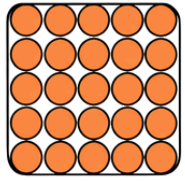


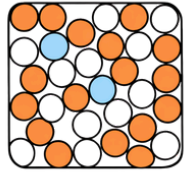
## What Is a Mixture?

A mixture is made when two or more substances are together but not chemically bonded. This means the substances keep their own properties and can usually be separated by physical methods.

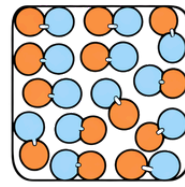
Examples of mixtures include air, sea water, milk and fruit juice.



Pure substance



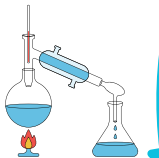
Mixture



Compound

Can be separated by

Distillation



Chromatography



Magnet

Evaporation



Filtration



In a mixture, each substance keeps its own properties, so nothing new is made. For example, in sand and water, the sand still feels solid and the water still stays liquid.



| Type           | What it means                               | Example                        |
|----------------|---|--------------------------------|
| Pure substance | Only one element or one compound            | Pure water, pure oxygen        |
| Mixture        | Two or more substances together, not bonded | Air, sea water, sand and water |

### Common Mixture Examples

## Mixtures



Air

Mostly nitrogen and oxygen



Fruit juice

Water, sugars, flavourings and sometimes pulp



Sea water

Water and dissolved salts

Iron filings and sulfur

Two solids mixed together



Milk

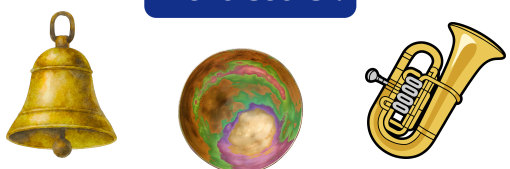
Water, fats, proteins and other substances

### What Makes a Mixture Different

- The substances are **not chemically joined**
- They can be mixed in **any amounts**
- Each substance still has its **own properties**
- They can be separated using **physical processes**
- No new substance is made just by mixing them

In a **compound**, atoms are chemically bonded in fixed ratios. In a **mixture**, the particles are simply together in the same place and can be **separated** again.

Brass is a mixture of copper and zinc, and mixing them makes the metal harder and more useful.



| Substances mixed | Type of mixture | Example       |
|------------------|-----------------|---------------|
| Solid + solid    | Alloy           | Brass         |
| Solid + liquid   | Solution        | Salt water    |
| Liquid + liquid  | Mixture         | Oil and water |
| Gas + gas        | Mixture         | Air           |