



Activity: The Rain Gauge

MATERIALS:

Scissors

Ruler

2-liter soda bottle

Transparent tape or double back tape

1-cup aquarium gravel

Tap water (this will be added at home)

OBJECTIVE:

The student will make and use a rain gauge, an instrument that is used to collect and measure falling water (precipitation). It measures the depth of water that would cover the ground if the rain did not drain away or evaporate. Discuss the effects of water conservation practices as it relates to information gathered by rain gauges.

Vocabulary:

Precipitation: vapor that condenses into clouds and falls on the land and water in the form of rain, snow, hail or sleet. Eighty-five percent of all precipitation falls into the ocean.

PROCEDURE:

1. Discuss the History of Rain Gauges – bucket, cylinder, funnel
Let the students know that the Rain Gauge was first used in India and that it was 2000 years ago. The rain gauge has not changed very much in the 2000 years. Mention the use of computers for long distances. (SOURCE: Dr. Mel's book – The Complete Idiot's Guide to Weather- Book pages 29-39 and 288-289)
2. Determine why the information used from Rain Gauges is so important
Discuss how people can use the information (IE: farmers, filter plant, travel agents)
3. Concrete the idea with the students that rain gauges are historic information not predictive. The history will give an idea of average but not predict the daily.
4. Cut (and discard) the top off the soda bottles so the bottle is 8" tall. (Figure A)
5. Pour the gravel into the bottle. (Ask why you need the gravel – to use as a weight and to fill in some of the space need to make a level starting point).
6. Tape the ruler vertically to the in side of the bottle, with the zero end just resting at the top of the bottle line above the gravel.
7. Pour water into the bottle until it touches the zero end of the ruler.
8. Set the bottle outdoors and document the amount of daily rainfall. During periods of no rainfall, add water as necessary to keep the starting water level even with the top of the gravel. (Evaporation)
9. Students may also wish to place this in the shower to measure their water use. **(Alternative)**
10. Discuss the ways in which the students can use a rain gauge, what they should do with the results.
11. Have the students gather weekly and monthly information and share with other students. They can also chart the information.



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12. Have students compare answers to others in the class, to information on weather reports, to historical data available in the newspaper (or other source).

Discussion Questions – see sheet below:

SEE ATTACHED SHEET

Follow the diagram to see how to cut the 2 liter bottle

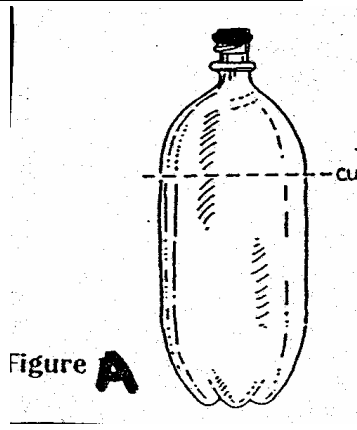


Figure **A**



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The Rain Gauge Lesson

Student name: _____

Discussion Questions:

Why is it important to measure rainfall?

What happens if it rains too much? If it does not rain enough?

Why is Water Conservation so important?

Where does rainwater go?

How do we collect rainwater? Can we drink it? How can we use it?

What happens to the rainwater we collect?

Why did we place gravel in the bottom of our rain gauge?

Why did we fill it with water up to the bottom of the ruler?

