

Investigation



Variables

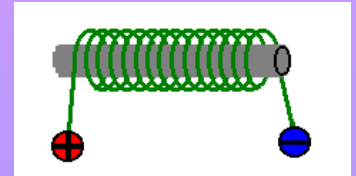
- Variables are things which can affect an experiment
- The **independent variable** is the one which you decide to change.
- The **dependant variable** is the one which you measure.
- The **control variables** are the ones you must keep the same for the experiment to be a **fair test**.

Which variable ?

- An investigation to see how the solubility of salt is affected by temperature.

<u>Independent variable</u>	<u>Dependent variable</u>	<u>Control variables</u>

- An investigation to see how the strength of an electromagnet changes with the number of turns on the coil



<u>Independent variable</u>	<u>Dependent variable</u>	<u>Control variables</u>

- An investigation to see how the concentration of an acid affects the speed of its reaction with magnesium

<u>Independent variable</u>	<u>Dependent variable</u>	<u>Control variables</u>

- An investigation to see how a persons heart rate is affected by exercise.

<u>Independent variable</u>	<u>Dependent variable</u>	<u>Control variables</u>

- An investigation to see which variety of tomatoes gave the most juice to make ketchup

<u>Independent variable</u>	<u>Dependent variable</u>	<u>Control variables</u>

Drawing results tables

- Results tables almost **ALWAYS** need **UNITS**.
- The **independent** variable usually goes in the left hand column
- The **dependent** variable goes on the right
- You usually need to take more than one reading and **average** them.

Independent variable	Dependent variable		
	Reading 1	Reading 2	Average

Solubility

Temperature (°C)	Amount of salt which dissolved (g)		
	Reading 1	Reading 2	Average

Strength of an electromagnet

Number of turns	Amount of paper clips picked up by the electromagnet		
	Reading 1	Reading 2	Average

Concentration

Concentration of acid (M)	Time for magnesium to all react (seconds)		
	Reading 1	Reading 2	Average

Heart rate

Length of exercise (mins)	Heart rate (beats per minute)		
	Reading 1	Reading 2	Average

Tomatoes

Species of Tomato	Amount of juice (cm ³)		
	Repeat 1	Repeat 2	Average

Making predictions

- Two –ER words if you can.
- Eg. The higher the temperature the greaterer the amount of salt that dissolves.
- The higher the electric current the greaterer the number of paper clips the electromagnet can pick up.
- The greaterer the concentration the fasterer the magnesium reacts with the acid
- The longerer you exercise for the fasterer your pulse rate gets.

Planning

- An investigation to see how the solubility of salt is affected by temperature.



Planning

- An investigation to see how the strength of an electromagnet is affected by the number of turns on the coil



Drawing graphs

- Simple rules also apply to graphs

