

Weather and Climate: What is weather?

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A thunderstorm lights up the sky over Portugal. Photo from: Wikimedia Commons.

Weather is the daily state of the atmosphere, or air, in any given place. It is different from climate, which is the average of weather conditions in an area over a long period. The weather is important to people. It affects their comfort, their food supply and even their safety.

Elements Of Weather



Many different elements combine to create weather. Temperature, how warm or cold it is outside, is one of the basic elements of weather.

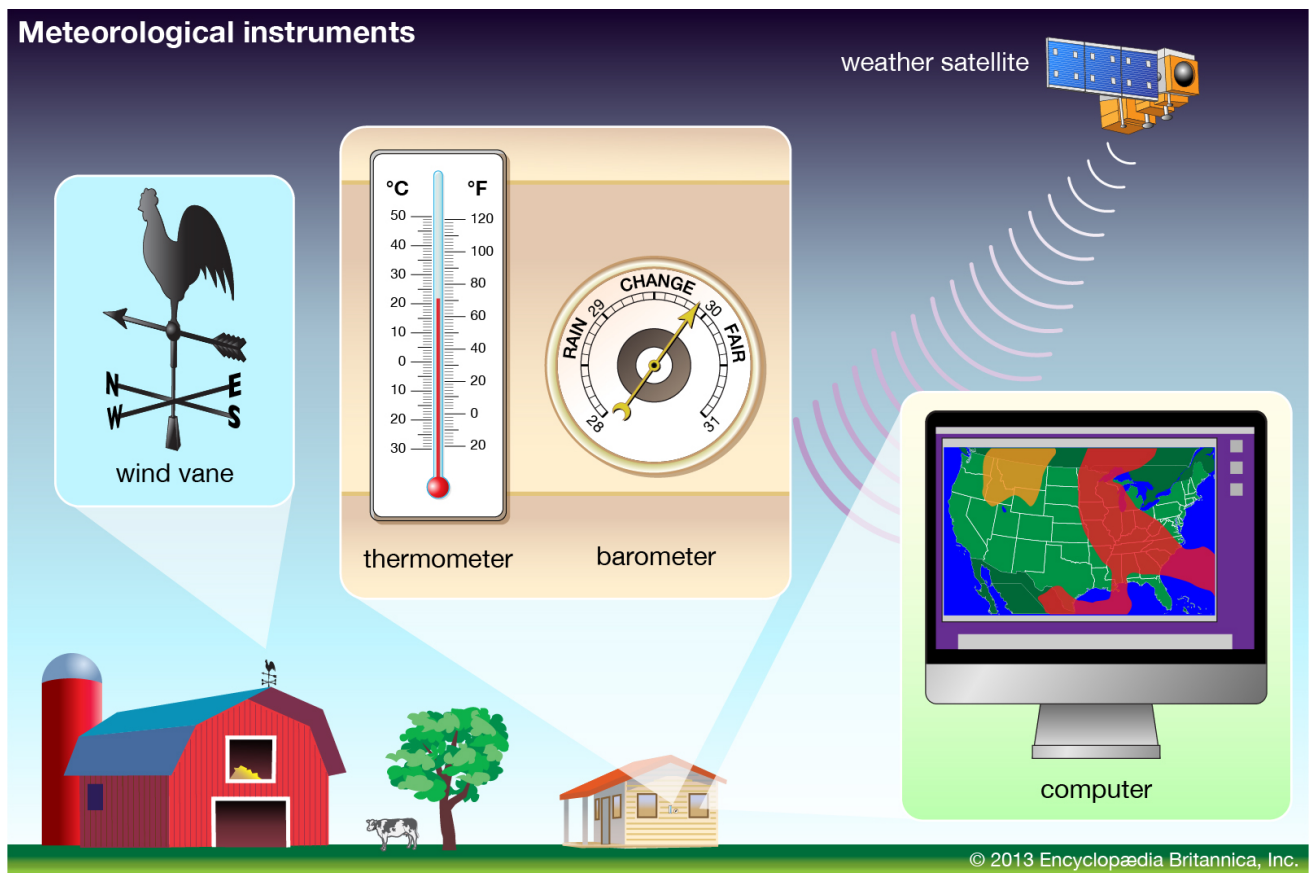
Wind, or the movement of air across Earth's surface, is a second element of weather. Winds may be gentle or powerful.

A third element of weather is humidity, or the amount of moisture in the air. Warm air can hold more moisture than cold air can.

Precipitation is a fourth element of weather. Precipitation may come in many forms, including rain, hail, sleet and snow. The form precipitation takes varies based on other weather conditions, such as temperature.

A fifth element of weather is atmospheric pressure. This is the weight of air above a given area. Changes in pressure help people to predict approaching storms. A storm is a disturbance in the atmosphere — for example, a thunderstorm or a hurricane.

Meteorology



Meteorology is the scientific study of weather. People who study and predict weather are called meteorologists.

Meteorologists use many instruments to gather information about weather. The thermometer and the barometer are some of the oldest and most common weather instruments. The thermometer measures temperature, and the barometer measures atmospheric pressure. Atmospheric pressure is also called barometric pressure. It is the weight of the air as felt at any given spot on Earth. Another common weather instrument is the wind vane, which shows the direction in which winds are blowing.

Satellites In Space Collect Weather Information

Today, satellites in space collect weather information worldwide. Computers help meteorologists track weather patterns. These tools also help meteorologists make weather forecasts.