Science Revision 9

(a) Robert wants to find out if children who play computer games have faster reaction times than those who do not play computer games.

A computer flashes pictures on a screen. When the children see a picture, they press a computer key as fast as they can.

The computer measures their reaction times.

The tables below show the reaction times of different children.

Children who play computer games	Reaction time (seconds)
Robert	0·32
Tara	0·33
Mike	0·35
Rebecca	0·34
Amina	0·36

Children who do NOT play computer games	Reaction time (seconds)
Raj	0·36
Graham	0·38
Anna	0·38
Alex	0·39
Cameron	0·37

How many children were tested in this investigation?

....

(b) What unit of time was used to record the reaction times?

Robert predicts:

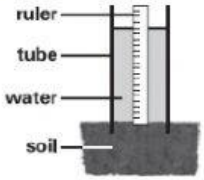
The more you play computer games, the quicker your reaction time will be.

If Robert could only test **THREE** children, which children should he test to see if his prediction is true? Tick **THREE**.

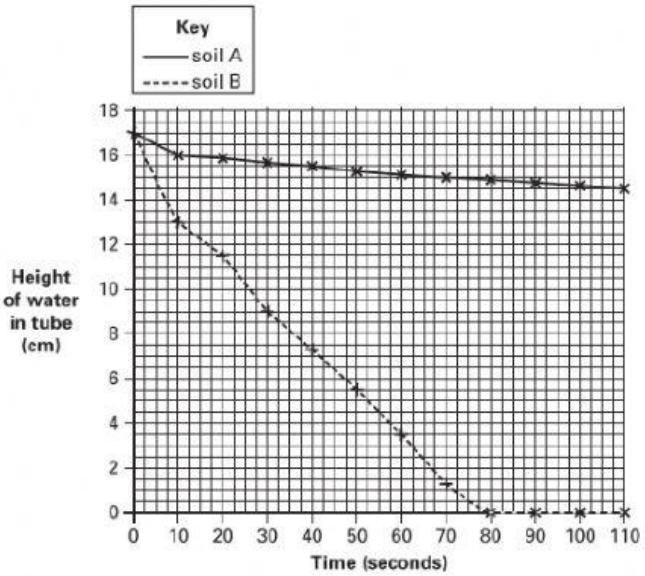
Child	Time spent playing computer games (hours per week)	Should Robert test this child?
Damien	4	
Amy	10	
Milly	4	
Tandi	10	
Stuart	4	
Hassan	1	

Class 6 want to find out if different soils absorb water differently.

They push a plastic tube into some soil.
They pour water into the tube.
The height of the water is 17 cm on the ruler.

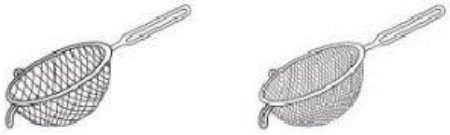


The children measure the height of the water in the tube every 10 seconds. They repeat the test with a different type of soil.
The children draw a graph of their results.



What is the height of the water in the tube for soil B after 30 seconds?

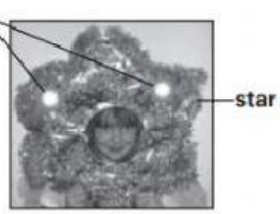
The children separate the particles in each soil using this equipment:

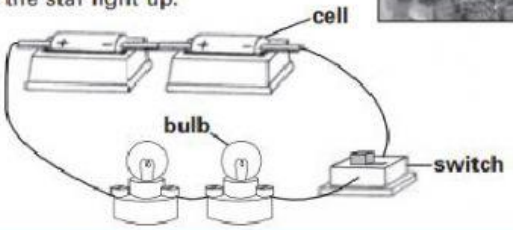


Name the equipment used to separate the soil particles.

Polly is in a school play.
She is dressed as a star.
The star costume has bulbs which light up.

The picture below shows the circuit that makes the star light up.





Polly wants the star to shine more brightly.
She has some ideas about how she can do this.

Write **yes** or **no** next to each idea to show if Polly will see the star shine more brightly.

Idea	Will the star shine more brightly? **Yes** or **no**?
add another bulb	.....
add another cell	.....
use longer wires	.....

Marcus and Davina are finding out about the water cycle.
They make the mini garden below to observe how water can change.

1. Put a layer of soil in the bottom of a clear bowl.

2. Add a small plant and water it well.

3. Cover the bowl with plastic wrap. This is a mini garden.

4. Put the mini garden on a windowsill.

The plant needs water to grow.

Name the part of the plant that takes in water from the soil.

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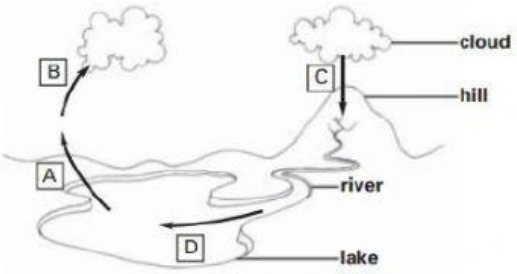
In the mini garden, water changes to water vapour.

What is the scientific name for the process in which water changes into water vapour?

Marcus and Davina can observe all the changes in the water cycle in their mini garden.

This is a diagram of the water cycle.



Draw **FOUR** lines to match each letter, A, B, C and D to the correct description of what is happening in the water cycle.

A	Rain falls.
B	Water changes into water vapour.
C	Water vapour changes into water.
D	Water flows into lakes or seas.

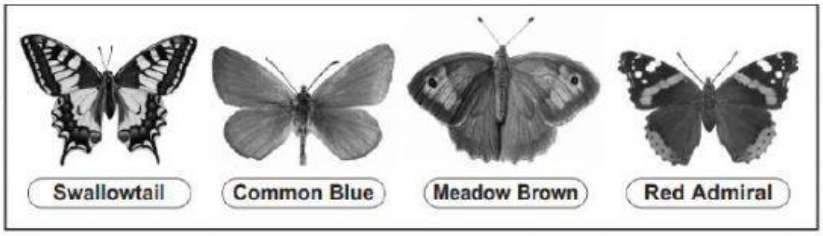
(a) George makes a model of the Sun, Earth and Moon.
He uses two bread rolls and a 50p coin.

Tick **THREE** boxes to show some changes that would make George's model more accurate.

The Sun should be bigger.	☐	The Moon should be the same size as the Earth.	☐
The Sun should be a sphere.	☐	The Moon should be an oval.	☐
The Sun should orbit the Earth.	☐	The Moon should be closer to the Earth.	☐

(a) Some children visit a butterfly park.

They use the pictures below to identify the butterflies they see.



) The children write conclusions about the butterflies.

Look at the butterflies and decide whether each conclusion is **true**, **false** or you **cannot tell**. Tick **ONE** box for each conclusion.

All of these butterflies...	True	False	Cannot tell
have spots on their wings.	☐	☐	☐
are eaten by the same predators.	☐	☐	☐
are the same age.	☐	☐	☐
have antennae which are longer than their bodies.	☐	☐	☐

Jo and Sabia are finding out about pulse rate and exercise.

Their teacher tells them two ways they can measure pulse rate.

Method 1:	**Method 2:**
Feel the pulse in your wrist and count the beats in a minute.	Use an electronic sensor to measure the pulse rate.

Jo and Sabia plan an investigation. Their plan is shown below.

Plan

1) Record resting pulse rate.
2) Run for 2 minutes.
3) Record pulse rate again.
4) Rest for 10 minutes.
5) Repeat the test for skipping, dribbling a football and jumping.

Jo exercises and Sabia records Jo's pulse rate.

Why is it important that the same person does all the exercises during their investigation?

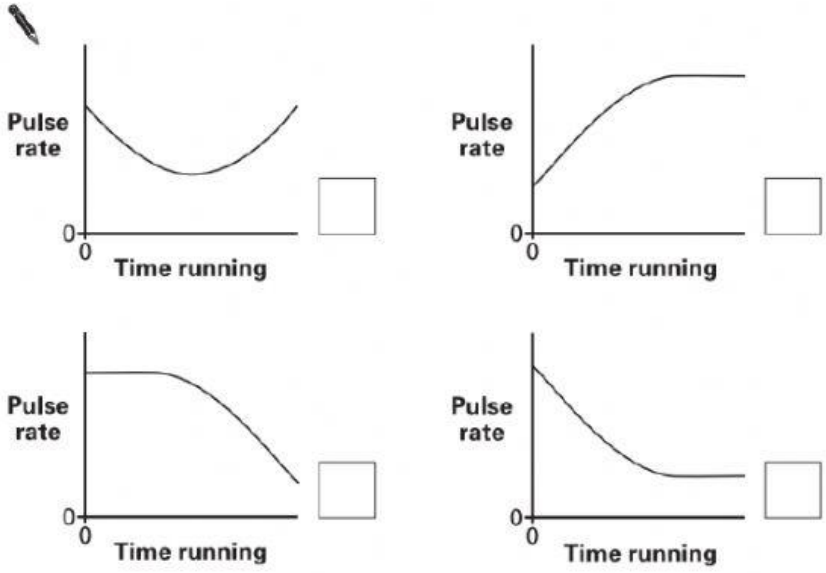
The table below shows their results.

Exercise	Jo's pulse rate (beats per minute)...	
	before exercise.	after exercising for 2 minutes.
running	72	163
skipping	72	165
dribbling a football	70	155
jumping	75	152

What was Jo's pulse rate after skipping for two minutes?

..... beats per minute

Which graph shows what will happen to Jo's pulse rate if she **runs** at the same speed for 15 minutes, starting from rest?
Tick **ONE** box.



Lucy has a fruit and nut chocolate bar.

Tick **THREE** boxes to show **three** properties of **solid** chocolate.

Solid chocolate...

flows.	☐	does not flow.	☐
changes shape.	☐	does not change shape.	☐
changes volume.	☐	does not change volume.	☐

Lucy wants to separate the fruit and nuts from the chocolate.

Lucy

Name the scientific process that happens when Lucy heats the chocolate bar.

.....

Lucy uses a sieve to separate the liquid chocolate from the fruit and nuts.

Describe **ONE** property of the liquid chocolate that allows it to go through the sieve.