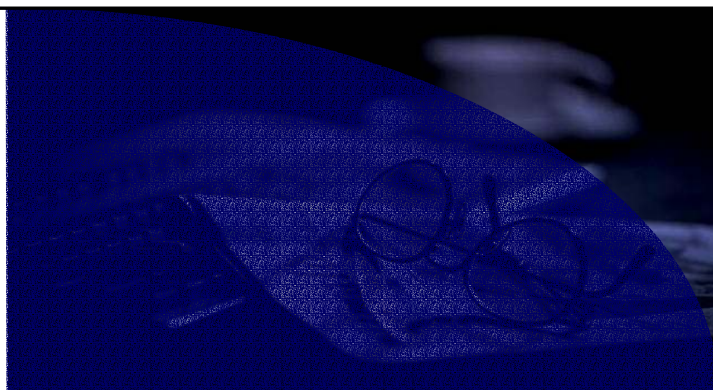


GCSE Science Coursework



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GCSE Science coursework...Marking and assessment:

The guidelines below are relevant to double and single GCSE 2006 specification for AQA, OCR and Edexcel.

PLANNING	
P2A	Outline a simple procedure.
P4A	Plan to collect evidence which will be valid.
P4B	Plan the use of suitable equipment or sources of evidence.
P6A	Use scientific knowledge and understanding to plan and communicate a procedure, to identify key factors to vary, control or take into account, and to make a prediction where appropriate.
P6B	Decide a suitable extent and range of evidence to be collected.
P8A	Use detailed scientific knowledge and understanding to plan and communicate an appropriate strategy, taking into account the need to produce precise and reliable evidence, and to justify a prediction, when one has been made.
P8B	Use relevant information from preliminary work, where appropriate, to inform the plan.
OBTAINING	
O2A	Collect some evidence using a simple and safe procedure.
O4A	Collect appropriate evidence which is adequate for the activity.
O4B	Record the evidence
O6A	Collect sufficient systematic and accurate evidence and repeat or check where appropriate
O6B	Record clearly and accurately the evidence collected.
O8A	Use a procedure with precision and skill to obtain and record an appropriate range of reliable evidence.
ANAYSIS	
A2A	State simply what is shown by the evidence
A4A	Use simple diagram, charts or graphs as a basis for explaining the evidence.
A4B	Identify trends and patterns in the evidence.
A6A	Construct and use suitable diagrams, charts, graphs (with lines of best fit, where appropriate), or use numerical methods to process evidence for a conclusion.
A6B	Draw a conclusion consistent with the evidence and explain it using scientific knowledge and understanding.

A8A	Use detailed scientific knowledge and understanding to explain a valid conclusion drawn from processed evidence.
A8B	Explain the extent to which to which the conclusion supports the prediction, if one has been made.
EVALUATION	
E2A	Make a relevant comment about the procedure used or the evidence obtained.
E4A	Comment on the quality of the evidence, identifying any anomalies.
E4B	Comment on the suitability of the procedure and where appropriate, suggest changes to improve it.
E6A	Consider critically the reliability of the evidence and whether it is sufficient to support the conclusion, accounting for any anomalies
E6B	Describe, in detail, further work to provide additional relevant evidence

Notes for marking POAE

Planning

- P2a/P4a – can be awarded against the “method”
- P4b – the apparatus list must include all measuring instruments. Agree them and write them in the Dept. mark scheme
- P6a (sci.know) - encourage plans to have the scientific knowledge linked to the experiment. Copied information from texts or internet does not get marks e.g. “Osmosis is..”/“Osmosis will occur in my potato because”
- P6a (prediction) – does not need a justification
- P6a (key factors) – must take account of “controls” – Agree them and write them in the Dept. mark scheme
- All three elements of P6a must be awarded to get P6a
- P6b must be a range of 5, and repeats of 3.
- P8a – detail is the essential element here and a accurate justification linked to the correct science.
- P8b – again detail – it must be written up thoroughly.
- Obtaining evidence
- When marking ‘recording evidence’ O6b – check the units in headings.
- Look out for mistakes like (s) and 14.85.

Analysing

- Graphs without units or incorrectly plotted do not get A4a.
- A4a/A6a – computer generated and line of best fit = A6a.
- Beware computer generated graphs don’t record everything e.g. the results of three trials and the average result all on one graph – award 0 if this happens.
- Remember O6a can also be awarded for “ numerical methods”
- A4a states use graphs for comments. Ensure that their comment is in agreement with their results.
- A4b – Trends – should state a “if X decreases then y increases” style of statement. A8a/b has to be the highest level of detailed comment.

Evaluation

- E4a – identifying “no anomalies” can be awarded A4b – but check – because it is unlikely that there are none at all. Remember any result off the line of best fit could be considered an anomaly.
- E4b – suggest changes to improve - must be related to what they have done. E.g. ‘I could have drained my potato before I weighed it’
- E6a- ‘account for anomalies’ – “I will be more careful” or “ I will repeat my experiment more times” are NOT acceptable comments. But comments on using the ‘correct size of measuring cylinder’ is acceptable.
- E6b – additional work. e.g. “In the osmosis experiment the distilled water gave a + % change in mass, whilst the 5% salt solution and 10% salt solution gave a - % change in mass. I will do more experiments to find the solution close to zero % change of mass by doing experiments with 0.5%, 1%, 2% solutions of salt solution.”