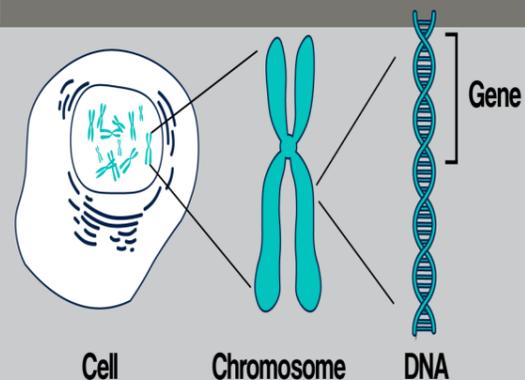


1. Biology



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'**.

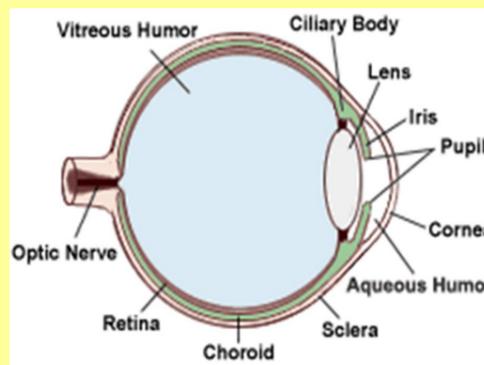
To prevent species from going extinct scientists keep records of genetic information known as **'gene banks'**.

Inheritance	When genes are passed on from parents to
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.

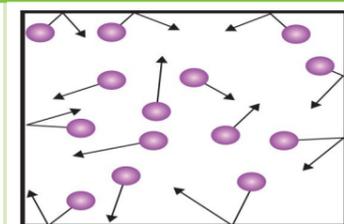
3. Physics

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.



2. Chemistry

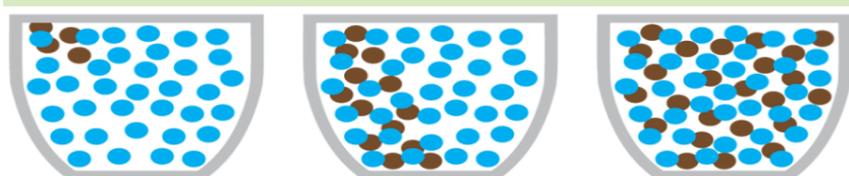


Gas pressure

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

Diffusion

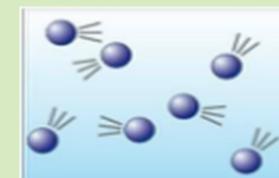
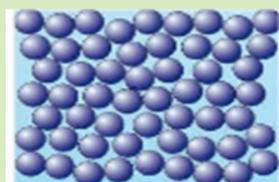
This is when particles **spread** from an area of **high concentration** to an area of **low concentration** along a **concentration gradient**.



Brownian Motion

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

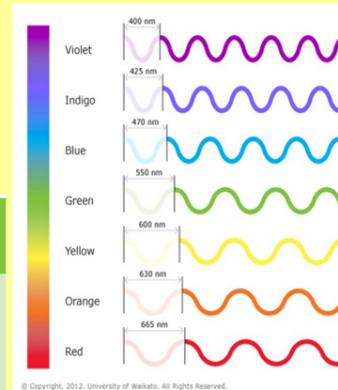
Density



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.

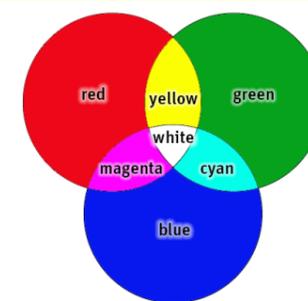
Light and Colour

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.

