CIE Chemistry A-Level

4.2.2 - Practical Skills for Paper 3

Presentation of Data and Observations

Flashcards

What is the most common form of recording observations in chemistry?

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Data tables

Where should the units of measurement be placed in the data table?

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In the column headings.

How are the independent and dependent variables set up in the table?

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The independent variable is always in the first column of the table and the dependent variable is in the next column(s).

Why are tables a good method of displaying qualitative data?

Why are tables a good method of displaying qualitative data?

They allow all the observations to be easily recorded and analysed.

What degree of precision should results be given to?

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The degree of precision should reflect the measuring apparatus' resolution.

E.g. If a measuring cylinder has a resolution of 1.0 cm^3, volumes should be recorded to the nearest 0.5 cm^3.

How many significant figures should calculated results be given to?

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The same number of significant figures as (or one more than) the least accurate measured quantity.

What type of data is suitable for displaying on a graph?

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Quantitative data

Why are graphs often used to display data?

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They clearly show patterns and trends in the data and make anomalous results easy to identify.

How can an anomalous result be identified from a scatter diagram?

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The anomalous data value will fall outside the trend of all the other data values and will not lie on/near the line of best fit.

For a graph of results, which axis do the independent and dependent variables go on?

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Dependent variable - vertical y axis

Independent variable - horizontal x axis

When plotting a graph, what key points should be remembered?

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- Draw in pencil and use a ruler
- Must fill at least half the available space
- Appropriate scale must be used
- Label axes (including units)
- Plot each point as a cross
- Draw a ring around outliers
- Draw a line/curve of best fit

How can the gradient of a straight line graph be calculated?

How can the gradient of a straight line graph be calculated?

Gradient = change in y ÷ change in x

How must a line of best fit be drawn?

How must a line of best fit be drawn?

A sharp pencil must be used.

If the trend is a straight line, a ruler must be used to draw a continuous straight line through the values.

If the trend is a curve, a continuous freehand curve must be drawn, connecting all the data values.