



Lesson 1 - Measuring Rainfall

Measuring Rainfall

Estimated Lesson Time: 25 minutes

Introduction

Rain is precipitation in the form of liquid water drops with diameters greater than 0.02 inches. Rainfall is easy to measure by recording how much water collects in a rain gauge. A rain gauge is an instrument used to measure how much rain has fallen. For best results, make sure to place your rain gauge at ground level in an open area. Different types of rain gauges include:

- Direct read rain gauges - a tube that collects rainfall and is read manually. It uses a measuring tube connected to a funnel that collects rain. Some have a smaller inner tube to measure rain in hundredths of an inch.
- Tipping bucket rain gauges - a small bucket that tips (and empties) whenever a certain amount of rain fills the bucket. The water is collected by a funnel then flows into the tipping bucket. The bucket works like a seesaw with a container on each side. A magnetic switch counts the number of tips, which is converted to rainfall accumulation.
- Weighing gauges - rainfall is collected into a storage bin on a scale; the weight of the water determines how much rain fell. Water may be lost through evaporation.
- Heated rain gauges - gauge is heated to measure snow and ice.

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Activity: Make A Rain Gauge

Materials

- 1 Soda Bottle, 2-liter
- 1 Mat knife or scissors
- Duct tape
- 1 Permanent marking pen, fine-tip
- 1 Cup of pebbles or marbles
- 1 Ruler

Construction

1. Discard the bottle cap. Measure up 7" from the bottom as shown, and then cut the soda bottle into two pieces. Do not discard the top piece. Cut a 1" flap on one side, 2" below the top cut of the bottle. This will allow you to pour water out of the gauge to return it to zero after rain has been collected and measured.
 2. Add a cup of pebbles or marbles to the base of the soda bottle.
 3. Turn the top of the soda bottle over to make a funnel. Insert it into the bottle base. Use duct tape to join the two pieces.
 4. You will measure rain in centimeters or inches. Measure up 3" from the base and draw a line with the permanent marking pen. Label this baseline "0." From baseline 0 measure and mark each inch measurement with a line. Mark and label six lines.
 5. To use the rain gauge, add water to the zero line. It will need to be refilled to zero after a dry spell. Place the rain gauge outside in an open area (no overhangs) where it will not be disturbed while collecting rain.
- NOTE: Add more pebbles or marbles for stability if you live in a windy area.

