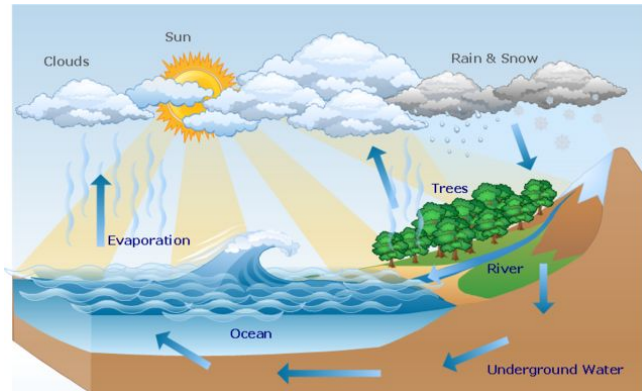


What to Know About Weather

Have you ever heard the saying “If you don't like the weather, just wait five minutes and it'll change!”? Although this is more accurate in some places than others, overall, weather is complex and ever changing. This is because weather is caused by forces and factors that are also constantly changing: throughout each day as the Earth turns, making the Sun appear to set and rise; and throughout each year as the Earth orbits the Sun, causing the changing seasons.

Weather is driven by light energy from the Sun and the force of gravity. These forces work together to create the water cycle. In terms of weather, the water cycle is responsible for precipitation. Radiation from the Sun is absorbed as thermal energy and causes water to evaporate from the oceans, other bodies of water, and the ground—causing it to enter the atmosphere as water vapor.



The amounts of water vapor in the atmosphere are measured and described in terms of humidity. Changing temperatures and air pressures cause changes in humidity—cooling air cannot hold as much water, and cooler air has a lower pressure. When the temperature and pressure are low enough, humidity reaches 100%; and water vapor condenses, forming clouds. The force of gravity pulls the condensed water back to the surface of the Earth as various forms of precipitation: rain, snow, hail, fog, and dew.

Uneven heating of the Earth's surface by the Sun creates differences in temperature and pressure, which also cause wind. Earth's different land surfaces and the oceans warm up and cool in different amounts and at different rates, creating areas of different temperatures and pressures. The temperature and pressure differences cause masses of air to move from 1 place to another: slowly as a light breeze, or more quickly as wind. Wind can be a variety of temperatures, depending on the temperature of the air mass that is creating the wind. Wind can create sandstorms or tornadoes. Wind combines with precipitation in moving pressure systems to create storms, ranging from light rain storms to hurricanes or blizzards.



The factors that play into the weather on any given day are all connected, impact one another, and can be traced back to energy from the Sun and the pull of gravity.

[By K.Tapdiqova - Own work, CC BY-SA 4.0](#) (Water Cycle)

[By NASA, Public Domain](#) (Satellite image of storms)