

SPEAK

like a scientist

Planning an experiment

Variable – A factor that can change in an experiment.

Independent variable – A variable that is being changed during the experiment.

Dependent variable – A variable that is being tested or measured during the experiment.

Control variable – A variable that must be kept the same, so the experiment is not affected.

Prediction – Stating what you think will happen during an experiment, using scientific theory.

Hypothesis – An idea about how something works that can be tested using experiments. Usually developed from a question based on an observation.

Observation – Something that can be seen to be happening.

Scientific method – Investigating by collecting and analysing data to demonstrate that an idea is right or wrong.

Method – A description of how an experiment should be done - can be written as a list of instructions.

Primary data – Data that has been collected from the original source for a specific purpose.

Secondary data – Data that has already been collected through primary sources and made available for others to use.

Apparatus – The equipment used to conduct an experiment.

Accurate – Results are accurate if they're close to the true value.

Precise – Results are precise if they've been repeated and are similar.

Repeatable data – Getting similar results when repeating the experiment.

Reproducible – Getting similar results when someone else does the experiment.

Random error – Something that causes an unexpected difference between a measurement and the true value. May happen when equipment is used incorrectly, or readings are taken incorrectly.

Systematic error – Something that causes the results to differ by the same amount each time. May happen when equipment is used incorrectly.

True value – The result that you would get in an ideal measurement or experiment that is totally unaffected by errors.

Outliers – Results that are very different from the others.

Repeat readings/measurements – Taking measurements or observations of the same experiment more than once.



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