

Name _____



What's Really in the Air?

When you take a deep breath, what are you actually breathing in? It might feel like nothing, but air is full of different gases. These gases include oxygen, nitrogen, carbon dioxide, and a few others. Together, they make up something very important: a mixture.

Air is a mixture, not a compound. But what does that mean? A mixture is made up of different substances that keep their own properties. In air, each gas keeps doing its own job. Oxygen helps us breathe, nitrogen fills most of the air, and carbon dioxide is used by plants. These gases are just floating together without changing into something new.

A compound, on the other hand, is made when elements chemically combine to form a new substance. Water is a compound. It's made when hydrogen and oxygen join together in a chemical reaction. The result is something completely different from the parts it came from. You can't just pull them apart by hand or by simple filtering.

Why does it matter that air is a mixture? Because it helps scientists and engineers do their jobs. For example, if air gets polluted, we don't have to make new air. We can clean out the bad stuff and keep the good gases. That's much easier with a mixture than with a compound.

Also, knowing what's in the air helps people stay safe. Airplanes, astronauts, and scuba divers all need the right mix of gases to survive. If the mixture is wrong, it could be dangerous.

So the next time you blow up a balloon or feel the wind on your face, remember: you're surrounded by a helpful, invisible mixture that keeps you alive every day.