

101+ AMAZING Science Project Ideas: WEATHER



Get Personalized Project Ideas

The [Topic Selection Wizard](#):

- Gives you a brief survey
- Recommends projects that are best for you

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[How Do Clouds Form?](#)

A time honored activity is to lie down on a nice day and watch the clouds roll by, associating each passing shape with a familiar object. We look at the clouds in the sky with a sense of mystery and amazement. What makes a cloud form? Find out in this simple experiment.

[Difficulty](#) = 1

[Weather and Climate in Your Neighborhood](#)

Do you live in an area where the weather changes a lot from season to season throughout the year? Or do you live in a place where the weather stays pretty much the same all year long? How dynamic is the weather, and how does it compare to climate? In this experiment you can use the Internet to conduct your own investigation about how climate and weather in your local area change over time.

[Difficulty](#) = 2

[How Does a Wind Meter Work?](#)

On a windy day it is hard to keep your hat on! The power of the wind can even be strong enough to power large wind turbines to make electricity! In this experiment, find out how you can make your own instrument to measure the speed and power of the wind. How does it work?

[Difficulty](#) = 2

[How Do the Seasons Change in Each Hemisphere?](#)

On a rainy day, do you ever wonder what the weather is like on the other side of the planet? Different regions around the globe can have very different seasonal weather patterns. In this experiment, you can test if these seasonal variations are related to which hemisphere each region is located in.

[Difficulty](#) = 3

[Make Your Own Psychrometer](#)

From the name, you might guess that a psychrometer is an instrument designed to measure your thoughts. Psych! Actually, it is an instrument that can help you forecast the weather. Read more to find out how it works.

[Difficulty](#) = 4 – 7

[Dry Spells, Wet Spells: How Common Are They?](#)

Can you remember what the weather was like last week? Last year? Here's a project that looks at what the weather was like for over a hundred years. You'll use historical climate data to look at moisture conditions in regions across the continental U.S. You'll use a spreadsheet program to calculate the frequency of different moisture conditions for each region and make graphs for comparison. Which part of the country has the most frequent droughts? The most frequent periods of prolonged rain? The most consistent precipitation? Here's one way to find out.

[Difficulty](#) = 5 – 8

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[Make a Hygrometer with Strands of Hair](#)

Does your hair go crazy when the weather turns damp? Did you know that strands of hair can relax and lengthen when the humidity increases and then contract again when the humidity decreases? In fact, hair strands can be used as the basis for a *hygrometer*, a device which measures the humidity level in the air. Will a hygrometer help you to predict bad hair days(!) or can you use it to help predict the weather?

[Difficulty](#) = 5

[How Does Atmospheric Temperature Affect the Water Content of Snow?](#)

Are you a snow aficionado? What atmospheric conditions produce light, powdery snow, and what conditions produce heavy, wet snow? This project shows you how to use data from daily balloon soundings of the atmosphere and your own snow measurements to find out.

[Difficulty](#) = 6

[Using Weather Balloon Data to Map Atmospheric Temperature](#)

Snow-capped mountains make a picturesque scene, especially in summertime when the peaks are in such contrast to the warmth below. This project shows you a way to see how temperature changes with altitude using data collected twice daily from weather balloons.

[Difficulty](#) = 6

[From Gas to Rust: Measuring the Oxygen Content of Air](#)

Earth's atmosphere, the ocean of air that blankets the planet, is mostly nitrogen and oxygen, with small amounts of other gases. How much oxygen is present in air at sea level? In air high up in the Appalachians or Rockies? Atop Mount Everest? How much oxygen is present in the air you breathe? Here's a project that shows you how to measure the percentage of oxygen in an air sample.

[Difficulty](#) = 6

[Predicting the Weather](#)

Here's a good way to get yourself on TV. This project will help you learn how to predict the weather. Who knows, maybe you'll be more accurate than your local meteorologist. You just might get hired! (Someday.)

[Difficulty](#) = 7

[Tracking Geomagnetic Storms in the Ionosphere](#)

The Sun is the ultimate source of the energy that powers weather systems on Earth. Geomagnetic storms are sun-powered storms in the upper atmosphere, arising from energized particles that are periodically ejected by the sun. Among other effects, geomagnetic storms can wreak havoc with earth-orbiting satellites, and disrupt satellite communications. The global positioning system (GPS) is a network of 24 earth-orbiting satellites that constantly sends radio signals through the earth's atmosphere. GPS receivers use these signals to determine their position on earth. Can you use errors in GPS signals to identify geomagnetic storm activity?

[Difficulty](#) = 9