

# Joint Polar Satellite System JPSS and Rainfall

It's Spring!

You may know the saying, "April showers bring May flowers." Depending where you live, snow may have already turned to rain before March 20, the first day of Spring. Throughout Spring, scientists measure and compare rainfall at different locations. This rainfall data is important for understanding "April showers" and measuring the average rainfall from year-to-year. Scientists also measure how much rain falls and is stored in Earth's lakes, rivers, and underground as a part of Earth's water cycle.

Rain is an important part of the water cycle, providing the main source of fresh drinking water to all life on Earth, and scientists want to make sure we are getting enough of it. Earth-observing satellites like the Joint Polar Satellite System (JPSS) help scientists measure rainfall all over the world (including hard-to-reach geographic areas without surface-based radar coverage).

JPSS monitors rain clouds (nimbus) and thunderstorm clouds (cumulonimbus) as they form and transport Earth's water from the atmosphere to the surface. Before it rains, JPSS can measure how much water is inside a cloud, helping scientists forecast upcoming rainstorms. During a rainstorm, JPSS can measure how much rain is falling in millimeters per hour.



Want to measure rainfall?  
**Make a rain gauge!**

## **Rainfall**

*is the measurement of rain during a period of time (usually millimeters per hour).*

# Make a Rain Gauge

## You will need

- Container such as a water bottle (to capture falling rain)
- Ruler or tape measure (to measure the rainfall captured by your container)
- Pen or marker
- Scissors or a utility knife, with an adult's help
- Small stones/pebbles (to hold the rain gauge down)
- Tape
- A rainy day!



## Create your Rain Gauge

1. **Cut** the top part of your plastic water bottle and remove the cap.
2. **Place** small stones or pebbles into the bottom of the water bottle.
3. **Turn** the top part of you bottle upside down and **tape** it to the top of your bottle. This helps funnel the rain into your container.
4. **Draw** a “zero line” using a marker and ruler to mark each inch or quarter inch along your container.
5. **Fill** your rain gauge with water up to the “zero line” for an accurate rain measurement.

## Measuring Rainfall

1. **Before a rainy day**, place your rain gauge in an open area outside.
2. Use your rain gauge to measure how many inches of rain fell every hour while it's still raining. Record the date, time and rainfall to the nearest quarter inch.

*Example: 3/20/2021, interval 1:00pm – 2:00pm, 1 inch*

3. Want a more accurate measurement? Create multiple rain gauges and spread them out in different areas outside. Take the average of the rainfall from each rain gauge every hour to the nearest quarter inch.

**Compare Rainfall Reports**

You can compare and submit your measurements with the Community Collaborative Rain, Hail & Snow Network at <https://maps.cocorahs.org>. Just find your town and follow the precipitation guide.

You can also share and compare your rainfall measurements with friends!



Learn more about JPSS at <https://www.nesdis.noaa.gov/jpss-education>



### JOINT POLAR SATELLITE SYSTEM (JPSS)

JPSS is the Nation's new generation polar-orbiting operational environmental satellite system. JPSS is a collaborative program between the National Oceanic and Atmospheric Administration (NOAA) and its acquisition agent, National Aeronautics and Space Administration (NASA).

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