

# What's the Weather?

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In today's technology laden world we can start the day by simply asking our digital assistants "What's the weather going to be today?" But weather goes far deeper and can be far more interesting than just whether or not you are going to put on a jacket today. We are going to explore the fascinating world of weather and show fun ways you can interact with the weather every day!

Let's start with what the weather is. Weather describes the conditions outside at any given time. This usually includes the temperature, if there are any clouds present and, the reason most of us check it, will there be any rain?



## Temperature. What It Is?

Let's [start with temperature](#). The temperature can tell you how hot or cold a day is going to be. In the United States we use the Fahrenheit scale. This scale is hundreds of years old and was based on human beings internal temperature being roughly 90 degrees fahrenheit. A thermometer is the device [used to measure temperature](#). As technology improved and thermometers advanced we learned that a human body's internal temperature is actually closer to 98 degrees fahrenheit than the 90 degrees that the scale was built off. The rest of the world, excepting Liberia and the Cayman Islands, uses the Celsius scale. This scale is based on the freezing and boiling temperatures of water.

Interesting Fact

One of the questions students always ask me is “If I am 98 degrees then why does a 98 degree day feel so hot?” The answer to this question is all about the skin. When we take our temperature we usually put the thermometer in our mouth to get our internal body temperature. If you were to take the temperature of your skin it would be closer to 70 degrees. That is why we feel comfortable around that temperature and get hot or cold if the temperature goes above or below 70.

## What Happens in the Sky

Our next big concern with weather is what is going on in the sky. Clouds can quickly turn a hot morning by the pool into a chilly afternoon. [Clouds](#) are made of evaporated water. As the sun heats oceans, lakes and even pools some of the water heats up enough to evaporate. This evaporation is what causes rain puddles to disappear when the sun comes out. The water warms and rises into the air until it reaches the colder parts of our sky. When the water cools down it condenses or sticks together, just like on a cold mirror in the bathroom after you take a hot shower. As the water sticks together it can form all kinds of different clouds. If enough of this water sticks together it can become too heavy and fall back down to earth.

Any water coming out of the sky is called precipitation. Precipitation can come in many forms. One of the most common forms is rain. As the tiny drops of water in clouds collect they will form raindrops, these drops fall through the cloud picking up more and more water on their way down. Sometimes raindrops can be small and misty, other times the drops can be huge and hit with a splash. If the temperature is cold enough these raindrops can freeze on their way down causing freezing rain, sleet and hail. If the cloud is cold enough the water freezes into ice crystals which fall as snow.

Here is an [educational video](#) on weather featured by our inimitable teacher Andrew that discovers the key secrets of weather conditions.



Watch on [YouTube](#)

## Funny Ways to Interact with Weather

How can we interact with the weather? Grab a thermometer and head outside. Start by trying to guess what the temperature is before checking the thermometer. Set the thermometer down in a sunny spot and a shady spot. How do the temperatures differ when they're in the sun?

### 1. Making your own predictions

Head outside in the morning, look at the sky and guess or measure the temperature. What do you think the weather is going to be? Will there be rain, or is it going to be sunny all day? Write your predictions down and check to see if you were correct later on. Pretty soon you will be predicting the weather like a true meteorologist. (Scientist who studies the weather, not meteors.)

### 2. Building a rain gauge

You can also build a rain gauge. A graduated cylinder works perfect but a cylindrical cup will work just fine. Put out your rain gauge before the rain and then measure how much rain fell by putting a ruler in the cup after. The number of inches of water in your cup is the number of inches of rain that fell during the storm. Did you know every 1 inch of rain would be 1 foot of snow if the weather was cold enough?

Weather is also not a local occurrence. A rainstorm in your area most likely formed hundreds or thousands of miles away. Many of these storms, like hurricanes, follow predictable paths. Using sites like [ventusky.com](#) you can track these storms as they

begin forming hundreds of miles out in the ocean. You can also get a more global look at weather patterns.

We make a lot of decisions **based on the weather**. Most students just look at the weather as something that happens without spending a lot of time really thinking about what causes rain or where snow storms come from. Take some time with your student to observe, predict and even measure your local weather.

