



**Charles Macintosh** was a Scottish inventor and chemist who invented waterproof fabrics in 1818. The Mackintosh raincoat was named after him in 1824.

## MATTER

is the stuff that makes up all of the things in the world. From your shoes to a flower to the air that we breathe.

## Year Two Materials



Autumn 1

*Think about an apple, a river and the air that we breathe. They seem different but they are all made of **MATTER**.*

### Squashing, Bending, Twisting and Stretching



Squash an object by pushing both hands together.



Bend an object by grabbing both ends of the object and bringing the ends inwards together.



Twist an object by turning your hands in opposite directions.



Stretch an object by pulling your hands slowly and gently apart.

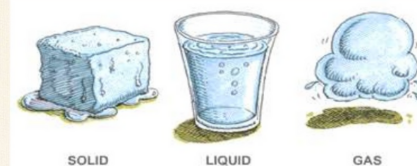
We can change the **SHAPE** of some solid materials by applying pressure to them e.g. squashing, bending, twisting and stretching.



There are different kinds of **MATTER**.

Matter can be a solid, a liquid or a gas.

### The 3 states of matter



## Glossary

**Gas** - a substance or matter in a state in which it will expand freely to fill the whole of a container, but we can't always see it

**Liquid** - a substance that flows freely but is of constant volume, like water or milk

**Materials** - this are what objects are made from

**Properties** - this is what a material is like and how it behaves (soft, stretchy, waterproof)

**Solid** - a substance or object that is solid (usually has a fixed shape)

**Suitability** - means having the properties which are right for a specific purpose

Different materials have different **PROPERTIES**. These properties make them suitable for different uses.

Matter makes up different types of materials. Some common materials are: wood, plastic, glass, metal, fabric, paper, rubber and cardboard.

### Properties of Materials



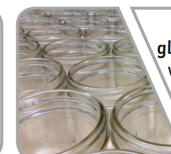
**plastic:** waterproof, strong, can be made to be flexible or stiff, smooth or rough.



**metal:** strong, hard, easy to wash.



**wood:** hard, stiff, strong, opaque, can be carved into any shape.



**glass:** waterproof, strong, transparent, hard, smooth.



**fabric:** soft, flexible, hard-wearing, can be stretchy, warm, absorbent.



**rubber:** hard-wearing, elastic, flexible, strong.

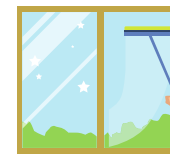
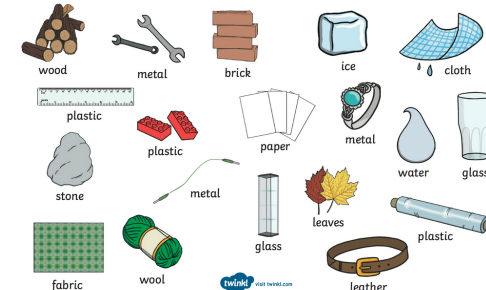


**paper:** lightweight, flexible.



**cardboard:** strong, light, stiff.

### Materials and Their Properties



*Think about a window. Why do we use glass for windows? What are the properties of glass that make it suitable for windows?*