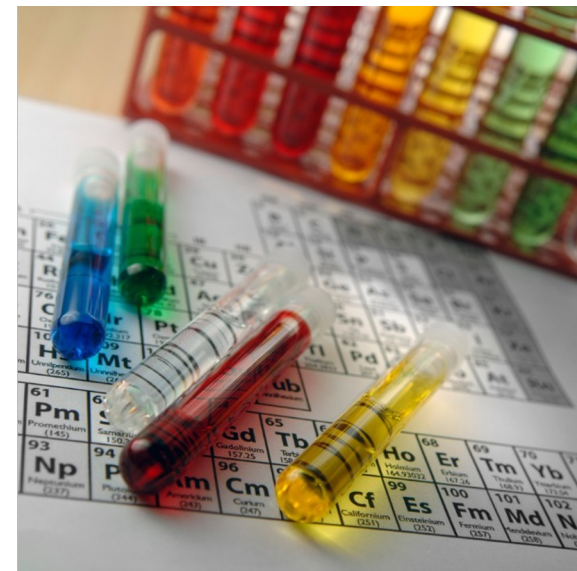


Exploring Physical and Chemical Changes

What is matter?

Matter is anything that has mass and takes up space. Everything you can see and touch is made up of matter. Each type of matter has its own unique **properties**.



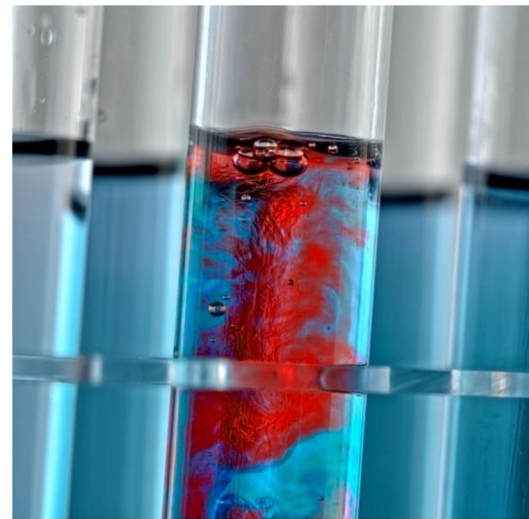
What is a property?

A **property** is a characteristic or trait people use to identify **matter**. The properties of matter allow us to identify different substances. The properties of matter fall into two categories; physical properties and chemical properties.



How can matter change?

Every day, matter undergoes changes. These changes can be classified as either **physical changes** or **chemical changes**.



What are physical changes?

A physical change is a change where the form or state of the matter changes.

A change of state includes; changes from solid to liquid or liquid to gas. Melting, freezing and boiling are all **changes of state but NOT changes of substance**. A melting ice cube is a good example.

Physical changes also include changing the **size or shape** of something. Cutting, bending, and dissolving are examples of physical changes.



What are chemical changes?

Chemical changes are caused by **chemical reactions**. Chemical changes produce matter that is different from the original matter. At least one new substance is formed.

Burning, cooking, rusting and rotting are examples of chemical changes.

A browning banana is a good example of a chemical change.



To summarize

Physical Change	Chemical Change
Is a change in form?	Is a change in substance?
Evidence of change <ul style="list-style-type: none">● Change of state (solid to liquid, etc.)● Change of size (breaking, cutting, dissolving)● Change of shape (bending, stretching, moulding)	Evidence of change <ul style="list-style-type: none">● Change in colour● Change of temperature● Production of an odour● Production of a gas (like bubbles)● Production of a precipitate (solid out of a liquid)
Example: Liquid water becomes solid ice, glass breaks	Example: Marshmallow becoming brown when heated

Is a haircut a **physical** or a **chemical** change?



A haircut is a **physical change**! It is a change in form or shape, but not substance.

The hair remains hair.

Is a rusting nail a **physical** or **chemical** change?



A rusting nail is experiencing a **chemical change!**

When iron is combined with oxygen and water, a new substance called iron oxide is produced. We call this rust.

Is a melting popsicle a **physical** or a **chemical** change?



A melting popsicle is a **physical change!**

The liquid used to make popsicle changes state, but it still remains the same liquid.

Re-cap and important terms....

Chemical Change: A type of change in which a new substance is formed.

For example: burning something.

Physical Change: A type of change in which a new substance is NOT formed. For example: water freezing.

Property: A characteristic or trait people use to identify matter.

Matter: Anything that has mass and takes up space.