

Wondrous Weather

Weather Conditions

What's the weather like today? Is the sun shining and the temperature warm? Or is it rainy and chilly?

Do you know what a weather forecast is? Have you ever thought about the tools that a [meteorologist](#) uses to determine the weekly forecast? Did you know that the type of weather you see where you live could be very different from the weather that a child living in another state or country sees? Join us as we take a deeper look at weather. You can even visit a web site or two that will allow you to create your own [weather conditions](#)!

When you listen to the weather report, you may hear a lot of different descriptions about what is going on outside, but what does all of that really mean? Is there a difference between "partly cloudy" and "partly sunny"? Let's see if we can describe some of the terms that a weatherman might use.

Sun

Sun is an easy one, right? If the forecast calls for sunny skies, you expect to look outside and see the sun shining brightly. What causes this, though? The obvious answer is that there is a lack of clouds in the sky, but the reason that there are fewer clouds is what we really want to discuss.

[High air pressure](#) will generally cause fewer clouds and more sunshine. "High pressure" simply means that the air is denser and will sink. The sinking air creates fewer clouds, giving way to sunshine. This type of weather is seen more often in the summer.

You have probably heard the terms "partly cloudy" and "partly sunny" when your parents have the weather report on the television, right? What do they mean? A lot of people make the mistake of thinking that they mean the same thing, but they don't. If it is partly sunny out, that means that the sun will be shining for less than half of the day. On the other hand, if it is partly cloudy, the clouds are supposed to be around for less than half the day. See the difference?

What do you like to do on sunny days? Write a paragraph or two describing your favorite sunny day activities.

Snow

Snow is a form of precipitation. When you go outside to play in the snow, the temperature is cold. The snow is created in the clouds when the water vapors form into crystals due to freezing. It is said that no two snowflakes are exactly the same. Try making your own [snowflake](#).

What do you think happens to the [animals](#) when it is cold and snowing? A lot of animals hibernate during the winter months, while others might head south. Some [animals](#) might hibernate for a short time, and others can be [active](#) out in the snow.

Rain

If the weatherman says that you should get your umbrella and galoshes on before you leave the house, what do you think the weather will be like? That's right; it will probably be [raining](#).

Rain is caused when water droplets trapped in the warm air condense, forming clouds. These clouds become so filled with water, that they eventually cannot hold all of it. When this happens, the water will fall to the ground in droplets, or rain.

Read more about the [water cycle](#) to gain a better understanding of rain, then create a poster illustrating the water cycle.

Hail

Have you ever seen ice fall from the sky during a thunderstorm? That can be pretty scary, especially when the ice becomes fairly large. This type of ice is called [hail](#).

Hail is essentially frozen pieces of rain. It is caused when the air rises high enough to be in temperatures that are below freezing. The clouds that are this high can drop small, frozen pieces of ice just as they would drop rain if the air were warmer. As the ice falls, it might hit a very strong wind that pushes it back up into the freezing clouds. This causes another layer of ice to freeze on the original ice ball. The process continues until the ice is heavy enough to not get blown upward again, and then the hail will fall to the ground.

Sometimes the hail is about the size of a pea, but it can reach much larger sizes! The record for the United States was a piece of hail that fell in Nebraska in 2003. The hailstone was 7 inches in diameter, which is bigger than a softball.

Do some research and find out what types of damage hail can cause. Make a list of your findings.

Tornado

Have you ever seen a [tornado](#) in real life or in a movie? They are very powerful, moving across the land with speed and force. A [tornado](#) can destroy everything in its path. How do they get such strength?

Tornadoes are formed when warm air from the south collides with cool air from the north. The air begins to swirl as the cool air falls and the warm air rises. This forms a funnel that stretches from the clouds all the way down to the ground. When the funnel cloud touches the ground, it becomes a tornado. The average tornado rotates at speeds between 40 and 110 miles per hour, although the most violent tornadoes spin at well over 200 miles per hour!

Tornadoes are measured on the [Enhanced Fujita Scale](#) (F0-F5). An F0 tornado is the slowest type of tornado with an F5 being the fastest and most powerful type.

Do you know how to stay safe in a tornado? Ask a parent to help you make a list of ways you and your family can stay safe during a tornado.