

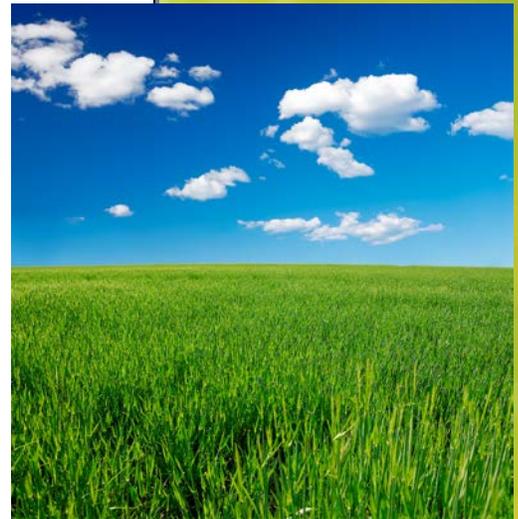
What Is Air?

People often make idle comments about the air around us. They might say, “I love a breath of fresh air,” or they might remark about the day’s air quality, noting if the air is clear or hazy. But most people have no idea what exactly is in *air*. What different substances are found in air? What do those substances do? As you’ll soon see, there’s more to air than meets the eye.

What we call air is actually a mix of several different gases, particles, water, and other materials. Many people commonly describe the air around us as “oxygen.” It’s true that oxygen is found in air, and that we need this oxygen to live. However, oxygen is not the most abundant gas found in air. That distinction belongs to nitrogen. If we break down the composition of air into percentages, nitrogen makes up about 78 percent of Earth’s air. Oxygen makes up much of the rest, about 21 percent.

If you do the math, you’ll realize that nitrogen and oxygen together make up 99 percent of the air around us. What’s in the remaining 1 percent? The last 1 percent of air is made up of a combination of other gases, including carbon dioxide, argon, helium, and methane. All of these gases are made of atoms, or combinations of atoms called molecules. Atoms are the fundamental building blocks of all matter. Because these gases are made of atoms, we know that air occupies space and has mass; it’s not just an empty void.

If you’ve learned about the water cycle, you already know that water is found in air, too. When the sun warms water on Earth’s surface, the water evaporates and turns into water vapor. This water vapor is invisible, but it still contains molecules of hydrogen and oxygen. Water is continually cycling through the air. As water vapor rises, it cools and condenses, forming clouds. The water eventually falls back to Earth as precipitation. Though we can’t see the water vapor in air, we can sometimes feel it. If you’ve ever experienced a humid day, when the air feels wet and your skin feels slightly damp, you’ve felt the water vapor in air.



Air is often invisible, but it is made up of many different particles.

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Air can also contain a variety of other particles. Some of these particles are naturally occurring, but others are introduced by humans. Dust is a naturally occurring particle in air. In large quantities, dust can reduce air quality, but small amounts of dust are important to air. The dust particles in air provide surfaces on which water molecules can join together and form clouds. Ash is another naturally occurring particle in air. Ash is likely to be present in the air over an area that has experienced a volcanic eruption.

Can you think of particles in air that were introduced by humans? If you guessed smog, you're right. Our modern life can affect Earth's air: the cars we drive and the factories that produce our goods can introduce pollutants into the air. An unfortunate part of modern life is that these pollutants can lower the quality of the air around us.

There are many things we can do to keep the air clean. We can place limits on car emissions and prohibit factories from releasing pollution into the air. Can you think of other ways we can cut down on the amount of air pollutants we create? What are some things you can do at home to help reduce air pollution?



Car exhaust can add particles of pollution to air.