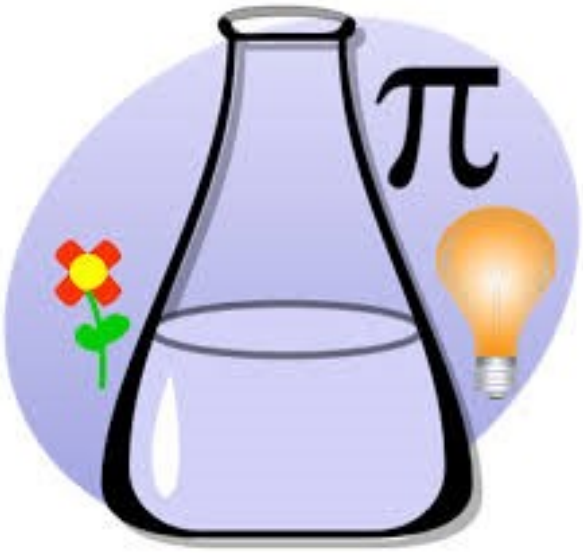
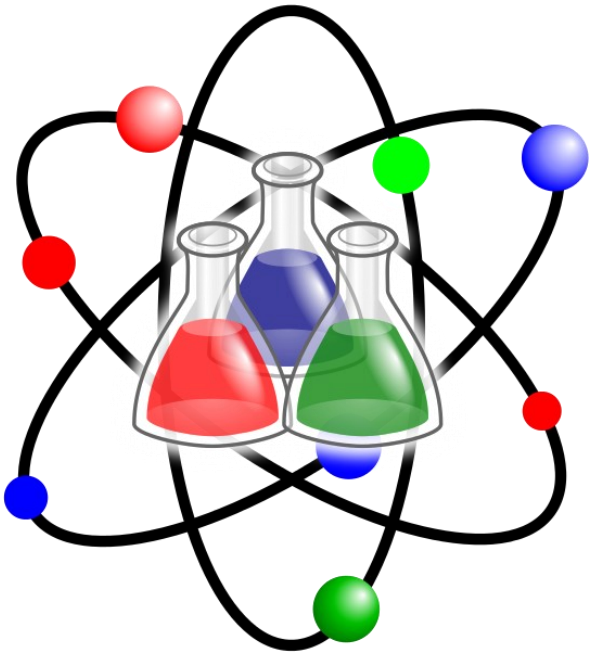
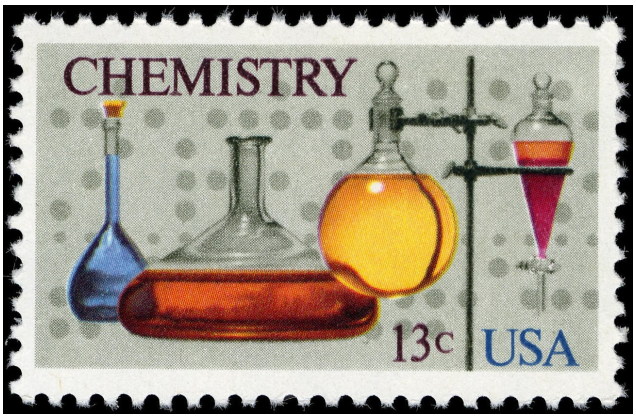




AQA GCSE Science Key Words

Knowledge Organiser



AQA Science Key Words (Knowledge Organiser)

	Key word	Definition
1	**Accuracy**	A measurement result is considered accurate if it is judged to be close to the true value
2	**Anomalies**	These are values in a set of results which are judged not to be part of the variation caused by random uncertainty
3	**Calibration**	Marking a scale on a measuring instrument. This involves establishing the relationship between the measuring instrument and standard values, which must be applied. For example, placing a thermometer in melting ice to see whether it reads zero, in order to check if it has been calibrated correctly.
4	**Categoric**	Categoric variables have values that are labels, eg names of plants or types of material
5	**Continuous**	Continuous variables can have values (called a quantity) that can be given a magnitude either by counting (as in the case of the number of shrimp) or by measurement (eg light intensity, flow rate etc). Previously known as discrete variable
6	**Control**	Control variable is one which may, in addition to the independent variable, affect the outcome of the investigation and therefore has to be kept constant or at least monitored.
7	**Data**	Information, either qualitative or quantitative, that has been collected.
8	**Dependent**	Dependent variable is the variable of which the value is measured for each and every change in the independent variable.
9	**Evidence**	Data which has been shown to be valid
10	**Fair test**	A fair test is one in which only the independent variable has been allowed to affect the dependent variable
11	**Hypothesis**	A proposal intended to explain certain facts or observations.
12	**Independent**	Independent variable is the variable for which values are changed or selected by the investigator

Key word	Definition
13 **Interval**	The quantity between readings, eg a set of 11 readings equally spaced over a distance of 1 metre would give an interval of 10 centimetres.
14 **Measurement error**	The difference between a measured value and the true value.
15 **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
16 **Prediction**	A prediction is a statement suggesting what will happen in the future, based on observation, experience or a hypothesis
17 **Random error**	These cause readings to be spread about the true value, due to results varying in an unpredictable way from one measurement to the next. Random errors are present when any measurement is made, and cannot be corrected. The effect of random errors can be reduced by making more measurements and calculating a new mean.
18 **Range**	The maximum and minimum values of the independent or dependent variables; important in ensuring that any pattern is detected. For example a range of distances may be quoted as either: 'From 10 cm to 50 cm' or 'From 50 cm to 10 cm'.
19 **Repeatable**	A measurement is repeatable if the original experimenter repeats the investigation using same method and equipment and obtains the same results. Previously known as reliable.
20 **Reproducible**	A measurement is reproducible if the investigation is repeated by another person, or by using different equipment or techniques, and the same results are obtained. Previously known as reliable.
21 **Resolution**	This is the smallest change in the quantity being measured (input) of a measuring instrument that gives a perceptible change in the reading
22 **Sketch graph**	A line graph, not necessarily on a grid, that shows the general shape of the relationship between two variables. It will not have any points plotted and although the axes should be labelled they may not be scaled.

Key word	Definition
23 **Systematic error**	These cause readings to differ from the true value by a consistent amount each time a measurement is made. Sources of systematic error can include the environment, methods of observation or instruments used. Systematic errors cannot be dealt with by simple repeats. If a systematic error is suspected, the data collection should be repeated using a different technique or a different set of equipment, and the results compared
24 **True value**	This is the value that would be obtained in an ideal measurement
25 **Uncertainty**	The interval within which the true value can be expected to lie, with a given level of confidence or probability, eg 'the temperature is 20 °C ± 2 °C, at a level of confidence of 95%'.
26 **Valid conclusion**	A conclusion supported by valid data, obtained from an appropriate experimental design and based on sound reasoning
27 **Validity**	Suitability of the investigative procedure to answer the question being asked. For example, an investigation to find out if the rate of a 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
28 **Variables**	These are physical, chemical or biological quantities or characteristics
29 **Zero error**	Any indication that a measuring system gives a false reading when the true value of a measured quantity is zero, eg the needle on an ammeter failing to return to zero when no current flows. A zero error may result in a systematic uncertainty