Rosyth School
End-of-Year Examination 2020
SCIENCE
Primary 4

Total Marks: /56

Name: _____

Class: Primary 4 _____

Register No. _____

Date: 28 October 2020

Total time for Booklets A and B: 1 h 45 min

Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets - Booklet A and Booklet B
4. For questions 1 to 28 in Booklet A, shade your answers on the Optical Answer Sheet (OAS) provided using a 2B pencil.

* This booklet consists of 23 printed pages (including cover page).

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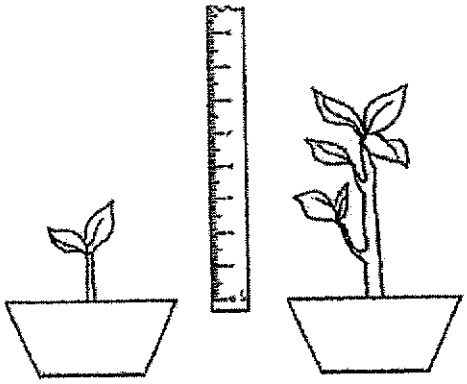
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For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.** [56 marks]

1. Sarah found a plant in the garden and measured its height. After two weeks, she measured its height again.



At the start After two weeks

From her observation, Sarah concluded that the plant is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

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2. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)



stomach → large intestine → small intestine

(2)



stomach → small intestine → large intestine

(3)



large intestine → stomach → small intestine

(4)



small intestine → large intestine → stomach

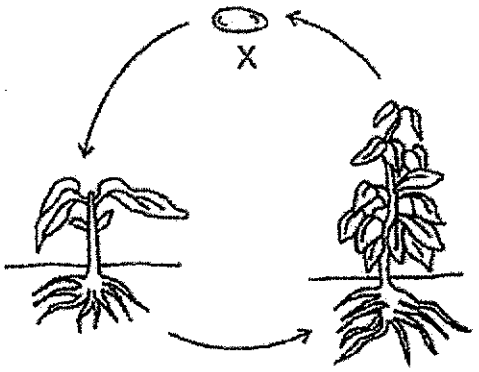
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3. Which animal has a pupa as a stage in its life cycle?

(1) beetle
(2) chicken
(3) cockroach
(4) grasshopper

4. The diagram below shows the life cycle of a plant.



What is the stage marked X?

(1) egg
(2) seed
(3) adult plant
(4) young plant

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5. The arrows (⟶) in the diagram below show the direction of movement of a substance in plants.

roots ⟶ stem ⟶ leaves

What is this substance?

(1) soil
(2) food
(3) water
(4) sunlight

6. Which one of the following objects is <u>not</u> made of waterproof material?

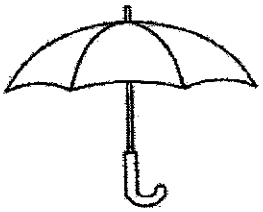
(1) metal spoon



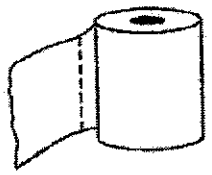
(2) glass window



(3) plastic umbrella



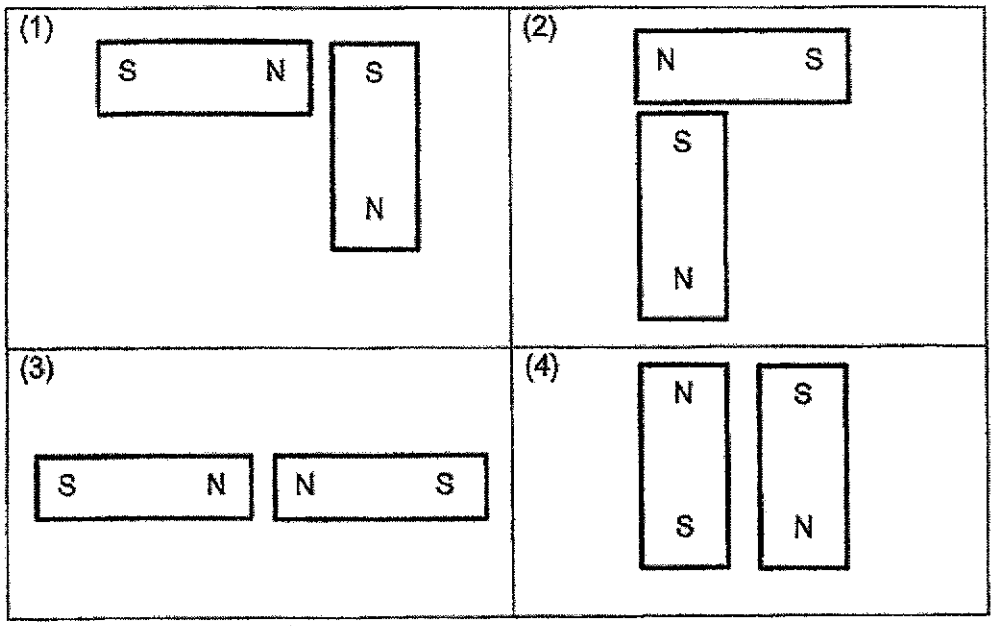
(4) toilet paper



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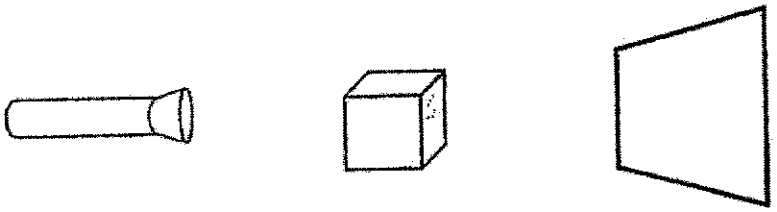
7. In which one of the following will the two magnets push each other away?



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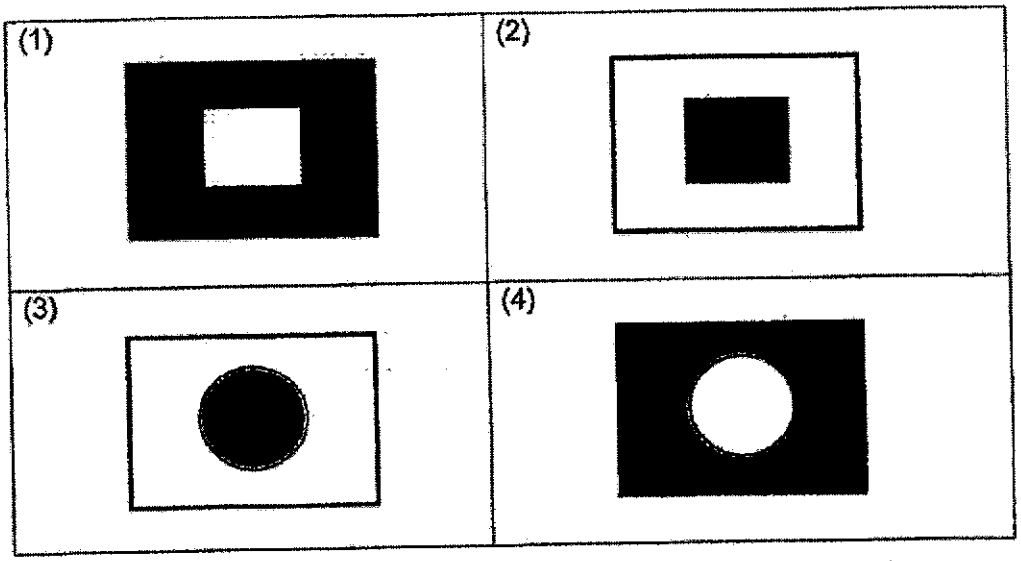
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8. The set-up below shows light shining on a wooden block.



torch wooden block screen

Which one of the following would likely be seen on the screen?



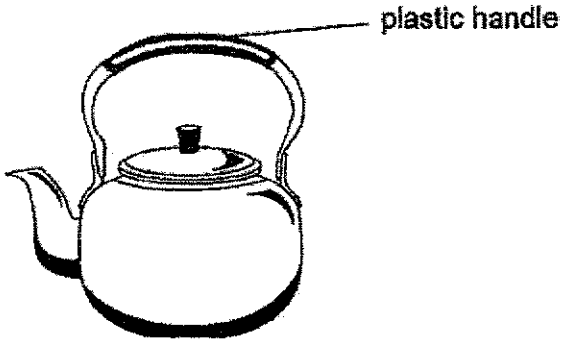
9. Which one of the following is <u>not</u> a source of heat?

(1) The Sun
(2) A blanket
(3) A lighted bulb
(4) A candle flame

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10. Hashim boiled some water in the kettle as shown below.



He is able to hold the kettle of boiling water using the plastic handle. This is because plastic is a _____.

(1) light material
(2) flexible material
(3) poor conductor of heat
(4) good conductor of heat

11. Study the table below.

Characteristic of animal	W	X	Y	Z
Has hair		✓		
Lays eggs	✓		✓	✓
Has wings	✓			
Has moist skin			✓	

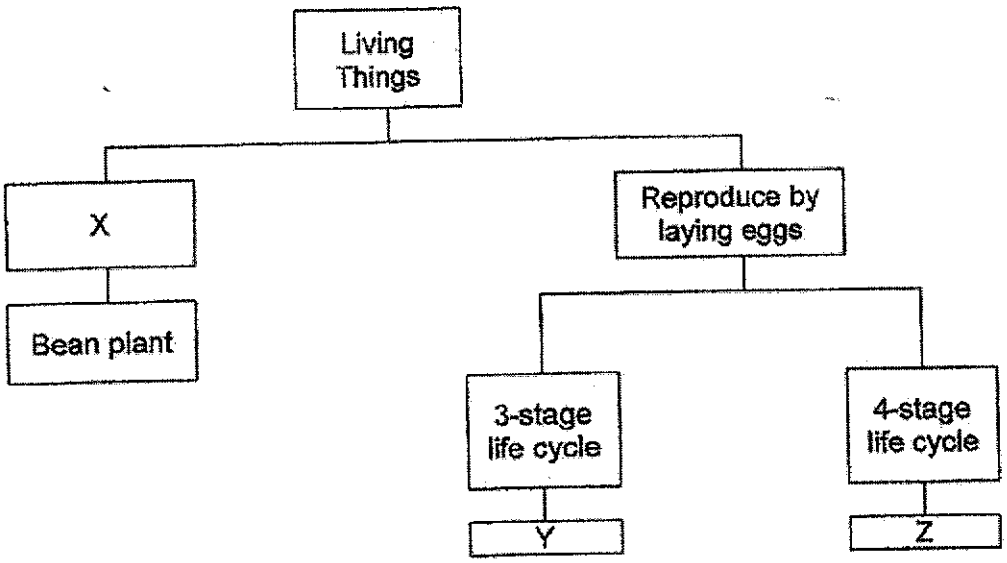
Which one of the following is an amphibian?

(1) W
(2) X
(3) Y
(4) Z

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12. Study the classification chart below.



Which of the following best describes X, Y and Z?

	X	Y	Z
(1)	reproduce by seeds	frog	cockroach
(2)	reproduce by spores	butterfly	chicken
(3)	reproduce by spores	cockroach	frog
(4)	reproduce by seeds	chicken	butterfly

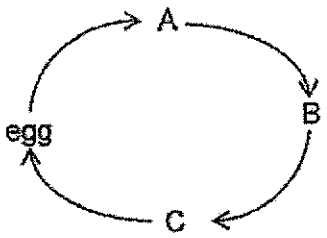
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13: How is an adult cockroach and its young similar?

(1) They can lay eggs.
(2) They have eight legs.
(3) They have a pair of wings.
(4) They have three body parts.

14. The diagram below shows the stages in the life cycle of the mosquito.



Which one of the following statement is true?

(1) Stage A represents the adult stage.
(2) The mosquito can only fly in stage B.
(3) The mosquito does not feed in stage B.
(4) Only stages B and C are spent in water.

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15. Amin observed organisms, E and F, over a period of time and recorded his findings in the table below.

Observation	E	F
It has a 3-stage life cycle.	Yes	Yes
Its young resembles the adult.	No	Yes
It spends part of its life cycle in water.	Yes	No

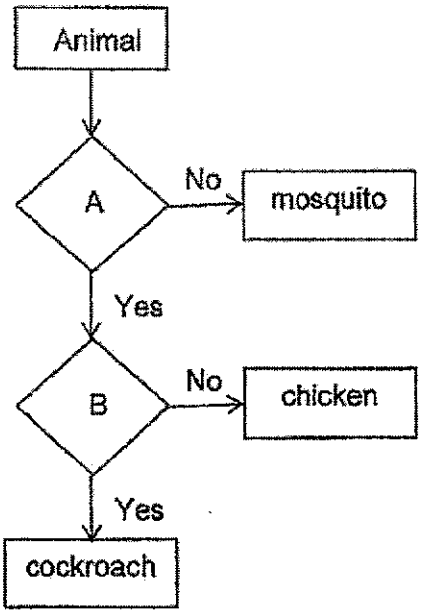
Which one of the following correctly represents organisms E and F?

	E	F
(1)	chicken	cockroach
(2)	butterfly	grasshopper
(3)	frog	cockroach
(4)	frog	mealworm beetle

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16. Study the flow chart below.



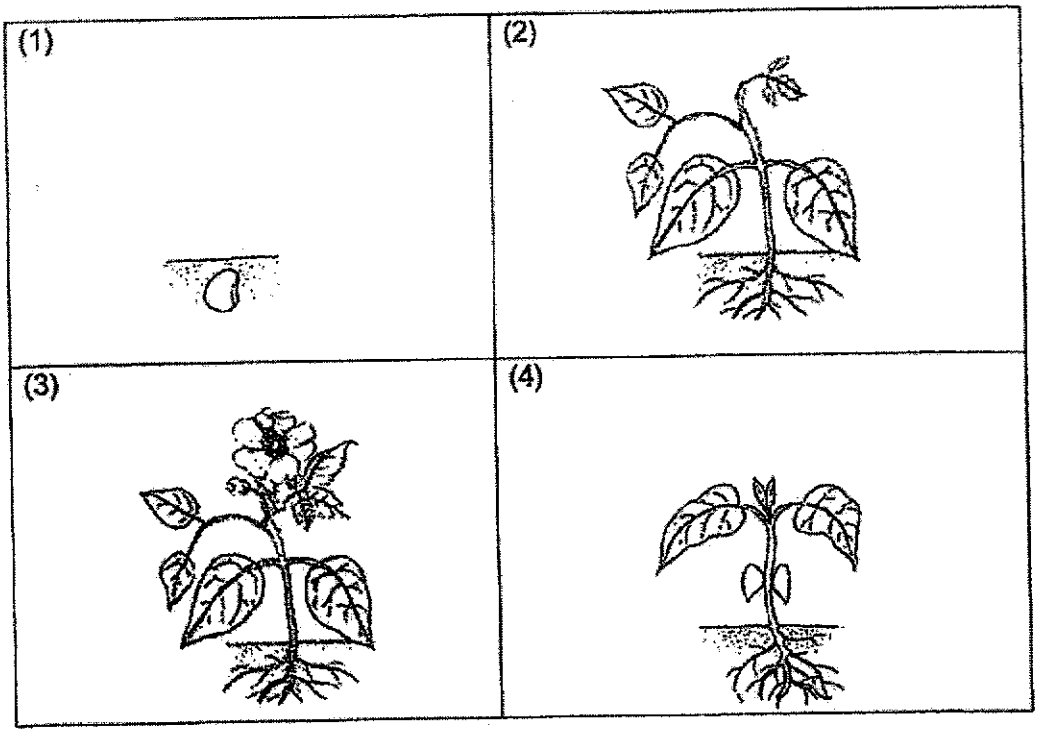
Which of the following statements correctly represents A and B?

	A	B
(1)	Does it give birth to its young?	Does its young resemble the adult?
(2)	Does it live in water?	Does it give birth to its young?
(3)	Does it have a 3-stage life cycle?	Does it have six legs?
(4)	Does it have a 4-stage life cycle?	Does it live on land?

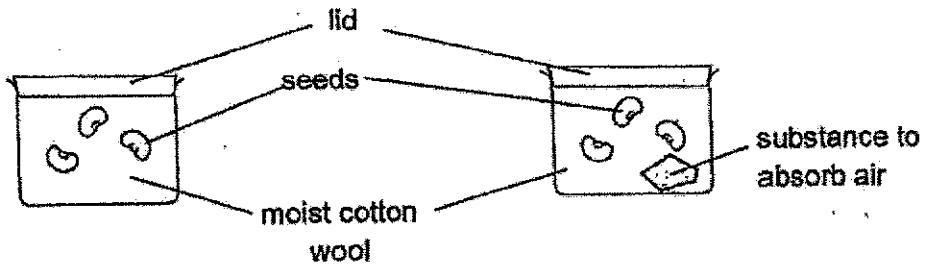
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17. In which of the following stages can the plant reproduce?



18. Alan carried out an experiment as shown below.



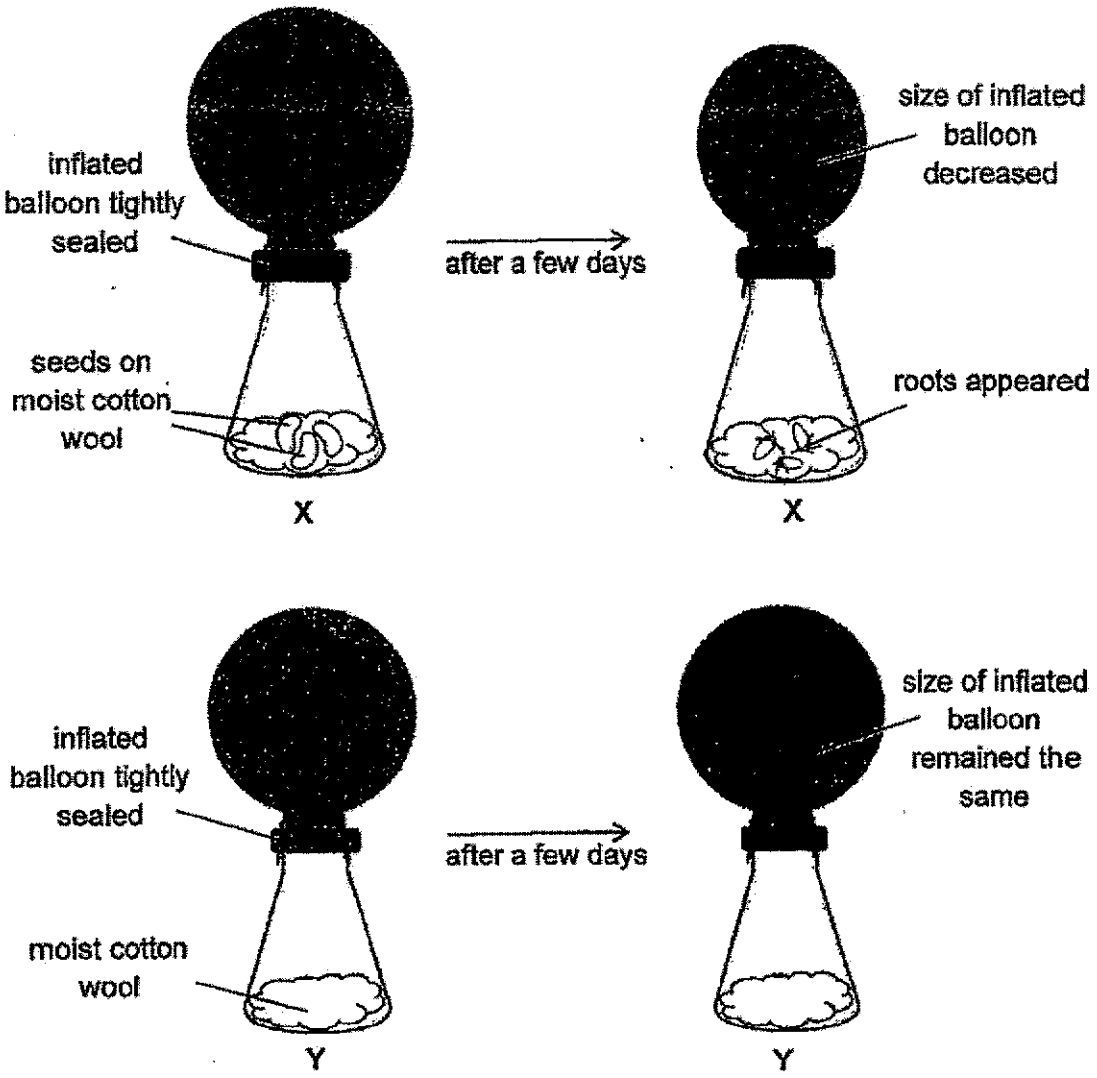
The aim of the experiment is to find out if the _____ affects the germination of the seeds.

(1) presence of air
(2) amount of water
(3) presence of light
(4) number of seeds

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19. Alex prepared two set-ups, X and Y, as shown below.



The size of the balloon for set-up X decreased. Which one of the following is a possible reason?

(1) Air was taken in by the seeds.
(2) Air was produced by the seeds.
(3) Air was taken in by the moist cotton wool.
(4) Air was produced by the moist cotton wool.

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20. The table below shows the properties of materials A, B, C and D.
A tick (✓) indicates that the material has the property.

Material	Property		
	Strong	Flexible	Waterproof
A	✓		✓
B	✓	✓	
C		✓	
D	✓	✓	✓

Which material, A, B, C or D, would you use to make a raincoat?

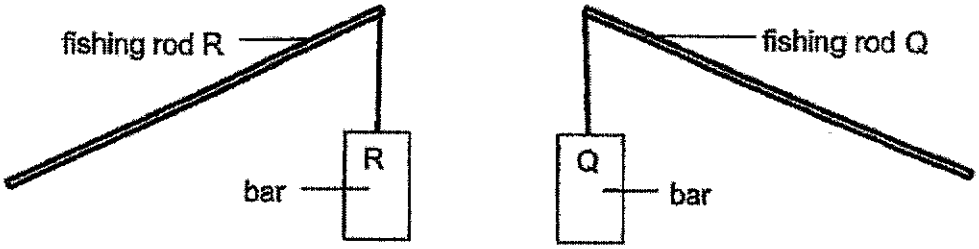


(1) A
(2) B
(3) C
(4) D

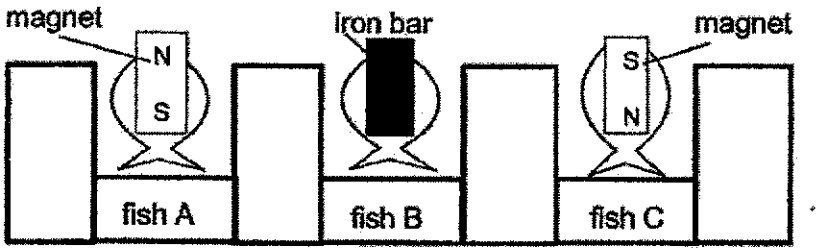
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21. Henry made a fishing game using the objects shown below.



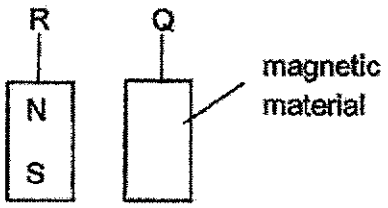
The lower end of bar R and Q are used to catch toy fish A, B and C.



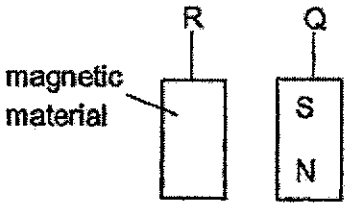
Rod R could catch fish A and B only. Rod Q could catch fish A and C only.

Which of the following shows the bars for rods R and Q?

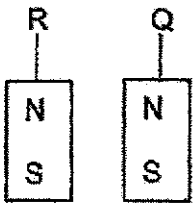
(1)



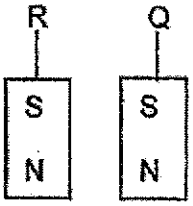
(2)



(3)



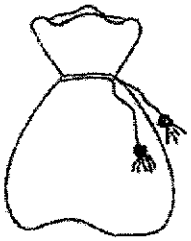
(4)



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22. The pictures below shows 1 kg of cotton and 1 kg of rice.



1 kg of cotton



1 kg of rice

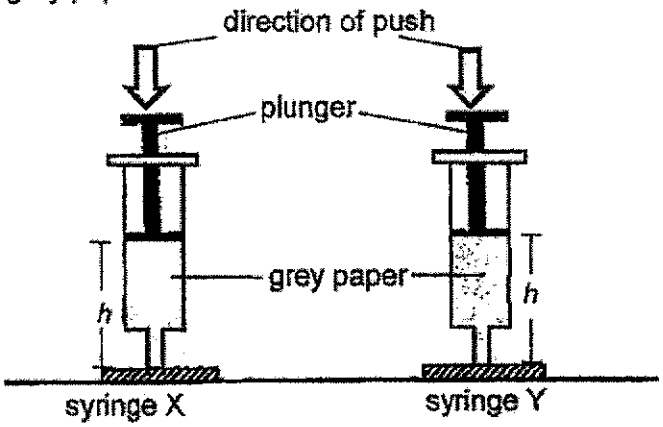
Which one of the following is true about the comparison of the mass and volume of the cotton and rice?

	Mass	Volume
(1)	same	same
(2)	different	same
(3)	different	different
(4)	same	different

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23. Ally carried out an experiment, as shown below, using two syringes, X and Y. Each syringe contained matter of different states. The external part of the syringes were wrapped in grey paper.



She pushed both plungers downwards and recorded the heights of *h* in the table below.

	Height of *h* (cm)	
Syringe	**At the beginning**	**At the end**
X	8	5
Y	8	8

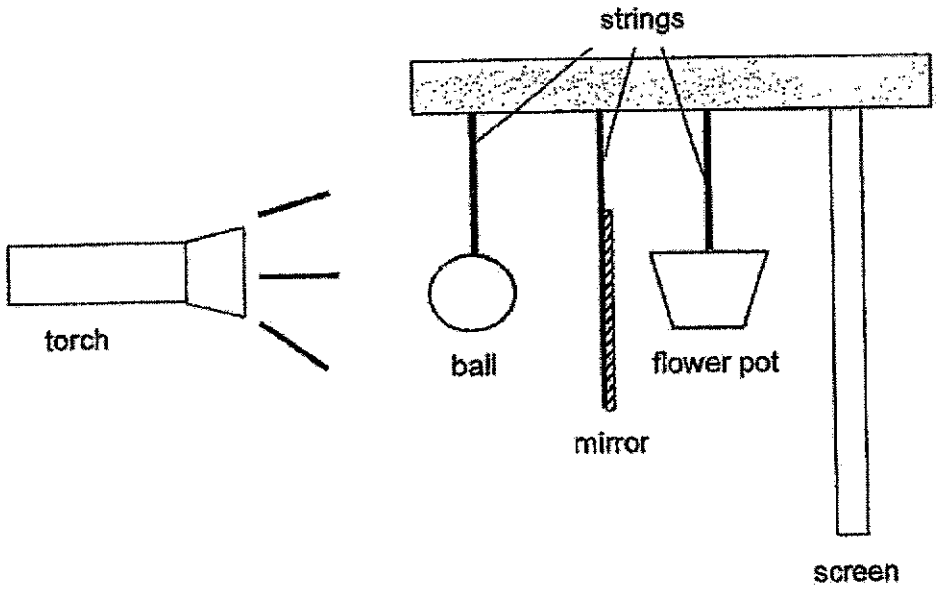
Which one of the following correctly describes the state of the substance contained in syringe X and Y?

	state of substance in syringe X	state of substance in syringe Y
(1)	gas	liquid
(2)	liquid	solid
(3)	gas	gas
(4)	liquid	gas

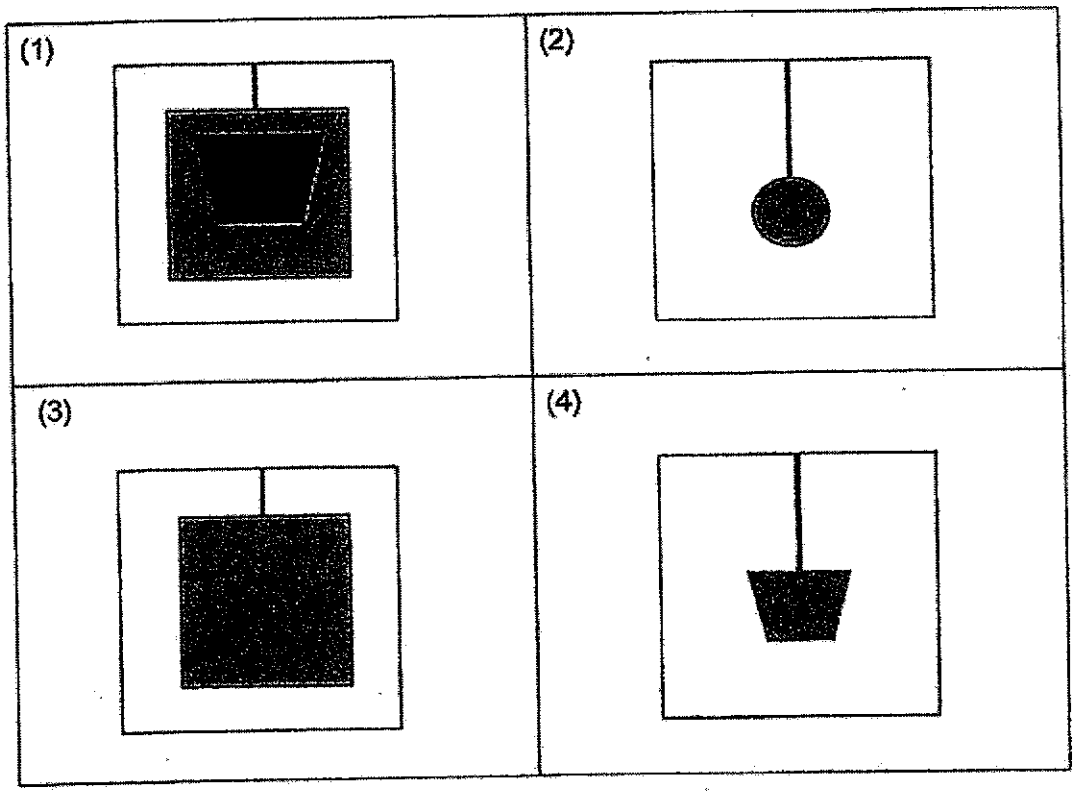
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24. A torch was shone on three objects hanging by strings as shown in the diagram below.



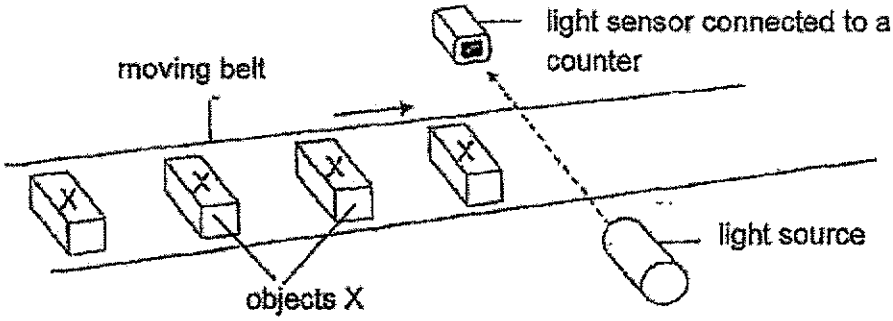
Which one of the following shadows will most likely be formed on the screen?



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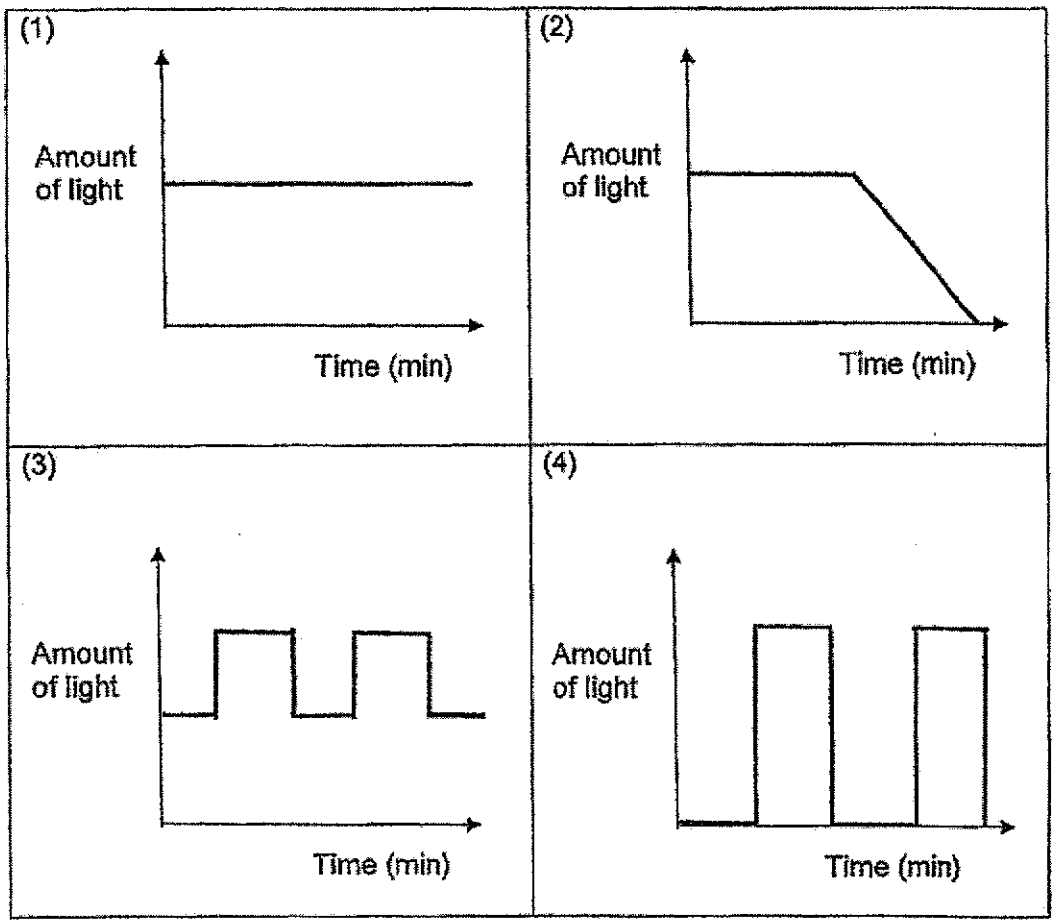
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25. The diagram below shows a set-up that uses a light sensor to count the number of identical object X moving on a belt in a room with lights.



The belt moves at a constant speed. When an object X is between the light source and the sensor, it blocks some light from reaching the sensor.

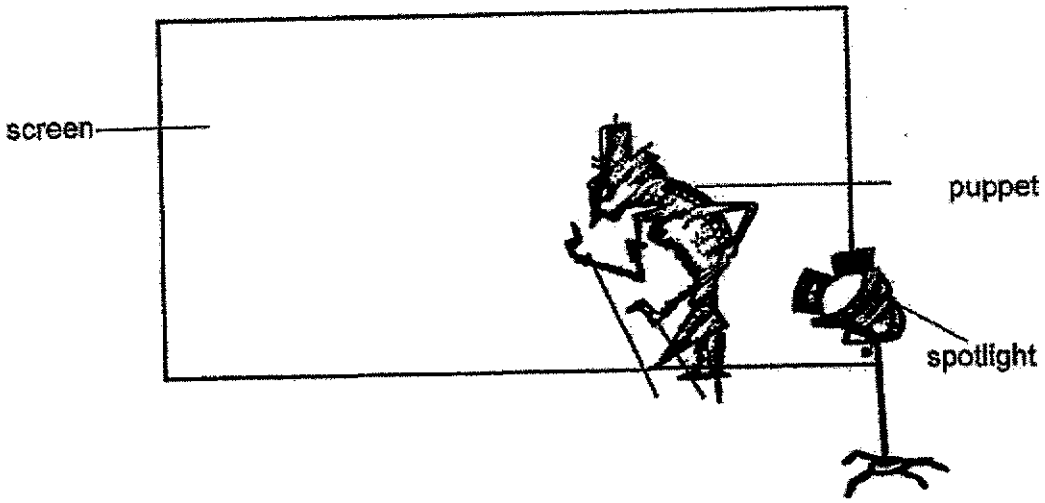
Which graph correctly shows the data recorded by the light sensor?



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26. Some pupils are preparing for a shadow puppet performance. They set up the stage as shown in the diagram below.



The pupils then made a few more shadow puppets by using different materials.

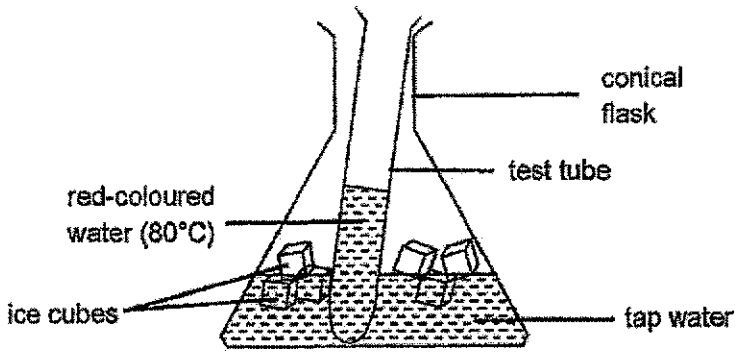
Which one of the puppet is the least suitable for the show?

(1) A puppet made of cardboard.
(2) A puppet made of tracing paper.
(3) A puppet made of drawing block.
(4) A puppet made of clear plastic sheet.

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27. A test tube containing some red-coloured water at 80°C was placed into a conical flask containing some tap water and ice as shown below. The set-up was left overnight in a room where the temperature was 26°C.



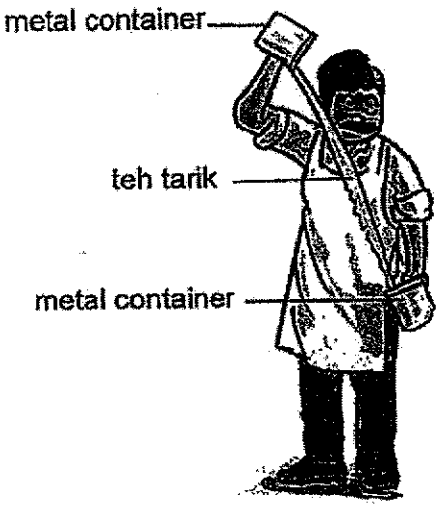
Which of the following correctly shows the temperature of the tap water and red-coloured water the next day?

	Temperature of the tap water (°C)	Temperature of the red-coloured water (°C)
(1)	54	54
(2)	15	26
(3)	26	80
(4)	26	26

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28. Mr Muthu prepared his 'teh tarik' (pulled tea) by pouring the tea from a metal container to another metal container repeatedly as shown in the diagram below.



He poured the tea back and forth repeatedly between the two metal containers from a height to ensure that the tea is not too hot for the customers to drink.

Sally, Vicky and Joy, each made a statement on why the tea is not too hot.

Sally	Coldness from the surrounding air travels to the hot tea.
Vicky	The hot tea will lose heat faster to the surrounding air.
Joy	Metal containers conducted the heat away from the hot tea.

Which of the above children's statement(s) is/are correct?

(1) Vicky only
(2) Vicky and Joy only
(3) Joy and Sally only
(4) Sally, Vicky and Joy

(Go to Booklet B)

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Rosyth School
End-of-Year Examination 2020
SCIENCE
Primary 4

Total Marks: ____ / 100

Name: _____

Class: Primary 4 _____

Register No. _____

Date: 28 October 2020

Total time for Booklets A and B: 1 h 45 min

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 41, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	**56 marks**	
Booklet B	**44 marks**	
Total	**100 marks**	

* This booklet consists of 15 printed pages (including cover page).

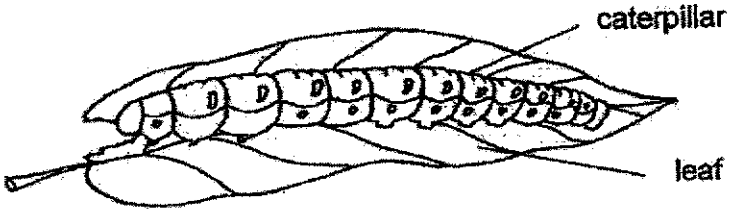
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For questions 29 to 41, write your answers in this booklet. [44 marks]

29. Study the diagram and fill in the blanks.

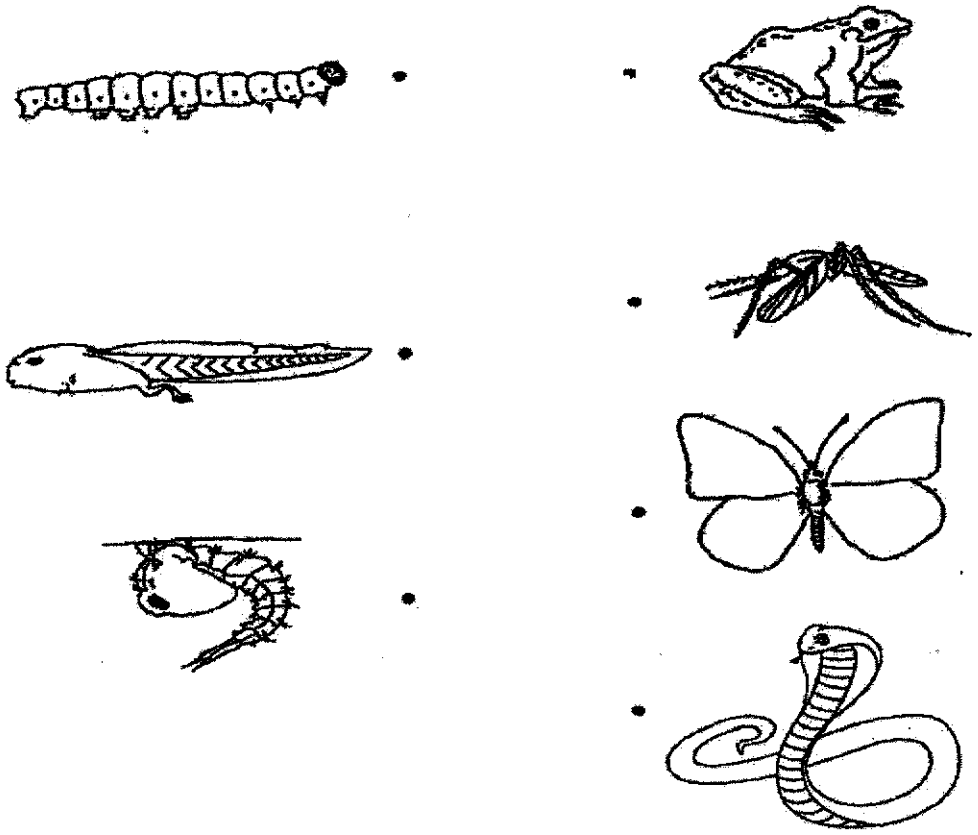


(a) The caterpillar needs food, _____ and air to stay alive. [1]

(b) The caterpillar eats leaves and becomes longer after some time. This shows that it can _____. [1]

30. The diagram below shows the young and adult of some organisms.

Draw lines to match the young with the correct adult. [3]



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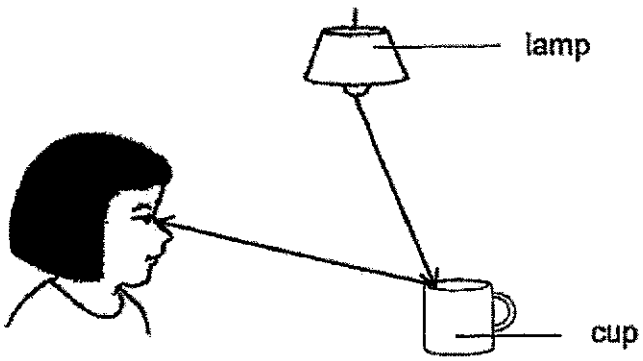
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31. Classify the following into matter and non-matter. [3]

shadow	sugar	heat

Matter	Non-Matter

32. The diagram below shows how Mary sees the cup.



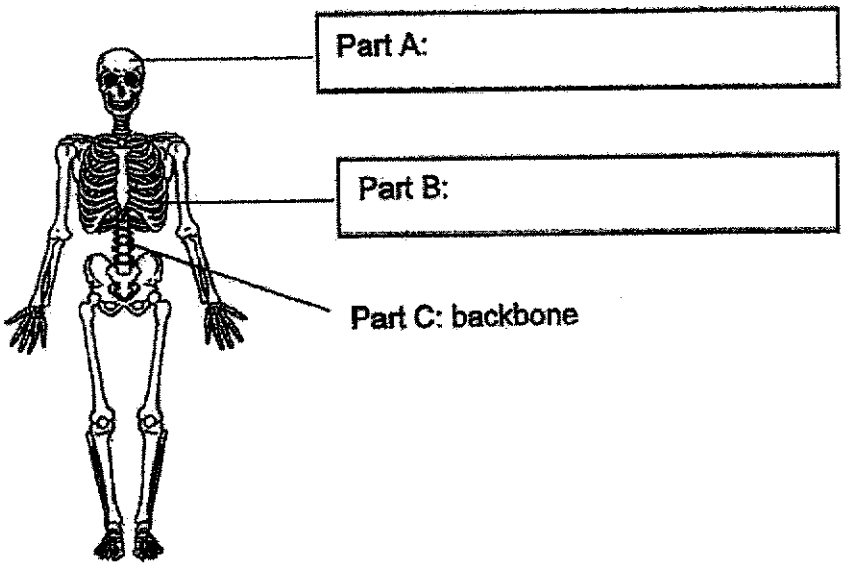
The _____ from the lamp is _____ by the cup and enters Mary's eye. [2]

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33. The diagram below shows the human skeletal system.

(a) Identify the parts, A and B, in the boxes below. [1]

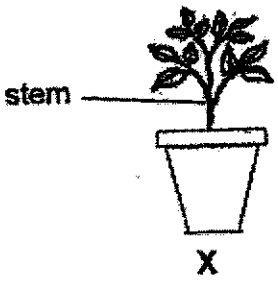


(b) State a function of part A. [1]

_____

_____

The diagram below shows plant X.



(c) Jenny learnt the functions of the plant system and states that the stem of plant X has a similar function as part C of the human skeletal system. Do you agree? Explain your answer. [2]

_____

_____

_____

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34. The table below shows the stages in the life cycle of insects, A and B, and the number of days they remain in each stage.

Stage in life cycle of Insect A	egg	larva	pupa	adult
Number of days	1	5	12	10

Stage in life cycle of Insect B	egg	larva	pupa	adult
Number of days	1	3	5	12

(a) Predict the stage of the insects, A and B, on the 10th day of their life cycles after the eggs are laid. [2]

Insect A: _____

Insect B: _____

Both insects reproduce by laying many eggs.

(b) Explain why the insects lay many eggs. [1]

_____

_____

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35(a) Draw and label the life cycle of the grasshopper below. [1]

(b) State a similarity and difference between the adult grasshopper and its young. [2]

Similarity:

Difference:

(c) Explain why the life cycle is important to the grasshopper. [1]

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36. Ken planted the seed of a flowering plant and observed its growth. He measured the height of the young plant over a period of time as shown in the table below.

Time (week)	Height of the plant (cm)
0	0
1	5
2	9
3	20
4	22
5	22

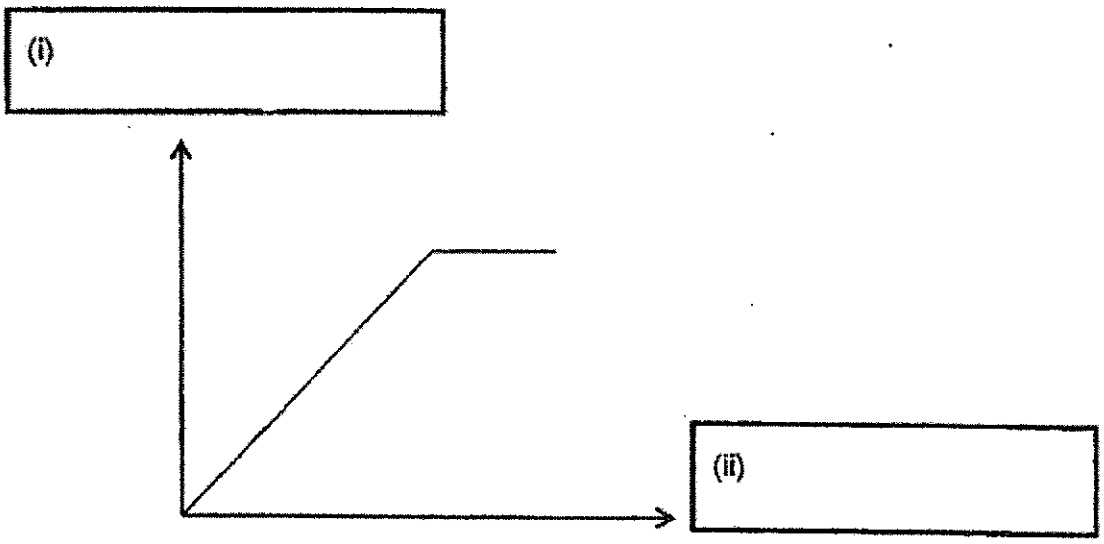
(a) State the two processes that the seed undergoes to become a young plant. [2]
The first letter of the two processes has been given.

(i) Process 1: G_____

(ii) Process 2: G_____

The graph below shows height of the plant over a period of time.

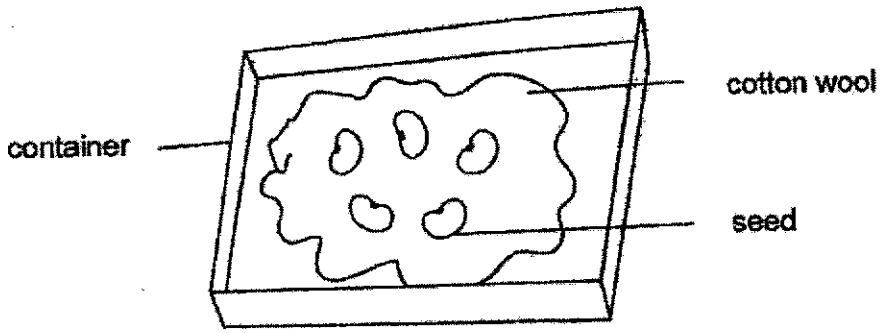
(b) Label (i) and (ii) clearly in the graph below. [2]



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37. Andy wanted to find out if the amount of light affected the germination of the seeds. He set up a container as shown below.



He placed three similar containers, E, F and G, in the Science laboratory and recorded the information in the table shown below.

Container	Amount of light (lux)	Amount of water added to container (ml)
E	3500	50
F	100	20
G	100	50

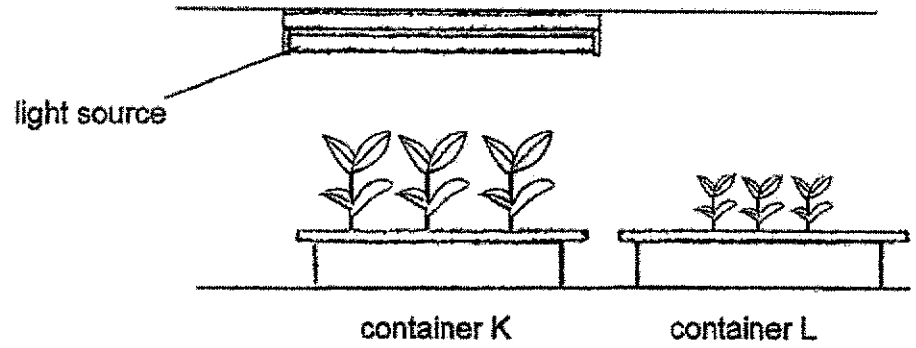
(a) Which two containers, E, F and G, should Andy use to carry out his experiment? Explain your answer. [2]

Question 37 is continued on page 9

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Andy observed another two containers, K and L, for a few weeks. He noticed that the plants in container L were smaller in size than the plants in container K as shown in the set-up below.



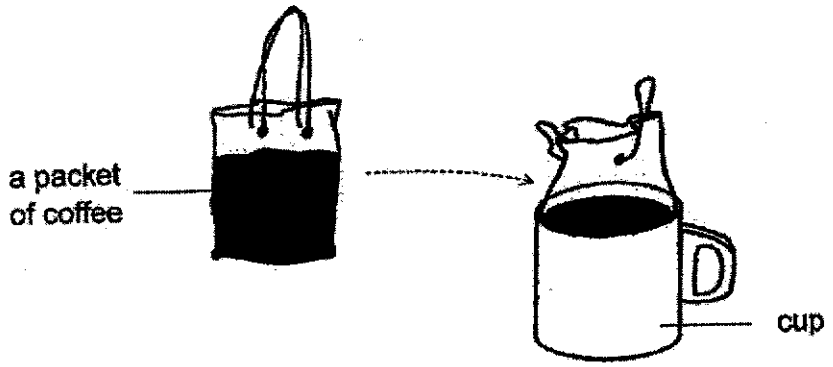
(b) Based on the set-up above, state why the plants in L were smaller in size. [1]

(c) What could Andy do to the set-up to ensure that all the plants in containers K and L were similar in size? [1]

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38. Sally placed a packet of coffee into a cup without overflowing as shown below.



(a) Identify the state of matter for the coffee. [1]

_____

(b) Look at the statements below. Put a tick (✓) in the correct columns. [2]

	Statement	True	False
(i)	The shape of the coffee changed.		
(ii)	The volume of the coffee changed.		

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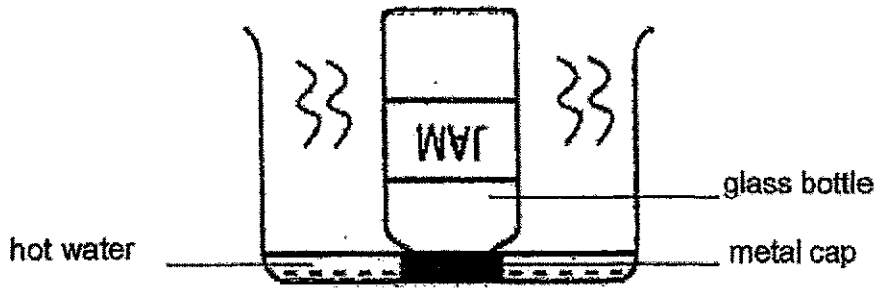
39. Andrea made a cup of hot milo. However, it was too hot to drink. She added some tap water into the cup.



(a) Put a tick (✓) in the boxes to show whether there was heat gain or heat loss in each item. [2]

	Item	Heat gain	Heat loss
(i)	Hot milo		
(ii)	Tap Water		

Andrea could not open the bottle of jam so she dipped the metal cap of the bottle into hot water for a minute as shown in the diagram.



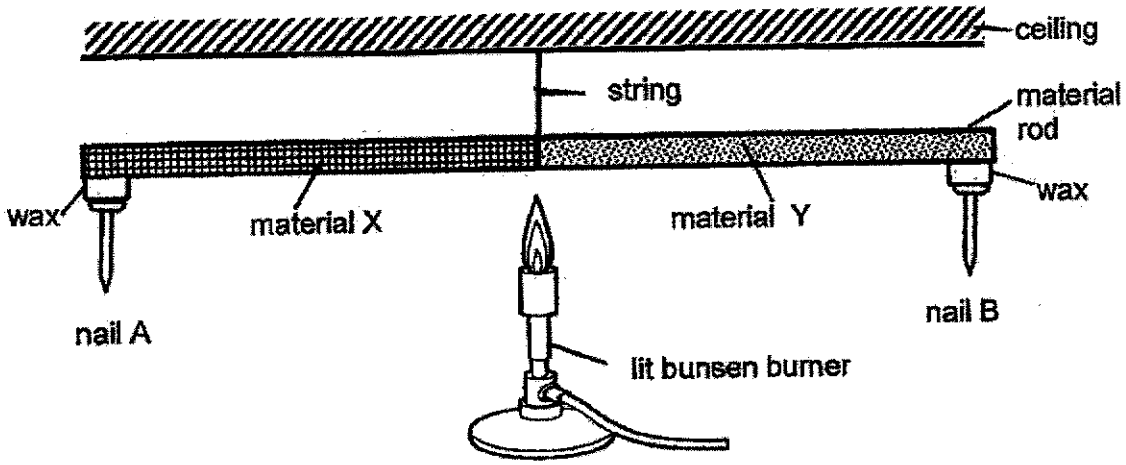
She was then able to open the bottle of jam using this method.

(b) Explain why Andrea was able to open the bottle of jam. [2]

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40. Lee Han carried out an experiment as shown below to find out which material is a better conductor of heat.



(a) Complete the table to show how Lee Han should carry out his experiment. Write the numbers 2 to 5 in the boxes provided in the table. The first step has been done for you. [2]

Step	Procedure
1	Stick the flat end of the nail to the end of the rod using the same amount of wax.
	Using a stopwatch, measure how long it takes for each of the nails to fall off.
	Hang the rod using the string over the bunsen burner.
	Record the results.
	Light the bunsen burner.

Question 40 is continued on page 13

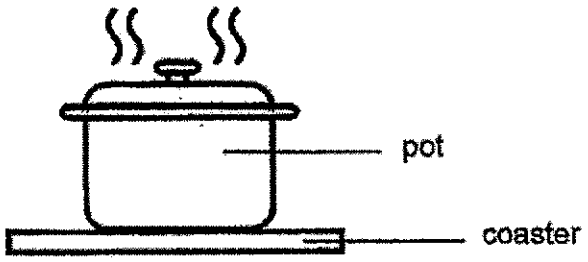
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Lee Han recorded the time taken for the nails to drop off from the rod in the table below.

Material	Nail	Time taken for each nail to drop off (min)
X	A	2
Y	B	5

He wanted to find out which material is the best to make into a coaster. The purpose of the coaster is to prevent the table from being damaged by heat.

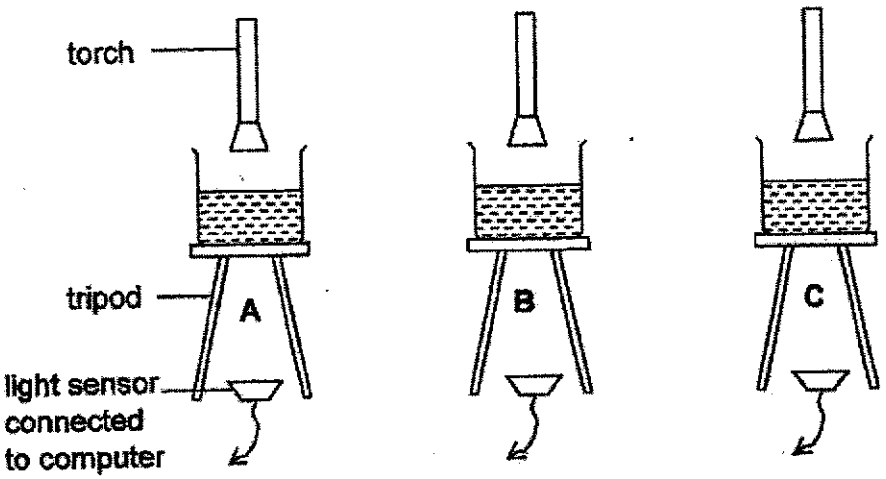


(b) Based on the results from the table, which material, X or Y, is the better choice for making the coaster? Explain your answer. [2]

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41. Paul collected some water samples from two ponds, A and B. He wanted to find out which pond has more polluted water. Polluted water contains more unwanted particles. Water sample C contained clear water.



He carried out the experiment in a dark room. He then used three identical torches to shine through the water samples. The reading of the amount of light passing through was recorded using a light sensor.

The results were shown in the table below.

Water samples	A	B	C
Amount of light that passed through (lux)	710	327	1009

(a) Which one of the water samples, A or B, was more polluted? Give a reason. [1]

(b) Why did Paul set up his experiment in a dark room? [1]

Question 41 is continued on page 15

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(c) Based on Paul's experiment, tick (✓) the correct variables accordingly in the table below. [2]

	Variable	Changed	Kept the Same	Measured
(i)	The type of water samples used			
(ii)	The amount of light that passed through the water			
(iii)	The amount of the water samples			
(iv)	Location of the set-ups			

End of Paper

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ANSWER KEY

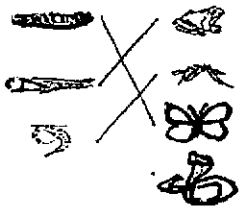
YEAR : 2020
LEVEL : PRIMARY 4
SCHOOL : ROSYTH
SUBJECT : SCIENCE
TERM : SA2

Q1	1	Q2	2	Q3	1	Q4	2
Q5	3	Q6	4	Q7	3	Q8	2
Q9	2	Q10	3	Q11	3	Q12	4
Q13	4	Q14	3	Q15	3	Q16	3
Q17	3	Q18	1	Q19	1	Q20	4
Q21	1	Q22	4	Q23	1	Q24	3
Q25	3	Q26	4	Q27	4	Q28	2

Q29

a) Water
b) Grow

Q30



Q31

Matter	Non-Matter
Sugar	Shadow heat

Q32

The light from the lamp is reflected by the cup and enters Mary's eye.

Q33

a) Part A : Skull
Part B : rib cage
b) Part A protects the brain
c) Yes , The backbone supports the body just like the steam keep the plant upright.

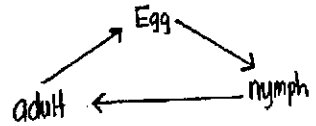
Q34

a) Insect A : pupa
Insect B : adult
b) Some of the insects eggs will be eaten by predators while the rest will live to adulthood to reproduce.

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Q35



a)

b) Similarity : Both have 6 legs
Difference : The young has no wings but the adult has wings.

c) The grasshopper needs to make of it's continuity of it's own kind.

Q36

a) i. Process 1 : Germination
ii. Process 2 : Grow

b) i. Height
ii. Time (week)

Q37

a) E and G as Andy are finding if the amount of light will affected germination and E and G have different amount of light and some amount of water as the question did not say about different amount of water.

b) L has smaller plants because the leaves receive less light than K to make food for the plants.

c) Put the light source in the middle of container K and L.

Q38

a) Liquid

b)

Statement	True	False
i) The shape of the coffee changed.	✓	
ii) The volume of the coffee changed.		✓

Q39

a)

Item	Heat gain	Heat loss
i) Hot milo		✓
ii) Tap water	✓	

b) In the hot water the metal cap will gain heat and expand allowing Andrea to open the bottle of jam.

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Q40

a)

Step	Procedure
1	Stick the flat end of the nail to the end of the rod using the same amount of wax.
4	Using a stopwatch , measure how long it takes for each of the nails to fall off.
2	Hang the rod using the string over the Bunsen burner.
5	Record the results.
3	Light the Bunsen burner.

b) Y it took a longer time than X to drop off and will prevent the table from being damaged by heat, It is a poorer conductor of heat.

Q41

a) B , it allows less light to pass through.

b) This is so that the light detected by the light sources sensor comes only from the torch.

c)

Variable		Changed	Kept the same	Measured
i)	The type of water samples used	✓		
ii)	The amount of light that passed through the water			✓
iii)	The amount of the water samples		✓	
iv)	Location of the set-ups		✓	

3

B✓D

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