

Combustion Practical 2

- To analyse the results of an investigation
- To evaluate an investigation

| KS3 Practical Mark Scheme | | | | | | | | | |
|---|--|-----|--|--|---|--|-----|--|--|
| Section 1 | | | | | Section 2 | | | | |
| Hypothesis | | | | | Practical Skill | | | | |
| H1 State a reasonable hypothesis (prediction). | | | | | P1 You have demonstrated that you can measure accurately. This means you are measuring to the nearest 0.1g in solids or the nearest 0.5ml in liquids. | | | | |
| H2 Explain hypothesis (prediction) using accurate science. | | | | | | | | | |
| Diagram | | | | | Graph | | | | |
| D1 State some equipment. | | | | | G1 Your graph has a sensible x (across) axis, labelled with units. | | | | |
| D2 State all of the equipment needed. | | | | | G2 Your graph has a sensible y axis (up) with units. | | | | |
| D3 Draw a scientific diagram in pencil, with a ruler. | | | | | G3 Your graph has it's points plotted in the right places in pencil. | | | | |
| | | | | | G4 Your graph has a line of best fit, or a sentence saying there is no correlation if there is none. | | | | |
| Variables | | | | | Analysis | | | | |
| V1 Stated your independent variable. | | | | | A1 You have stated whether your results supports your prediction of not. | | | | |
| V2 Stated your dependent variable. | | | | | A2 You have used two points of data (numbers) to describe how your results supports your prediction or not. | | | | |
| V3 Stated 2 or more controlled variables. | | | | | A3 You have referred to overall trend in your graph, and whether this supports or not your prediction. | | | | |
| V4 Explained how you have controlled these two variables. | | | | | | | | | |
| Method | | | | | Context | | | | |
| M1 Written a step by step method with most of the steps. | | | | | C1 You have stated a real life context where the results of this experiment apply. | | | | |
| M2 Described in detail all of the steps, including how to record measurements. | | | | | C2 You have explained how the trend in your results would apply to this real life context. | | | | |
| M3 If I follow your method I will get accurate results. | | | | | | | | | |
| M4 There is no spelling errors, or punctuation missing from your method. | | | | | | | | | |
| M5 Your method explains why you will need to repeat the experiment. | | | | | | | | | |
| Risk Assessment | | | | | Evaluation | | | | |
| R1 You have stated two risks and how to prevent them. | | | | | E1 You have stated one source of error in your method results. This cannot be human error. | | | | |
| R2 You have stated what you will do if someone is hurt with these two risks (remedial actions). | | | | | E2 You have described how you could reduce this error if you repeated the experiment. | | | | |
| Table | | | | | | | | | |
| T1 Your results table has your variables as headings. | | | | | T2 Your results table includes appropriate units for all of your headings. | | | | |
| Section 1 Total | | /18 | | | Section 2 Total | | /12 | | |
| Practical total | | /30 | | | | | | | |

Circle your target level

Each section done right is worth one mark

Use this to work out how much you need to do.

This is based on the accuracy of your measurements and how safe you are during the practical.

The maximum mark you can get is 30

The sections everyone should be doing this lesson

Practical Skill

P1 You have demonstrated that you can measure accurately. This means you are measuring to the nearest 0.1g in solids or the nearest 0.5ml in liquids.

- Visually assessed by the teacher in the lesson, this mark is awarded to students who demonstrate that they can carry out a practical safely and accurately.

Graph

- G1** Your graph has a sensible x (across) axis, labelled with units.
- G2** Your graph has a sensible y axis (up) with units.
- G3** Your graph has it's points plotted in the right places in pencil.
- G4** Your graph has a line of best fit, or a sentence saying there is no correlation if there is none.

Analysis

- A1** You have stated whether your results supports your prediction of not.
- A2** You have used two points of data (numbers) to describe how your results supports your prediction or not.
- A3** You have referred to overall trend in your graph, and whether this supports or not your prediction.

Analysis

A1 You have stated whether your results support your prediction or not.

My results support/do not support my prediction that.....

Context

C1 You have stated a real life context where the results of this experiment apply.

C2 You have explained how the trend in your results would apply to this real life context.

- examples of contexts for this experiment are:

Context

C1 You have stated a real life context where the results of this experiment apply.

This experiment applies to the real world because.....

- eg firefighters closing doors
- or CO₂ fire extinguishers

Evaluation

E1 You have stated one source of error in your method/results. This cannot be human error.

E2 You have described how you could reduce this error if you repeated the experiment.

| KS4 Practical Mark Scheme | | Section 1 | | Section 2 | |
|---|--|--|--|--|--|
| | | Sources | | Practical Skill | |
| S1 Two relevant sources are identified. (If websites full URLs needed). | | S2 The usefulness of one source is commented on. | | S3 A comparison between the usefulness of the two sources is made. | |
| Hypothesis | | H1 State a reasonable hypothesis (prediction). | | H2 Explain hypothesis (prediction) using accurate science. | |
| Variables | | V1 Stated your independent variable. | | V2 Stated your dependent variable. | |
| V3 Explained how not controlling these variables could affect your results. | | V4 Explained how you have controlled these two variables. | | V5 Stated 2 or more controlled variables. | |
| V6 Identified one of your variables that is difficult to measure accurately. | | V7 Explained why this variable is difficult to measure accurately. | | V8 Suggested how this variable could be measured more accurately. | |
| Diagram | | D1 State some equipment. | | D2 State all of the equipment needed. | |
| Method | | M1 Written a step by step method with most of the steps. | | M2 There is no spelling errors, or punctuation missing from your method. | |
| M3 Your method explains why you will need to repeat the experiment. | | M4 Your Method includes a reference to the prediction at which measurements must be made. | | M5 There is no spelling errors, or punctuation missing from your method. | |
| Risk Assessment | | R1 You have identified any significant hazards. | | R2 You have stated appropriate control measures for the hazards. | |
| Table | | T1 Your results table has your variables as headings. | | T2 Your results table includes appropriate units for all of your headings. | |
| Intervals | | I1 You have stated whether or not the interval was suitable with a detailed explanation. | | I2 You have stated whether or not the interval was suitable with a detailed explanation. | |
| I3 You have stated why we compare our results with other groups (reproducibility, pattern, check). | | I4 You have compared your results (overall trend/pattern) with another group's results. | | I5 You have included data (numbers) in your comparison. | |
| Graph | | G1 Your graph has a suitable line of best fit, or a suitable straight line is drawn in pencil. | | G2 Your graph has a suitable line of best fit, or a suitable straight line is drawn in pencil. | |
| Analysis | | A1 You have stated whether your results support your prediction or not. | | A2 You have used two points of data (numbers) to describe how your results support your prediction or not. | |
| Evaluation | | E1 You have correctly identified any anomalous results or stated that you have no anomalous results. | | E2 You have identified whether you needed to repeat any results. | |
| E3 You have stated one source of systematic error in your method/results. This cannot be human error. | | E4 You have described how you could reduce these errors if you repeated the experiment. | | E5 You have referred to overall trend in your graph, and whether this supports or not your prediction. | |
| Looking at another Group's Results | | L1 You have compared your results (overall trend/pattern) with another group's results. | | L2 You have included data (numbers) in your comparison. | |
| Context | | C1 You have stated a real life context where the results of the experiment apply. | | C2 You have explained how the trend in your results apply to this real life context. | |
| C3 You can stated how your results can be used in the context. | | Section 1 Total /30 | | Section 2 Total /20 | |
| | | Practical total /50 | | | |