



# Treasure Chest of Science

**Grade Level:** Upper Elementary

**Subjects:** Science, Social Studies, Math  
Language Arts

**Objectives:**

Students will be able to:

- Create a science journal,
- Use appropriate tools to make scientific observations,
- Demonstrate how to record scientific information in the journal,
- Define botanist and ecologist,
- Become familiar with the journal of a professional scientist.

**Teacher's Notes:**

- Viewing the *Introduction* and the second scene, *A Natural Connection*, is strongly encouraged in order to introduce Dr. Braun and her sister and to provide context to their lives and work.
- The *Mineral Springs* scene contains a brief anecdote explaining the history of the resort and E. Lucy's attitude towards the entertainment the resort provided. Teachers should preview this part of the film and decide if it is appropriate and relevant to the lesson.
- The concept of **plant succession** is introduced during this scene.

**Summary:** After viewing the *Mineral Springs* scene from the film, **A Force for Nature: Lucy Braun**, students will create and keep a science journal/notebook.

**Materials:**

- Composition book, spiral notebook, or three-ring binder
- Pens, pencils, crayons, markers, and stickers
- Natural objects for observation (leaves, sea shells, rocks, fossils)
- Sample Student Data Sheet, attached

**Introduction:**

Scientists like Dr. E. Lucy Braun create **journals** and **notebooks** which contain **data**, observations, and findings from their research. These collections of information guide future research and serve as documentation of past research. Their journals contain a variety of materials such as photographs, drawings, charts, tables, measurements and detailed notes.

**Procedure:**

1. Choose a natural object that all students can **observe**, such as a flowering plant or tree on school grounds, or something brought into the classroom like acorns, lichens or moss. Students will make observations and collect data on their natural object. Have students share their research and discuss what data they might have missed. Students may also write a paragraph describing their object or plant using the data they collected.
  - a. *Option 1:* Provide appropriate tools for students to make their observations (ruler, scale, paper, pencil, hand lens). Let students decide what observations to make and what kind of data to collect.
  - b. *Option 2:* Provide a data sheet with sections that students can fill in such as length, mass, textural observations, location, species, color, and if outside, temperature, wind, and cloud cover.
2. View the *Mineral Springs* scene from the film, **A Force for Nature: Lucy Braun**. After viewing the film segment, lead the class with the following discussion questions:
  - a. What is a **botanist**? (someone who studies plants)
  - b. What is an **ecologist**? (someone who studies the interaction of organisms and their environment)

- c. How did E. Lucy and her sister Annette make their observations?
  - d. What types of data did they collect?
  - e. How did E. Lucy and her sister organize and keep their data?
3. Have students create their own science journal/notebook where they can record observations they make and data they collect. Students can then record in their journal/notebook on a regular basis.
    - a. Journals/notebooks can be a composition book, spiral notebook, or loose paper in a three-ring binder.
    - b. Each student's journal/notebook will be unique but should include: student's name, teacher's name, class and school, a decorated cover, date, page numbers and vocabulary with definitions.
    - c. Journal/notebook entries will be unique to each student. Let students know that there is not a "right" or "wrong" way to create their entry, it is just a way for them to remember and recall correctly the observation, experiment, etc. Students can write questions they have and the answers they come up with, predictions, ideas, and observations. They can utilize tables, charts, graphs, maps, and their own sketches within their journals/notebooks.
  4. Students may need prompts to get started journaling. Options could include:
    - a. Writing prompt based on a question written on the board.
    - b. Observing an object or scene, indoors or out. Repeat later in the year to see change over time.
    - c. Assigning one specific kind of observation each day for a week using the same object. (Use an animal skull, measuring one day, weighing the next, counting teeth and so on.)
    - d. Students can keep track of new vocabulary words with definitions in the journal.
    - e. Have students record lab activities in their journal, then use those notes to complete a lab report.

## Extensions:

1. Have students observe a natural process such as decomposition, weathering, erosion, or deposition. What kind of data would they collect on that process and how could it be recorded in their journal?
2. Minute 52 – 53 of the scene, *The Road Less Traveled*, from the documentary focuses on Dr. Braun's herbaria. The importance of it and where it went for storage after her death is discussed. After viewing this segment, have students collect and press leaves or whole plants to create a classroom **herbarium**. Discuss what future classes will gain from this type of collection. Instructions for the creation of an herbarium can be found here: <https://askabiologist.asu.edu/activities/create-your-own-herbarium>



Lucy Braun stands next to a plaque dedicating Lynx Prairie in Adams County, Ohio, as a National Natural Landmark in 1967. Courtesy, Lloyd Library and Museum

## Sample Student Data Sheet

Observer(s): \_\_\_\_\_ Date: \_\_\_\_\_

Location: \_\_\_\_\_ GPS: \_\_\_\_\_

State: \_\_\_\_\_ County: \_\_\_\_\_ Township: \_\_\_\_\_

Temperature: \_\_\_\_\_ Precipitation type\*: \_\_\_\_\_ Cloud Cover\*\*: \_\_\_\_\_ Wind Speed: \_\_\_\_\_

\* 0 = none; 1 = mist/fog; 2 = rain; 3 = snow; 4 = other

\*\* 1 = clear skies; 2 = 25% cloud cover; 3 = 50% cloud cover; 4 = 75% cloud cover; 5 = 100% cloud cover

Object description: \_\_\_\_\_  
\_\_\_\_\_

Length: \_\_\_\_\_ Width: \_\_\_\_\_

Mass: \_\_\_\_\_

Texture: \_\_\_\_\_ Color: \_\_\_\_\_ Shape: \_\_\_\_\_

Draw/Sketch object in the space below:

