

Year 8 Science Practice Booklet Summer Term 23-24



Name:

Teacher:

Instructions

- Read questions carefully
- Attempt all questions and check your answers
- Look at the marks awarded in each question to work out how detailed your answer should be

Candidates may also use

- Calculator

| | | | | | | | | |
|-------------|---|---|---|---|---|---|---|---|
| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Mark | | | | | | | | |
| Total Marks | 6 | 5 | 3 | 5 | 5 | 6 | 6 | 6 |

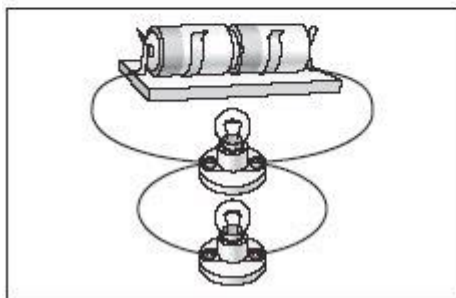
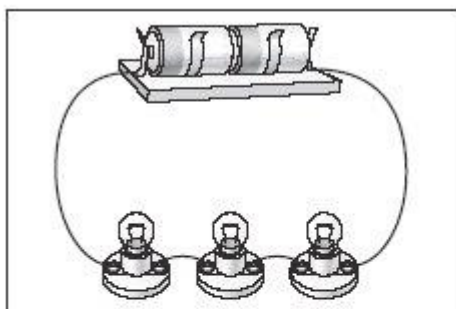
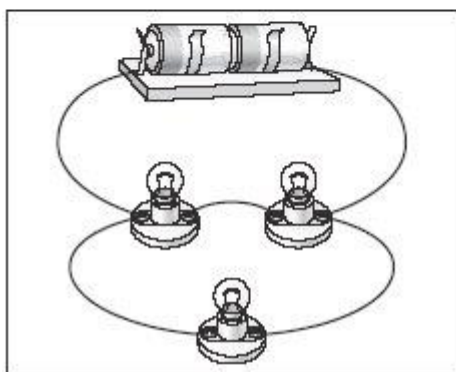
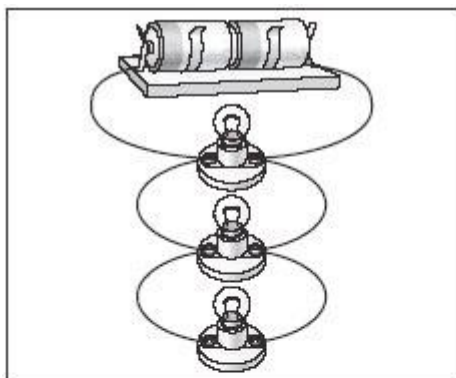
Total Marks/42

Next Steps for Revision:

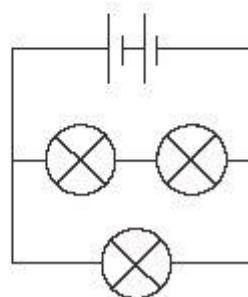
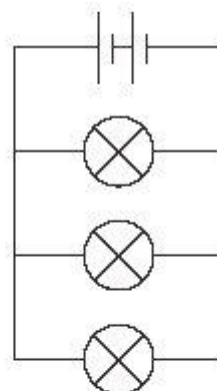
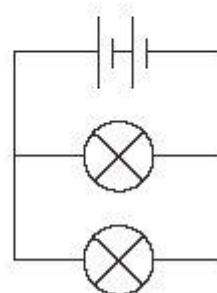
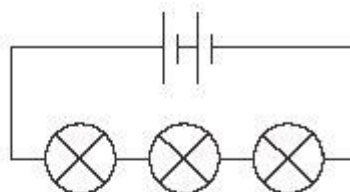
Q1.

- (a) Draw a line from each electrical circuit to the correct circuit diagram.
 Draw only **four** lines.

electrical circuit



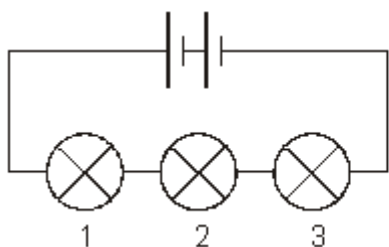
circuit diagram



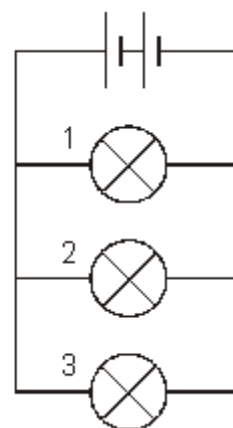
2 marks

(b) In each circuit below, **bulb 1 breaks** and goes off.

Under each circuit diagram below, tick the correct boxes to show if bulb 2 and bulb 3 are **on** or **off**.



circuit A



circuit B

| | on | off |
|----------------------|----|-----|
| bulb 1 breaks | | ? |
| bulb 2 | | |
| bulb 3 | | |

| | on | off |
|----------------------|----|-----|
| bulb 1 breaks | | ? |
| bulb 2 | | |
| bulb 3 | | |

2 marks

(c) Give the name of the part that provides energy for each circuit.

.....

1 mark

(d) Why is copper used for wires in a circuit?
Tick the correct box.

Copper does **not** stick to a magnet.

Copper is a good conductor of electricity.



Copper is a brown metal.

Copper is a good conductor of heat.

1 mark
maximum 6 marks



Q2.

David put two bars of iron close to each other.
There was **no** magnetic force between them.
David recorded the result as shown below.

| | | | | |
|-------------|---|-------------------|---------|-------------------------------------|
| bar of iron |  | | attract | <input type="checkbox"/> |
| | | | | repel |
| bar of iron |  | no magnetic force | | <input checked="" type="checkbox"/> |



(a) David did three other tests.
Tick the correct box to show the result for each test.

(i)

| | | | | |
|---------------|---|-------------------|---------|--------------------------|
| bar of copper |  | | attract | <input type="checkbox"/> |
| | | | | repel |
| bar magnet |  | no magnetic force | | <input type="checkbox"/> |



1 mark

(ii)

| | | | | |
|-------------|---|-------------------|---------|--------------------------|
| bar of iron |  | | attract | <input type="checkbox"/> |
| | | | | repel |
| bar magnet |  | no magnetic force | | <input type="checkbox"/> |

1 mark

(iii)

| | | | |
|---------------------|---|--------------------------|--------------------------|
| bar of steel |  | | result |
| | | attract | <input type="checkbox"/> |
| bar magnet |  | repel | <input type="checkbox"/> |
| | | no magnetic force | <input type="checkbox"/> |



1 mark

(b) David then did two experiments with magnets.

The tick in each box shows David's results in each experiment.



Label the missing poles on **each** magnet to match David's results.

(i)

| | | | |
|-------------------|---|--------------------------|-------------------------------------|
| bar magnet |  | | result |
| | | attract | <input type="checkbox"/> |
| | | repel | <input checked="" type="checkbox"/> |
| bar magnet |  | no magnetic force | <input type="checkbox"/> |

1 mark

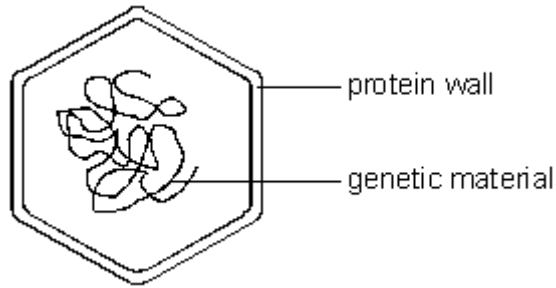
(ii)

| | | | |
|-------------------|---|--------------------------|-------------------------------------|
| bar magnet |  | | result |
| | | attract | <input checked="" type="checkbox"/> |
| | | repel | <input type="checkbox"/> |
| bar magnet |  | no magnetic force | <input type="checkbox"/> |

1 mark
maximum 5 marks

Q3.

Viruses have a very simple structure as shown below. They have no nucleus.



Viruses only reproduce inside living cells. Unlike bacteria, viruses are **not** affected by medicines called antibiotics.

- (a) Describe how vaccines can help the body's natural defences against viruses.

.....
.....
.....

2 marks

- (b) Some viruses are able to change their genetic material frequently. Each change produces a virus with different protein molecules in the protein wall. Explain why a vaccine which worked against the old virus may **not** work against the new types.

.....
.....

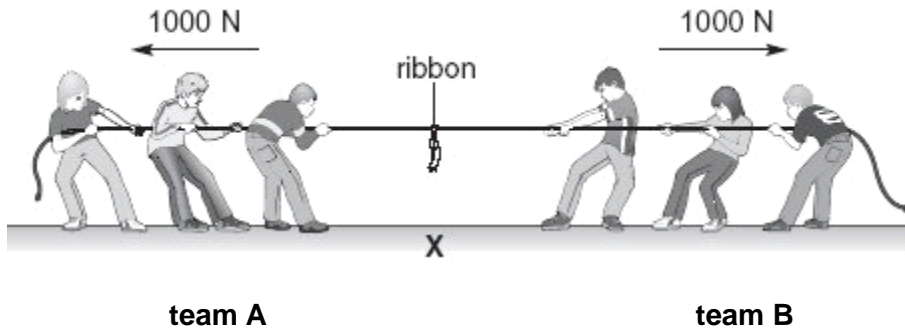
1 mark

Maximum 3 marks

Q4.

The drawings in parts (a), (b) and (c) show two teams of pupils in a tug-of-war. There is a ribbon tied to the middle of the rope.

(a) The sizes and directions of the forces of each team are shown.

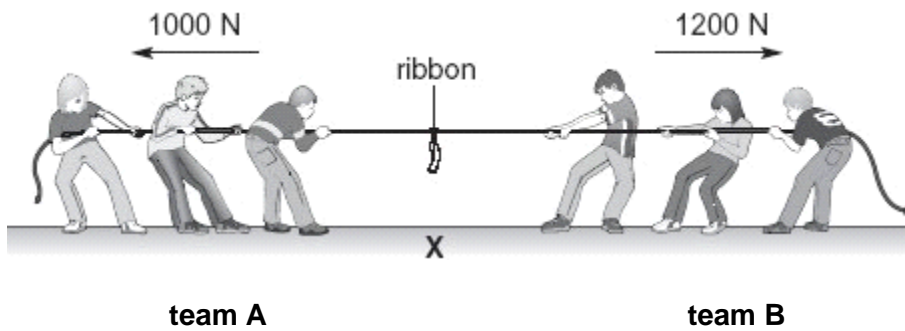


The ribbon stays above point X on the ground.
Give the reason for this.

.....
.....

1 mark

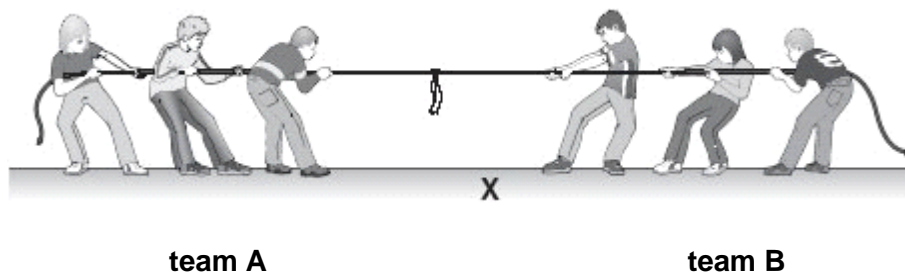
(b) The teams then pull with the forces shown below.



Draw an arrow on the rope to show the direction in which the ribbon will move.

1 mark

(c) Later, the ribbon was to the left of point X as shown below.

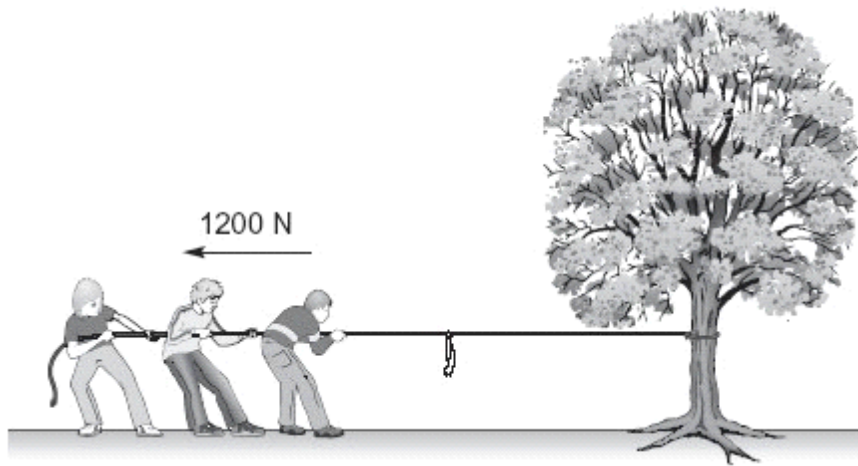


Why did the ribbon move towards the left?

.....
.....

1 mark

- (d) Team A practises by pulling a rope tied to a tree.



The team pulls with a force of 1200 N but the tree does **not** move.

What is the force of the tree on the rope?
Tick the correct box.

| | | | | | | | |
|------|--------------------------|---------------------|--------------------------|--------|--------------------------|---------------------|--------------------------|
| zero | <input type="checkbox"/> | less than 1200 N | <input type="checkbox"/> | 1200 N | <input type="checkbox"/> | more than 1200 N | <input type="checkbox"/> |
|------|--------------------------|---------------------|--------------------------|--------|--------------------------|---------------------|--------------------------|

1 mark

- (e) The pupils do **not** slip because there is a force between their shoes and the ground. What is the name of this force?

.....

1 mark
maximum 5 marks

Q5.

Gold, iron and magnesium are elements which conduct electricity.

Sulphur and phosphorus are elements which do **not** conduct electricity.

When iron and sulphur are heated together, they react to form a new substance called iron sulphide.

(a) From the substances named above, give:

(i) the name of a metal;

.....

1 mark

(ii) the name of an element which is a non-metal;

.....

1 mark

(iii) the name of an element which will rust;

.....

1 mark

(iv) the name of a compound.

.....

1 mark

(b) When magnesium and sulphur are heated together, they react. Write the name of the compound which is formed when magnesium reacts with sulphur.

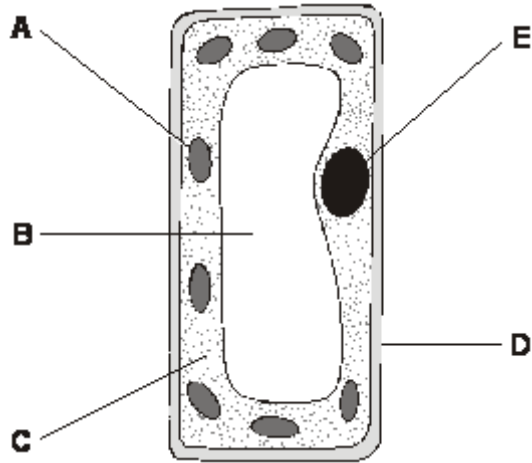
.....

1 mark

Maximum 5 marks

Q6.

The diagram shows a plant cell.



(a) Give the name of part A.

.....

Give the function of part A.

.....
.....

2 marks

(b) Give the name of part E.

.....

Give the function of part E.

.....
.....

2 marks

(c) Give the letters of **two** parts that are present in plant cells but **not** in animal cells.

..... and

1 mark

(d) How can you tell that the cell in the diagram is from a leaf and **not** from a root?

.....

1 mark
maximum 6 marks

Q7.

Russell investigated the relationship between mass and weight. He weighed five different masses using a force meter.

His results are shown in the table.

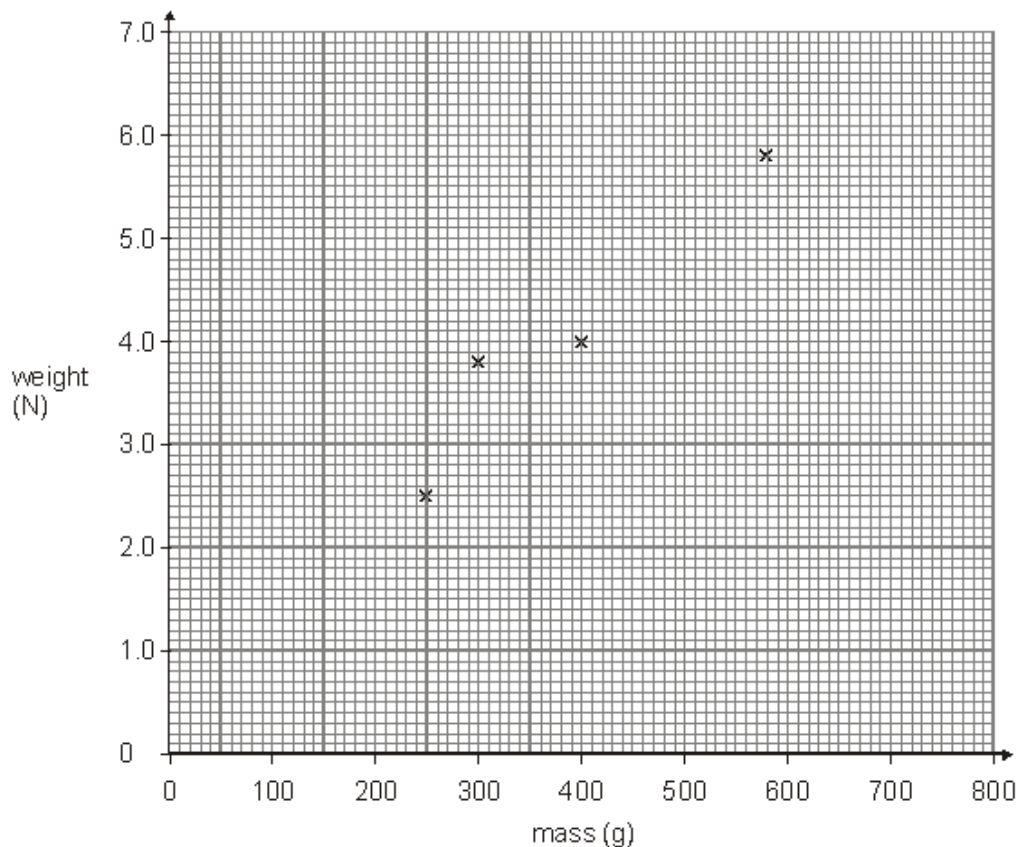
| mass (g) | weight (N) |
|----------|------------|
| 150 | 1.5 |
| 250 | 2.5 |
| 300 | 3.8 |
| 400 | 4.0 |
| 580 | 5.8 |

(a) He plotted four of his results on a grid as shown below,

(i) Plot the point for the 150 g mass on the graph.

1 mark

(ii) Draw a line of best fit.



1 mark

(b) One of the points Russell plotted does **not** fit the pattern.

Circle this point on the graph.

1 mark

(c) Use your graph to predict:

(i) the mass of an object weighing 6.5 N;

..... g

1 mark

(ii) the weight of an object of mass 50 g.

..... N

1 mark

(d) Give **one** reason why it is more useful to present the results as a line graph rather than a table.

.....

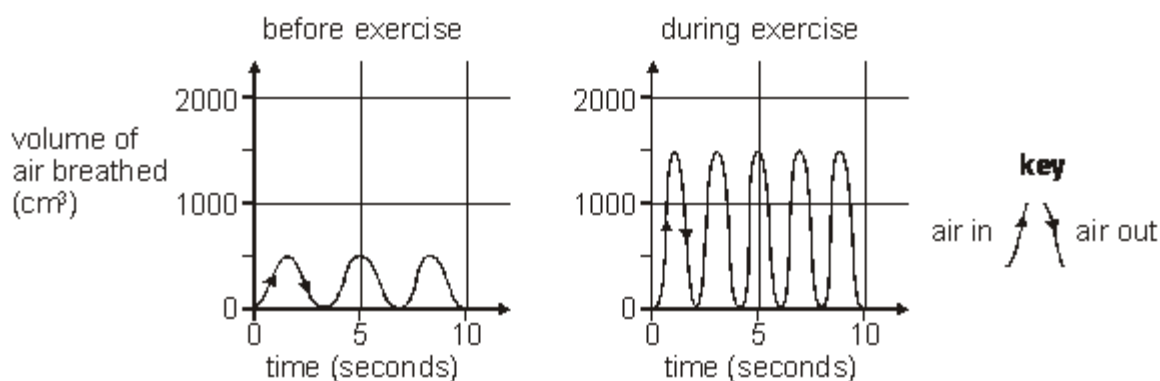
1 mark

maximum 6 marks

Q8.

Joanne measured the volume of air she breathed in and out of her lungs.

The graphs represent the volume of air Joanne breathed in and out with each breath **before** and **during** exercise.



(a) During exercise Joanne breathed more air in and out of her lungs than before exercising.

(i) How much **more** air did Joanne breathe in with each breath during exercise?

..... cm³

1 mark

(ii) Explain fully why Joanne needed to breathe in more air during exercise.

.....
.....
.....
.....

3 marks

- (b) (i) As Joanne exercised, the volume of air she breathed in and out increased. Give **one** other way Joanne's breathing changed during exercise.

.....
.....

1 mark

- (ii) How does the graph show this other change?

.....
.....

1 mark
maximum 6 marks