

Name: Solutions

Mark: _____ / 3029

Scientific Method & Practical Skills Mini Quiz**Question 1****(8 marks)**

Gertrude noticed that Max was more tired after playing soccer for 45 minutes than he was after a 30 minute game, she concluded that it must be because Max used more energy in a 45 minute game. Max's Mum noticed that after a 30 minute game Max ate 1500kJ during lunch, while after a 45 minute game he ate 2000kJ for lunch. Max's Mum concluded that Max used 500kJ of energy more playing a 45 minute game than a 30 min game.

A. What is the correct name given to the information collected about Max? (1 mark)

Data (or first hand data)

B. Was any qualitative data collected? If so what was it? (2 marks)

Yes ① noticing Max was tired ①

C. Was any quantitative data collected? If so what was it? (2 marks)

Yes ① Any example ①

D. Once Max's Mum forgot to measure the amount of lunch Max ate. Also the scales she used were only accurate to 1g (which means 1.6g would show as 2g etc). Which of these is an error, and which is a mistake. Explain why you made this choice. (3 marks)

① Mistake - forgetting① Error - scales only accurate to 1g① Could avoid mistake by being more careful

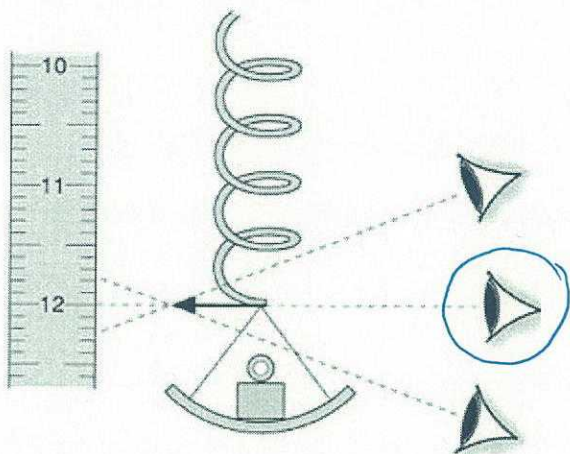
May also say both were mistakes if they say Mum could have chosen different scales

Year 8 – Physical Science

Question 2

(2 marks)

One of the eyes in the picture below is in the correct position to take an accurate measurement of the position of the end of the spring.



A. Circle the eye in the picture that is in the correct position (1 mark)

B. What sort of error could be caused by looking at the incorrect angle? (1 mark)

parallax

<http://www.antonine-education.co.uk>

Question 3

(6 marks)

Fill in the blanks on the table (6 marks):

-1 for each missing or incorrect.

Unit of measurement	Joule	Kilojoule	<i>megaJoule</i>
Symbol	<i>J</i>	<i>kJ</i>	MJ
Convert the measurements	2500	<i>2.5</i>	<i>0.0025</i>
	<i>6500000</i>	6500	<i>6.5</i>
	<i>800000000</i>	<i>800000</i>	800

Question 4

(7 marks)

Sarah looked up the nutritional information on a packet of Nutrigrain and discovered that 100g of Nutrigrain provides 1600kJ of energy. She then designed the following table to help her work out how much energy she would get from different amounts of Nutrigrain.

A. Fill in the blanks on Sarah's table (2 marks):

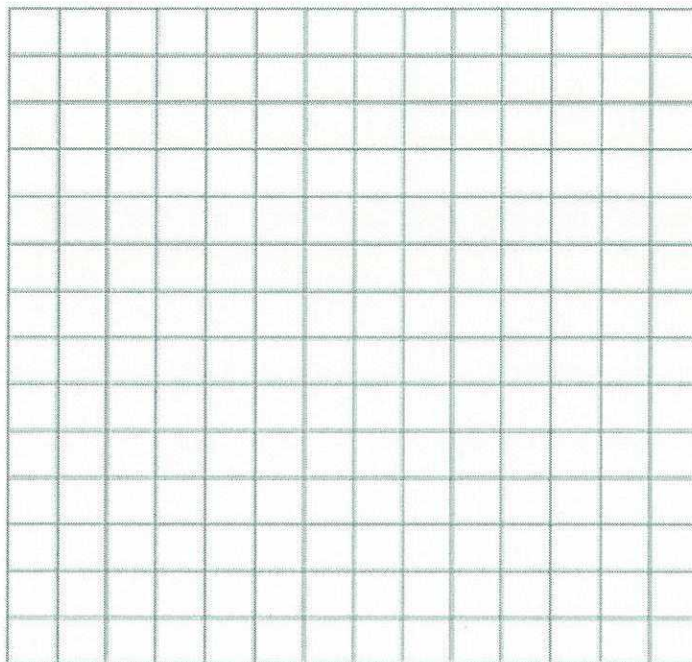
Amount of Nutrigrain in g	Energy Received in kJ
100	1600
200	<i>3200</i>
250	<i>4000</i>
300	<i>4800</i>

Year 8 - Physical Science

B. Draw a graph based on the information above (5 marks).

-1 for each missing

- Title
- Ind Var on X
- Labels
- Units
- pencil
- axis drawn in
- ruler
- neat



Question 5

(7 marks)

Sharif wants to work out how energy efficient the new I pods are compared with the old version. Sharif collects 3 of each version so he has 6 in total. Sharif charges all devices for the same amount of time then counts how many times he can play his favourite song over and over before it stops.

A. What is the independent variable (1 mark)

version of ipod

B. What is the dependent variable (1 mark)

how many times he can play the song

C. List one variable Sharif controlled (1 mark)

Charging time
song length

Year 8 – Physical Science

D. Write a hypothesis for Sharif's experiment (2 marks).

① correctly worded

① includes ind & dep. variables

E. Was the data collected by Sharif first hand or second hand data (1 mark)?

First hand.

End of Test