B0: Working Scientifically

Knowledge organiser

Asking Questions

An investigation has an;

independent variable (what we change),

a **dependent variable** (what we measure),

and **control variables** (what we keep the same)

Independent	Dependent	Control
Material of the cup	Temperature of the drink	Volume of drink
		Size of cup
		Time the drink is left to cool
		Starting temperature of drink

How does the material of a cup affect how warm his drink stays.

Planning investigations

Accurate: Close to the true value of what you are measuring.

Precise: This describes a set of repeat measurements that are close together.

not accurate not precise

accurate not precise

not accurate precise

accurate precise

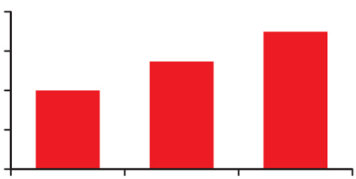|			
100.01g	100.02g	100.01g	Accurate, precise
90g	96g	107g	Accurate, Not precise
92.1g	92.1g	92.2g	Not accurate, Not precise
101.1g	99.0g	100.01g	Precise, Not accurate

Recording Data

Investigation: An experiment or set of experiments designed to produce data to answer a scientific question or test a theory.
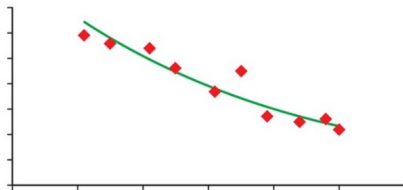
Mean: An average of a set of data, found by adding together all the values in the set and dividing by the number of values in the set.

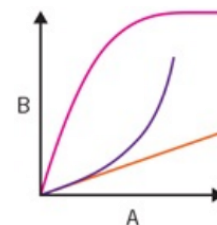|	
10, 12, 11	7
6, 10, 5	21
19, 20, 24	11
22, 17, 21	20
35, 30, 40	35

Analysing Data

Discontinuous: A variable that can only have whole-number values.

Continuous: A variable that has values that can be any number
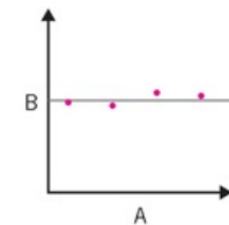
Evaluating Data

Line of best fit: A smooth line on a graph that travels through or very close to as many of the points plotted as possible.

In these graphs, if A increases then B increases.

In these graphs, if A increases then B decreases.

In this graph, if A increases B does not change.

Key terms

Make sure you can write definitions for these key terms.

Observation, investigation, data, variable, independent variable, dependent, variable, control variable, prediction, plan, accurate, precise, spread, uncertainty, repeatable, reproducible, continuous, discrete, categoric, range, risk assessment, outlier, mean, line graph, bar chart, pie chart, analyse, line of best fit, conclusion, evaluate, confidence, random error, systematic error