**REVISION SHEET for SCIENTIFIC SKILLS**

1. The Bunsen burner
2. Draw a labelled diagram of the Bunsen burner.
3. Colour of flame produced when airhole is open: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Colour of flame produced when airhole is closed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Give two reasons why you should heat water in a beaker using a Bunsen flame with the airhole open.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Graphing skills

Six students each measured how long it takes a tablet to dissolve in water. They used water at different temperatures. The table below shows their results.

* Redraw the table so that the data is in increasing temperature order.
* Draw a line graph of this data.
* State the trend/generalisation that you notice.

|  |  |  |
| --- | --- | --- |
| Student | Temperature of water (0C) | Dissolving time (seconds) |
| Cory KatherineDarrylTakaoEmmaPania | 302535402045 | 222420182716 |

1. Safety in the laboratory
2. What do the following symbols mean?

  

1. State four safety rules when working in a laboratory, and explain why each is needed.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Scientific diagrams

 Draw a scientific diagram of a beaker of water being heated over a Bunsen burner

1. Experiments: Match the heading on the left with the description on the right

|  |  |  |
| --- | --- | --- |
| Aim |  | A 2-dimensional diagram to show the experimental setup |
| Equipment |  | 1. Add a small piece of magnesium ribbon to 2mL of hydrochloric acid in a test tube.2. Record all observations. |
| Diagram |  | To observe how magnesium reacts with hydrochloric acid |
| Method |  | 1 - the mixture fizzed2 - the test tube got hot3 - the magnesium dissolved |
| Results |  | The magnesium reacted with the hydrochloric acid, giving off a gas and heat. |
| Conclusion |  | Test tube, test tube holder, piece of magnesium ribbon, hydrochloric acid |

1. Use the table of student heights to answer the questions below

|  |  |
| --- | --- |
| Student Height (cm) | Student Height (cm) |
| Laura 134Zane 145John 142Nitisha 129Whitney 137 | Paul 150Claire 135Jessie 130Jack 148Natasha 133 |

(a) What is the average height of the girls? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) What is the average height of the boys? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) What is the average height of all ten students? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(d) Which students are shorter than average? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(e) What conclusion can you make from these results? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. What quantity does each of the following symbols represent? The first one has been done for you.

|  |  |
| --- | --- |
| mm | distance measured in millimetres |
| km |  |
| cm |  |
| s |  |
| hr |  |
| min |  |
| mL |  |
| L |  |

8. Convert the following measurements to the units given.

(a) 250cm = \_\_\_\_\_\_m (d) 3.5L = \_\_\_\_\_\_mL (g) 3600m = \_\_\_\_\_\_km

(b) 3h = \_\_\_\_\_\_s (e) 420s = \_\_\_\_\_\_min (h) 0.245m = \_\_\_\_\_\_mm

(c) 3.5km = \_\_\_\_\_\_m (f) 754mL = \_\_\_\_\_\_L (i) 140s = \_\_\_\_\_min

9. A rectangular block of copper metal weighs 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of copper?

10.Match each item of apparatus listed below with its use by drawing a line between the apparatus and its use

tripod a general purpose glass container for small amounts of material

spatula placed on the top of a tripod to spread the heat

gauze for holding hot objects

test tube for standing equipment on in order to heat it

Bunsen burner a general purpose glass container with a pouring lip

stand and clamp used for heating things

beaker for picking up small amounts of solids

tongs for holding equipment in place

11. Mrs Bucket has complained to the Dairy Co-operative. She believes that the new disposable plastic bottles and waxed paper cartons are not good for the storage or transport of milk as they cause the milk to go sour (or bad) much faster. Mrs Bucket claims that the glass bottle keeps the quality of milk longer than any other container.

You have an acid (sour) indicator that will change from green to red when any milk sample becomes sour or bad. You have been asked to design an experiment that will help us recommend or oppose the return to glass!

 What is Mrs Bucket’s hypothesis? (write a **clear statement** from the text)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Designing the experiment:

Which factors/variables are you going to keep the same and which one are you going to change?

Variable changed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Variables kept the same: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write a method for the experiment:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_