Matter

Matter = anything that has mass and takes up space

Plastic is matter. It is flexible (bendable), durable (lasts a long time) and versatile (can do many things) But…is plastic a harmful (bad) substance or a beneficial (helpful) substance? You decide. You may need to know that'degradable' is the opposite of durable and means it can break down. [at this point we did a class activity.]

*note: the underlined words are ones you should know for this unit.

Properties of Matter

'Durable' and 'flexible' are properties of matter. There are physical properties of matter and chemical properties of matter.

Physical Properties = properties that describe a substance using the 5 sense.

SAFETY ALERT – Do NOT taste anything in a science lab unless told to do so.

1) State of matter – state whether the substance is solid, liquid or gas.
2) Hardness – describes how easy/difficult it is to scratch a substance.
   The geological hardness scale goes from 1 (talc) → 10 (diamond)
   Talc is like chalk. Diamond is the hardest substance known.
3) Malleable – ability to bend.
   If something is malleable, it is bendable. Gold, silver etc. is malleable because we can bend it into jewellery.
4) Ductile – ability to form a wire. ie: copper wire is what we use for electrical wiring in houses.
   Copper is said to be ductile.
5) Boiling Point & Melting Point – the temperature (°C) at which the substance boils and melts.
   Water → boiling point = 100 °C melting point = 0°C
6) Colour – often you describe the colour of substance. No colour? Call it 'colourless'.
7) Crystal Structure (for solids) – describes the shape of the crystal. Check out salt from your salt shakes at home. It is in perfect cubes! Now check out white sugar – not in perfect cubes!
8) Solubility – ability to dissolve. High solubility = easy to dissolve. Low solubility =hard to dissolve
9) Viscosity – how 'thick' a substance is. High viscosity = hard to pour ie: ketchup
   Low viscosity = easy to pour ie: water
10) Density – measured value. You get a number and it has a unit.
    Density = mass/volume
    mass might be in grams (g) and volume in milliliter (mL) .
    So the units could be g/mL (g/cm^3 can also be used)

Chemical Properties = properties that describe the reaction that can happen when it forms a **new** substance.

ie: wood burns in the presence of oxygen to form ash.
(ash is not wood – it is a new substance.)

1) Flammable = ability to burn
2) Ability to react with Acid