My Little Weather Station: A Hands-On Adventure

Materials Needed

- **For the Rain Gauge:** A clear 2-liter plastic bottle, scissors, a ruler, a permanent marker, and some small rocks or marbles.
- **For the Wind Catcher:** A pencil with a new eraser, a push pin, a plastic straw, and a small piece of cardstock or thin cardboard (about 3x3 inches).
- **For the Cloud Craft:** Blue construction paper, cotton balls, and white school glue.
- **For the Weather Chart:** A large piece of paper or poster board, a ruler, and crayons or markers.

Learning Objectives

This lesson is designed to be hands-on and creative, encouraging application over memorization. By the end of this lesson, the student will be able to:

- Build simple tools (a rain gauge and wind catcher) to observe weather phenomena.
- Identify and represent three basic cloud types (puffy, wispy, and flat) through a creative craft.
- Begin to record daily weather observations, connecting their tools and observations to a chart.
- Verbally describe the day's weather using terms like "sunny," "cloudy," "rainy," and "windy."

Lesson Activities

Part 1: The Spark - Becoming a Meteorologist (5 minutes)

Teacher says: "Have you ever wondered why some days are sunny and perfect for the park, and other days are rainy and cozy for staying inside? People who study the weather are called **meteorologists**. Today, YOU are going to be a meteorologist! We will build our very own weather station to figure out what's happening in the sky."

Look outside together. Ask questions like, "What do you see in the sky today? Do you feel any wind on your face? Is the sun hiding or shining brightly?"

Part 2: Activity - Build a Rain Gauge (15 minutes)

Goal: To create a tool that can "catch" and measure rain.

1. **Prepare the Bottle:** (Parent task) Carefully cut the top third off the 2-liter plastic bottle.
2. **Assemble the Gauge:** Flip the top part you just cut off upside down and place it into the bottle's base. It will act as a funnel.
3. **Add Weight:** Place a few small rocks or marbles in the bottom of the bottle so it doesn’t blow over in the wind.
4. **Create the Scale:** Pour some water in until it's just above the rocks. This is your starting line. Use a permanent marker to draw a line and label it "0". From there, use a ruler to draw marks up the side of the bottle (e.g., every centimeter or half-inch).
5. **Set It Up:** Place your new rain gauge in an open area outside. After the next rainfall, you can go out together and see how much rain you collected!

Part 3: Activity - Make a Wind Catcher (15 minutes)

Goal: To create a tool that shows which way the wind is blowing. This is a simple version of a

weather vane.

1. **Create the Arrow:** From the cardstock, cut out a small triangle (for the arrowhead) and a slightly larger square or rectangle (for the tail).
2. **Attach to the Straw:** Tape or glue the triangle to one end of the plastic straw and the tail to the other end. You've made an arrow!
3. **Find the Balance Point:** Carefully balance the straw on your finger to find its center.
4. **Assemble the Wind Catcher:** Gently push the pin through the balance point of the straw and then into the eraser on the end of the pencil. Make sure it's loose enough to spin freely.
5. **Test It Out:** Take it outside! Hold the pencil still and watch the arrow point in the direction the wind is coming from. You can also blow on it to see it spin.

Part 4: Activity - Cotton Ball Cloud Creations (15 minutes)

Goal: To learn that clouds come in different shapes through a fun, sensory art project.

1. **Teacher says:** "Let's look at the clouds. Sometimes they are big and puffy like cotton balls, and other times they are thin and wispy. Let's make some!"
2. **Puffy Clouds (Cumulus):** On one section of the blue paper, have the child glue down clumps of cotton balls to make big, puffy shapes. Explain that these are the "fair weather" clouds you see on sunny days.
3. **Wispy Clouds (Cirrus):** On another section, help the child pull cotton balls apart into thin, wispy streaks before gluing them down. Explain that these are often seen high in the sky.
4. **Flat Clouds (Stratus):** On the last section, have the child stretch out cotton balls to cover a wide area, like a flat gray blanket. Explain that these clouds can sometimes bring drizzle or light rain.

Part 5: Bringing It All Together - The Daily Weather Chart (Ongoing)

Goal: To apply learning in a daily routine of observation and recording.

1. **Create the Chart:** On a large piece of paper, draw a grid with columns for: "Day," "Sunny," "Cloudy," "Rainy," and "Windy."
2. **Daily Check-In:** Each day, go to the window or step outside together. Ask the child to be the meteorologist and give their "weather report."
3. **Mark the Chart:** Have the child draw a checkmark, a star, or a sticker in the correct column(s) for that day's weather. They can check their rain gauge and see if their wind catcher is spinning!

Differentiation and Extensions

For Extra Support

- Pre-cut the shapes for the wind catcher.
- Focus on one activity per day instead of all at once.
- Use pre-drawn weather icons (sun, cloud, raindrop) on the chart that the child can circle instead of writing.

For an Extra Challenge

- Introduce the scientific names for the clouds: Cumulus, Cirrus, and Stratus. Write them on the cloud craft.
- Help the child write down the temperature on the weather chart each day.
- Encourage the child to make a weather prediction for the next day and see if they are right.

Assessment: How We Know We're Learning

Success in this lesson is measured by engagement and application, not a formal test.

- **Verbal Explanation:** Can the child point to their rain gauge and explain, in their own words, what it does? ("It catches the rain.")
- **Demonstration:** Can the child show you how the wind catcher works by holding it up in the wind or blowing on it?
- **Creative Product:** The completed cloud craft serves as a beautiful representation of their learning.
- **Ongoing Observation:** The daily completion of the weather chart shows a sustained understanding and application of weather concepts. Ask them at the end of the week, "How many sunny days did we have?"