

Scientific Observation and Journaling for Grade 4

Lesson 1: Lobed or Toothed Leaf



Teacher Preparation Bring leaves to class, one for each student, or take students outdoors to pick them. All leaves should come from the same kind of tree or bush. Store them in plastic bags in the refrigerator until you're ready to use them.

Optional: Cut one branch to show how the leaves are arranged.

Materials For each student, one leaf, pencil, colored pencils, science journal

Time One or two class periods

Procedure

1. **What do we know about leaves?** Draw a web on your board. Ask students to share what they know about leaves as you record answers.
2. Students **observe** and you **write a list of descriptive words** on the board as they volunteer their observations. Use guiding questions, for example: *Describe the shape, color, edge and veins of your leaf. What does it smell like? What sound does it make when you drop it? How does it feel to your fingertip (rough, smooth, bumpy)? Does it have a pattern? Is it symmetrical?* Then students **write seven or more words** in their journal.
3. **Count and measure:** On a sheet of grid paper, have the students **trace** their leaf at the top of the page. Ask them to **count** as many features as they can identify—for example, the petiole, lobes or teeth, main veins, and colors. Have them **measure** the length and width and record as decimal numbers and **estimate** the area of the leaf.
4. **Demonstrate scientific drawing.** Then have students **draw** their leaves in the journals, paying careful attention to the shape, edge, petiole, and veins. *Look closely! Draw what you see.*
5. Have students **label** their drawings—*petiole, blade, veins, lobed or toothed edge*—and use colored pencils to **color** the leaf accurately.
6. Have students practice **enlarging and reducing:** using the same paper that the leaf was traced on, draw the leaf at twice its actual size, and then draw it at half its actual size.
7. **Reflection.** Practice making **analogies.** *What does your leaf look like? What does it remind you of?* Write a list of answers on your board and then a sentence or two: “The shape of the leaf reminds me of _____.” “The design on the leaf looks like _____.” Also encourage students to write about their **feelings** about the leaf or the activity and a **memory, question** or **new discovery.** Students should **write one or more paragraphs or a poem** on their journal page.
8. **Clean-up** by collecting leaves to compost.
9. **Assess students’ work** by having them complete the student rubric. Then complete it yourself for comparison. Grading is optional.
10. **Close** with a class discussion. *What did you like about this activity? What did you learn? Was anything difficult or confusing? How would you do it differently next time?*