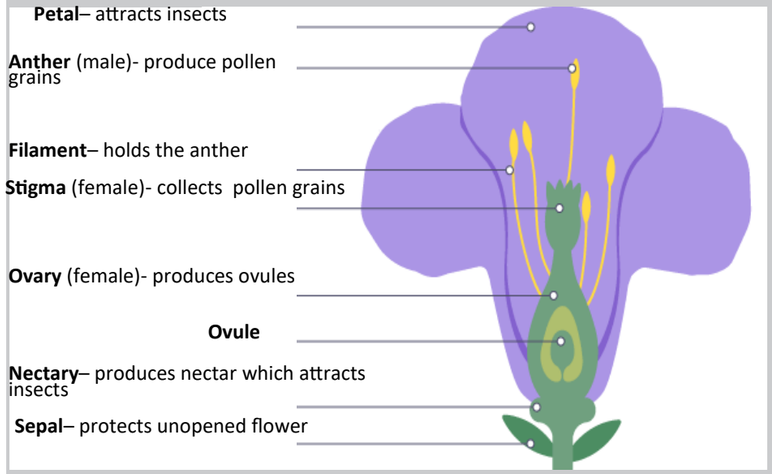
Science

Year 7 Term 4

Trinity Academy Bradford

1. Biology



Pollination

Pollination is when **pollen grains** move from the **anther** of a flower to the **stigma** of another flower. This can happen by **wind or insects.** We depend on insects like honey bees to pollinate most of our crops and therefore food production.

Seeds and Fruit

When a pollen grain lands on the stigma of a flower, a pollen tube grows until it meets an ovule in the ovary. Fertilisation happens. The female parts of the flower develops into a fruit. The ovules become seeds.

Dispersal

Seeds must be dispersed (spread away from each other) to reduce competition between new plants.

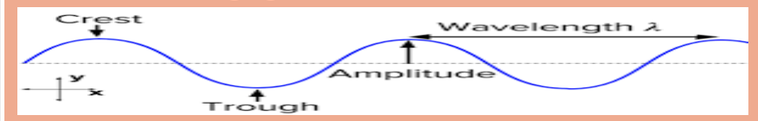
Method	Detail
Wind	Seeds have lightweight parts, wings or parachutes
Animals (inside)	Brightly coloured and tasty fruits contain seeds with indigestible coats, so that the seeds pass through the animal's digestive system undamaged
Animals (outside)	Fruits have hooks that attach them to the fur of passing animals
Self-propelled	Have a pod that bursts open when ripe, throwing the seeds away from the plant

3. Physics

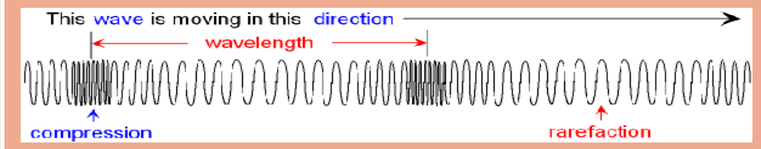
Waves

A wave transfers energy **without** moving matter.

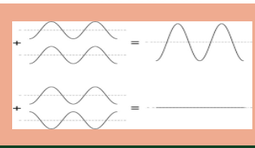
A transverse wave e.g. light



A longitudinal wave e.g. sound



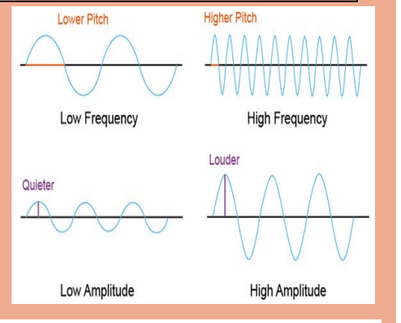
Waves can affect each other by **superposition.** Waves can either get bigger or cancel out.



Wavelength	The distance between two peaks of a wave,
Frequency	The number of waves that pass a point in a
Peak	The highest point of a wave
Trough	The lowest point of a wave
Amplitude	The maximum distance moved

Sound

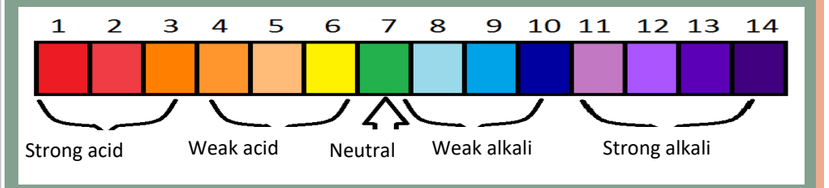
Sound is a **longitudinal wave** that is detected by our ears. The property of the wave changes the sound we hear. The **auditory range** is the range of **frequencies** that an organism can hear.



2. Chemistry

The **pH** of a substance can be found using an **indicator.**

Universal indicator



Litmus paper

	Red litmus	Blue litmus
ACIDIC SOLUTION	Stays red	Turns red
NEUTRAL SOLUTION	Stays red	Stays blue
ALKALINE SOLUTION	Turns blue	Stays blue

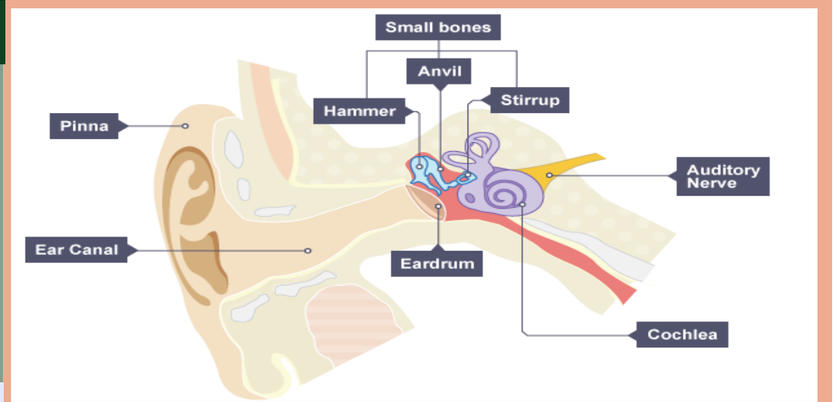
Acid reactions

acid + alkali -> salt + water

acid + metal -> salt + hydrogen

acid + carbonate -> salt + water + carbon dioxide

To test the gas produced we can insert a **lit splint**, if a **squeaky pop** is heard the gas is **hydrogen**. We could also bubble the gas through **limewater,** if the limewater turns **cloudy** the gas is **carbon dioxide.**



In the ear

- **Eardrum** vibrates.
- Vibration passed through **small bones** and **cochlea**.
- Signals sent from cochlea to **auditory nerve**.
- Signals sent from auditory nerve to **brain.**

In a microphone

- **Diaphragm** vibrates.
- Vibrations converted to **electrical signals**.
- Signals passed down a **wire** to a **speaker**.