

Properties of Matter

Physical and Chemical Properties

- * **QUICK:** You lost your backpack at lunch. How would you describe it to the office to see if it had been found.
- * When you use any sort of descriptor of your backpack, you are describing its physical properties.

Chemical Properties

- * A chemical property describes how a substance reacts with another to form a new substance.
- * Ex: Combustibility
- * Ex: Flammability
- * Ex: Light sensitivity

Physical Properties

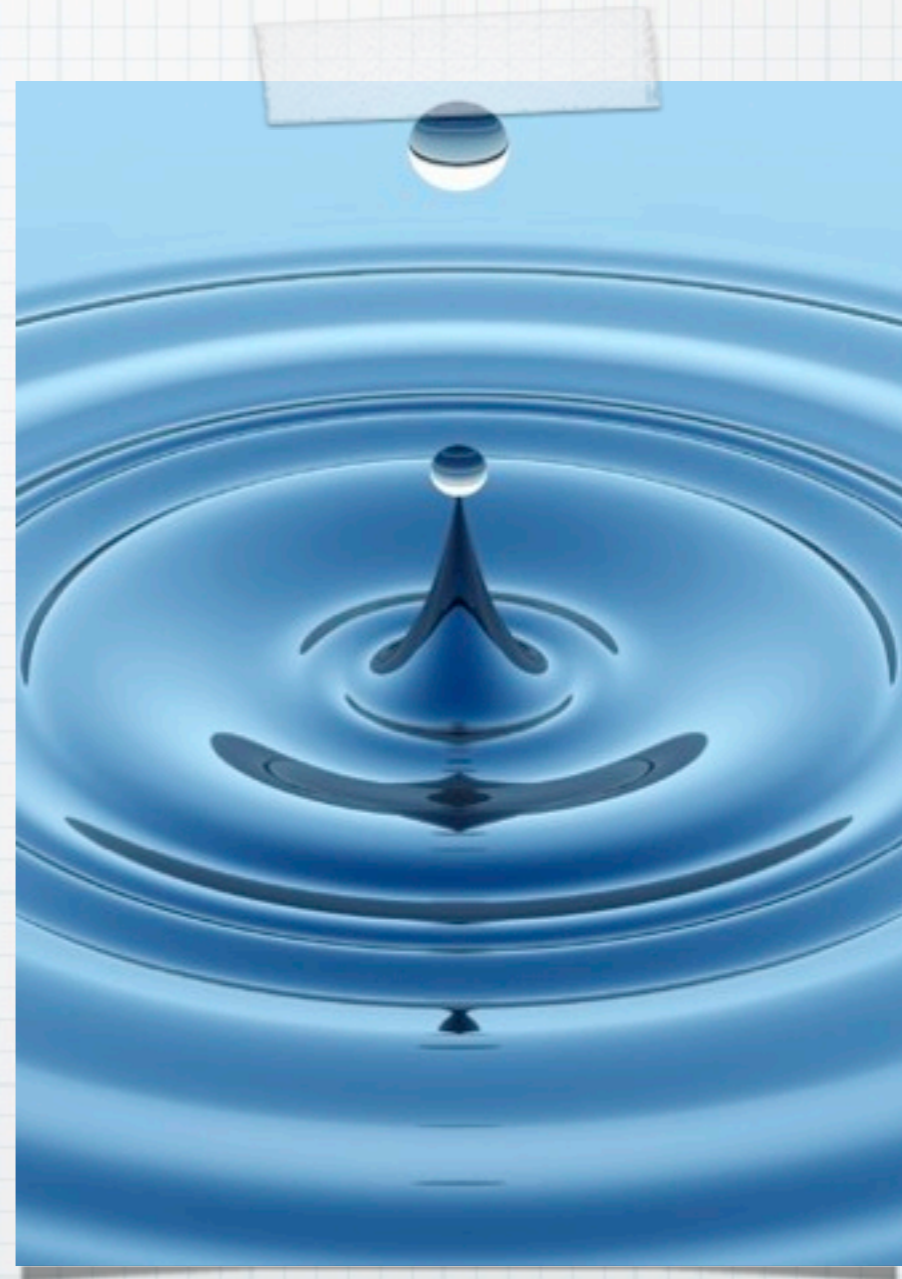
- * A physical property is one that can be observed or measured without making a new substance.
- * Colour, density, ect.
- * You can determine a physical property by using one of your five senses.

Physical Properties

- * There are two types of physical properties:
 - * Qualitative: does not provide numerical information.
 - * Ex: Colour
 - * Quantitative: any physical property that does use numerical data
 - * Ex: length

Physical Properties

- * 1) Physical State:
- * Solid, liquid, gas.



Physical Properties

- * 2) Hardness:
- * Resistance of a solid to being scratched or dented
- * Example: diamond is harder than glass



Physical Properties

- * 3) Malleability
- * Ability of a metal to be hammered or bent into different shapes
- * Example: Aluminum foil is easily bent



Physical Properties

- * 4) Ductility
- * Ability of a metal to be pulled into wires
- * Example: Copper is very ductile and is commonly used for electrical wiring



Physical Properties

- * 5) Melting and Boiling Points
- * Temperature at which substances change state
- * Water changes from solid to a liquid at 0°C



Physical Properties

- * 6) Crystal Form
- * The solid form taken by many minerals. Each mineral usually takes a characteristic pattern
- * Salt Crystals usually look like tiny cubes



Physical Properties

- * 7) Solubility

- * The ability of a substance to dissolve in a solvent

- * Example: Sugar is soluble in water



Physical Properties

- * 8) Viscosity

- * How easy a liquid flows

- * Example: The thicker the liquid, the slower it flows and is more viscous. Corn syrup is viscous



Physical Properties

- * 9) Density

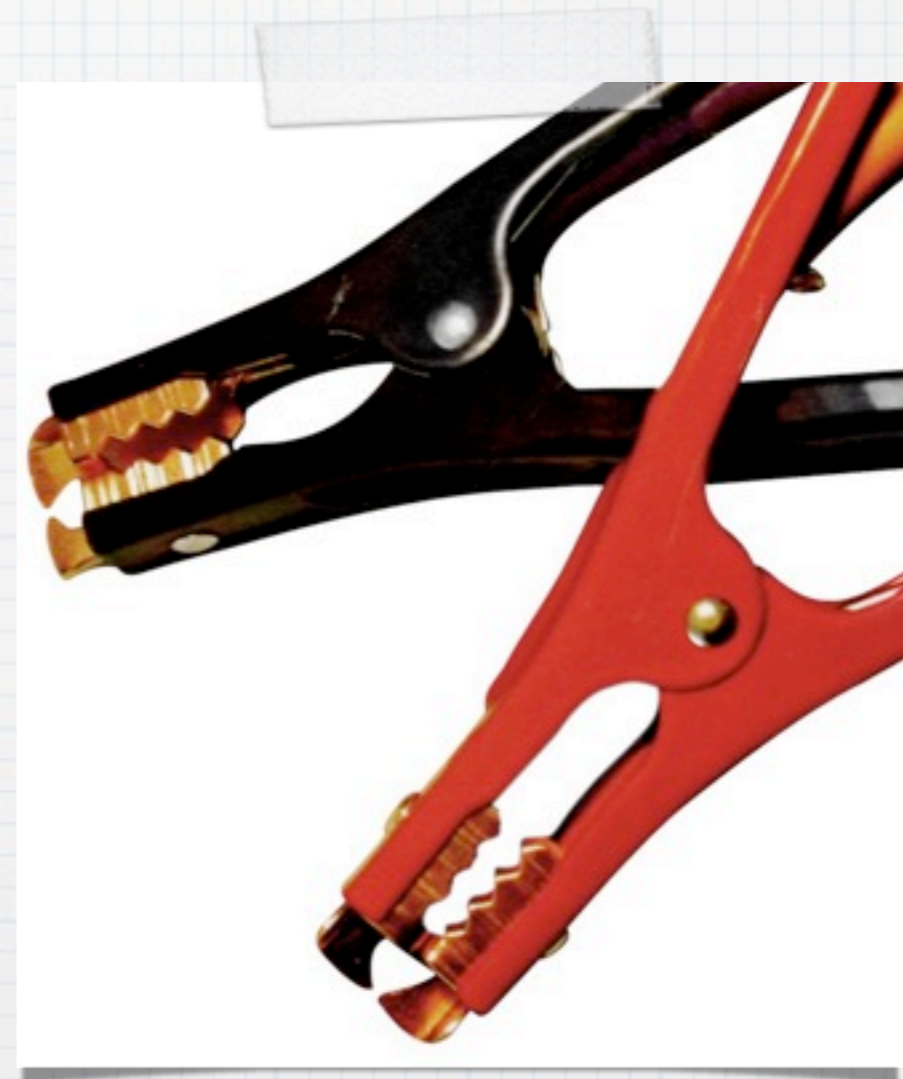
- * The amount of matter per unit volume

- * Example: Lead is very dense, feathers are not dense



Physical Properties

- * 10) Conductivity
- * If a substance is able to conduct heat or electricity.



Physical Properties

- * 1) Brittleness:
- * The ability to break apart or shatter easily.



Physical Properties

- * 12) Lustre:
- * The ability of an object to reflect light.



Physical Properties

- * 13) Clarity

- * the transmission of light through a substance.

- * Substances can be defined as transparent, translucent, or opaque.

