

Conduction

- ❖ To describe materials as insulators or conductors and give examples.
- ❖ To make a prediction with reasons with respect to best insulating material.
- ❖ To describe heating and cooling in terms of heat energy being transferred to or from surroundings.

Conduction

Conduction is the movement of heat through solids.

Conduction

What is a conductor?

Conduction

What is an insulator?

Conduction

What materials are the best conductors?

Think, pair, share

Conduction

An investigation into which materials are better conductors of heat

Hypothesis

H1 State a reasonable hypothesis (prediction).

H2 Explain hypothesis (prediction) using accurate science.

Hypothesis

H1

I think that the temperature will fall the fastest in thecup.

I think that the temperature will fall the slowest in the..... cup.

H2

I think this because.....

Diagram

D1 State some equipment.

D2 State all of the equipment needed.

D3 Draw a scientific diagram in pencil, with a ruler.

Variables

V1 Stated your independent variable.

My independent variable I changed was the.....

V2 Stated your dependent variable.

My dependent variable I measured was.....

V3 Stated 2 or more controlled variables.

To make it a fair test my controlled variables were.....

V4 Explained how you have controlled these two variables.

We made sure it was fair by.....

Method

M1 Written a step by step method with most of the steps.

First you must....

M2 Described in detail all of the steps, including how to record measurements.

We changed by.....

M3 If I follow your method I will get accurate results.

To measure accurately you must....

M4 There is no spelling errors, or punctuation missing from your method.

M5 Your method explains why you will need to repeat the experiment.

You will need to repeat the experiment because.....

Risk Assessment

R1 You have stated two risks and how to prevent them.

The risks are.....
To prevent these risks you must.....

R2 You have stated what you will do if someone is hurt with these two risks (remedial actions).

If someone is hurt you must.....

Table

T1 Your results table has your variables as headings.

T2 Your results table includes appropriate units for all of your headings.
cm/N/m/kg/kj etc

	Start temperature C	End Temperature C	Time 1	Time 2	Time 3	Average
Polystyrene cup	70	60				
Double Polystyrene cup	70	60				
Copper Cup	70	60				
Copper cup with foil	70	60				
Copper cup with wool	70	60				

	Start temperature C	End Temperature C	Time 1	Time 2	Time 3	Average
Polystyrene cup	70	60	133	189	150	157.333333333333
Double Polystyrene cup	70	60	173	60	166	133
Copper Cup	70	60	82	58	80	73.3333333333333
Copper cup with foil	70	60	46	240	45	110.333333333333
Copper cup with wool	70	60	180	170	190	180

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 wether your results supports your prediction of not.

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

A2 You have used two points of data (numbers) to describe how your results supports your prediction or not.

I can see this because at..... my result was..... whilst/and atmy result was

A3 You have referred to overall trend in your graph, and wether this supports or not your prediction.

My graph shows that as increases/decreases(also) increases/decreases. This supports/does not support my prediction.

Context

prediction.

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

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

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

From my results I can see that..... this means that.....

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.

A source of error that could have affected my results/measurement was...

If I were to repeat the experiment I could reduce the error by.....

Complete write up for homework

KS3 Practical Mark Scheme							
Section 1	Section 2						
<p>Hypothesis</p> <p>H1 State a reasonable hypothesis (prediction). H2 Explain hypothesis (prediction) using accurate science.</p> <p>Diagram</p> <p>D1 State some equipment. D2 State all of the equipment needed. D3 Draw a scientific diagram in pencil, with a ruler.</p> <p>Variables</p> <p>V1 Stated your independent variable. V2 Stated your dependent variable. V3 Stated 2 or more controlled variables. V4 Explained how you have controlled these two variables.</p> <p>Method</p> <p>M1 Written a step by step method with most of the steps. M2 Described in detail all of the steps, including how to record measurements. 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.</p> <p>Risk Assessment</p> <p>R1 You have stated two risks and how to prevent them. R2 You have stated what you will do if someone is hurt with these two risks (remedial actions).</p> <p>Table</p> <p>T1 Your results table has your variables as headings. T2 Your results table includes appropriate units for all of your headings.</p>	<p>Practical Skill</p> <p>P1 You have demonstrated that you can measure accurately. This means you are measuring to the nearest 0.2g in solids or the nearest 0.5ml in liquids.</p> <p>Graph</p> <p>G1 Your graph has a sensible x and y 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.</p> <p>Analysis</p> <p>A1 You have stated whether your results supports your prediction or 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.</p> <p>Context</p> <p>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.</p> <p>Evaluation</p> <p>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.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Section 1 Total</td> <td>/18</td> <td>Section 2 Total</td> <td>/12</td> <td>Practical total</td> <td>/30</td> </tr> </table>	Section 1 Total	/18	Section 2 Total	/12	Practical total	/30
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KS3 Practical Mark Scheme							
Section 1	Section 2						
<p>Hypothesis</p> <p>H1 State a reasonable hypothesis (prediction). I think that when we increase the _____ the _____ will _____. This is because _____.</p> <p>Diagram</p> <p>D1 State some equipment. D2 State all of the equipment needed. D3 Draw a scientific diagram in pencil with a ruler.</p> <p>Variables</p> <p>V1 Stated your independent variable. My independent variable is _____. It changed was this: _____.</p> <p>V2 Stated your dependent variable. My dependent variable is _____. I measured was: _____.</p> <p>V3 Stated 2 or more controlled variables. To make it a fair test my controlled variables were: _____.</p> <p>V4 Explained how you have controlled these two variables. We made sure it was fair by: _____.</p> <p>Method</p> <p>M1 Written a step by step method with most of the steps, including how to record measurements. First you must: _____ We changed _____ by: _____ To measure accurately you must: _____.</p> <p>M2 Described in detail all of the steps, including how to record measurements. 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. You will need to repeat the experiment because: _____.</p> <p>Risk Assessment</p> <p>R1 You have stated two risks and how to prevent them. The risks are: _____ To prevent these risks you must: _____.</p> <p>R2 You have stated what you will do if someone is hurt with these two risks (remedial actions). If someone is hurt you must: _____.</p> <p>Table</p> <p>T1 Your results table has your variables as headings. T2 Your results table includes appropriate units for all of your headings. cm³/N²/kg/s etc</p>	<p>Practical Skill</p> <p>P1 You have demonstrated that you can measure accurately. This means you are measuring to the nearest 0.2g in solids or the nearest 0.5ml in liquids. Your teacher will decide whether or not you have achieved this, you do not need to write anything down.</p> <p>Graph</p> <p>G1 Your graph has a sensible x and y 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.</p> <p>Analysis</p> <p>A1 You have stated whether your results supports your prediction or not. My results supports/does not support my prediction that: _____.</p> <p>A2 You have used two points of data (numbers) to describe how your results supports your prediction or not. I can see this because at _____ my result was _____ which at _____ my result was _____.</p> <p>A3 You have referred to overall trend in your graph, and whether this supports or not your prediction. The graph shows that as _____ increases/decreases, this supports/does not support my prediction.</p> <p>Context</p> <p>C1 You have stated a real life context where the results of this experiment apply. This experiment applies to the real world because: _____.</p> <p>C2 You have explained how the trend in your results would apply to this real life context. From my results I can see that: _____ this means that: _____.</p> <p>Evaluation</p> <p>E1 You have stated one source of error in your method/results. This cannot be human error. A source of error that could have affected my results/measurement was: _____.</p> <p>E2 You have described how you could reduce this error if you repeated the experiment. If I were to repeat the experiment I could reduce the error by: _____.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Section 1 Total</td> <td>/18</td> <td>Section 2 Total</td> <td>/12</td> <td>Practical total</td> <td>/30</td> </tr> </table>	Section 1 Total	/18	Section 2 Total	/12	Practical total	/30
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