Applied General Science – Glossary of terms
(TVQ01028, TVQ01029)

	Definition
Accuracy	a measurement result is considered accurate if it is judged to be close to the true value.
Adapted	making something suitable for a new use or purpose.
Akaryote	this is a cell without a nucleus e.g. erythrocyte (red blood cell). Viruses do not have acellular structure and whilst outside cells they are inert particles (visions), they may be considered akaryotic.
Analyse	examine (something) methodically and in detail, in order to explain and interpret it. Separate information into components and identify their characteristics.
Analyte	a substance whose chemical constituents are being identified and measured.
Anomalous	deviating from what is standard, normal, or expected.
Aseptic technique	refers to procedures performed under sterile conditions that are applied to prevent contamination unwanted contact with microorganisms.
Assess	make an informed judgement.
Batch Processing	materials, either dry bulk or fluids that are being processed are treated in batches by passing the output of one process to subsequent processes.
Biotechnology	the exploitation of biological processes, organs or systems for industrial or other purposes, especially the genetic manipulation of microorganisms for the production of antibiotics, enzymes etc.
Calculate	determine (the amount or number of something) mathematically.
Catenate	the linkage of atoms of the same element into longer chains.
Chirality	asymmetric chemical structure such that the structure and its mirror image are not superimposable.
Colorimetry	a technique used to determine the concentration of coloured compounds in solution.
Commercial	concerned with or engaged in commerce; i.e. trade or business.
Compare	identify similarities and /or differences.
Concise	giving a lot of information clearly and in a few words; brief but comprehensive.

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Continuous Processing	materials, either dry bulk or fluids that are being processed are continuously in motion, undergoing chemical reactions or subject to mechanical or heat treatment.
Conventions	ways in which things are usually done.
Cultivation Techniques	procedures that allow microbial organisms to multiply by reproducing in a predetermined culture medium under controlled laboratory conditions.
Data	facts and statistics collected together for reference or analysis.
Describe	give a detailed or graphic account / presentation of.
Disease	a disorder of structure or function in an organism especially one that produces specific symptoms or that affects a specific location and is not simply a direct result of physical injury.
Effectiveness	the degree to which something is successful in producing a desired result; success.
Enantiopure	those compounds having, within the limits of detection, molecules of one chirality.
Enthalpy	a measurement of energy in a thermodynamic system. It is equal to the internal energy of the system plus the product of pressure and volume.
Ethics and morals	relates to “right” and “wrong”. Whilst they are sometimes used interchangeably, they are different. Ethics refer to rules provided by an external source, eg codes of conduct in workplaces or principles in religions. Morals refer to an individual’s own principles regarding right and wrong.
Eukaryote	any organism whose cells contain a nucleus and other organelles enclosed within membranes.
Evaluate	form an idea of the amount, number, or value of; assess.
Evidence	information showing that a proposed theory is true or false. This can be written, experimental or photographic.
Explain	make (an idea or situation) clear to someone by describing it in more detail or revealing relevant facts.
Functional groups	a portion of a molecule that is a recognisable / classified group of bound atoms.
Genetic Engineering	deliberate modification of the characteristics of an organism by manipulating its genetic material.

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Haemocytometer	a device used to count cells, originally devised to count red blood cells.
Hazards	a situation that poses a level of threat to life, health, property, or environment.
Identify	show or indicate who or what (someone or something) is.
Inconsistencies	the state of not staying the same throughout.
Industrial	relating to economic activity concerned with the processing of raw materials and manufacture of goods in factories.
Isomerism	the phenomenon whereby certain compounds, with the same molecular formula, exist in different forms owing to their different organisations of atoms.
Justify	show or prove to be right or reasonable. Support a case with evidence.
Limiting factor	common limiting factors are environmental conditions that limit the growth, abundance, or distribution of an organism or a population of organisms in an ecosystem.
Mandatory	compulsory, required by regulations.
Manipulate	handle or control (a tool, mechanism, information, etc.) in a skilful manner.
Methodology	a system of methods used in a particular area of study or activity.
Modification	change that adapts, qualifies, or restricts something for a new end or purpose.
Nomenclature	the devising or choosing of names for things, especially in a science or other discipline.
Outline	rough draft or summary of main features, a clear description but not a detailed one.
Percentage error	a useful tool for determining the precision of your calculations. The formula is given by: The experimental value is your calculated value, and the theoretical value is your known value.
Physiology	a branch of biology dealing with the functions and activities of living organisms and their parts, including all physical and chemical processes.

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Precision	precise measurements are ones in which there is very little spread about the mean value. Precision depends only on the extent of random errors – it gives no indication of how close results are to the true value. It can be expressed numerically by measures of imprecision (e g standard deviation).
Primary standard	a substance of known high purity which may be dissolved in a known volume of solvent to give a **primary standard solution.**
Prokaryote	a microscopic single-celled organism which has neither a distinct nucleus with a membrane nor other specialised organelles, including bacteria and cyanobacteria.
Record	set down in writing or some other permanent form for later reference.
Relate	show how things are connected to each other, and to what extent they are alike or affect each other.
Reliability	the extent to which an experiment, test, or measuring procedure yields consistent results on repeated trials. A measure is said to have a high reliability if it produces similar results under consistent conditions, (see repeatability and reproducibility below).
Repeatability	precision obtained when measurement results are produced in one laboratory, by a single operator, using the same equipment under the same conditions, over a short timescale. A measurement is 'repeatable' in quality when repetition under the same conditions gives the same or similar results e.g. when comparing results from the same learner or group using the same method and equipment.
Reproducibility	precision obtained when measurement results are produced by different laboratories (and therefore by different operators using different pieces of equipment). A measurement is 'reproducible' in quality when reproducing it under equivalent (but not identical) conditions gives the same or similar results from different learner groups, methods or equipment - a harder test of the quality of data.
Review	assess (something) formally with the intention of instituting change if necessary.
Risk assessment	a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking.

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Serial Dilution	a step-wise dilution of a substance in solution. Usually the dilution factor at each step is constant, resulting in a geometric progression of the concentration in a logarithmic fashion.
Somatic	relates to the body cells in contrast to germ line cells or the mind.
Stochastic	unpredictable due to the influence of a random variable.
Qualitative	relating to, measuring, or measured by the quality of something rather than its quantity. The testing of a substance or mixture to determine the characteristics of its chemical constituents. A qualitative description would be "Magnesium burns in air with a brilliant white flame to form magnesium oxide"
Quantitative	relating to, measuring, or measured by the quantity of something rather than its quality. A quantitative description would be "10g of magnesium burns in air to form 16·67g of magnesium oxide"
Radioisotope	this is a radioactive isotope.
Radiotherapy	the treatment of disease, especially cancer, using X-rays or similar forms of radiation.
Refractive Index	the ratio of the velocity of light in a vacuum to its velocity in a specified medium.
Risks	a situation involving exposure to danger.
Secondary standard	a **standard** that is prepared in the laboratory for a specific analysis. It is usually standardised against a **primary standard**.
Serial dilution	the stepwise **dilution** of a substance in solution. Usually the **dilution** factor at each step is constant, resulting in a geometric progression of the concentration in a logarithmic fashion.
Specific heat capacity	the heat required to raise the temperature of the unit mass of a given substance by a given amount (usually one degree).
Spectroscopic	an optical device for producing and observing a spectrum of light or radiation from any source, consisting essentially of a slit through which the radiation passes, a collimating lens, and an Amici prism.
Standard procedure	established or recommended methods to be followed routinely for the performance of designated operations or in designated situations —called also standing operating procedure. A set of instructions that indicate exactly how to follow an experiment.

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Stoichiometry	measures quantitative relationships, and is used to determine the amount of products/reactants that are produced/needed in a given reaction.
Tabulated	arranged in tabular form; usually as a table.
Ultrastructure	fine structure within a cell that can be seen only with the high magnification obtainable with an electron microscope.
Underpinning	something that serves as a foundation, basis or support for a theory or fact.
Validity	suitability of the investigative procedure to answer the question being asked. For example, an investigation to find out if the rate of the chemical reaction depended upon the concentration of one of the reactants would not be a valid procedure if the temperature of the reactants was not controlled. A **valid conclusion** is one supported by valid data, obtained from an appropriate experimental design and based on sound reasoning.
Volumetric	a widely-used quantitative analytical method. This method involves the measurement of volume of a solution of known concentration which is used to determine the concentration of the analyte.