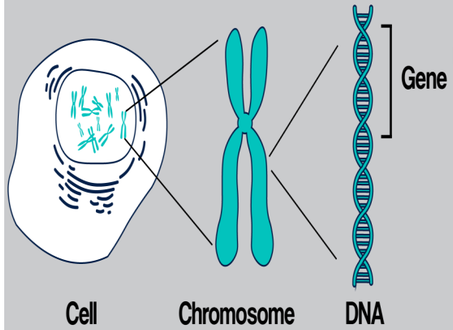
Science

Year 8 Term 4

Trinity Academy Bradford

1. Biology



DNA has a structure called a 'double-helix'. This was discovered by Watson and Crick in the 1950s.

Individuals within a species show **genetic variation** because of **mutations** in their DNA.

Organisms that are **best adapted to their environment will survive** and can then **pass on their genes to their offspring**. This is natural selection and sometimes known as the **'survival of the fittest'**.

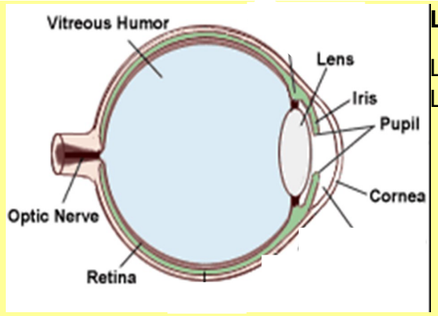
To prevent species from going extinct, scientists keep records of genetic information known as **'gene banks'**.

Inheritance	When genes are passed on from parents to offspring.
Characteristic	How an organism looks or behaves.
DNA	A chemical which carries genetic information.
Gene	A section of DNA which codes for a particular characteristic.
Chromosome	Coiled strands of DNA which are stored in the nucleus of cells.
Mutation	A change in the DNA.
Natural selection	The process of how organisms change over time (evolution).
Extinction	When there are no more individuals of a plant or animal species alive anywhere in the world.

3. Physics

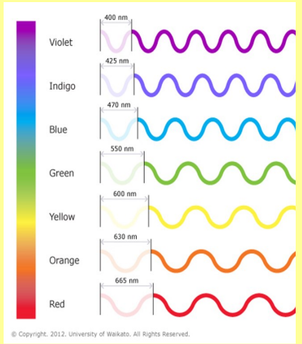
The Eye

The **retina** is the light sensitive part of the eye. It absorbs light waves and turns these into an **electrical impulse** which travels to the brain along the optic nerve.



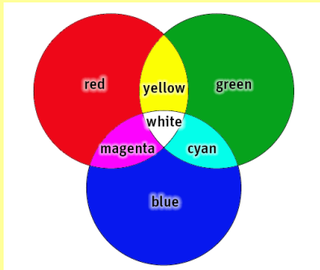
Light and Colour

Light is a **transverse wave** that travels in straight lines at a speed of **300 000 000m/s**. Light does not need particles to travel and so it can travel through a **vacuum**.

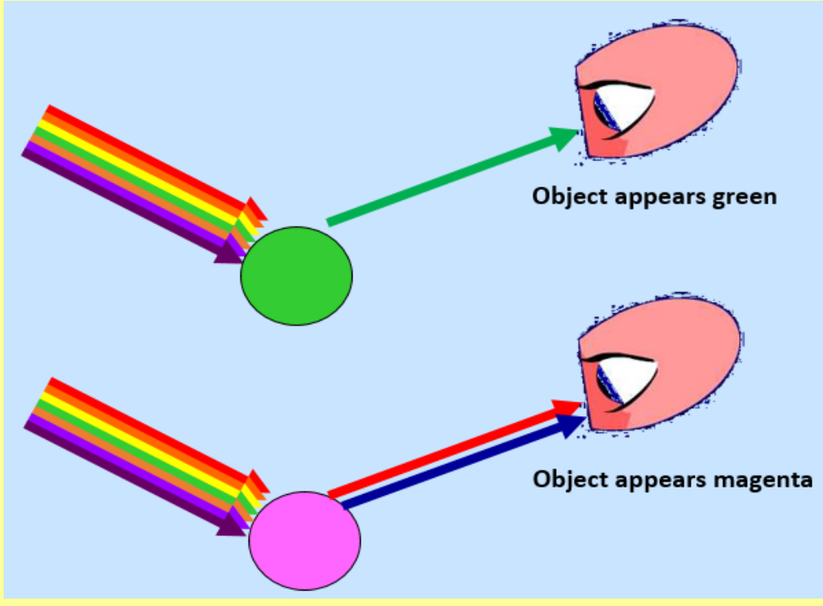


White light is made up of a **spectrum of colours** from high frequency violet to low frequency red.

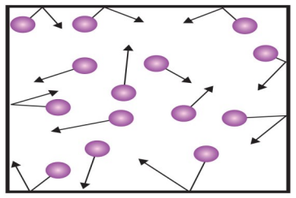
The **'primary colours'** of light are **red, green and blue**. These can be mixed together to form the **'secondary colours'; yellow, cyan and magenta.**



Objects appear different colours because they **reflect different colours of light**. E.g. red objects reflect red light, cyan objects reflect both green and blue light, all other wavelengths of light are absorbed.



2. Chemistry

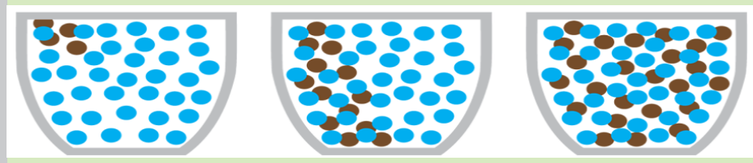


Gas pressure

This is caused by particles of gas **colliding and exerting a force** on a surface, e.g. the inside of a container.

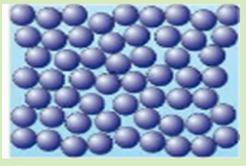
Diffusion

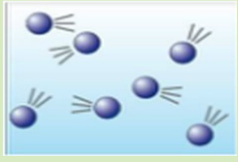
This is when particles **spread** from an area of **high concentration** to an area of **low concentration** along a **concentration gradient**.



Brownian Motion

This is the random movement of particles of a liquid or gas (fluids).





Density

Density is a measure of how much space (volume) particles take up. When a liquid evaporates, **particles move further apart** from one another. Because **the same number of particles will now take up a larger amount of space**. This means that the density has decreased.