2. **Look at the samples included in this activity.** See pages 37 – 38.
3. **Try making field notes.** Ask students to find “weedy” plants near their homes and take field notes about them. Alternatively, you can conduct this activity on the school grounds or on a field trip. Tell students to model their field notes after the samples you looked at in books, on the Internet, and on pages 37 – 38. Sketches should include distinguishing features, color attributes, and different angles. Narratives must accompany their sketches. They should describe how the plants look, where they live, and what the students observed. Younger students can dictate their narratives to older student helpers.



Objectives

- Discover the value of natural history sketches and notes.
- Observe and describe a plant using a basic field note format.
- Practice and improve observation skills (collecting information, quantifying information, and observing patterns in nature).

Grades

2 – adult

Group Size

Individuals

Activity Time

One 50-minute period plus homework

Setting

Classroom and outdoors

Materials

- Internet access or reference books
- Writing surfaces
- Notebooks
- Pencils

Connections

See next page.

Academic Standards

Grades 2 – 4

- English Language Arts: B.4.1
- Science: A.4.3, C.4.5

Grades 5 – 8

- English Language Arts: B.8.1
- Science: A.8.3, B.8.5, C.8.2

Grades 9 – 12

- English Language Arts: B.12.1
- Science: A.12.6, B.12.4

Scout Connections

- Boy Scouts: Environmental Science
- Junior Girl Scouts: Hiker, Outdoor Creativity, Wildlife, Your Outdoor Surroundings
- Cadette and Senior Girl Scouts: Wildlife

Assessing the Learning

Students should complete self-evaluations of their field notes. The evaluations should list what they did well, what they liked about the process, and what they could improve. They should also evaluate at least two of their classmate's field notes. Encourage students to learn from each other and to make constructive comments.

Grades should be based on the criteria established in class. Field notes should include these features:

- Name of observer
- Date and time
- Specific description of the location so someone else can find the same area (e.g., trail, road, county)
- Written description
- Sketch of plant in color or with color notations

Extending the Learning

Compare botanical illustrations with artistic representations.

People sketch and paint plants for a variety of reasons. While early botanical illustrations were sometimes more art than science, they are very different today. Botanical illustrators know that their art may be used as an aid to identification. Colors must be accurate and plant parts must be drawn to scale. Other artists who paint plants might be interested in capturing the essence of the plant. They don't need to include every plant part. They are free to emphasize the flowers or whatever they find aesthetically pleasing. Challenge your students to find samples of early botanical drawings, current botanical illustrations, and artistic representations of the same plant on the Internet. Compare them. Ask students which type of art they would prefer to create.

Create personal field guides. Each student can make a field guide to common plants in your schoolyard or a nearby natural area. Suggest students use a spiral notebook. Dedicate one page for each plant. Include a sketch, leaf rubbing, or pressed leaf. Use tape to attach seeds or twigs. Students should add hints and notes that help them remember each plant.

Finding Out More!

The Boy Who Drew Birds: A Story of John James Audubon. Jacqueline Davies. 2004. This book tells of the young Audubon and how his youthful hobbies inspired his life work.

Drawing from Nature. Jim Arnosky. 1982. This book shows how to draw water, land, plants, and animals.

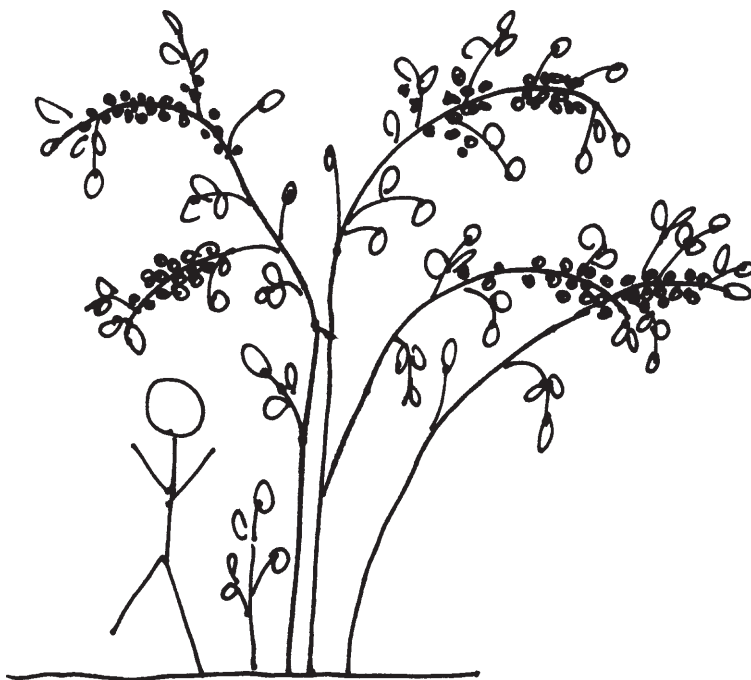
The Journals of Lewis and Clark. American Philosophical Society. 2005. This online journal chronicles the expedition. <<http://amphilsoc.org/library/exhibits/treasures/landc.htm>>

Plants on the Trail with Lewis and Clark. Dorothy Hinshaw Patent. 2003. This book describes the journey of Lewis and Clark throughout the western United States. The focus is on the plants they cataloged, the plants' uses for food and medicine, and the plant lore of Native American people.

Student page – elementary

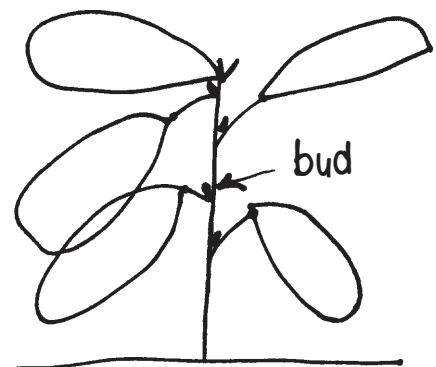
I don't like buckthorn. It is everywhere in the woods behind my house. The little trees grow close to each other and trip me.

Erin Mittermaier
November 3, 2005
N129 W17325 Arthur Court
Germantown, WI



My dad

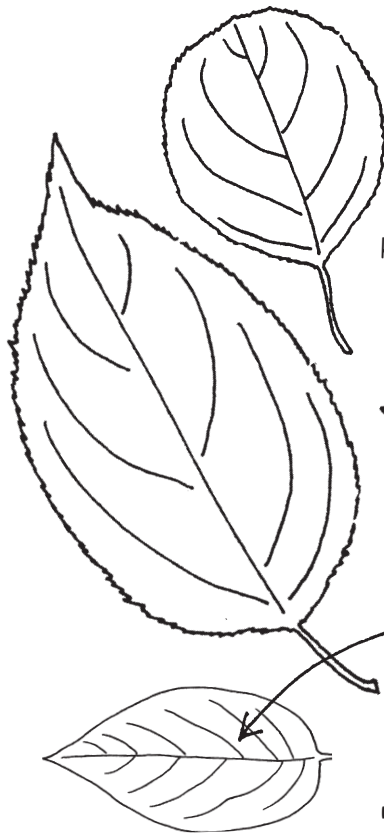
This is the smallest buckthorn tree I could find.



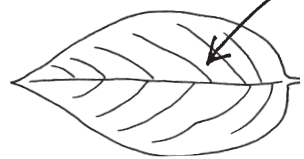
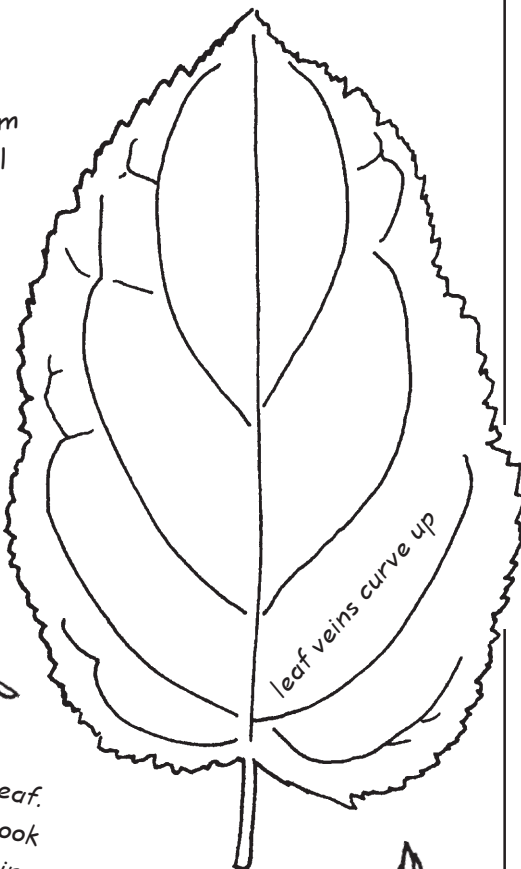
One tree was taller than my dad. The tall buckthorn trees have black berries. The berries are at the top. There are so many they make the branches hang down.

Today is sunny with temperatures in the mid-60s. The wind roared all last night and blew most of the leaves off of the trees. It's easy to see the non-native trees and shrubs in my backyard now, because they are the only ones with green leaves! I'm determined to find out more about buckthorn today. I really want to know how it got its name!

N. Mittermaier
November 3, 2005; 1:30 pm CST
NE Corner of Lancelot & Camelot
in Germantown, WI



All 4 of these leaves are from buckthorn shrubs in my yard. I know they are all common buckthorn because the leaves have teeth, but just look at the different sizes and shapes.



This leaf is not a buckthorn leaf. Now I understand what the book meant about leaf veins. The veins on all the buckthorn leaves curve up toward the tip of the leaf. The veins on this leaf just point to the edge of the leaf.

THORNS

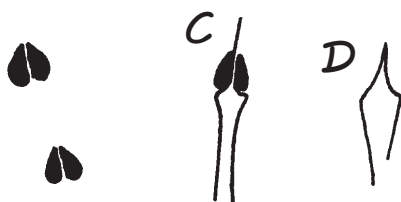
I looked at the end buds on 10 buckthorn shrubs.

- 4 didn't have any sign of thorns (A & B)
- 3 had "thorns" longer than the buds (C)
- 2 had "thorns" that barely stuck out from the buds
- 1 had a thorn that was hidden by the buds (D - buds removed)



The BUCK in BUCKthorn

I think I found the reason for the name. Look at the end buds on twig B. Now look at the deer footprints I found in the mud.



Some of the buds are opposite each other (B) and some are alternate (A).