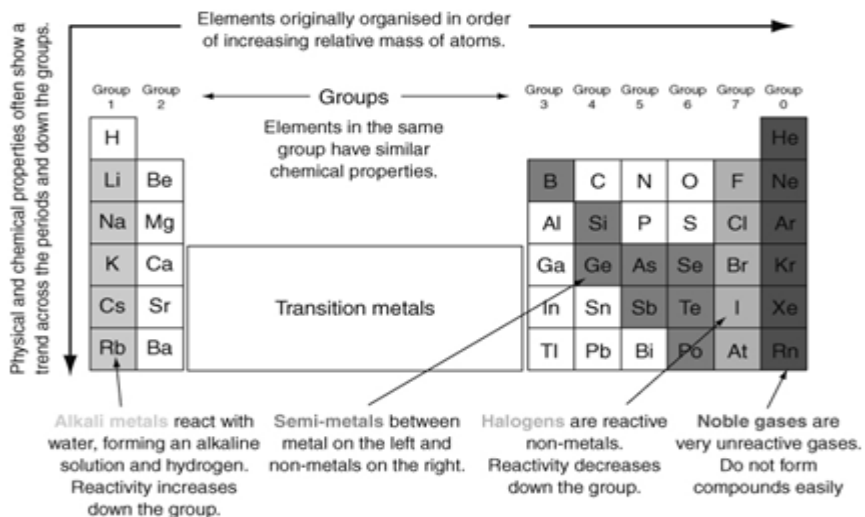
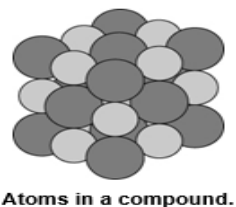
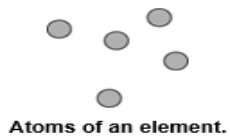


## The Periodic Table



- All matter is made up of tiny particles called atoms.
- Atoms are indestructible, and cannot be created, or destroyed.
- The atoms in an element are all identical.
- In compounds, each atom of an element is always joined to a fixed number of atoms of the other elements.
- During chemical reactions, atoms rearrange, to make new substances.



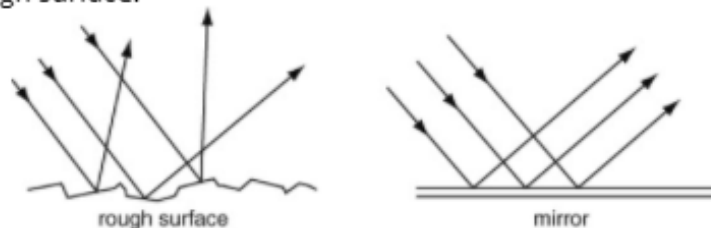
Physical Property	Metal	Non-metal
conductor of electricity	yes	no (exception: graphite)
conductor of heat	yes	no (exception: graphite)
malleable- can be beaten into a different shape with a hammer	yes	no (they're brittle- break easily)
ductile- can be drawn out into wires	yes	no (they're brittle- break easily)
lustrous- has a shiny surface when polished	yes	no (very dull surfaces)
sonorous- makes a ringing sound when hit with a hard object	yes	no (they make a dull sound)

## Light

Light travels in straight lines from a **source**. Light travels as **transverse** waves. It travels much faster than sound, and does not need a substance to travel through.

Light travels through **transparent** objects but not through **opaque** objects. **Shadows** are made when light is blocked by an object. Opaque objects block all light. **Translucent** objects allow some light to pass through, but it is scattered so you do not see a clear image.

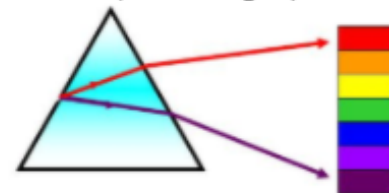
Light rays are scattered by rough surfaces (**diffuse reflection**), which means that you cannot see an **image** in an object with a rough surface.



Mirrors and shiny materials such as polished metals reflect light evenly. This is called **specular reflection**.

The **angle of incidence** ( $i$ ) is equal to the **angle of reflection** ( $r$ ) – this is known as the **law of reflection**.

White light is a mixture of colours. White light can be split up using a **prism** to give a **spectrum** of seven colours (red, orange, yellow, green, blue, indigo, violet). The splitting of colour into a spectrum is called **dispersion**.



## **Key vocabulary:**

**Period:** horizontal row in the periodic table

**Periodic table:** A tabular representation of all known elements in order based on atomic number, eg all the noble gases are found on the right of the periodic table

**Metal:** Shiny element that is a good conductor of electricity and heat, and which forms basic oxides.

**Group:** A vertical column in the periodic table containing elements with similar chemical properties.

**Atomic number:** The number of protons in the nucleus of an atom. Also called the proton number.

**Malleable:** Capable of being hammered or pressed into a new shape without being likely to break or return to the original shape.

**Brittle:** If something is brittle it is easily broken.

**Dispersion:** Spreading out of the different wavelengths of light, caused by refraction of light as it passes through a prism.

**Frequency:** The number of waves produced each second. The unit of frequency is hertz (Hz).

**Law of reflection:** In reflection at a surface, the angle of incidence equals the angle of reflection.

**Ray diagram:** Diagram that represents the direction and angle of travel of light.

**Refraction:** Process by which a wave changes speed and sometimes direction upon entering a denser or less dense medium, eg a light ray changes direction when refracted by a lens.

## Videos



## Quizzes

