Greek Orthodox Patriarchate School
International - Fuhies

Name:		Subject:	*Primary Science*
Class:	*Five (A / B)*	Date:	

Cambridge Primary Science

Practice Booklet
(Checkpoint past paper questions)

Forces and electricity

Light and the solar system

Rocks, the rock cycle and soil

Teacher : Nada Marji

Objectives :

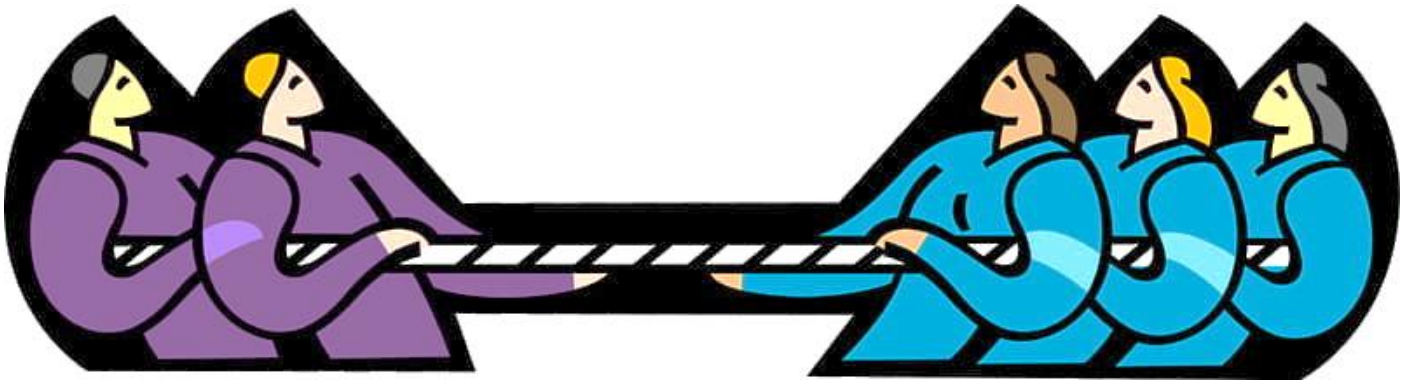
- Describe the difference between mass, measured in kilograms (kg), and weight, measured in newton's (N).

- Describe the effect of gravity and know that when gravity changes, the weight of an object changes but the mass does not.

-Use force diagrams to show the name, size and direction of forces acting on an object.

- Describe the effect of different forces on an object at rest and in motion.

-Recognize that the mass and shape of an object can affect if it floats or sinks.



Teacher : Nada Marji

Contact and non-contact forces

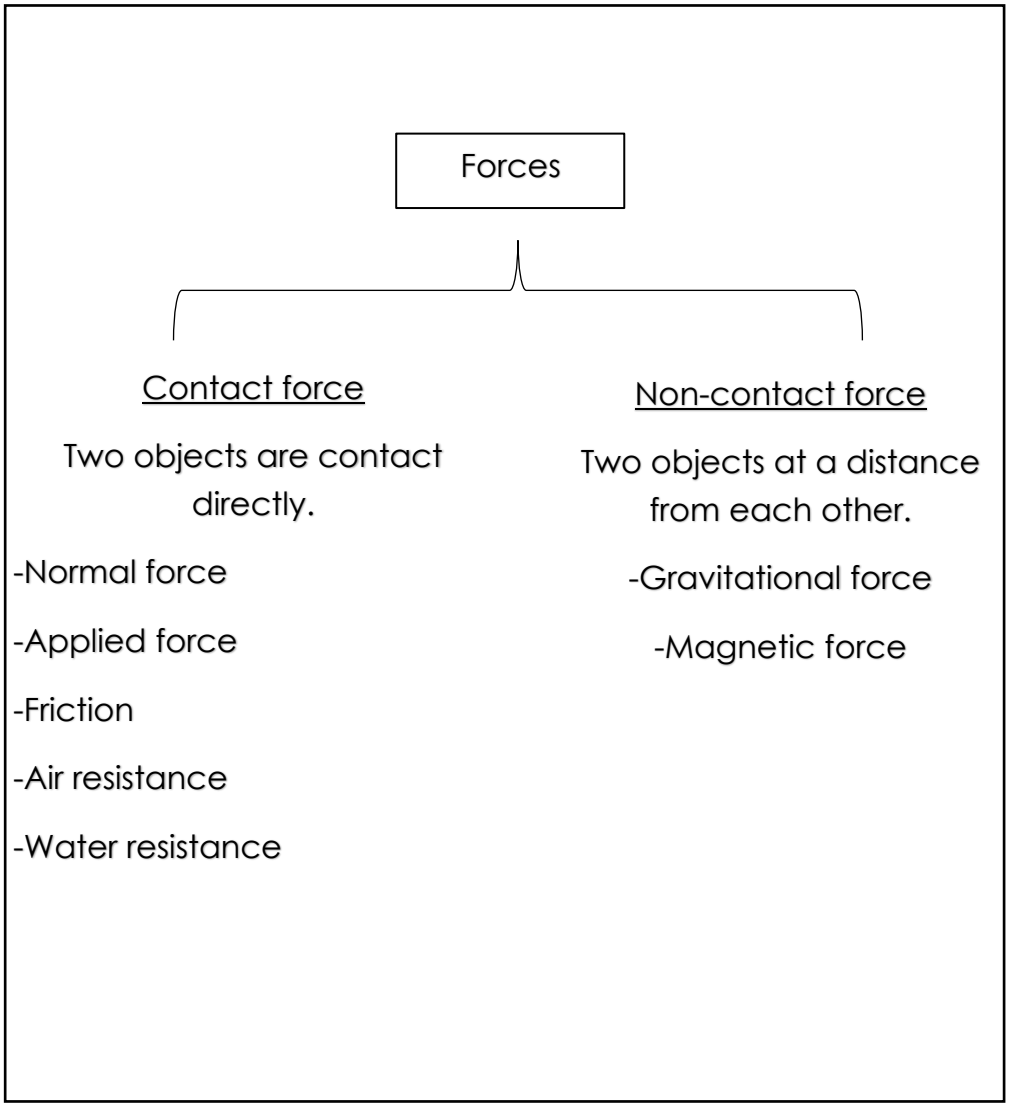
-**A force is** a push or a pull acting on an object as a result of its interaction with other object.

-There must be two objects for a force to happen.

-Forces are measured **in Newton (N), by using a newton meter.**

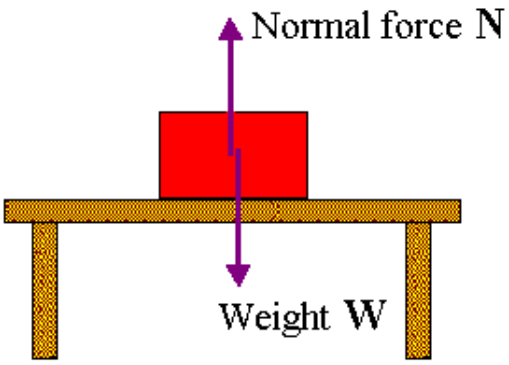
-The unit of force is named **after Isaac Newton**, who first theorised about forces.

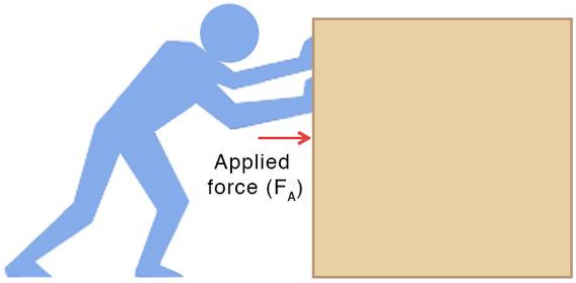
A force usually results from an interaction



Normal force (Contact force)

Is the force that happens on the surface to prevent solid objects from passing through each other. Normal force is a contact force. If two surfaces are not in contact, they can't exert a normal force on each other.



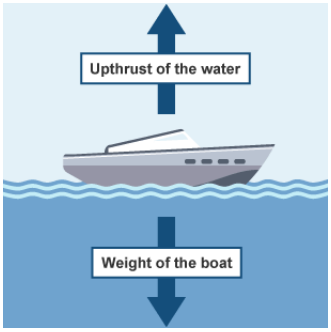


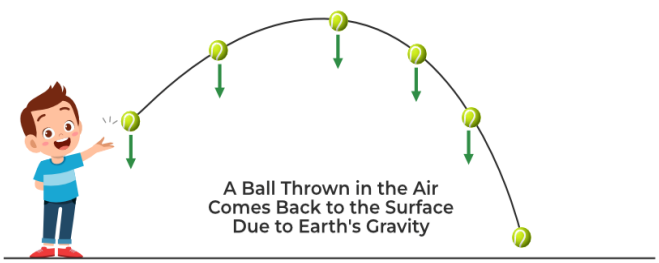
Applied force (Contact force)

Force that is applied to an object by a person or another object.

Upthrust (Contact force)

The force that pushes up on an object in water or air





Gravitational force(Non-contact force)

Gravity or the pulling force exerted by one mass on another.

Anything that has mass is attracted to the gravity

The **greater the mass** the **greater the gravitational force.**

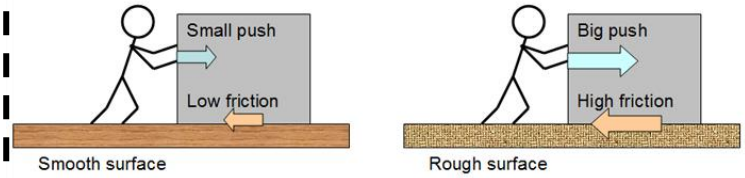
Friction (Contact force)

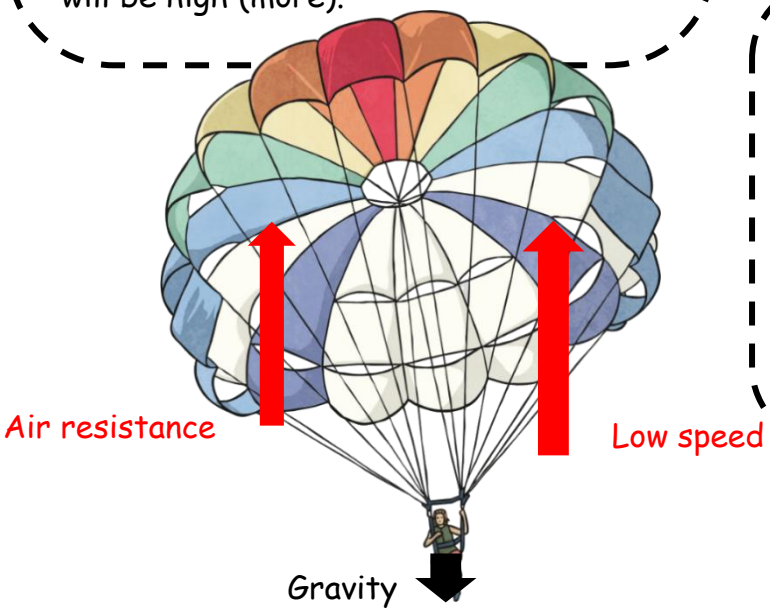
Is a force that acts in the opposite direction to the applied force.

-Friction it could be high or low:

-If the surface is smooth the friction will be low(less).

- If the surface is rough the friction will be high (more).





Air resistance (Contact force)

- It is a type of friction.

-It is **a type of force that uses friction to slow things down that are moving through air.**

-It is caused by contact between a moving object and the air surround it.

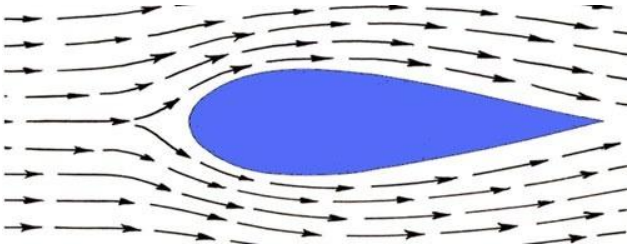
Water resistance (Contact force)

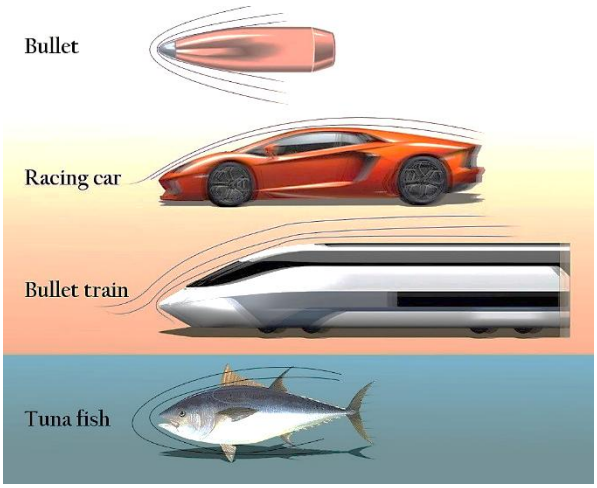
- It is a type of friction.

- It is **a type of force that uses friction to slow things down that are moving through water.**

-It is caused by contact between a moving object and the surrounding water.

-Some shapes allow an object to move easily in water, we say these shapes are ***streamlined.***

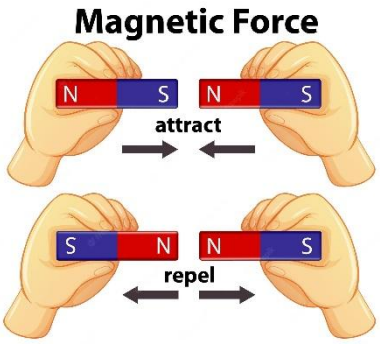




Magnetic force (Non-contact force)

-It pull or push on objects without touching it.

- Attract and repel force



-Motion is how an object's position changes over time. In other words, **movement.**

Balanced forces are forces on an object that are equal in size and opposite in direction

Balance force act on an object it will not change its motion, shape or direction

If it still it will stay still.

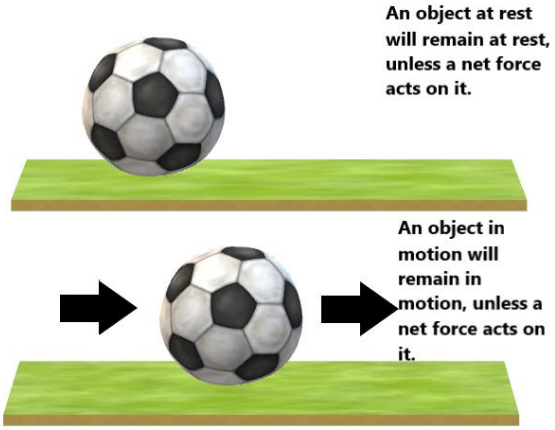
Unbalanced forces are forces that cause a change in motion.

Unbalance force acts on an object it will change its motion.

If it still it will make it start to move.

If it's moving it will change speed, shape or direction.

FIRST LAW OF MOTION



When the forces acting on an object are unbalanced, the motion of the object will always change.

The motion of the object will either increase speed up or it will decrease (slow down)

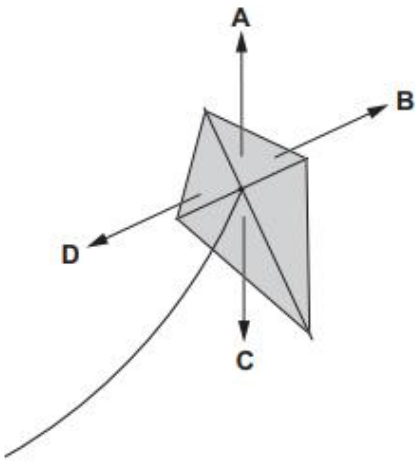
Teacher : Nada Marji

Q1)

Samir is flying a kite.

There is a strong wind blowing.

The picture shows the forces on the kite.



(a) Which letter shows the gravitational force on the kite?

.....

Which letter shows the pulling force Samir exerts?

.....

Which letter shows the pulling force of the wind?

.....

(b) Which **two** forces balance?

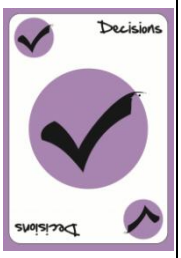
Circle the correct answer.

A and **C**

B and **C**

C and **D**

D and **A**



(c) The strength of the wind increases.

The kite stays in the same place.

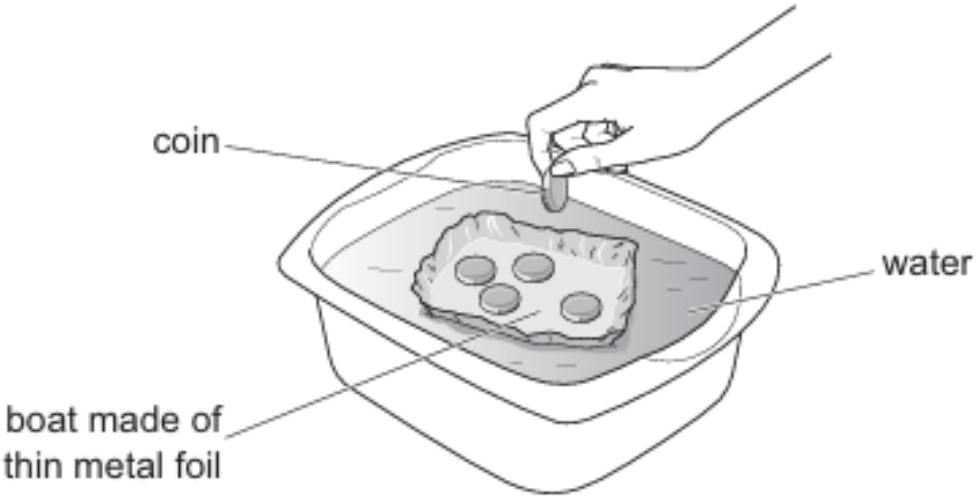
What happens to the pulling force that Samir exerts?

.....

Q2)

Lily investigates floating and sinking.

She drops coins into a boat made of thin metal foil.



(a) The boat floats when there are 10 coins in the boat.

Complete the sentence.

The boat sinks when there are 16 coins in the boat because .....

.....

.....

(b) Lily wants to make the boat sink when there are only 10 coins in the boat.

Suggest what she does **to the boat** to make it sink with only 10 coins.

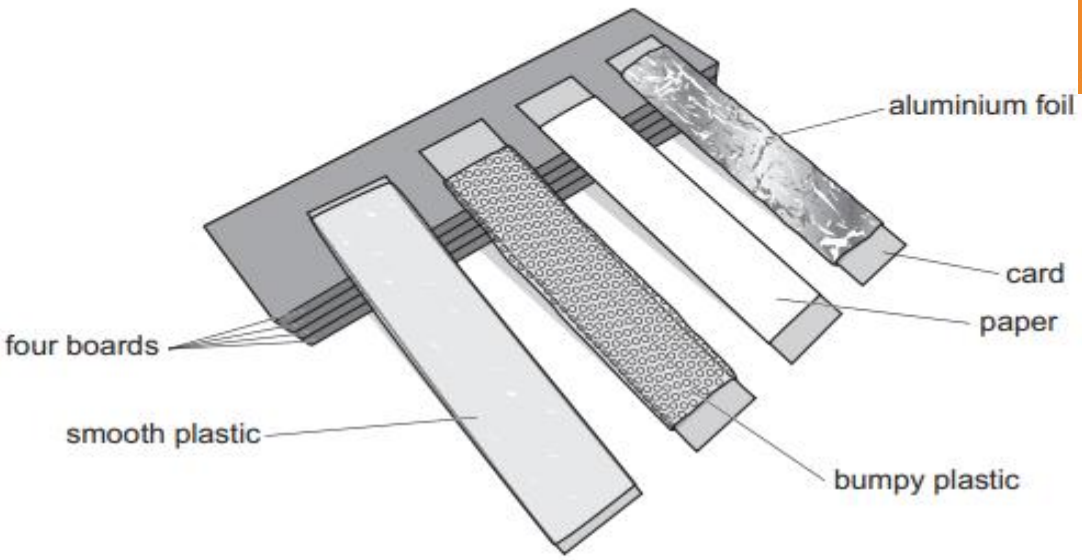
.....

.....

Q3)

Blessy investigates friction.

She uses four different materials.



Blessy

- puts each material on some card
- puts the end of each card onto four boards
- rolls a ball down each material.

(a) Complete the sentences.

Blessy uses the boards to .....

.....

Blessy always uses four boards to .....

(b) Complete the prediction.

Choose from

aluminium foil **bumpy plastic** **paper** **smooth plastic**

least friction **most friction** **no friction**

The ball will take the longest time to reach the end of the .....

.....

This is because this material has .....

[1]

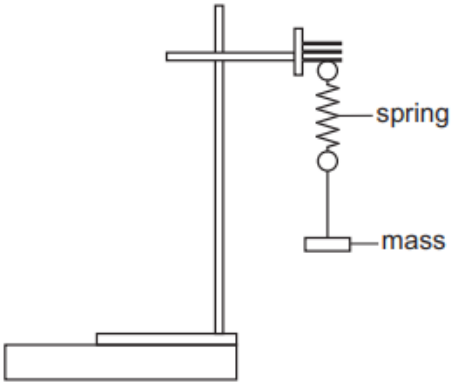
(c) Blessy wants to make the investigation more reliable.

Write down **one** thing she does to make the investigation more reliable.

..... [1]

Q4) Youssef investigates bouncing objects.

Look at the apparatus he uses.



The spring stretches when the mass is added.

(a) Which unit is used to measure mass?

.....

(b) Draw an arrow on the diagram to show the direction of gravity on the mass.

Q5) This question is about forces.

Which of the following are examples of forces?

Tick (✓) the **three** correct boxes.

- a beam of light from a torch ☐
- a girl unscrewing a jar ☐
- a horse pulling a cart ☐
- a man pushing a trolley ☐
- the sound of a drum ☐

Q6)

Complete the sentences about friction.

Choose the **best** words from the list.

air resistance

a force

gravity

a mass

slow down

speed up

stay the same

Friction is .....

Friction makes a moving object .....

A type of friction is .....

Q7) . Write **true** or **false** next to each of these statements.

a) Mass is a force. .....

b) Weight is a force. .....

c) Length is a force. .....

d) A force is a push or a pull. .....

. Explain why astronauts move in a bouncy way on the moon.

.....

Q8)Answer the following:

1-In what unit we measure the forces?

……..

2-What is the name of the force that pulls towards the center of the Earth?

……
……..

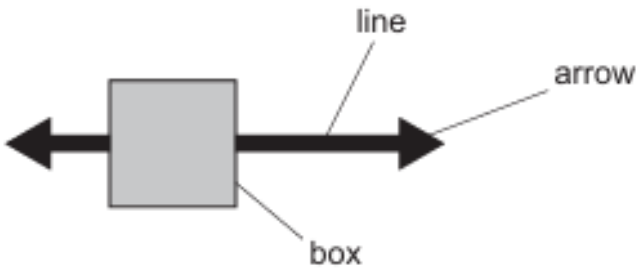
3-What pieces of equipment do we use to measure force ?

……
……

Q9)

A force diagram is a type of model.

Look at the force diagram for a box.



(a) Which statements describe how this model helps students understand forces?

Tick (✓) **two** correct boxes.

forces **cannot** be seen ☐

forces **cannot** be heard ☐

the arrow shows the direction of a force ☐

the arrow shows the type of force ☐

the length of the line shows the direction of a force ☐

the length of the line shows the type of force ☐

[2

(b) Look at the force diagram of the box.

Complete the sentence about the movement of the box.

The box moves .....

because .....

.....

[2

Q10)

Mass and weight are different.

(a) Draw a straight line to match each **description** to its correct **measurement**.

description	measurement
mass of an apple	40 kg
weight of a book	100 g
mass of a chair	10 N

(b) Complete the sentences.

Choose words from the list.

decreases **increases** **stays the same**

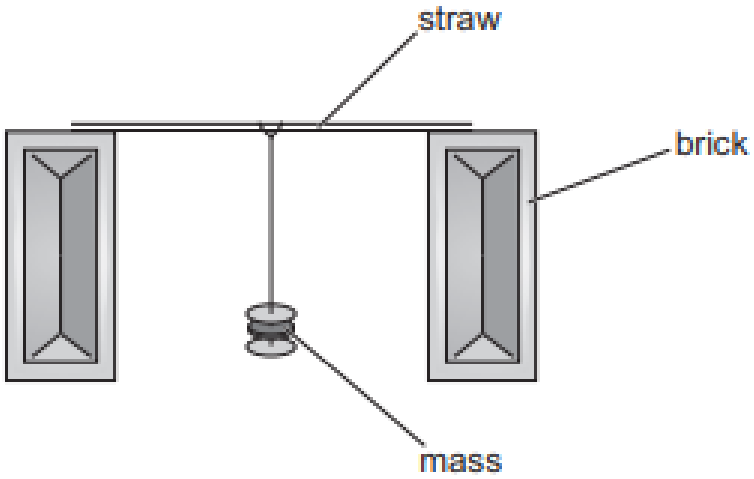
When gravity decreases, the mass .....

When gravity increases, the weight .....

Q11)

Jamila and Chen investigate bones.

They use straws as the bones.



Jamila and Chen:

- hang one 10 g mass on the straw
- hang more 10 g masses on the straw until the straw breaks
- repeat their investigation with a shorter straw.

(a) Jamila and Chen make their investigation a fair test.

Write down **two** factors they keep the same.

1 .....

.....

2 .....

.....

(b) Jamila and Chen change **one** factor.

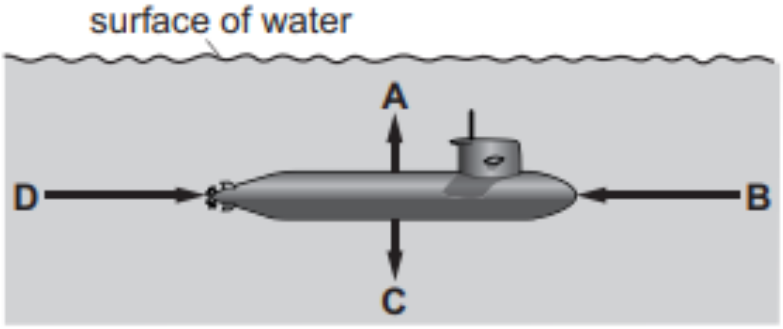
Write down the factor they change.

.....

Q12)

A submarine travels underwater.

The submarine is moving in this direction →.



(a) Name the forces acting on the submarine.

A .....

B .....

C .....

D .....

(b) The submarine is moving in this direction → .

Look at the length of the arrows for force **B** and force **D**.

Describe the speed of the submarine.

.....

(c) Which force increases when the submarine rises to the surface of the water?

Circle the correct answer.

A **B** **C** **D**

Q13)

(a) Chen writes some sentences about forces.

Only **one** sentence is correct.

Tick (✓) the correct sentence.

Force is also called mass.	☐
Force is measured in kg.	☐
Force is measured in m.	☐
Forces do **not** stop objects moving.	☐
Forces have direction.	☐

(b) Chen goes skateboarding.

There is friction between the ground and the wheels.

Describe how he can **increase** the friction between the ground and the wheels.

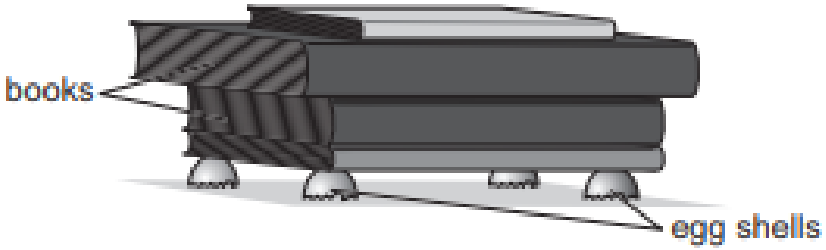
.....

.....

Q14)

Safia investigates forces.

She puts books on four egg shells.



Safia adds books until the egg shells break.

She records the number of books needed to break the egg shells.

She repeats the investigation. Each time she uses new egg shells.

Here are her results.

investigation number	number of books to break the egg shells
1	5
2	5
3	6
4	2
5	6

(a) Safia thinks one of her investigations is not correct.

Which investigation does she think is not correct?

Explain why.

Investigation number .....

Explanation ..... [1

(b) Safia's investigation is **not** a fair test.

Describe why it is **not** a fair test.

.....

Q15) This question is about forces.

Decide if each statement is true or false.

Tick (✓) the correct box.

	true	false
forces make objects change speed	☐	☐
friction is a force	☐	☐
pitch is a force	☐	☐
weight is a force	☐	☐

Q16) Pierre has five pictures showing him running.

A B C D E

He draws arrows on the pictures.

(a) Which picture shows the direction of the force of gravity?

Circle the correct answer.

A **B** **C** **D** **E**

(b) Air resistance slows him down.

Which picture shows the direction of air resistance?

Circle the correct answer.

A **B** **C** **D** **E**

Q17) Carlos investigates forces.

(a) Which apparatus does he use to measure force?

.....

(b) He writes his results in a table.

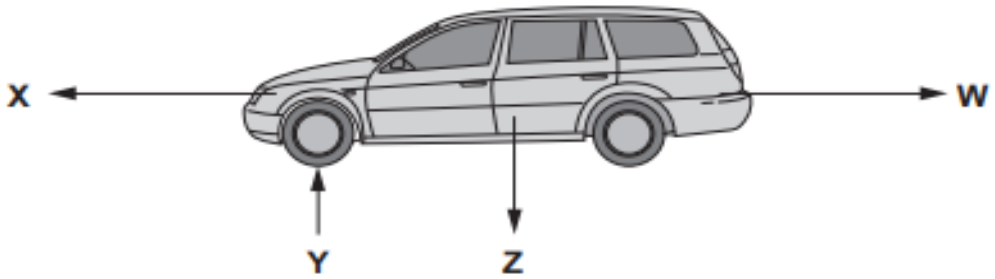
type of force	force
pull	4.8
push	6.1
twist	5.3

Carlos has **not** put the unit for force in the table.

What is the unit for force?

.....

Q18) Cars have different forces acting on them.



The car is moving in the direction of arrow **X**.

(a) Which letter shows the **weight** of the car?

Circle the correct answer.

X **Y** **Z** **W**

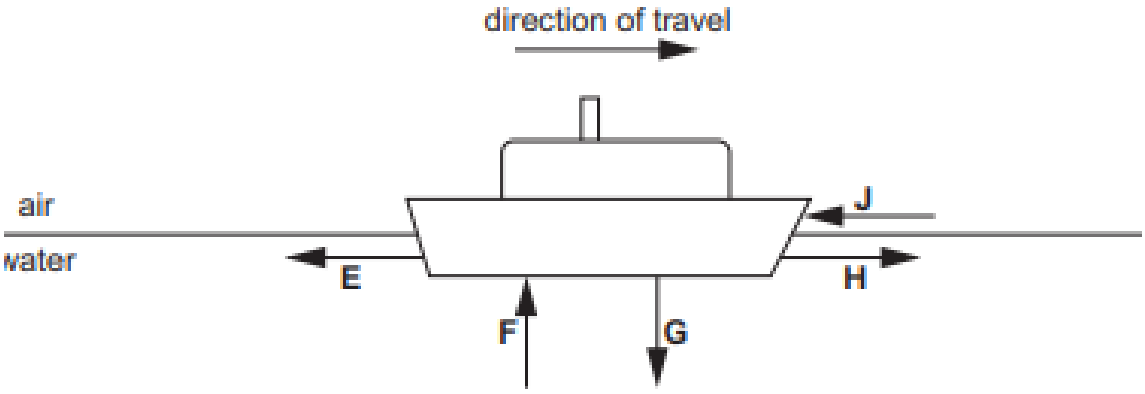
(b) Which letter shows the **air resistance**?

Circle the correct answer.

X **Y** **Z** **W**

Q19)

Look at the diagram of the forces acting on a ship.



Force **H** is the applied force from the engine of the ship.

Identify the forces **E**, **F**, **G** and **J**.

Choose from the list.

air resistance

friction

gravity

normal force

upthrust

water resistance

force **E** .....

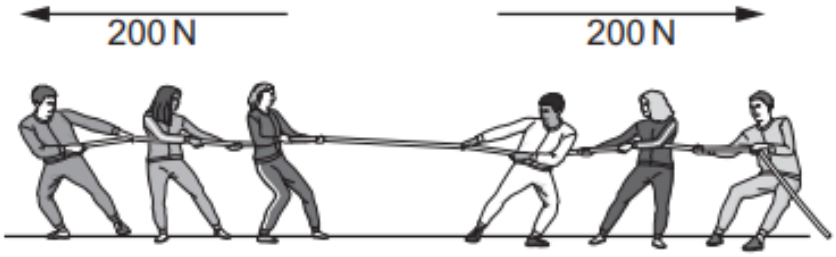
force **F** .....

force **G** .....

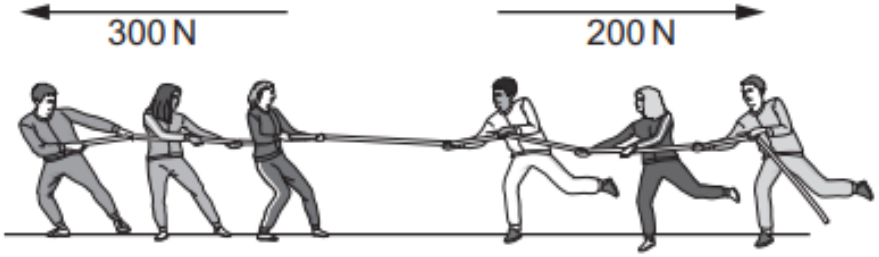
force **J** .....

Q20) Force diagrams are used to show the size and direction of forces.

Look at the two force diagrams.



force diagram **A**



force diagram **B**

(a) One of the arrows is labelled 300 N.

Complete the sentences.

N is used because it measures .....

kg is **not** used because it measures .....

(b) Describe what happens in force diagram **A**.

.....

.....

(c) Describe and explain what happens in force diagram **B**.

description .....

.....

explanation .....

.....

Q21) Safia and Mia investigate floating.

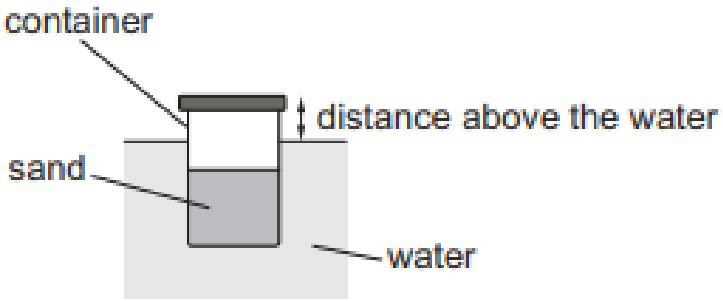
They use six identical small containers with lids.

Safia puts a different mass of sand into each container.

Mia drops the containers into the water.

All the containers float.

Look at the diagram of one of these containers.



Mia measures the distance above the water shown in the diagram.

Here are her results.

mass of sand in g	**distance above the water in cm**
2.5	4.0
5.0	3.5
7.5	3.0
10.0	2.5
12.5	3.0
15.0	1.5

(a) There is **one** anomalous result.

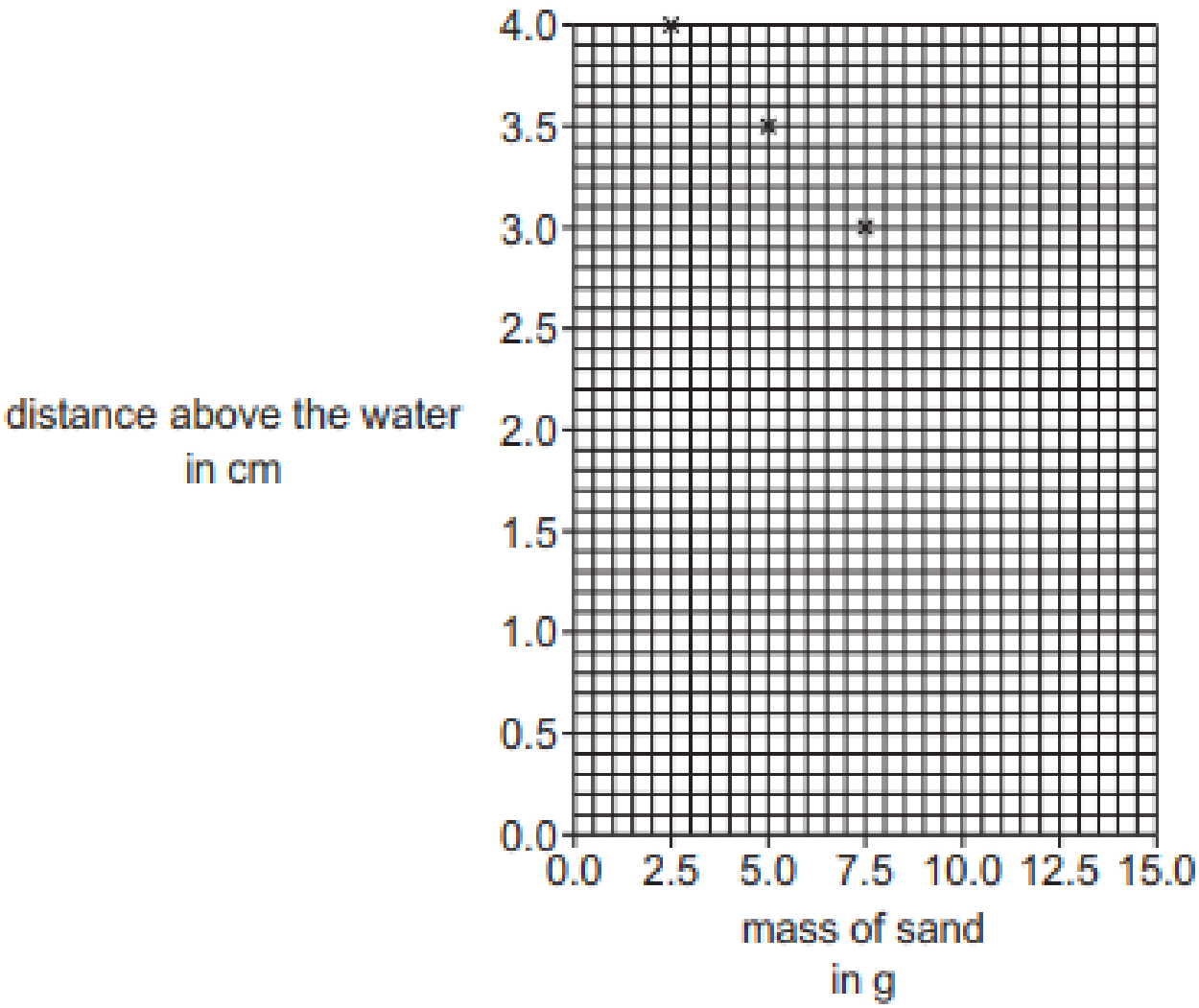
Complete the sentence.

The anomalous result is **mass of sand** ..... g and

distance above the water ..... cm.

(b) Complete the line graph by:

- plotting the last three points using small crosses
- drawing a line of best fit.

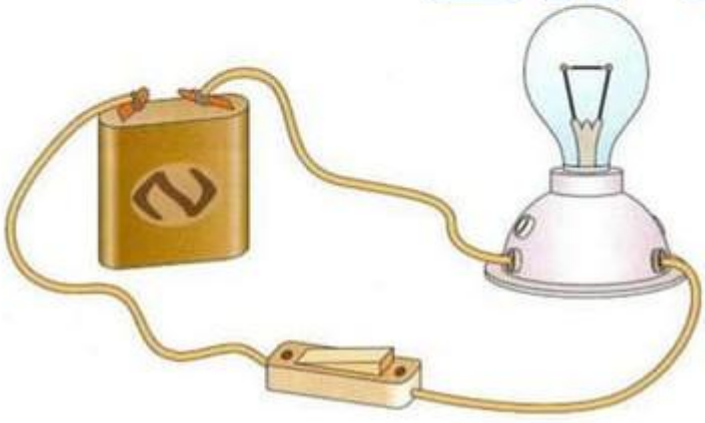


(c) Complete the sentence to describe the **pattern** in the results.

As the mass of sand in the container increases .....

.....

Electric Circuits



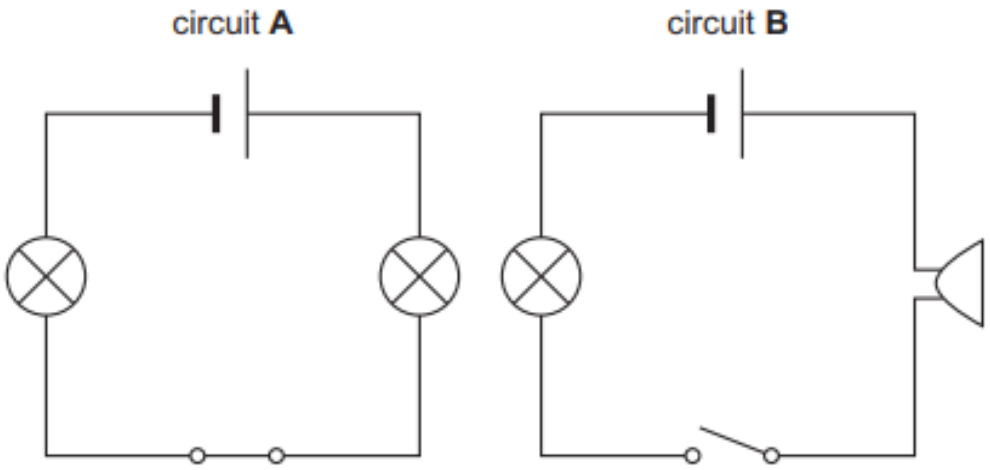
Objectives :

- Use diagrams and conventional symbols to represent, make and compare circuits that include cells, switches, lamps and buzzers.

-Make simple circuits and compare the brightness of lamps in series and parallel circuits.

Q1) Scientists use models to describe electrical circuits.

Look at these two electrical circuits.



Both circuits have a cell and wires.

(a) Describe two **other similarities** between the two circuits.

1 .....

2 .....

(b) Describe two **differences** between the two circuits.

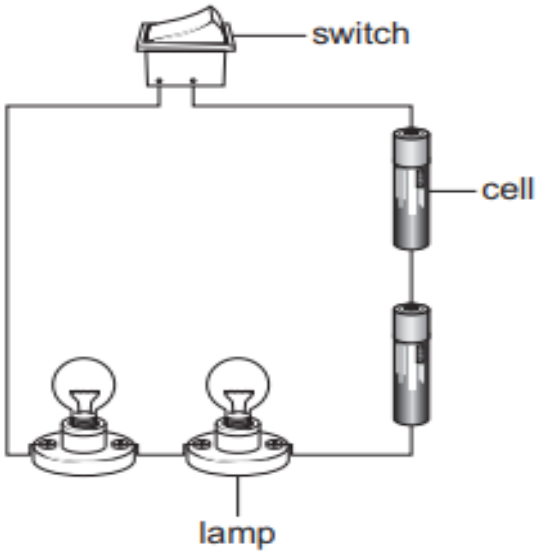
1 .....

2 .....

Q2) Draw a line to connect the **type of electrical component** to the correct **symbol**.

type of electrical component	symbol
switch	
wire	
lamp	
cell	

Q3) Kofi has built an electrical circuit.



(a) The lamps are **off**.

What does Kofi do to turn the lamps **on**?

.....

(b) In the space below draw the circuit diagram for this electrical circuit.

Use circuit symbols.

Q4) Some of the properties of copper are shown in the table.

property
good conductor of electricity
good conductor of heat
high boiling point
high melting point
hard
shiny

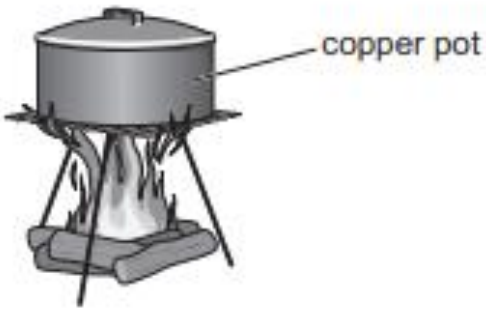
(a) Why is copper used to make electrical wires?

Choose from **the table**.

.....

(b) Why is copper used to make cooking pots and pans?

Choose the best two reasons from **the table**.



1 .....

2 .....

Q5) Complete these sentences.

Cables and wires need to be **good** electrical conductors.

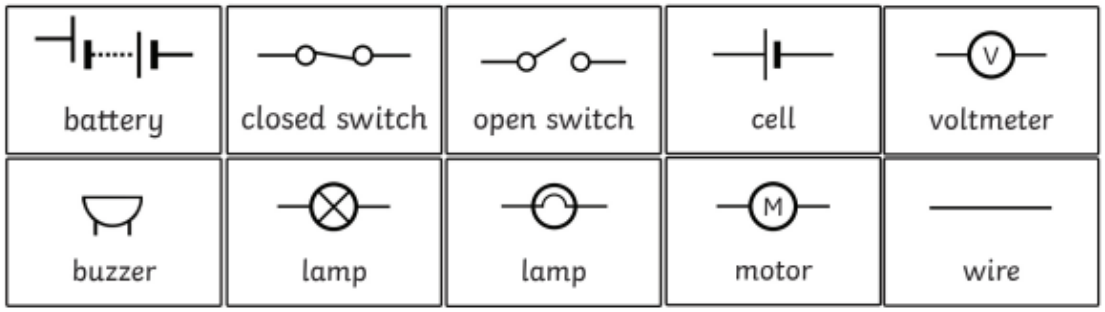
They are made of ..... .

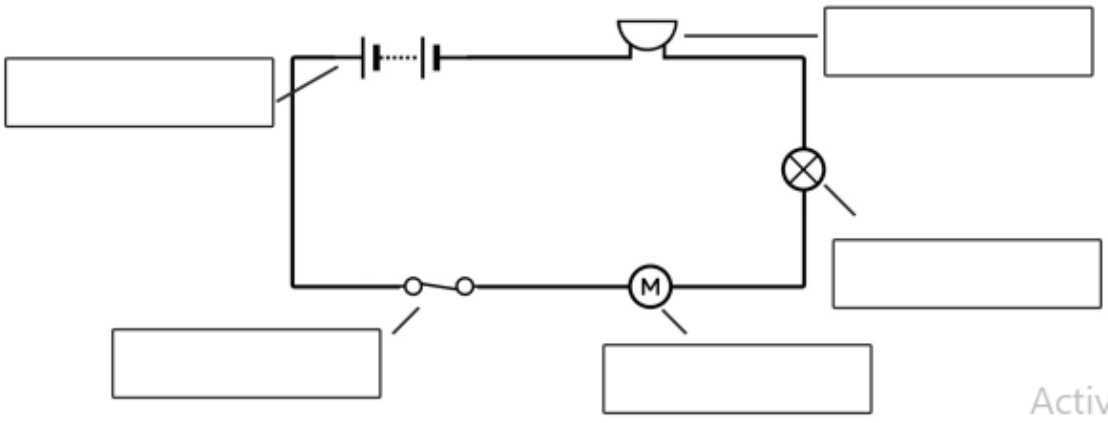
For safety, wires are covered with materials that do not conduct electricity.

The wires are covered with ..... .

Any material that is a non-conductor is an ..... .

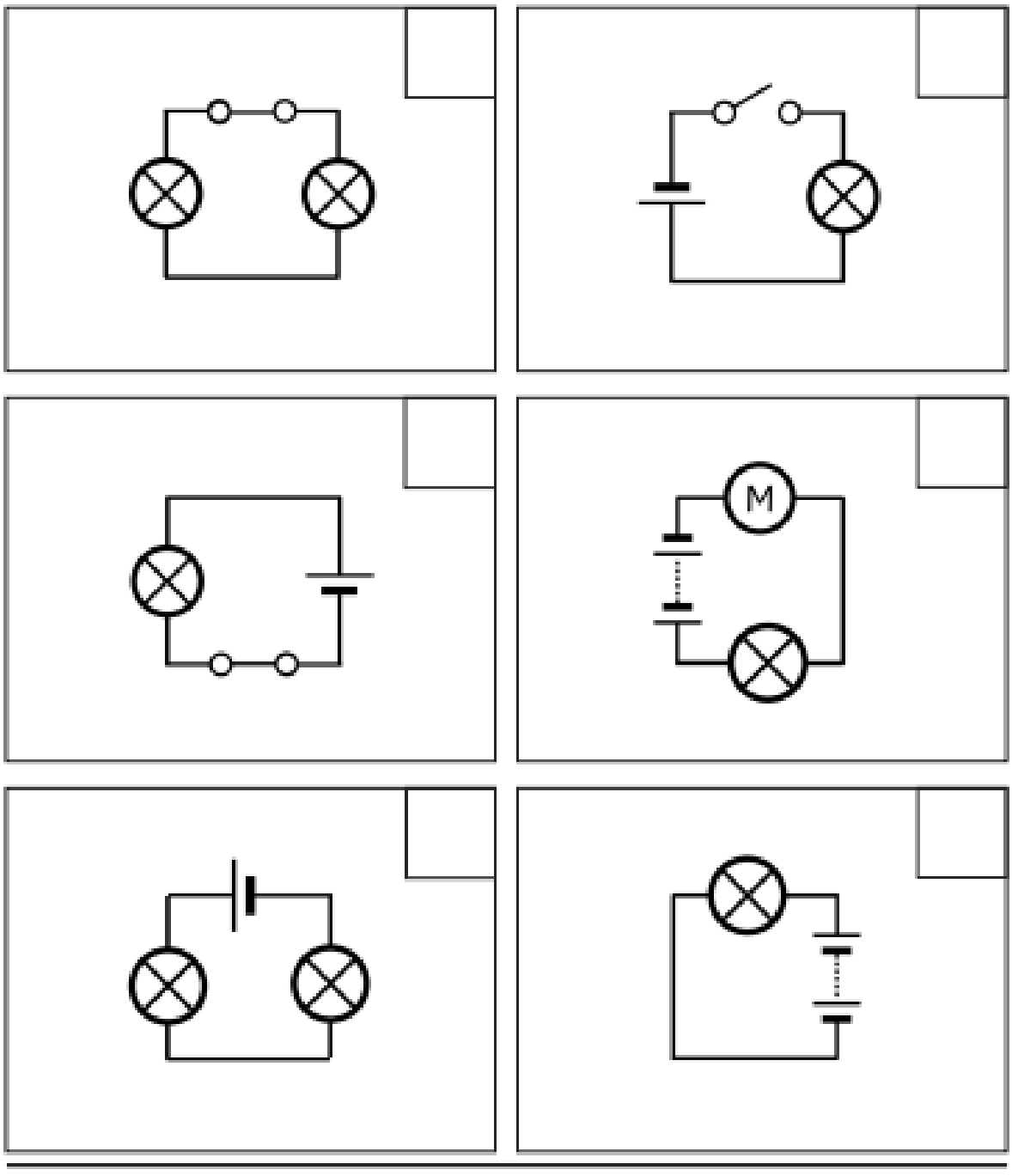
Q6) Label the circuit below.



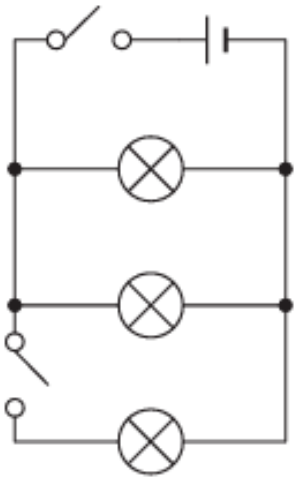


Q7) Mark the circuit diagrams with atick ifyou think the bulb will light.

Put a cross ifyou think the bulb will not light.



Q8) Priya draws a diagram of an electrical circuit.



(a) This electrical circuit is a **parallel** circuit containing six electrical symbols.

Complete the sentences with the names of the electrical symbols.

The circuit has only **one** .....

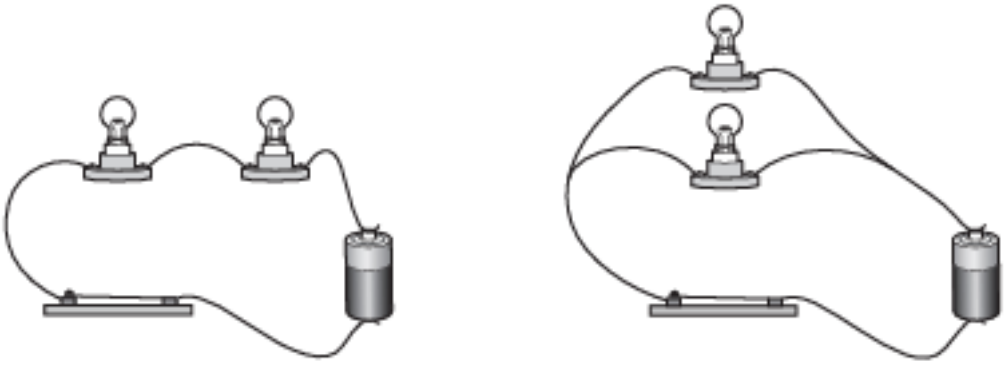
The circuit has only **two** .....

The circuit has only **three** .....

(b) Priya changes the parallel circuit to make it into a series circuit.

Draw this **series** circuit containing the six electrical symbols.

Q9) Mia has two electrical circuits.



electrical circuit **A** electrical circuit **B**

Both circuits have identical components.

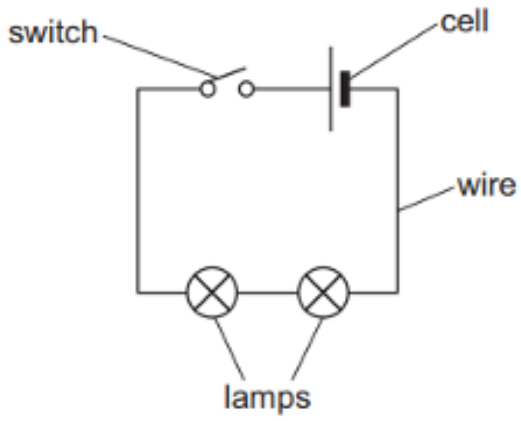
Complete the sentences.

The parallel circuit is electrical circuit .....

The circuit with the brightest lamps is electrical circuit .....

Q10)

Mia connects an electrical circuit.



She closes the switch.

The lamps are very bright.

Mia adds two more lamps to the electrical circuit.

Describe what happens.

.....

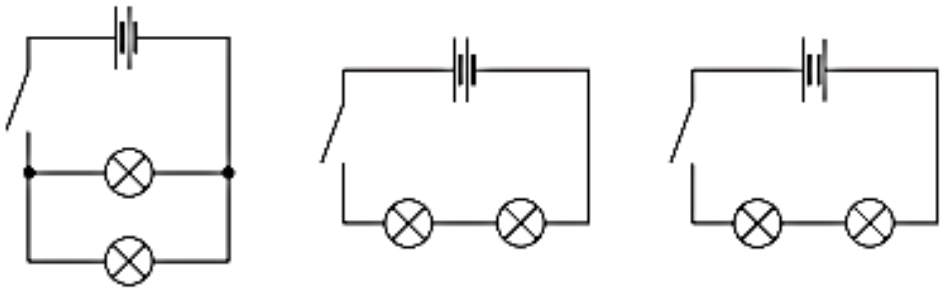
.....

Q11)

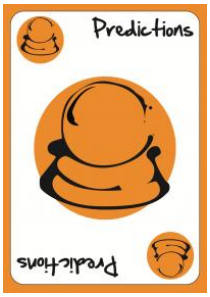
(a) An electrical circuit has two cells, correctly arranged, and two lamps in series with one switch. When the switch is closed both of the bulbs light up.

Which circuit, **A**, **B** or **C**, matches the description?

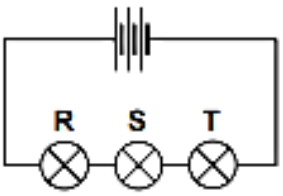
Put a circle around the answer.



A **B** **C**



(b) In this circuit, bulb **S** does not light up.



(i) What happens to bulbs **R** and **T**?

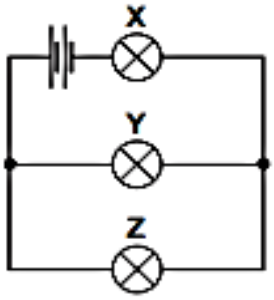
R .....

T .....

(ii) Why does this happen?

.....

(c) In this circuit, bulb **Y** fails.



What happens to bulbs **X** and **Z**?

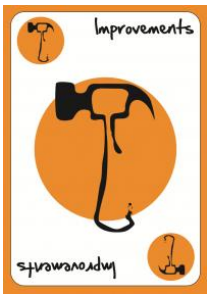
X .....

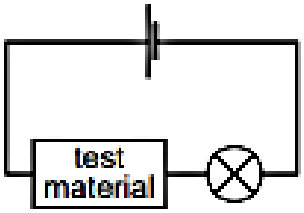
Z .....

Q12)

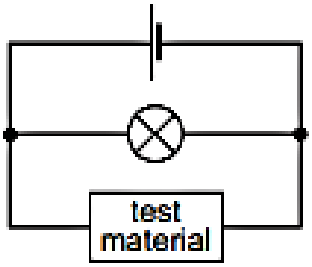
Alec is going to test some different materials to see if they conduct electricity.

(a) Which of these circuits should he use?
Tick (✓) the correct box.

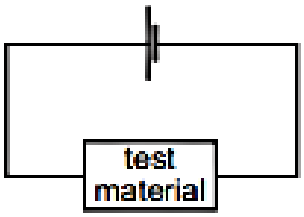




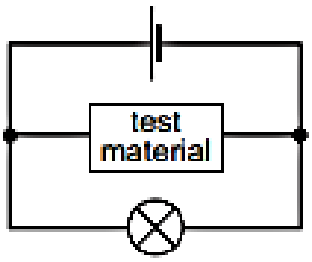
A ☐



B ☐

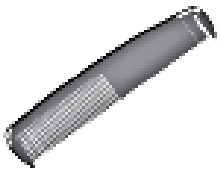


C ☐



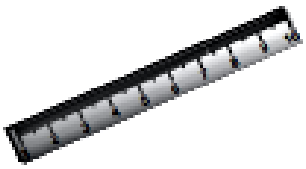
D ☐

(b) Which **two** items, if put into the correct circuit above, would cause the bulb to light up?
Tick (✓) the **two** correct answers.



plastic comb ☐

steel scissors ☐



wooden ruler ☐

metal paperclip ☐

(c) What do we mean by the terms

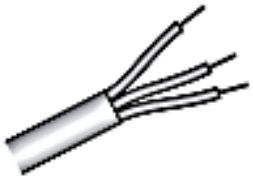
(i) electrical conductor

..... [1]

(ii) electrical insulator?

.....

(d) The picture shows some electrical wiring from a house. Each indi
covered in plastic and then all the separate wires are covered in
of plastic.



Why are the wires covered in plastic?

.....

Q12) The picture shows an electrical cable.

(a) Label the picture.

Choose from the following words.

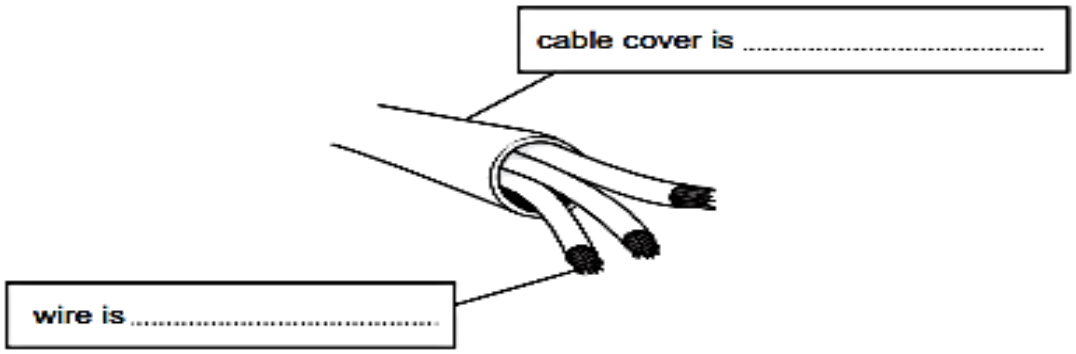
glass

metal

paper

plastic

wood



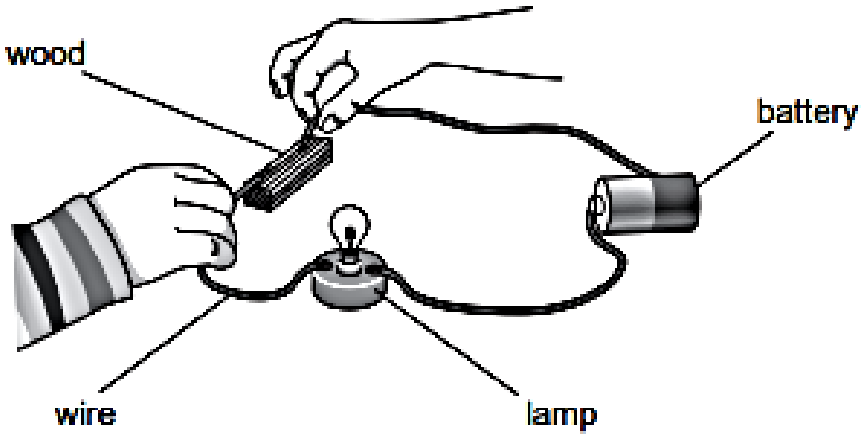
(b) Complete the sentence.

The cable cover is a good .....

Q13) Blessy and Aiko investigate electrical conductors.

They make an electrical circuit to test different materials.

The first material they test is wood.



(a) Explain what happens in this electrical circuit.

The lamp .....

.....

This happens because .....

.....

(b) Aiko wants to find out which metal is the best electrical conductor.

What does she measure to find out which metal is the best electrical conductor?

Circle the correct answer.

brightness of the lamp

colour of the lamp

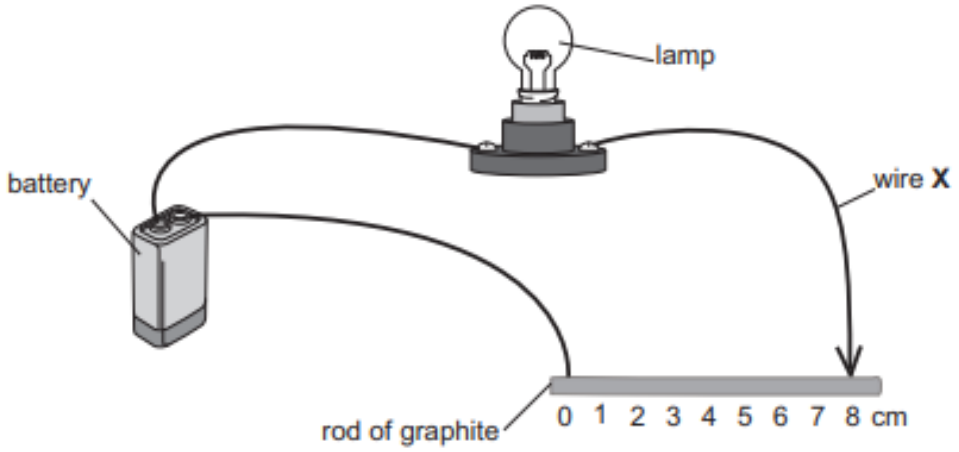
colour of the metal

length of the metal

temperature of the metal

Q14)

Hassan and Mike connect an electrical circuit.



Hassan moves the wire **X** from 0 cm to 8 cm.

Mike writes down how bright the lamp is for each distance.

He uses a scale from 0 to 100.

100 is the brightest on the scale.

Here are the first three results.

distance in cm	brightness of lamp
0	100
2	80
4	60
6	
8	

(a) Complete the sentence.

As the distance increases the brightness of the lamp .....

Circle the correct answer.

0 **20** **40** **60** **80**

(c) Complete the sentence.

Choose the **best** word from the following.

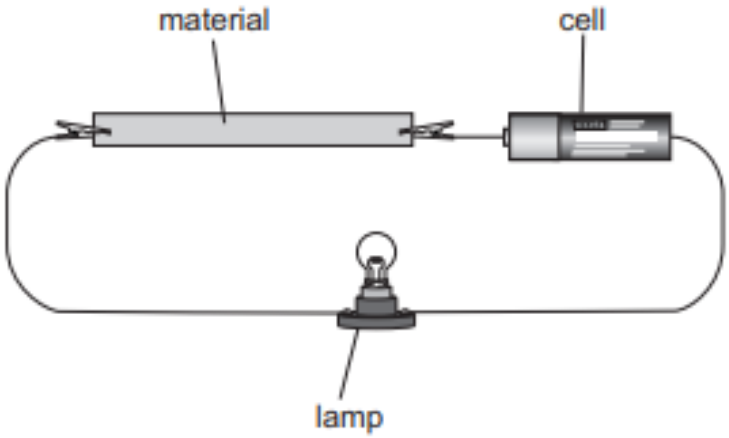
conductor **insulator** **metal** **plastic** **solid**

Graphite is a good electrical .....

Q15)

Mia investigates electrical conductors.

She puts different materials in an electrical circuit.



(a) The symbol for the cell is

Draw the symbol for the lamp.

(b) Some materials are good conductors of electricity.

What happens to the lamp if the material is a good conductor of electricity?

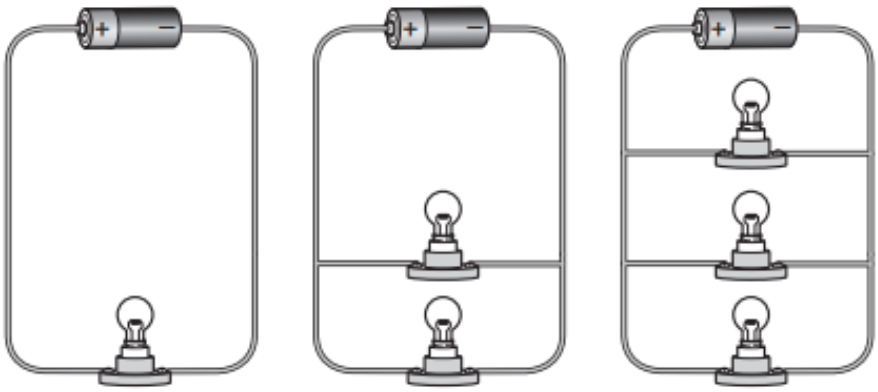
.....

(c) Which material is a good conductor of electricity?

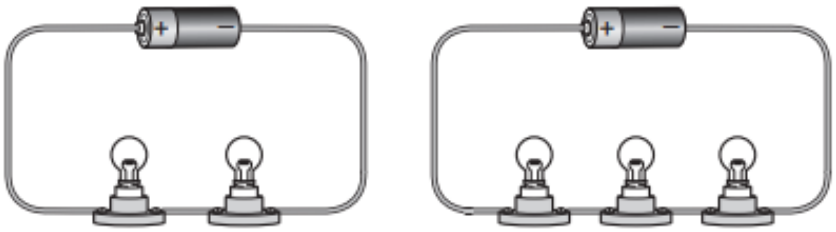
Circle the correct answer.

Paper **plastic** **rubber** **silver** **wood**

Q16) Lily compares lamp brightness in five different circuits.



circuit **A** circuit **B** circuit **C**



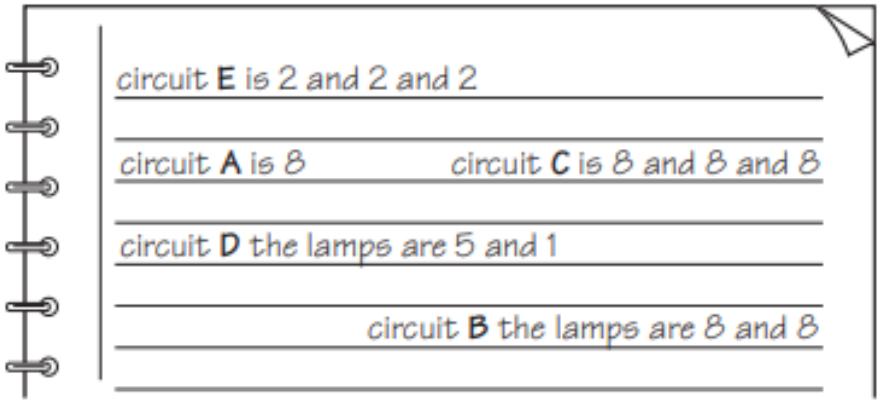
circuit **D** circuit **E**

She uses identical lamps and identical cells for each circuit.

Lily uses a scale for lamp brightness for each lamp.

10 is the brightest and 1 is the least bright.

Look at her results.



(a) Lily starts to write the results into her results table.

Complete her results table.

circuit	.....
A	.....
B	.....
C	8 and 8 and 8
D	.....
E	.....

(b) There is **one** anomalous result.

Circle the circuit with the anomalous result.

A **B** **C** **D** **E**

(c) Describe **two** conclusions shown by the results.

Use your knowledge about series and parallel circuits in your answers.

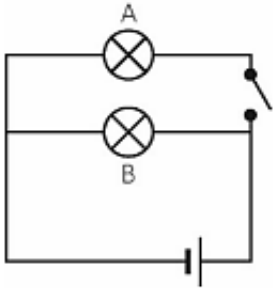
1 .....

.....

2 .....

.....

Q17) Look at the circuit diagram.



a What type of circuit is this?

_____

b Explain how you know it is this type of circuit.

_____

c Will lamps A and B both light up?

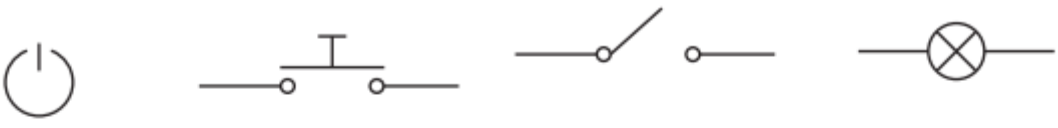
_____

d Explain your answer.

_____

_____

Q18) Mike uses secondary sources to find out about symbols in electrical circuits.



A **B** **C** **D**

E **F** **G** **H**

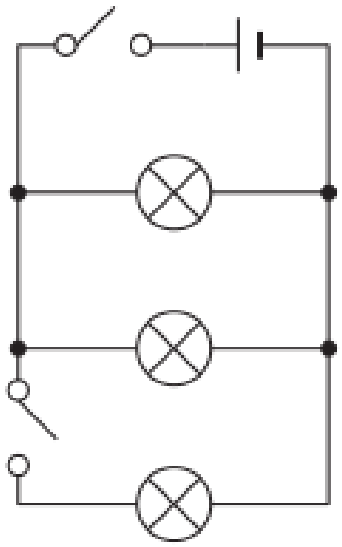
Which symbols are conventional electrical symbols?

Circle the correct answer.

A and **B** **C** and **D** **E** and **F** **G** and **H**

Q19)

Priya draws a diagram of an electrical circuit.



(a) This electrical circuit is a **parallel** circuit containing six electrical symbols.

Complete the sentences with the names of the electrical symbols.

The circuit has only **one** .....

The circuit has only **two** .....

The circuit has only **three** .....

(b) Priya changes the parallel circuit to make it into a series circuit.

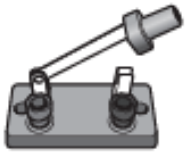
Draw this **series** circuit containing the six electrical symbols.

Q20)

There are different types of electrical circuits.

(a) Symbols are used to draw electrical circuits.

Complete the table by writing **one name** and drawing **three symbols**.

name	diagram	symbol
cell		
.....		
lamp		
buzzer		

(b) Chen makes two different electrical circuits.

He uses:

- two identical lamps in each circuit
- one cell in each circuit.

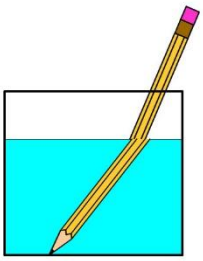
Complete the table by drawing **two** circuit diagrams.

type of circuit	circuit diagram
series	
parallel	

(c) Complete the conclusion.

The lamps are the brightest in the ..... circuit

because .....

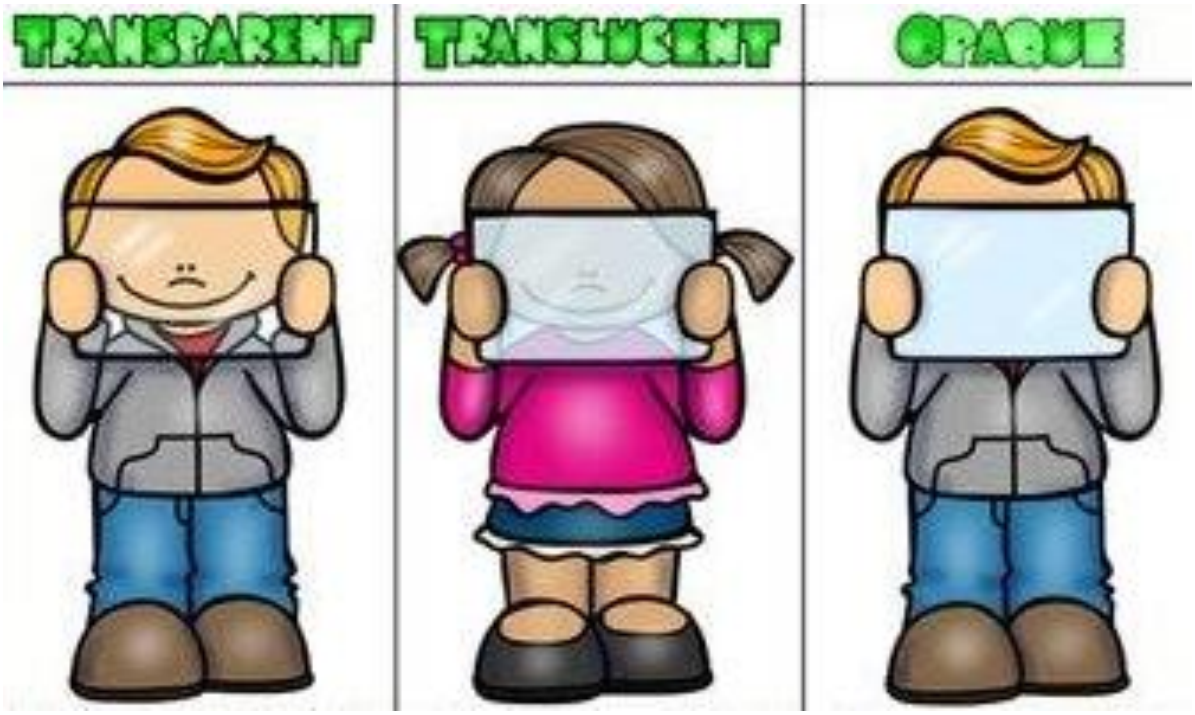


Light, reflection and refraction

Objectives :

-Describe how a ray of light changes direction when it is reflected from a plane mirror.

- Describe how a ray of light changes direction when it travels through different mediums and know that this is called refraction.



Q1)

Class 6 investigate light.

- A hole is cut in a box.
- A flashlight (torch) is put inside the box.
- Different materials are put over the hole in the box.

(a) Predict what will happen if the material is **opaque**.

Complete the sentence.

If the material is opaque I predict .....

.....

(b) Which material is opaque?

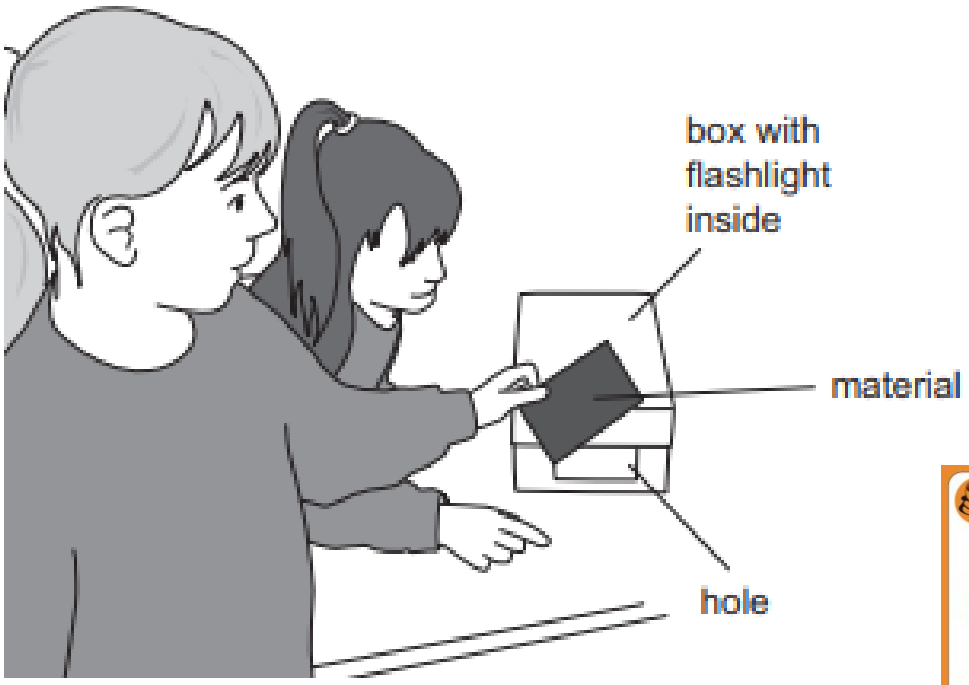
Circle the correct answer.

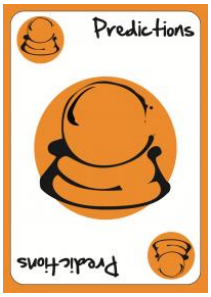
glass **ice** **water** **wood**

Q2)

Class 6 investigate light.

- A hole is cut in a box.
- A flashlight is put inside the box.
- Different materials are put over the hole in the box.





(a) Predict what will happen if the material is **transparent**.

Complete the sentence.

If the material is transparent I predict .....

.....

(b) Why do we see light from the flashlight?

Circle the correct answer.

light goes into our eyes

light is reflected by our eyes

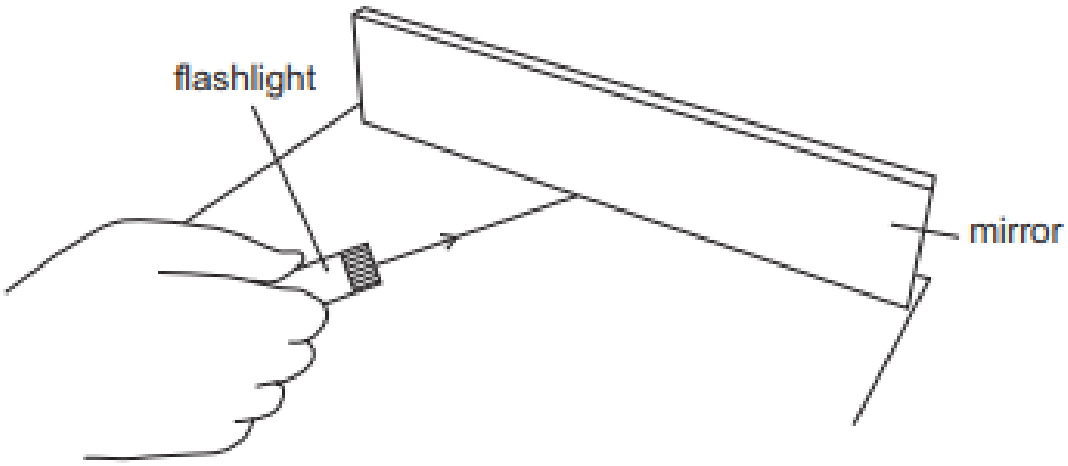
light goes into the flashlight

light is reflected by the flashlight

Q3)

Priya investigates reflection of light using a flashlight.

She shines the flashlight at a mirror and draws the path of the ray of light.



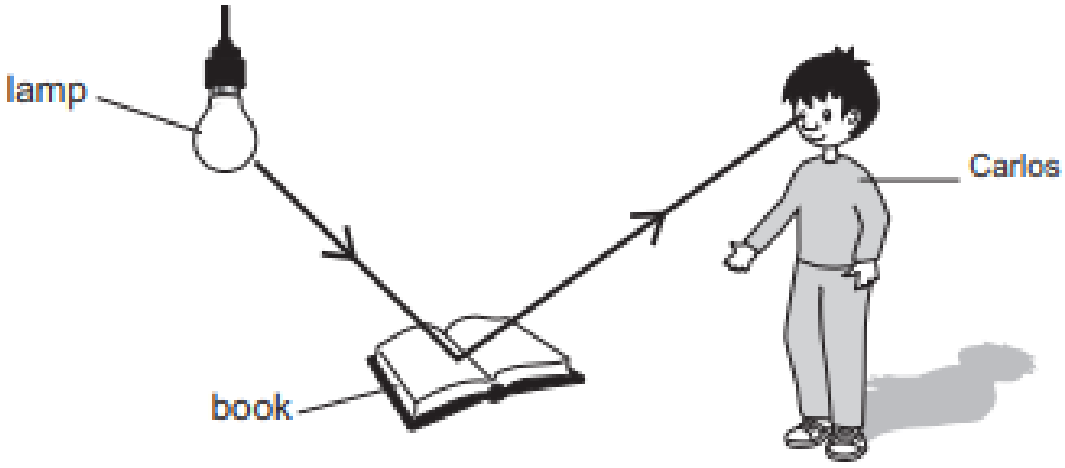
Priya has not completed the diagram.

Draw the ray of light coming from the mirror.

Q4)

1 Carlos draws a picture.

He uses the picture to explain how he sees a book.



Complete the sentences.

Choose from the following words.

arrows	**ears**	**eyes**	**face**	**jumps**
lines	**rays**	**reflects**	**takes in**	

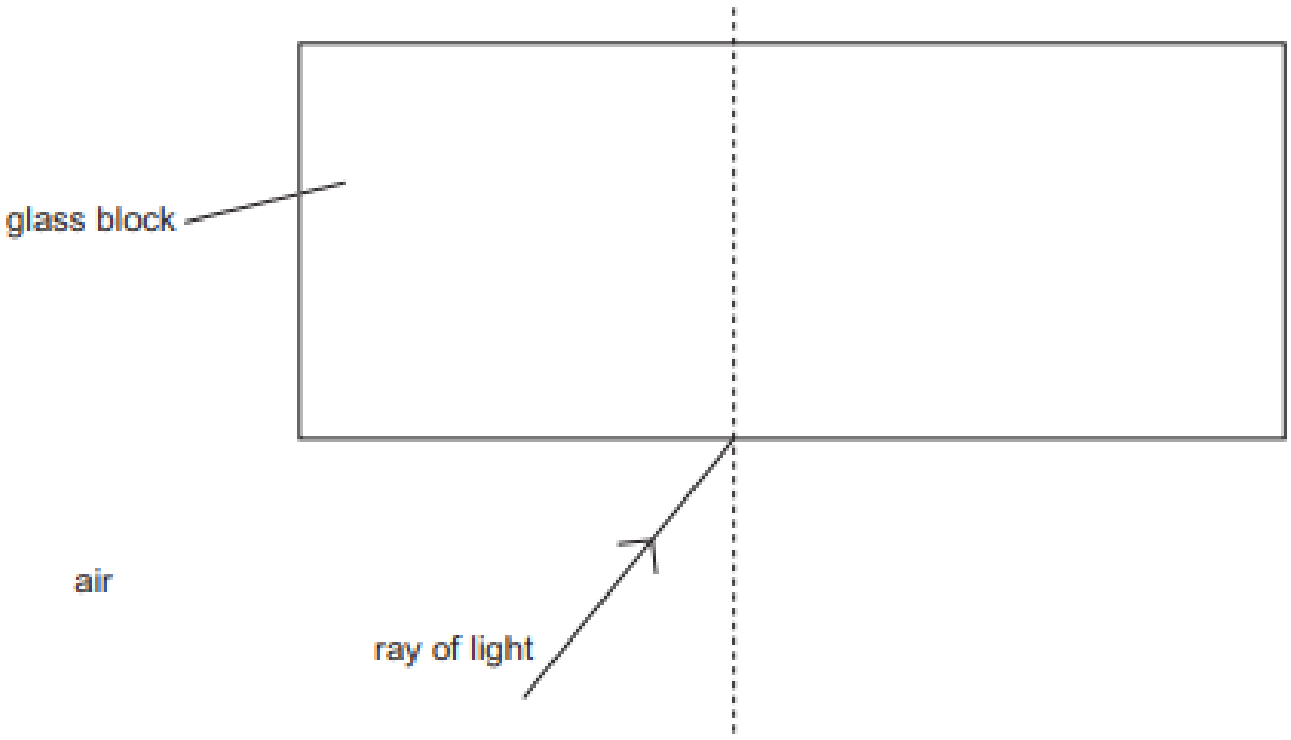
The lamp produces ..... of light.

The surface of the book ..... the light.

The light reaches Carlos and enters his ..... .

Q5)

The diagram shows a ray of light just about to enter a glass block.



(a) The ray of light enters the glass block.

Draw the ray of light inside the glass block.

(b) Describe what happens to the ray of light as it moves from the air into the glass block.

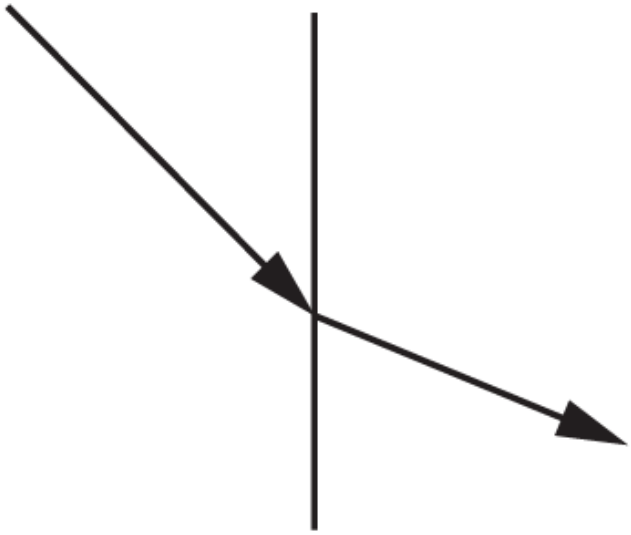
.....

.....

Q6)

Pierre is learning about the properties of light.

He draws a model to show one of the properties of light.



Which property of light is Pierre modelling?

.....

Q7)

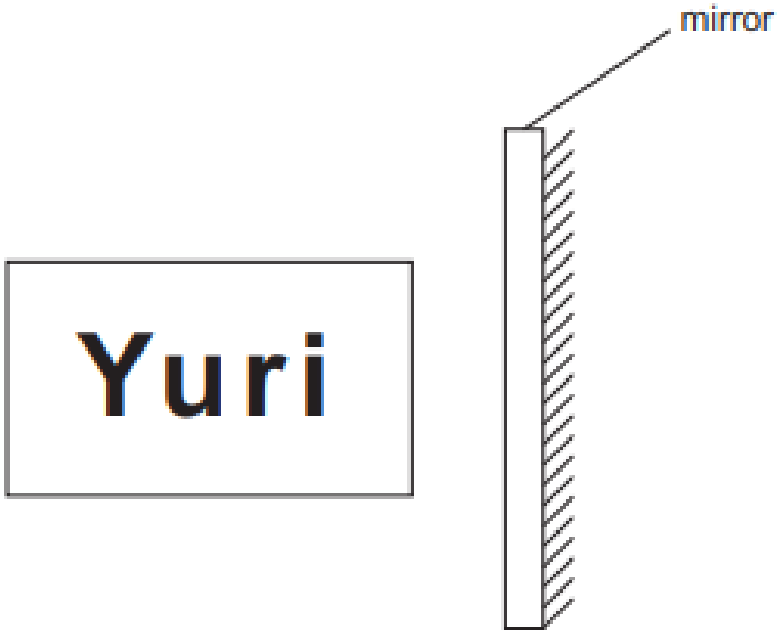
The law of reflection says that the angle that a ray of light hits a surface (the angle of incidence) is equal to the angle that the ray of light bounces off a surface (the angle of reflection).

Draw a line showing the angle at which the ray of light bounces off the mirror, using the law of reflection.

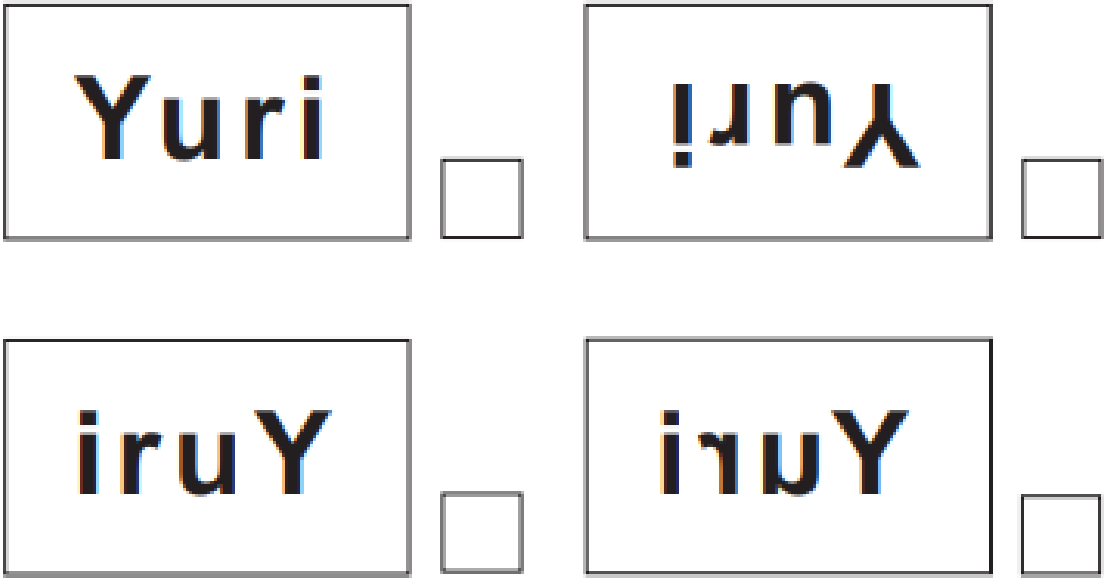
Q8)

7 Yuri draws his name on a piece of paper.

(a) He looks at his name in a mirror.



Tick (✓) the box next to the image Yuri sees in the mirror.



[1]

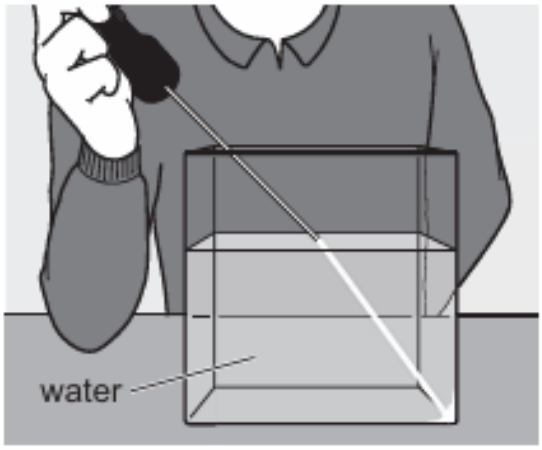
(b) Complete these sentences about mirrors.

Rays of light from the object are ..... by the mirror.

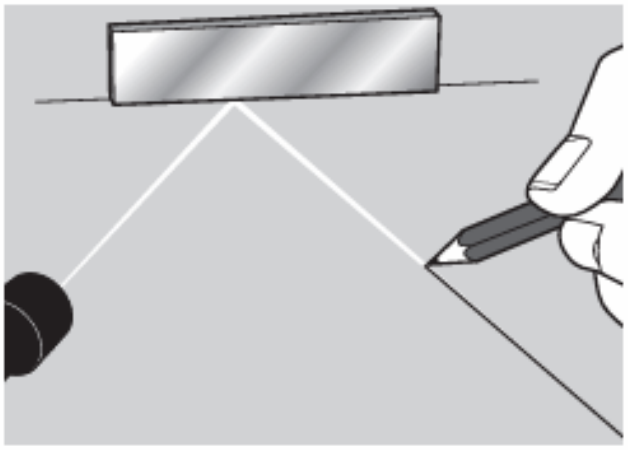
We can see the image because the rays of light .....

Q9)

Mike does two different investigations using light rays.



investigation **A**



investigation **B**

(a) Describe what happens to the light ray in investigation **A**.

Complete the sentences.

In investigation **A** the light ray changes .....

This is called .....

[2]

(b) Describe what happens to the light ray in investigation **B**.

Complete the sentences.

In investigation **B** the light ray changes .....

This is called .....

[2]

(c) Mike removes the water from the container in investigation **A**.

Describe what happens to the light ray.

.....

..... [1]

Q10) Name 3 light sources:

a) .....

b) .....

c) .....

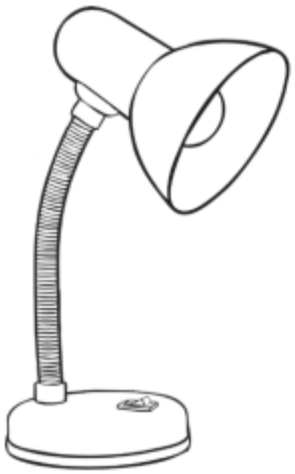
Q11) How can we see the moon at night?

.....

Q12) Fill in the gap in this sentence:

Light travels in a ..... line.

Q13) 4. Draw **two** lines and arrows to show how the eye sees the apple.



Q14)

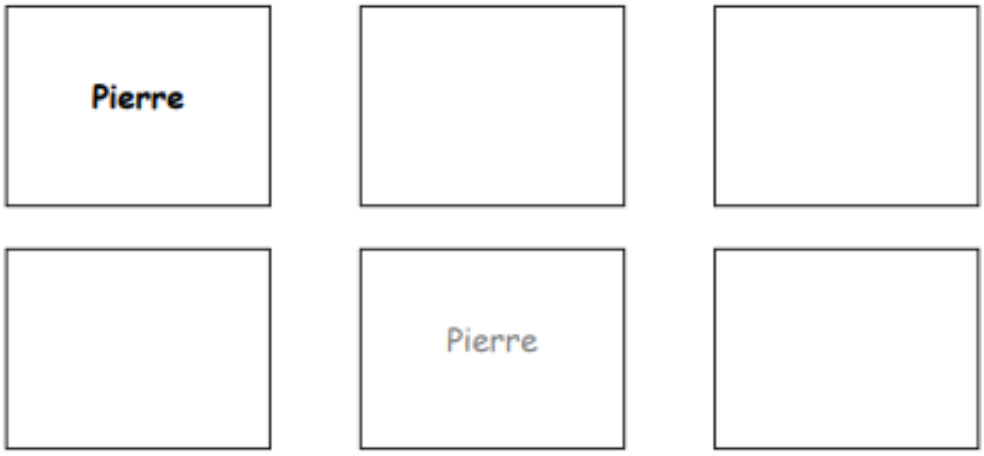
6. Draw 4 lines on this diagram to show how the person sees the bird through the periscope:

Q15)

Pierre investigates different materials.

- He writes his name on a piece of paper.
- He puts different materials over his name.

Here are his results.



(a) How many of the materials are opaque?

Circle the correct answer.

1 **2** **3** **4** **5** **6**

(b) Pierre thinks that one of the materials is more transparent than the others.

Use his results to explain why.

.....

.....

Q16)

Label the diagram showing the reflection of light by a mirror.

Choose words from

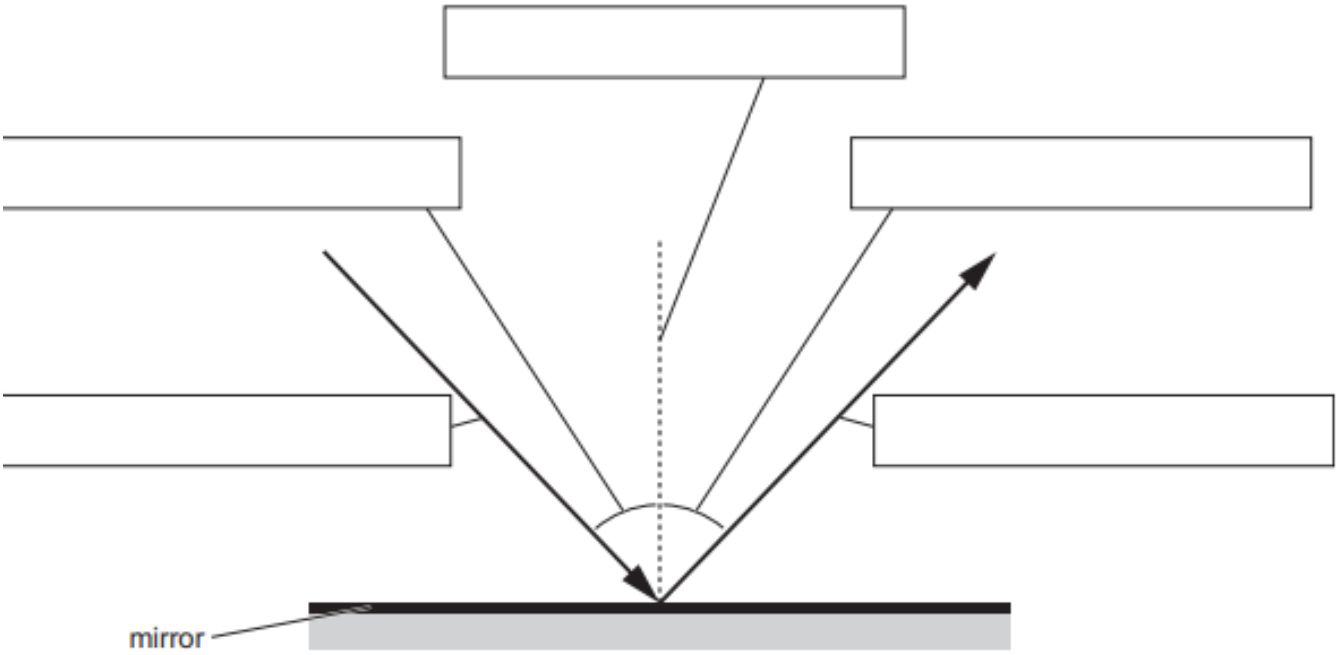
angle of incidence

angle of reflection

normal

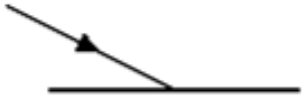
incident ray

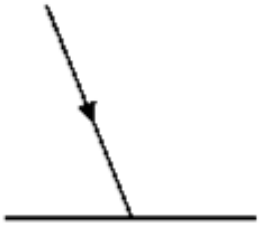
reflected ray

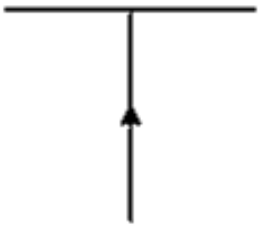


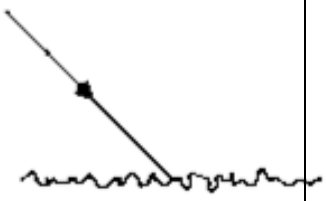
[3]

Q17)Draw the reflection diagram

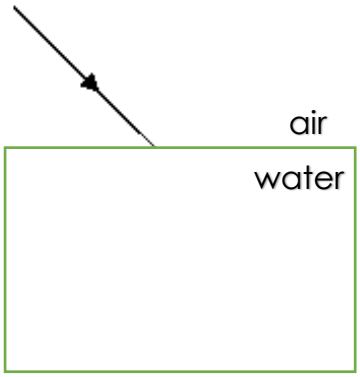


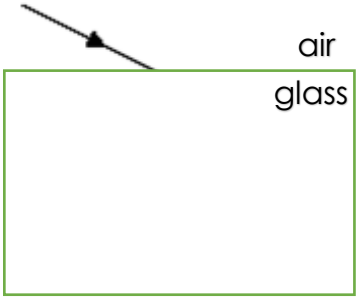


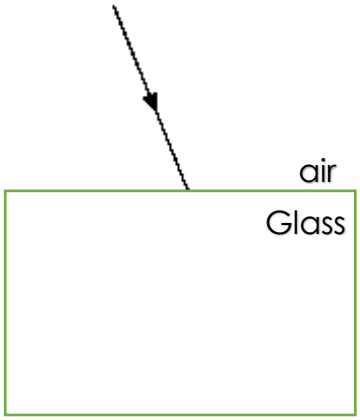




Q18) Draw the refracted light for each diagram.







Q18)

Mike holds a mirror against his face.

Look at the picture.

(a) Complete the sentence.

There is a face in the mirror because the _____ in the room is

_____ from the mirror.

[2]

(b) Mike only sees a small part of his face in the mirror.

Describe what Mike does to see exactly half of his face in the mirror.

_____

_____ [1]

(c) Describe how Mike makes his face appear clearer in the mirror.

Circle **two** correct answers.

use a darker mirror

use a duller mirror

use a cleaner mirror

use a bigger mirror

use a smoother mirror

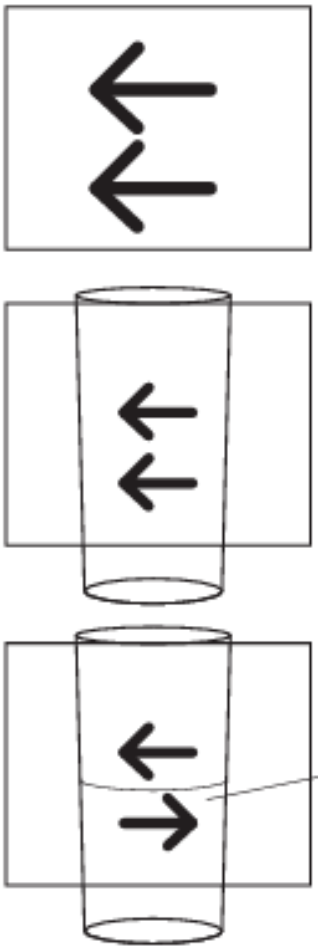
[1]

Q19)

Mike is doing an investigation about light.

He uses an empty glass and a glass of water.

Look at the diagrams.



Mike draws two arrows on paper.

He puts an empty glass in front of the arrows.

He adds water to the glass.

Describe what is happening to the **light** passing through the glass and the water.

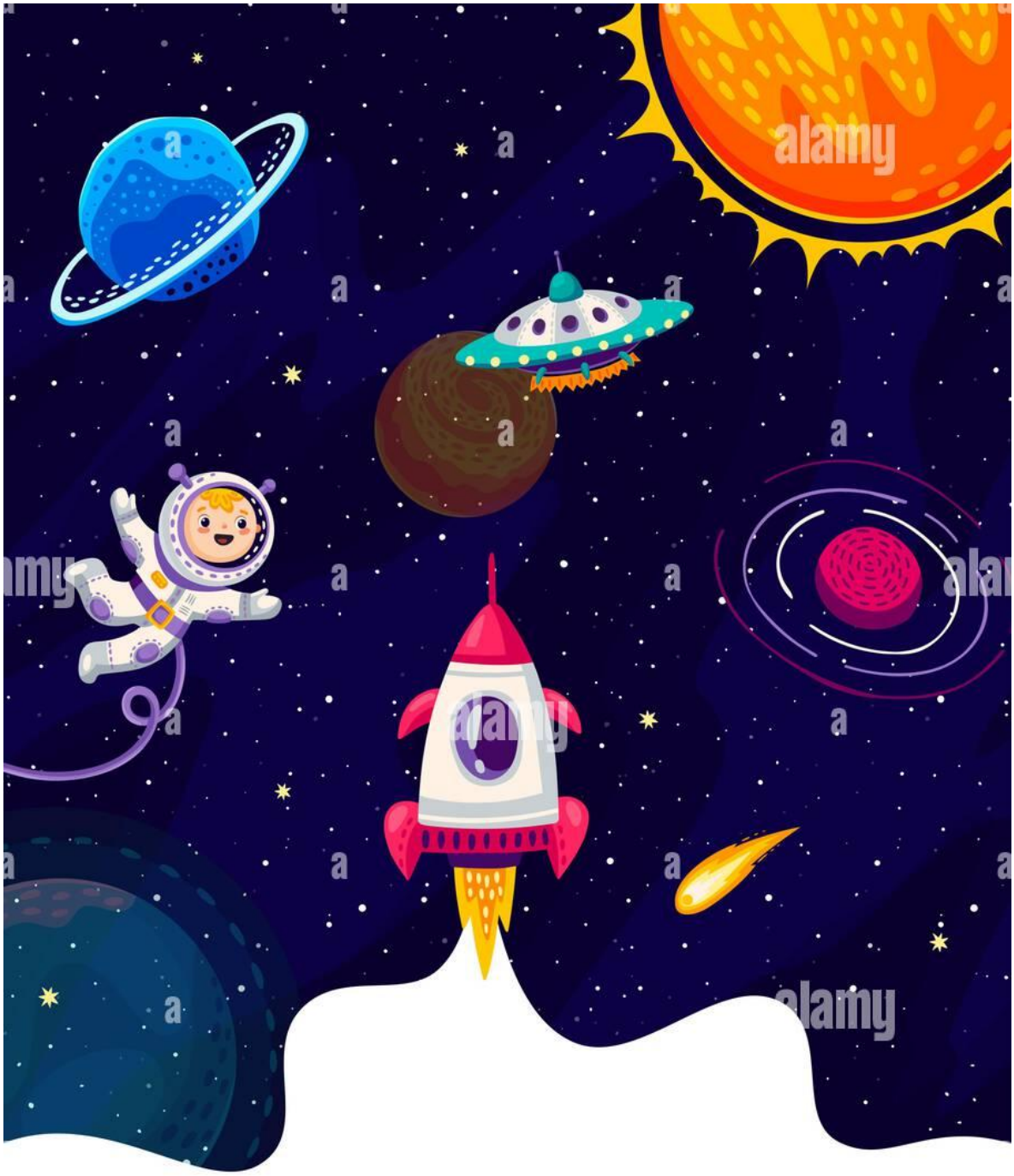
Explain your answer.

description .....

.....

explanation .....

.....



The solar system

Objectives

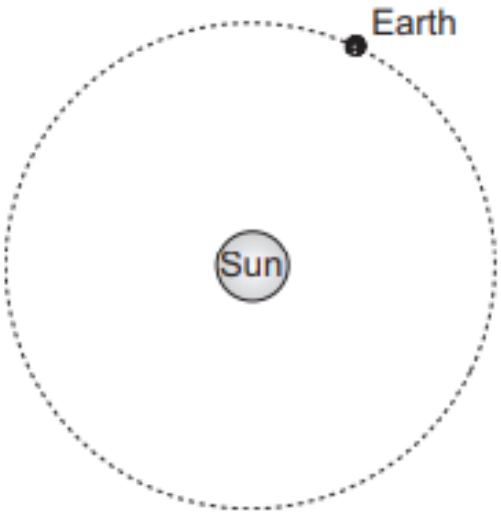
Describe the relative position and movement of the planets, the Moon and the Sun in the Solar System.

Observe and describe the changes in the appearance of the Moon over its monthly cycle.

Teacher : Nada Marji

Q1)

The diagram shows the Sun and Earth.



NOT TO SCALE

Tick (✓) the **two** correct sentences.

The Sun takes 1 year to orbit the Earth.	☐
The Earth takes 1 year to orbit the Sun.	☐
The Earth takes 24 hours to orbit the Sun.	☐
The Earth spins on its axis once every 24 hours.	☐
The Earth spins on its axis once every year.	☐

Q2) Chen, Mike and Oliver write notes about the Earth and the Sun.

Look at their notes.

Chen

The Sun spins on its own axis.
It takes a year to orbit the Earth.

Mike

The Earth spins on its own axis.
It takes a year to orbit the Sun.

Oliver

The Earth spins on its own axis.
It takes a day to orbit the Sun.

Only one is correct.

Circle the name of the child who is correct.

Chen **Mike** **Oliver**

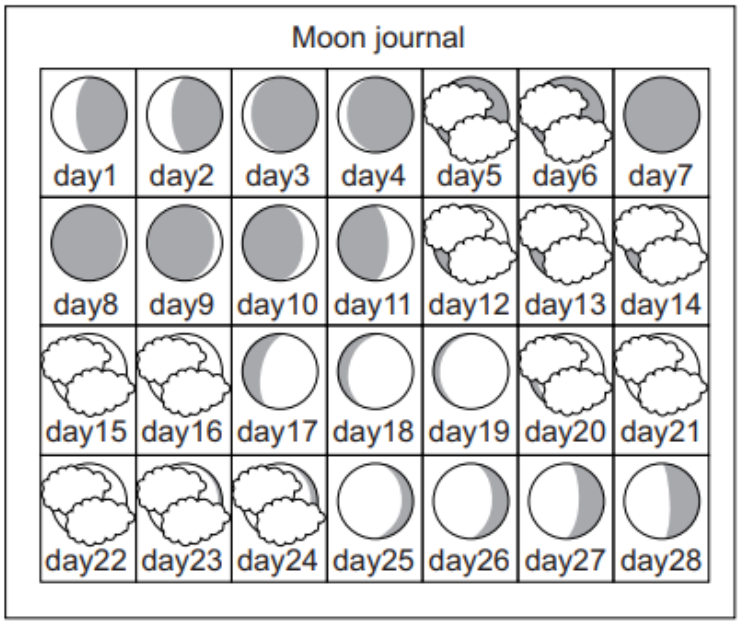
Q3) There are eight planets in the Solar System.

(a) Complete the table using these distances from the Sun in millions of km.

58 **108** **150** **228** **779** **1434** **2873** **4495**

planet	distance from the Sun in millions of km
Earth	.....
Jupiter	.....
Mars	.....
Mercury	.....
Neptune	.....
Saturn	.....
Uranus	.....
Venus	.....

(c) Oliver completes a Moon journal.

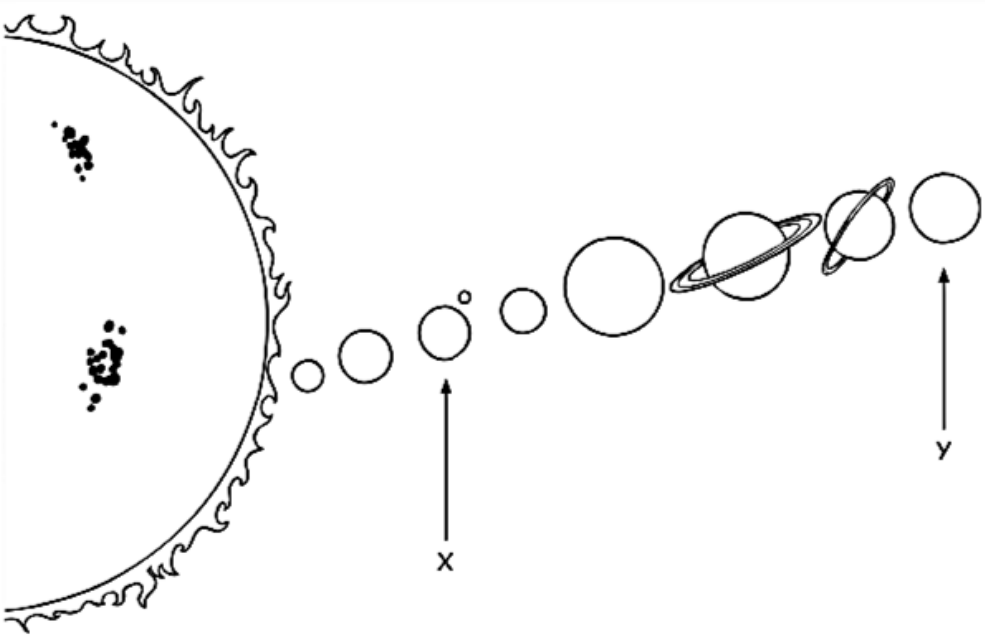


Complete the sentence.

Oliver does **not** see the Moon on day 14 because .....

.....

Q4)



1. Name the planets labelled: [2]

X _____

y _____

Q5)

How long does it take for:

a) The Earth to spin once on its axis?

.....

b) The Moon to go around the Earth once?

.....

c) The Earth to go round the Sun once?

.....

Q6)

The table shows some information about different planets in the Solar System.

planet	distance from the Sun in million km	time to spin on axis in Earth days	time to orbit the Sun in Earth years
A	57.9	58.6	0.2
B	149.6	1.0	1.0
C	108.2	243.0	0.6
D	778.4	0.4	11.9
E	227.9	1.0	1.9

(a) Which planet is the **nearest** to the Sun?

Circle the correct answer.

A **B** **C** **D** **E** [1]

(b) Which planet takes the **most** time to move around the Sun?

Circle the correct answer.

A **B** **C** **D** **E** [1]

(c) Describe the relationship between the distance from the Sun and the time to orbit the Sun.

.....

.....

(d) Look at the picture of the Earth.

Part of the Earth is labelled **X**.

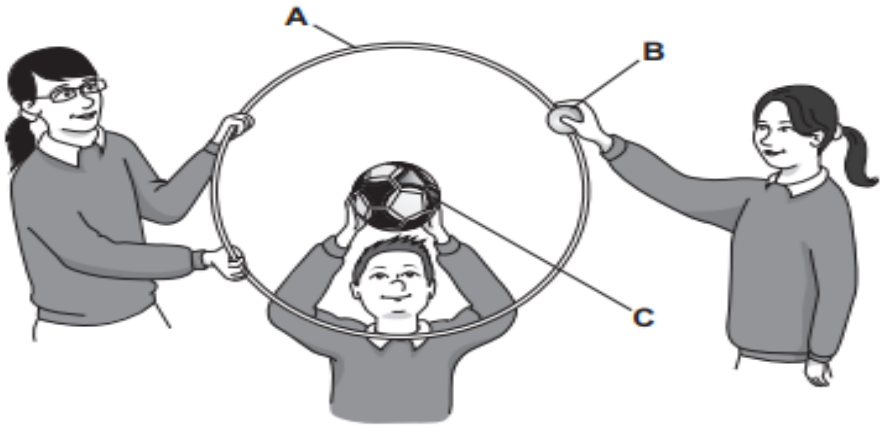
Part of the Earth is labelled **Y**.

Describe what it is like at part **X** and **Y**.

At **X** it is .....

At **Y** it is .....

Q7) Safia, Mia and Mike make a model of part of the solar system.



This is the model they make.

- Safia holds the hoop **A.**
- Mia moves the small ball **B** around the hoop **A.**
- Mike stands still in the middle holding the large ball **C.**

Complete the sentences.

Choose from the words

axis **Earth** **Moon** **orbit** **Sun**

Hoop **A** is a model of the .....

Ball **B** is a model of the .....

Ball **C** is a model of the .....

Q8)

The Moon changes in appearance over its monthly cycle.

(a) The diagram shows seven different phases of the Moon in the Northern Hemisphere.

There are eight phases of the Moon but only seven are drawn in the diagram.

Explain why it is **not** possible to draw the other phase.

.....

..... [

(b) The diagram shows a waxing crescent of the Moon in the Northern Hemisphere and the Southern Hemisphere.

Northern Hemisphere

Southern Hemisphere

Look at the diagrams.

Complete the sentences.

One **similarity** between the waxing crescents in the diagram is .....

.....

.....

One **difference** between the waxing crescents in the diagram is .....

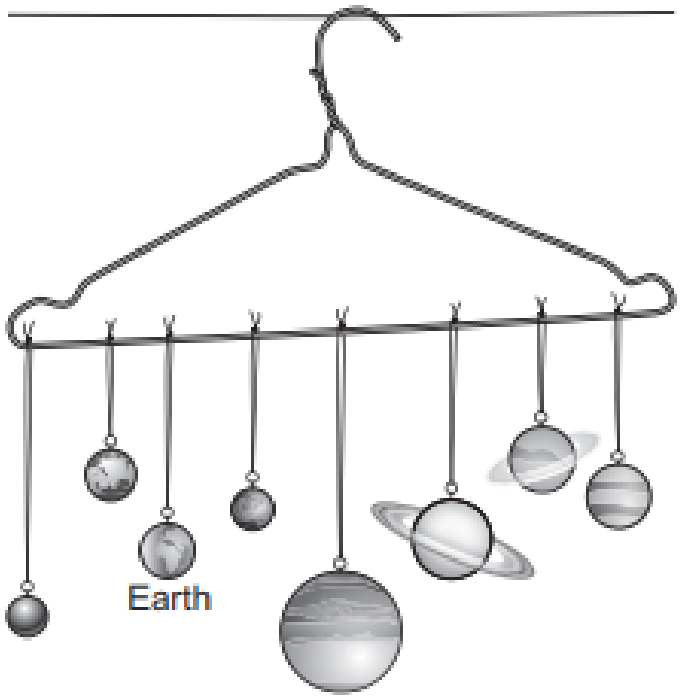
.....

.....

I

Q9)

Blessy makes a model of the Solar System.



(a) Write down **two** ways this model helps Blessy understand the Solar System

1 .....

.....

2 .....

.....

[

(b) Write down **one** way this model does **not** help Blessy understand the Solar System.

.....

..... [

10) Mia has ten boxes.

Each box has a fact about the Earth.

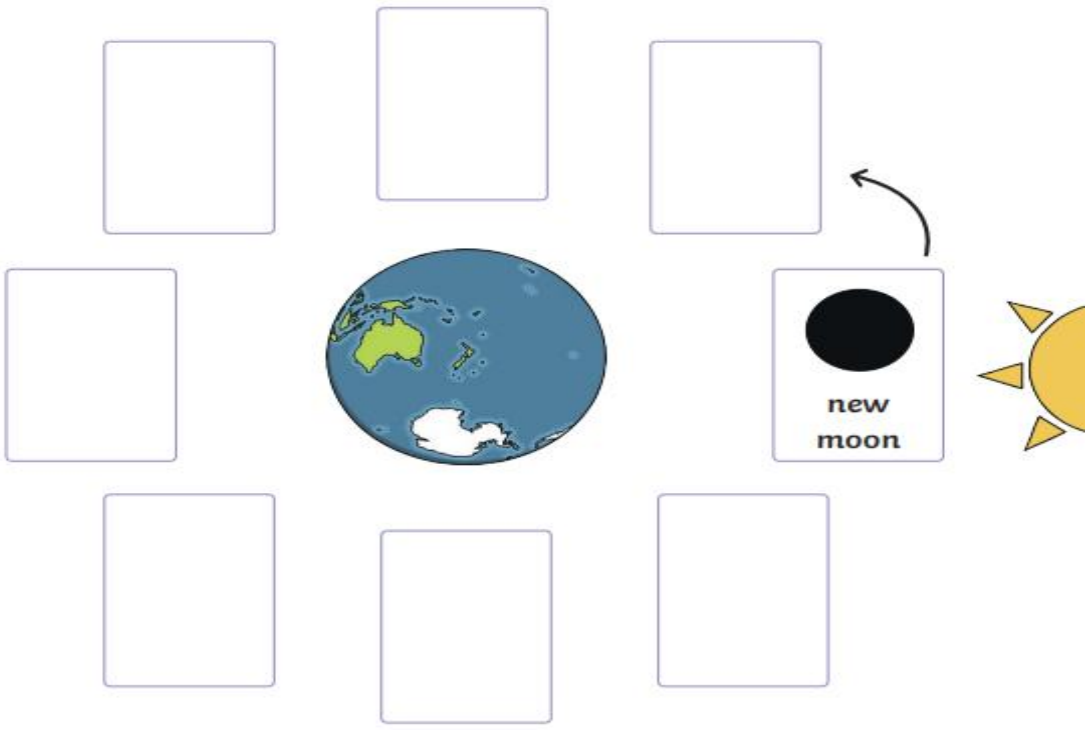
Only four of the boxes have true facts.

One box with a true fact has been ticked for you.

Put a tick (✓) in the boxes of the other **three** true facts.

The Earth spins on its axis.	The Earth only spins in the morning.	The Earth orbits the Sun. ✓	The Earth spinning on its axis causes day and night.	The Earth takes 24 hours to orbit the Sun.
The Earth takes a year to spin on its axis.	The Earth moves very close to the Sun and then stops.	The Earth takes a year to orbit the moon.	The Earth takes 24 hours to spin on its axis.	The Earth spins to the left and then to the right.

Q11) Draw and write the name of each phases

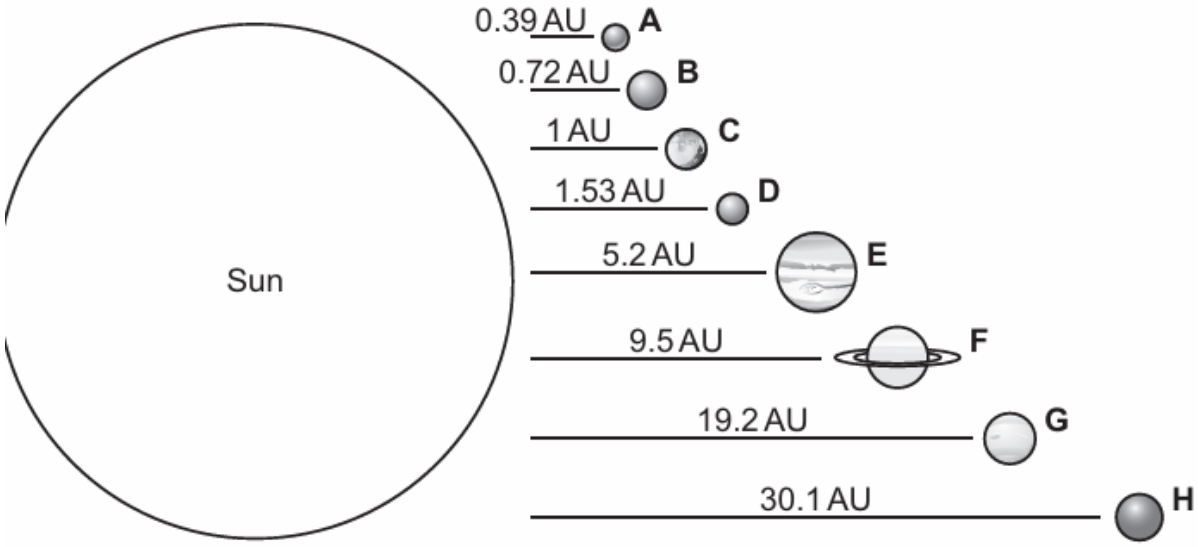


Q12)

Yuri draws a picture of the Sun and the eight planets.

The picture shows the distance between the Sun and each planet.

The distance between the Sun and Earth is 1 AU (astronomical unit).



Not drawn to scale

(a) Write down the names of the planets labelled **A**, **D** and **G**.

A .....

D .....

G .....

(b) Complete the sentences by writing the correct **letter** of the planet.

The planet with a distance of 5.2 AU from the Sun is .....

The distance from the Sun to Earth is 1 AU.

The planet with the most similar distance from the Sun to Earth is

.....

The planet almost 20 times further from the Sun than the Earth is

.....

(c) Complete the sentences.

A planet ..... on its own axis.

A planet ..... the Sun.

Rocks , rock cycle & soil

Objectives :

-Know that rocks can be classified as metamorphic, igneous and sedimentary and describe the identifying features of each type of rock.

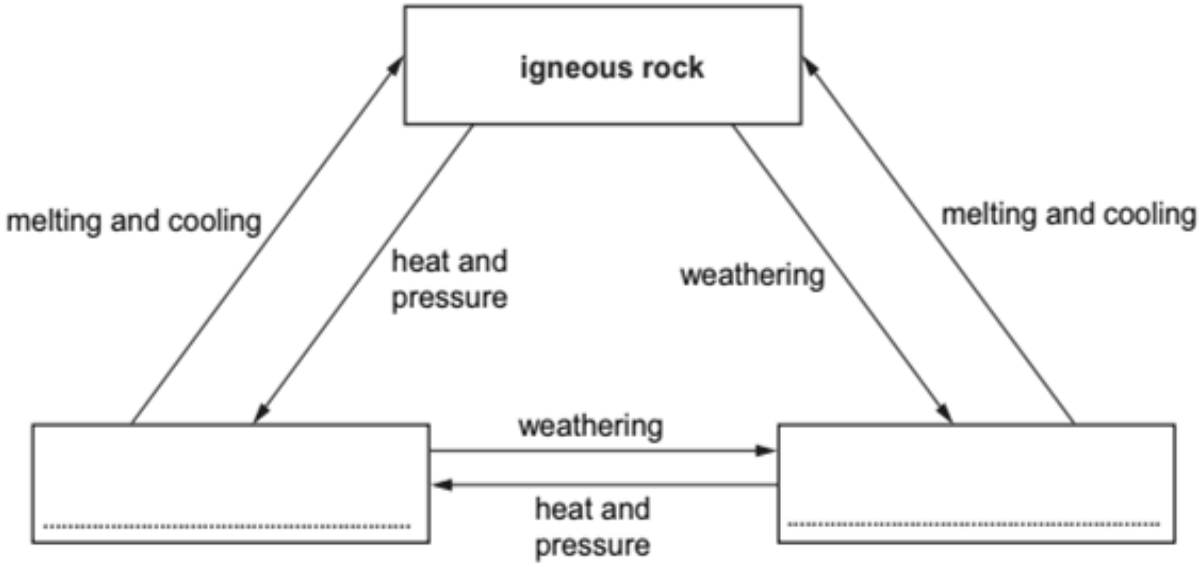
-Describe the rock cycle and the formation of metamorphic, igneous, and sedimentary rocks, in terms of solidification, erosion, sedimentation, burial, metamorphism, and melting

-Describe the way fossils can form in sedimentary rocks.

-Know that there are different types of soils and they can be classified based on their clay, sand, and organic content.

-Know that soil composition can change, which can support, or hinder, plant growth.

Q1) The diagram shows part of the rock cycle.



(a) Complete the diagram by writing in the **two** missing types of rock.

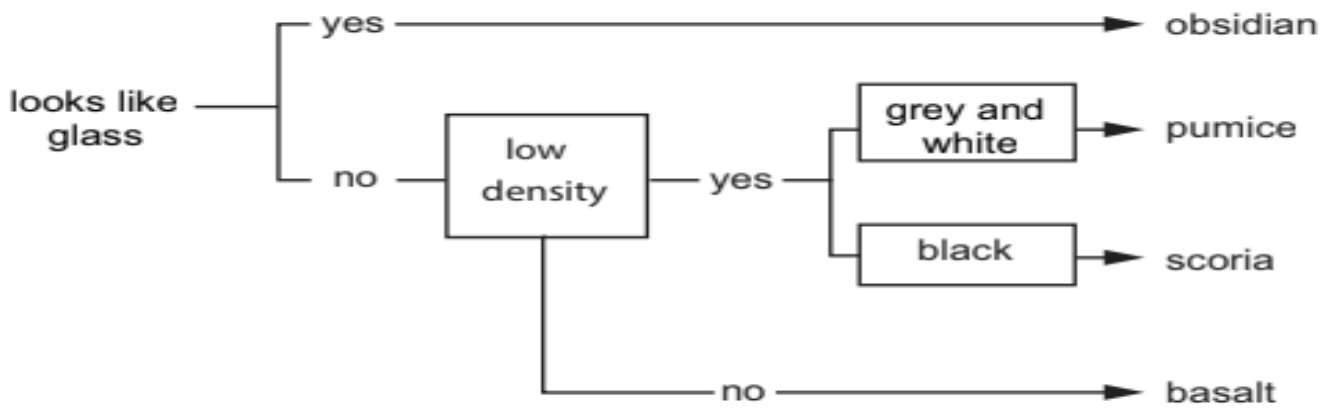
(b) Pierre investigates rocks.

He describes the rocks he investigates.

Here is a table of his observations.

rock	observation
A	grey and white rock that has a low density
B	black rock that has a high density
C	shiny black rock that looks like glass
D	black rock that has a low density

Use this key to identify the four rocks.



A .....

B .....

C .....

D .....

Q2)

Look at the descriptions of three rocks, **A**, **B** and **C**.

Rock **A** is formed in layers. It is soft and contains fossils.

Rock **B** is made when molten rock cools. It is hard and contains crystals.

Rock **C** is very hard. It contains distorted fossils due to high temperatures and high pressures.

(a) Complete the sentences to name each **type** of rock.

Choose from the list.

igneous **metamorphic** **sedimentary**

Rock **A** is ..... rock.

Rock **B** is ..... rock.

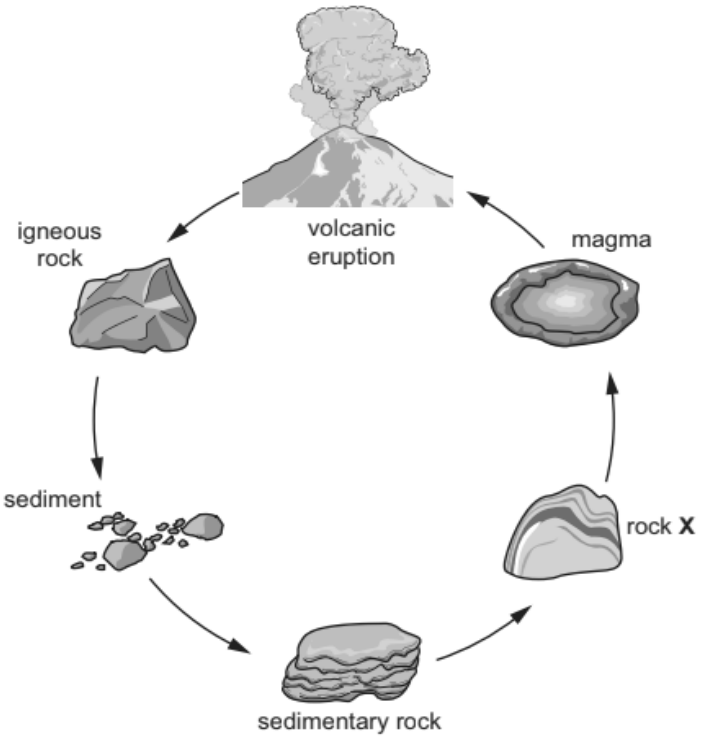
Rock **C** is ..... rock.

(b) Describe how **sedimentary** rock is formed.

.....

.....

Q3) The diagram shows different types of rocks and how they form.



(a) Sedimentary rocks can be turned into rock **X** by heat and pressure.

What type of rock is **X**?

.....

[1]

(b) Which layer of the Earth contains magma?

Circle the correct answer.

atmosphere **inner core** **mantle** **outer core**

[1]

(c) Sedimentary rocks often contain the remains of dead animals and plants from millions of years ago.

What word is used to describe these remains?

.....

[1]

(d) Different types of soil have different amounts of organic matter in them.

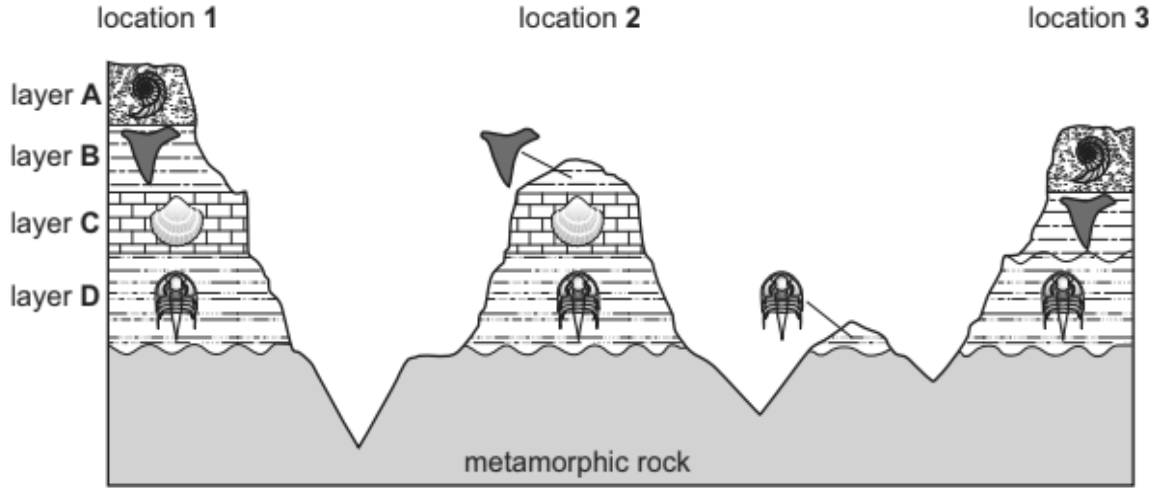
Which type of soil contains the most organic matter?

Circle the correct answer.

clay **loam** **sandy** **silt**

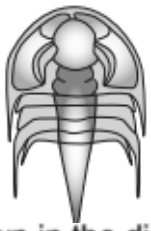
Q4)

The diagram shows a cross-section of rocks in three different locations.



(a) Fossils are found in the layers of rocks.

Look at the picture of one of the fossils.



(i) This fossil is the **oldest** shown in the diagram.

Explain how you can tell.

.....

(ii) The fossil is found in a sedimentary rock.

Circle the sedimentary rock in the list.

basalt **granite** **marble** **sandstone**

(b) Complete the sentence to explain how metamorphic rocks form.

Choose words from the list.

heat **ice** **pressure** **water** **wind**

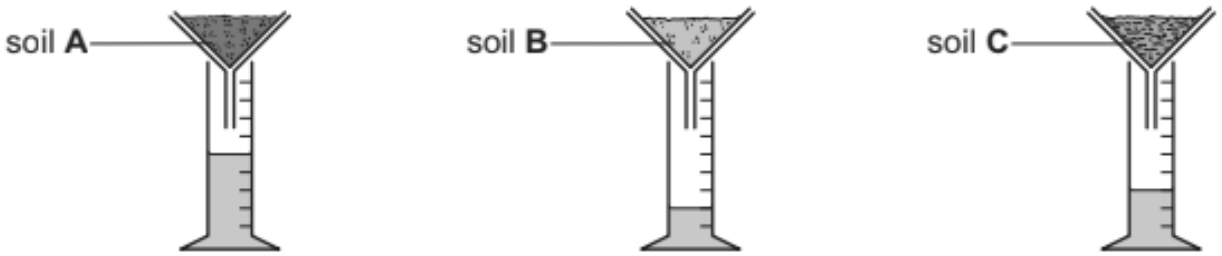
Q5)

Mia investigates three types of soil, **A**, **B** and **C**.

She wants to find out how much water each soil can hold.

She adds 20 cm^3 of water to the same volume of each soil.

She collects the water that comes through in a measuring cylinder.



Look at the results of Mia's investigation.

(a) Match the **letter** of the soil to the correct **name** of the soil.

letter	name of soil
A	clay soil
B	loam soil
C	sandy soil

(b) Loam soil contains small pieces of decaying plants.

What name describes these pieces of decaying plants?

Choose from the list.

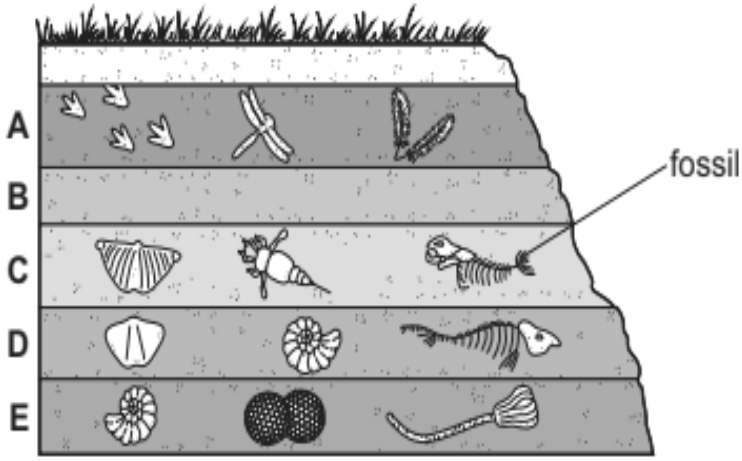
deposits **humus** **sediment** **top soil**

.....

Q6)

Sedimentary rocks are formed in layers.

Look at the diagram of layers of sedimentary rocks.



not to scale

(a) Which layer has the **youngest** fossils?

.....

(b) Metamorphic rocks do not normally contain fossils.

Tick (✓) the box next to the correct explanation.

Animals did not live in areas where metamorphic rocks were formed. ☐

Metamorphic rocks are formed when molten rock cools. ☐

Metamorphic rocks were formed before there was life on Earth. ☐

Metamorphic rocks were formed under high temperatures and pressures. ☐

Q7)) Rocks in the Earth's crust are classified by the way that they are formed. Complete the sentences about rock formation.

Choose words from the list.

Each word can be used once, more than once or not at all.

Igneous **metamorphic** **sedimentary**

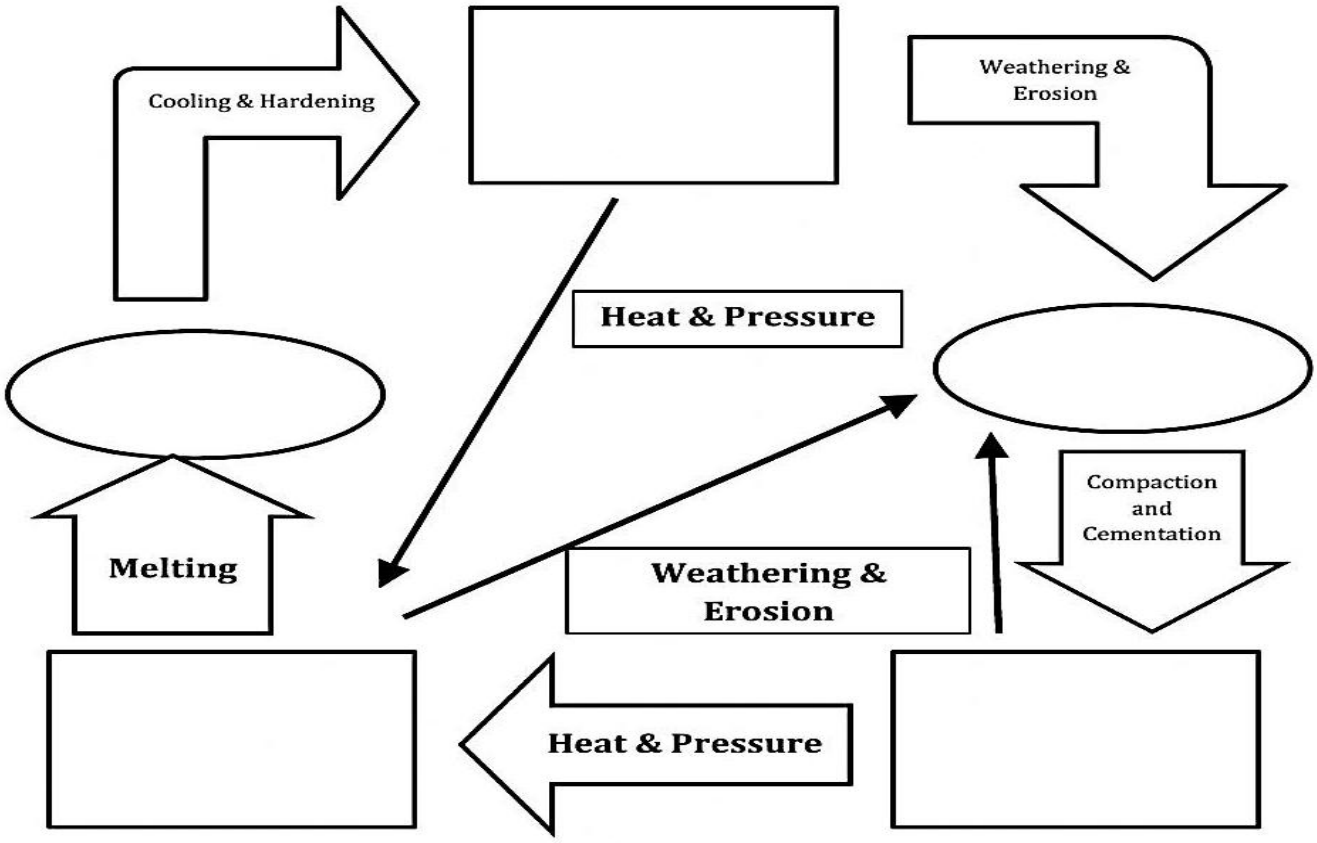
(a)…….. rocks are formed when molten lava from a volcano cools down.

(b)…….rocks are made from grains of rock that are cemented (stuck) together.

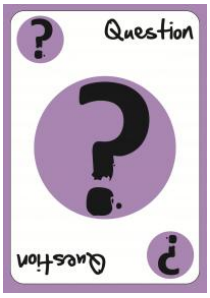
(c)…….. rocks are made when heat and pressure change other types of rock.

(d)…… rocks are found in layers and often contain fossils.

Q8) Fill in the missing blanks with the correct answer:



Q9)



There are three types of rock found on the Earth's surface.

One of the types of rock is called sedimentary.

(a) Name the **other** two types of rock.

1 .....

2 .....

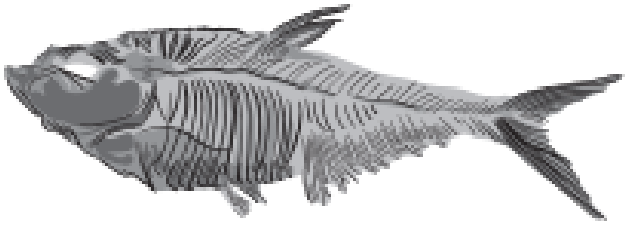
(b) Look at the table. It shows the description of some rocks.

rock	description
A	This rock is found in layers and is very crumbly.
B	This rock is very hard and contains crystals.
C	This rock is black and very shiny.
D	This rock is soft and contains very small particles.

Which **two** rocks are sedimentary?

.....

(c) Aiko finds this fossil in some sedimentary rock.



Describe how fossils are formed in sedimentary rock.

.....

.....

.....

Q10) Describe the processes of sedimentation and metamorphism.

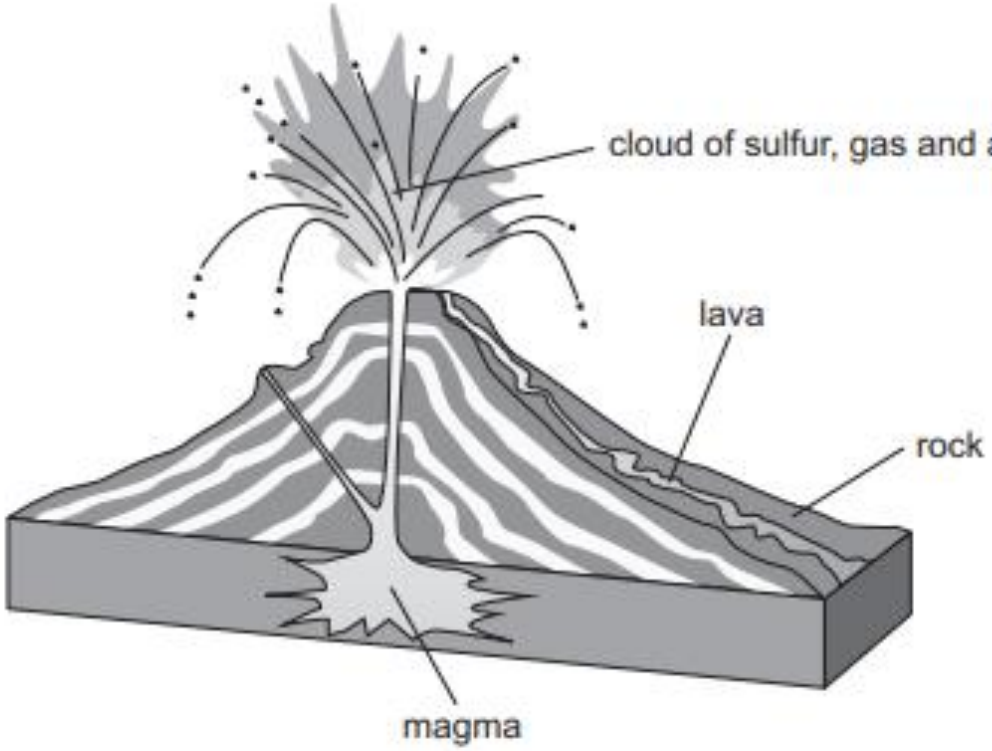
sedimentation .....

.....

metamorphism .....

.....

Q11) This diagram shows an erupting volcano.



After an eruption, the magma and lava cool. Rock is formed.

(a) What is the name of this rock?

Underline the answer from the list.

igneous rock

metamorphic rock

sedimentary rock

(b) Clouds of sulfur gas are released into the air when a volcano erupts.

> Sulfur is a bright yellow crystalline solid at room temperature.
> Sulfur does not dissolve in water.
> Sulfur does not conduct electricity.

Is sulfur a metal or a non-metal?

.....

Which piece of information in the box helped you to decide?

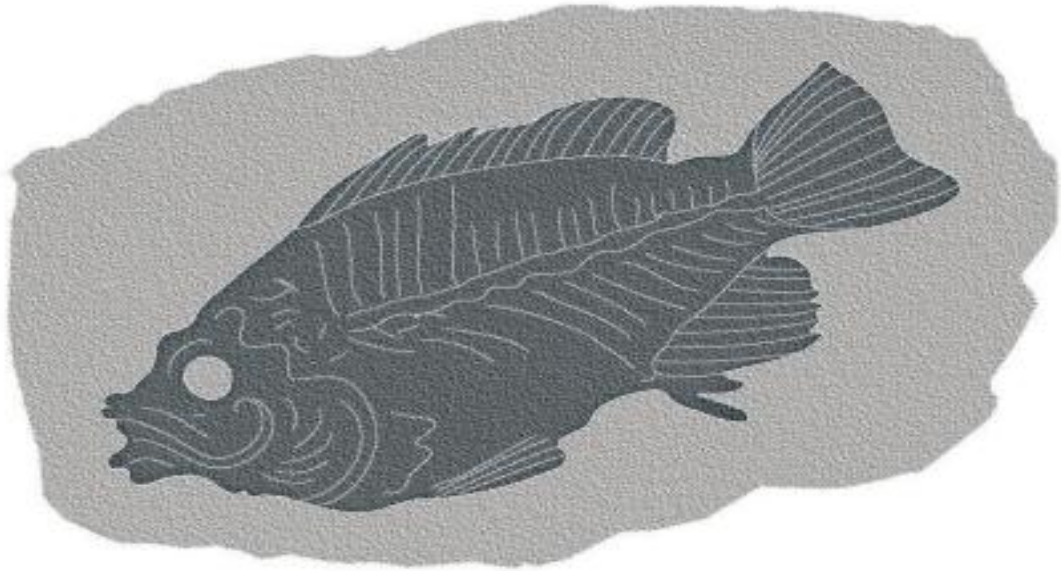
.....

(c) Volcanic eruptions also happened many millions of years ago.

Layers of volcanic ash covered the bodies of fish.

Over many years this ash formed rock.

This picture shows part of the rock that has been formed.



(i) This picture shows a fish which is now a .....

(ii) What is the name of the type of rock in the picture?

Underline the answer from the list.

igneous rock

metamorphic rock

sedimentary rock

Q12) Look at the table showing the amount of minerals, air and water in different soils.

soil	minerals	air	water
A	low	high	medium
B	low	low	high
C	high	high	medium
D	high	low	low

Organic content helps soils hold water and allows air to the roots of plants.

Organic content also provides important minerals to help plants grow.

Which soil has the **highest** organic content?

.....

Q13) Planet Earth has rocks and soil.

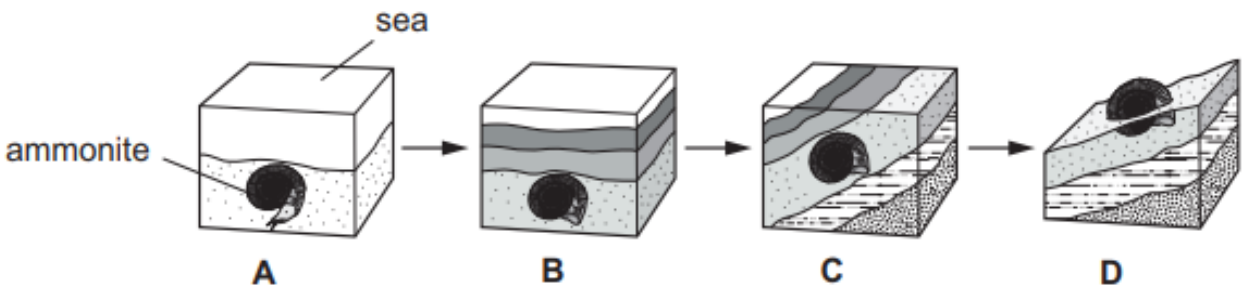
(a) The three rock types are metamorphic, igneous and sedimentary.

Draw a line to match each **rock type** to its correct **description**.

rock type	description
metamorphic	a very hard rock formed when lava from volcanoes cools
igneous	a very hard rock formed from other rocks using heat and pressure
sedimentary	formed when tiny pieces of rock are pressed together

(b) Fossils form in sedimentary rocks.

The pictures show how a fossil of an ammonite is formed and found.



Write descriptions for pictures **B** and **D**.

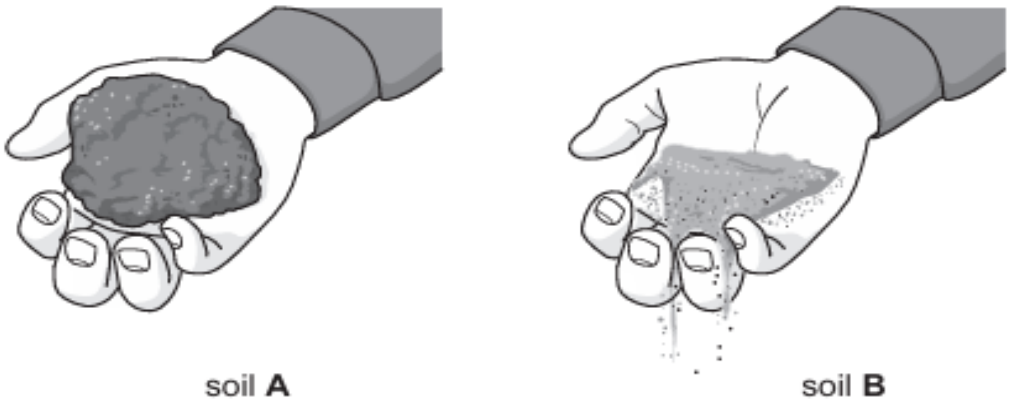
A Ammonite dies and falls to the bottom of the sea.

B .....

C Over millions of years the sedimentary rock moves.

D .....

(c) Mike compares two soils.



soil **A** soil **B**

Soils are made from a mixture of:

- clay
- sand
- organic matter

Complete the sentences.

Soil **A** is mostly made from ..... because

.....

Soil **B** is mostly made from ..... because

.....

Q14) There are different types of soil.

(a) Complete the sentence.

Soils are classified based on their:

- clay content
- ..... content and
- organic content.

(b) Aiko collects information about two different plants.

Lavender grows best in well-draining soil.

Honeysuckle grows best in well-draining soil with lots of minerals.

A well-draining soil lets water leave the soil quickly.

Aiko makes some predictions.

Tick (✓) the correct prediction.

Clay soil is best for growing lavender because clay soil stops water leaving the soil. ☐

Clay soil is best for growing honeysuckle because clay soil contains only a few minerals. ☐

Soil with lots of organic material is best for growing lavender because this soil has a dark colour. ☐

Soil with lots of organic material is best for growing honeysuckle because this soil allows water to pass through. ☐

(c) Aiko investigates how sunflower plants grow in different soils.

She:

- uses four identical pots
- puts one sunflower seed in each pot
- adds different types of soil to each pot
- adds the same volume of water to each pot
- measures the height of the sunflower plants after 80 days.

Circle **all** the **control variables** in this investigation.

type of pot

number of seeds

volume of water

height of sunflower

Q15) Most fossils form in rock.

(a) The statements show the stages in fossil formation.

Put the statements in order from stage **1** to stage **6**.

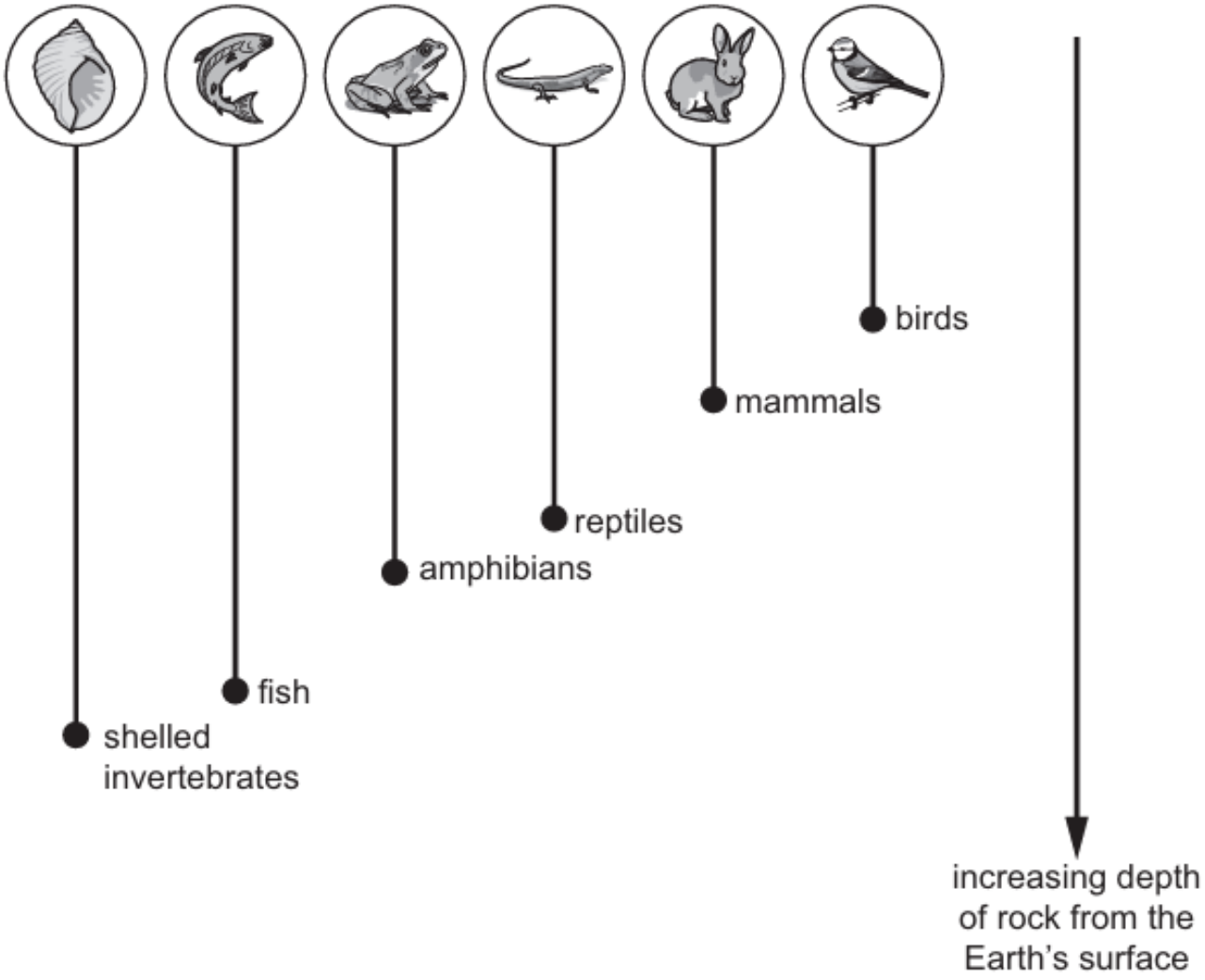
Two have been done for you.

statement	stage
more sand and clay build up and harden	**4**
animal dies	
soft tissues decompose leaving hard bones	**3**
animal quickly buried by sand and clay	
erosion of rocks so fossils are seen	
gradually the bones are replaced by minerals	

(b) Fossils are as old as the rocks surrounding them.

The deeper the rocks below the surface of the Earth, the older the rocks.

Look at the diagram showing the depth of different fossils.



Complete the sentences about the information in the diagram.

The oldest fossils are of .....

The youngest fossils are of .....

The End