Conduction Date

- * 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.

Lesson 2

<u>cwk</u> <u>Conduction</u> <u>date</u>

Conduction is the movement of heat through solids.

<u>cwk</u> <u>Conduction</u> <u>date</u>

What is a conductor?

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What is an insulator?

<u>cwk</u> <u>Conduction</u> <u>date</u>

What materials are the best conductors?

Think, pair, share

cwk Conduction date

An investigation into which materials are better conductors of heat

Hypothesis

hypothesis (prediction).

H1 State a reasonable 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.

variable.

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

V2 Stated your dependent V3 Stated 2 or more controlled variables.

> To make it a fair test my controlled variables

V4 Explained how you have controlled these two variables.

We made sure it was fair

Method

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.

To measure accurately you must....

M4 There is no spelling errors, or punctuation M5 Your method explains why you

explains why you will need to repeat the experiment.

You will need to repeat

Risk Assessment

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).

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

If someone if 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

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

A1 You have stated wether 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.

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

A3 You have referred to overall

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

C1You 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.

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

prediction.

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

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	8 9 50 11 12 11 14 15 15 15 15 15 17 14 15 15 15 15 15 15 15 15 15 15 15 15 15				
Section I	Section 2				
<u>Hypothesis</u>	Practical Skill				
H1 State a reasonable hypothesis (prediction). N2 Explain hypothesis (prediction) using accurate science.	P2 You have demonstrated that you can measure accurately. This means you are measuring to the nearest 0.3g in solids or the nearest 0.5ml in liquids.				
<u>Diagram</u>	<u>Graph</u>				
D1 State some equipment. D2 State all of the equipment needed. With a ruler.	G1 Your graph has a G2 Your graph has a G3 Your graph has it's sensible x (across) asis, sensibl				
<u>Variables</u>	Analysis				
V1 Stated your V2 Stated your dependent V3 Stated 2 or more V4 Explained how you have controlled these two variable. variable. controlled variables. variable.	A1 You have stated wether your A2 You have used two points of data [sumbors] to describe how your results supports your prediction of results supports your prediction or not. A3 You have referred to overall trend in your graph, and wether results supports your prediction or not.				
Method	Context				
MI Written a step by MD Sembed in detail all step method with most step method with most of the steps, including town to round method I will get measurement. xccords results. method. MI file lidous your method will get missing from your method. method. septimes you will need to expert the experiment.	CZ You have stated a real life context where the results C2 You have explained how the trend in your results would apply to this real life context.				
Risk Assessment	<u>Evaluation</u>				
RI 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).	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.				
<u>Table</u>	1 1 1 1				
TI Your results table has your variables as headings. 12 Your results table includes appropriate units for all of your headings.	Section 1 Section 2 Total /18 Section 2 /12 Practical total /30				

KS3 Practical Mark Scheme									
Section I				Section 2					
Hypothesis			Practical Skill						
H1 State a reasonable hypothesis (prediction). I think that when we increase the	N2 Cuplain hypothesis [prediction] using accurate science. This is because		P1 You have demonstrated that you can measure accurately. This senses you are measuring to the nearest 0.5ml in liquids. This senses you are measuring to the nearest 0.5ml in liquids. Your scacker and ideals whether or not you have soldiered this, you do not need to write anything down. Graph						
<u>Diagram</u>									
D1 State some equipment. D2 State all of the equipment needed. D3 Draw a scientific diagram in pencil, with a ruler.			C1 Your graph has a G2 Your graph has a sensible x (scross) axis, sensible y axis (up) piece in pencil. Settle to a correlated with units. With units. G1 Your graph has it's points plotted in the right there is no correlated with units.						
<u>Variables</u>		V4 Doplained how you have	Analysi	_			A3 You have refe	rred to overall	
V1 Stated your V2 Stated your dependent independent variable.	V3 Stated 2 or more controlled variables. controlled these two variables.		A1 You have stated wether your A2 You have used to results supports your prediction of results supports your		be how your trend in your graph, and wether				
My independent variable I My dependent variable I measured was		Ve made sure it was fair 'Y	My results supports/do not i can see th		I can see this beca	t/and atmy result increases/dec		ases(also) ases. This	
Method M2 Described in detail all		Context supports/does not support my prediction.							
MI Written a step by a full the steps, including step method with most bow to record of the steps. MI step	ell get missing from your	or punctuation explains why you will from your need to repeat the	CTYou have stated a real life context where the results C2 You have explained how the trend in your of this experiment apply. C2 You have explained how the trend in your results would apply to this real life context.				ife context.		
First you must We charged by To measure you must	This experiment applies to the real world because								
Risk Assessment				Evaluation					
R1 You have stated two risks and how to prevent them.		ave stated what you will do if someone is hurt se two risks (remedial actions).		E1 You have stated one source of error in your E2 You have described how you could rec method/results. This cannot be human error. E1 You have described how you could rec this error if you repeated the experiment					
The risks are	If someone if hurt you must		A source of error that could have affected my If I were to repeat the experiment I could redu the error by				nt I could reduce		
<u>Table</u>					1	1			
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		Section 1 Total	/18	Section 2 Total	/12	Practical total	/30	