Grade 2 Earth Systems, Structures, and Processes

Focus on: Weather Instruments

This lesson is meant to support the unit on Earth Systems, Structures, and Processes. It can be done to generate background knowledge prior to teaching the unit, during the unit to reinforce lessons, or as a follow up to the unit to increase the retention of information. How you guide your students will depend on the information you have already taught and the information you want to introduce. If your school garden does not have any weather instruments, talk to your garden coordinator to see how you can help get the instruments for the garden.

Clarifying Objectives:

2.E.1.2 Summarize weather conditions using qualitative and quantitative measures to describe:

- Temperature
- Wind direction
- Wind speed
- Precipitation

2.E.1.4 Recognize the tools scientists use for observing, recording, and predicting weather changes from day to day and during the seasons.

Key Vocabulary:

- Weather Instruments
- Temperature
- Soil Thermometer
- Degrees Celsius (˚C)
- Degrees Fahrenheit (˚F)
- Wind Vane
- Anemometer
- Rain Gauge
- Wind direction
- Wind speed
- Precipitation

Focus Question(s):

What weather instruments do we have in the garden? What are they used for?

Materials:

School Garden
Weather Instruments in the garden (rain gauge, wind vane, soil thermometer)
Science Notebooks

Activities:

1. Review what students already know about weather instruments.
2. Tell students we are going to search the school garden for weather instruments.
3. Remind the students to walk in the garden so no people, plants, or animals are accidently hurt.

Guiding Questions:

- What is this instrument?
- What does it do?
- How does it work?
- Why do gardeners or farmers use this instrument?

4. Have the students search for weather instruments. When they find them, they should sketch them, and write about them in their science notebooks. 5. After students have located them. Take a garden tour of the instruments. Discuss each one using the Guiding Questions. 6. RAIN GAUGE: If the garden gets at least 1" of rain each week, it is not necessary to water the garden. This is a very helpful tool for gardeners and farmers! 7. SOIL THERMOMETER: Soil Thermometers are very important for 2 reasons. Seeds need the soil to be the correct temperature in order to germinate. Gardeners can check the temperature of the soil to see if it has warmed up enough to plant certain seeds. Also, if you have a compost pile, it has to get hot enough in order to kill any pathogens that might contaminate the soil. A soil thermometer measures the temperature to make sure it has gotten hot enough. 8. WIND VANE: Historically speaking, the wind vane used to help farmers predict the weather based on the direction of the winds. Today, most wind vanes are decorative in gardens, yet they can also help you make decisions on whether or not to water your garden with a sprinkler system or where to place the sprinkler system. If you need to water certain plants, you will want to take the wind direction into consideration so you don't water the sidewalk and not your plants. 9. ANEMOMETER: This instrument is used for measuring the speed of the wind, or of any current of gas.	- What if the rain gauge showed a measurement of 2 inches of rain, What would we need to do? - What if the rain gauge showed a measurement of ½ inch? What would we need to do? - Do you think all seeds need the soil to be the same temperature in order to grow? Why or why not? (No – Seeds have different needs. Some can be planted in cooler temperatures and some need warmer temperatures in order to grow.) - If the wind was blowing to the east, what direction would the water be blown in if you were using a sprinkler system? - Can you garden without these instruments? - Which instruments are needed the most? - Where else can you get information about the weather?