



In a Bit of Leaf

Introduction

In the book *Jo MacDonald Hiked in the Woods*, author Mary Quattlebaum introduces children to the trees, plants, and creatures in a forest and models safe, courteous behavior in the wild. In this activity, children use observation and several scientific tools to examine a leaf, pine needle, and fern frond.

Materials Needed

- ◆ One green deciduous leaf and pine needle per child
- ◆ One dead leaf per child (optional)
- ◆ One bracken fern frond per class (optional)
- ◆ Scientific notebook (3-8 pieces of paper stapled)
- ◆ Pencils
- ◆ Magnifying glass
- ◆ Microscope
- ◆ Slide and slide cover

Procedure

1. Tell children that they are scientists and will be making careful observations of leaves using three types of scientific tools (eye, magnifying glass, and microscope).
2. Ask them to draw one big circle on each page of scientific notebook.
3. Give each child one leaf. Read aloud the section "Trees Make Their Own Food" to explain why the leaves are green. Have children examine leaf with hands and eyes. This is Observation 1. Ask what they feel/see or "observe" (for example, smooth on one side, rougher on the other? Spots or discolorations?). Have them list and then draw their observations inside the first circle in notebook. The eye is usually the scientist's first tool.
4. Have children observe a bit of their leaf with a magnifying glass and draw what they see inside the second circle in notebook. This is Observation 2.
5. Place a bit of leaf on slide with cover slip. Have children observe with microscope and draw what they see inside the third circle of notebook. This is Observation 3.
6. Have children compare their different observations. What are similarities and differences between the three drawings for leaf? For pine needle? Now, compare the leaf to the pine needle.
7. Explain that Jo MacDonald was able to see many trees, plants, and leaves with her naked eye. Some plants are so tiny, though, that you can see them only with a microscope—but they are very important. These microscopic plants are an important part, especially, of the ocean food chain.

Key Concepts

- ◆ Students answering questions using scientific resources combined with observations.
- ◆ Plan and conduct a simple systematic observation or investigation.
- ◆ Use simple instruments such as magnifier and microscope to gather data and extend the senses.
- ◆ Communicate investigations that might be drawn or spoken as well as written.
- ◆ Tools help scientists make better observations, measurements, and equipment for investigations.

Nature Connections

- ◆ Examine a dead deciduous leaf by repeating steps 2-6 in procedures above. Have children compare their observations/drawings of green and dead leaf. What are similarities? Differences?
- ◆ Ask children to look at/touch fern frond. What are differences from/similarities to the deciduous leaf? Do they see spores on underside of fern leaves?

Additional Resources

- ◆ **A Tree for All Seasons** by Robin Bernard
- ◆ **A Tree Is a Plant** by Clyde Robert Bulla, illustrated by Stacey Schuett

