



## ***Eco-Wonders***

### ***Science – Grade 4-6***

**Students make a rain gauge and a pinwheel in order to measure rain and wind, and keep track of their observations in a log.**

Materials:

- Thermometer
- See following pages for additional materials

Instructions:

Discuss the weather with your students. How do people, plants, and animals act in different kinds of weather? For example, do you notice that ducks are out and about during the rain? Or maybe you see that people run and hide when it rains. What happens if it is windy? How do plants react? The best way to learn about weather is to watch it. You can become weather-wise by creating and using your own weather instruments. In this activity, students will measure and observe precipitation, wind, and temperature.

See following pages for rain gauge and pinwheel instructions.

Use the rain gauge and pinwheel to measure the weather. Also, use a thermometer to measure the temperature. Have students record their measurements in the weather log (see following page). Then watch how people, plants and animals act in the weather and record those observations as well. Graph the results to see changes over time. Also, make predictions about tomorrow's weather, then look at newspapers or listen to the television news for forecasts of tomorrow's weather. Have students compare those to their own predictions. Were they correct?

See Lesson Enhancements on following pages for additional ideas.



### **Rain Gauge Instructions:**

#### **Materials:**

- Narrow olive jar or other clear jar with straight sides and flat bottom
- 2-liter plastic soda bottle
- Scissors
- Wide clear tape
- Ruler with ½ inches marked

Make a rain gauge to measure precipitation. Precipitation is rain, snow, sleet, and hail – all forms of weather that fall to the earth. Place your rain gauge outside where it won't be disturbed. Find a way to keep it upright. After it has rained, read the rain scale on your rain gauge to record the amount of rain that fell. If it rained overnight, be sure to check your rain gauge early in the morning so that water doesn't have time to evaporate.

1. Cut the top off of a 2-liter plastic soda bottle.
2. Attach a scale or ruler, marked to the half inch, to a clear jar with wide clear tape. Make sure that the 0 mark is lined up with the bottom of the jar or bottle.
3. Put the bottle top upside down in the jar to serve as a funnel.
4. Your rain gauge is ready to measure rainfall!



### Pinwheel Instructions:

#### Materials:

- Square construction paper (8.5" x 8.5" is a good size)
- Pencil (with attached eraser)
- Straight pin (with flat head or push pin)
- Scissors

Wind is air moving across the earth's surface. Sometimes the wind is gentle, but sometimes it is very strong and destructive. Winds are named by the direction from which they blow. If a wind blows from the west to the east, it is called a west wind. A north wind blows from the north. It's hard to describe wind, but you can see its effects. If you have ever had your hair blow in your face, had a paper you were holding blow away, or watched a leaf float by, you've seen what the wind can do.

Make a pinwheel to help you observe the wind. The pinwheel won't tell you how fast the wind is blowing, but you can look at it to guess the wind's speed. Is your pinwheel moving fast? Slow? Kind of fast? Not at all?

1. Draw diagonal (from corner to corner) lines on your paper square.
2. Use your scissors to cut along diagonal lines about two-thirds of the way to the center. Fold one of the corners to the center point.
3. Then repeat for the other three corners. Overlap all four points at the center. Stick the pin through all the layers of the paper and into the pencil eraser. Now your pinwheel is ready for the wind.





**Weather Log:**

Date/Time	Temp.	Precipitation	Wind Speed	People, Plant, Animal Behavior	Weather Forecast for Tomorrow



**\*\* Lesson Enhancements:** Discuss the following with the students.

- What kind of weather did they observe?
- How did the weather change throughout the course of a day? Was it cooler in the evening or in the afternoon? What part of the day was the warmest?
- How did people, plants, and animals act during this weather?
- What kind of pattern in the weather did you notice? For example, does it usually rain during certain temperatures?
- How does weather help show that everything is connected to everything else?
- What was the average temperature for the week? How does the average temperature change over the course of a year?
- What is your favorite kind of weather? In what kind of weather do you like to be outside? What kind of outside activities are good for different types of weather?
- A meteorologist studies the weather and then tries to forecast it. Forecasting means predicting what the weather will be. Describe a time when you relied on a weather forecast to make a decision.