



# How gases mix

Gases begin to mix the instant they come into contact.

The mixing of gases is very important. For example, if the gases you breathed out didn't mix with fresh air, you would keep breathing the same stale gas back in (Picture 1). In fact, the gases you breathe out immediately begin to mix with the gases in the air.

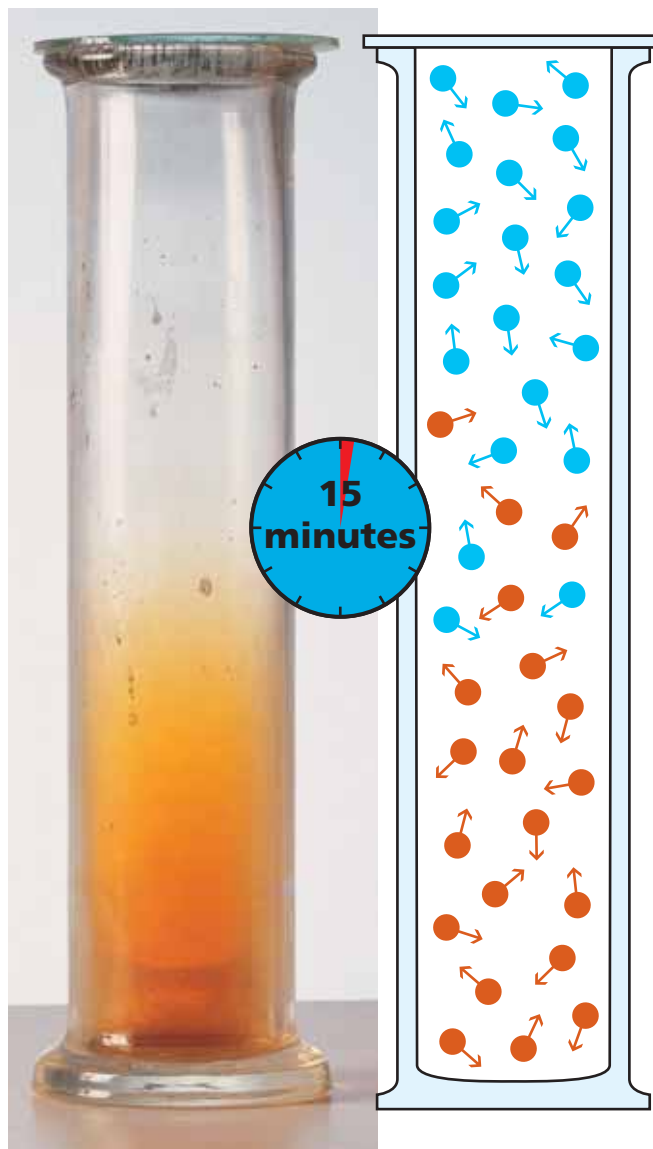
## How mixing works

In Picture 2 you see what the mixing of gases is all about. In this case, a scientist put some brown gas in the bottom of a flask filled with air. The scientist then put a lid on the flask.

As you can see, the brown gas soon began to move up the

▼ (Picture 1)  
When you breathe out, you push stale air a short distance away and breathe in air from close to your face. This gives the breathed-out gas time to mix with the air before you breathe it in again.

► (Picture 2) The stages of a brown gas mixing with air. Notice how the brown gas becomes a paler colour as it mixes.



jar, while the colourless air moved down. After five hours, the gases were completely mixed.

## What happened?

Each gas spread throughout the whole jar. The brown gas moved towards the top of the flask and the air moved to the bottom. Of course, the particles of the two gases keep bumping in to each other, and so it took time for them to spread out.

This is an important fact about gases that we rely on all of the time. We expect the air, for example, to be the same wherever we go. The fact that it is like this is only possible because the gases in the air are continually bouncing about and mixing.

### Summary

- Gases expand to fill as much space as they can.
- Gases mix evenly, even if one is heavier than the other.
- When gases mix, each gas becomes more spread out.

