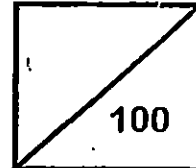




**Rosyth School**  
**First Semestral Examination for 2015**  
**SCIENCE**  
**Primary 4**

Name: \_\_\_\_\_

Total  
Marks:



Class: Pr 4 \_\_\_\_\_ Register No. \_\_\_\_\_ Duration: 1 h 45 min

Date: 14<sup>th</sup> May 2015

Parent's Signature: \_\_\_\_\_

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## **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 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in Booklet B.

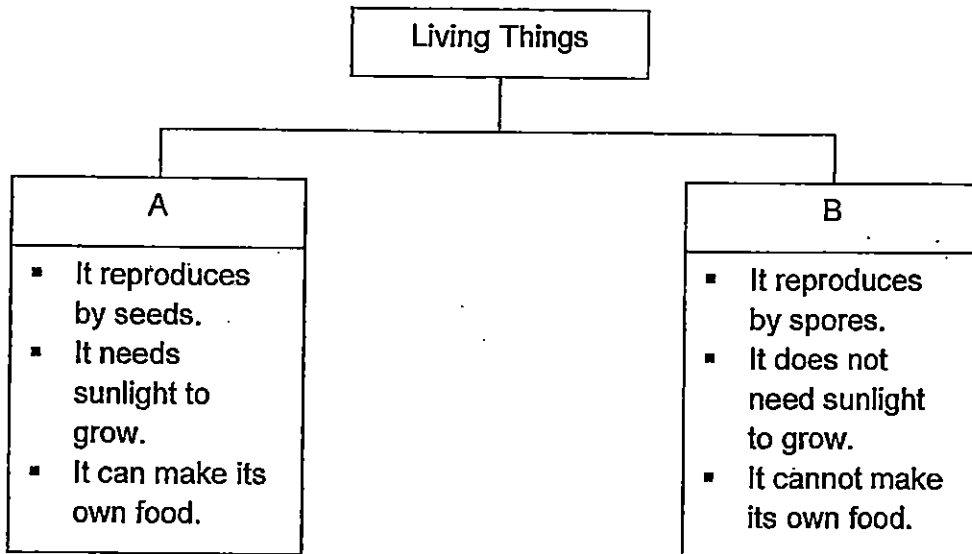
\* This booklet consists of 16 pages.

For each question from 1 to 30, 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. (60 marks)

1. Kelly saw some butterflies in a garden. When she tried to catch the butterflies, they flew away. What characteristic of living things did the butterflies show?

- (1) Living things can die.
- (2) Living things can grow.
- (3) Living things can respond to changes.
- (4) Living things need air, food and water to survive.

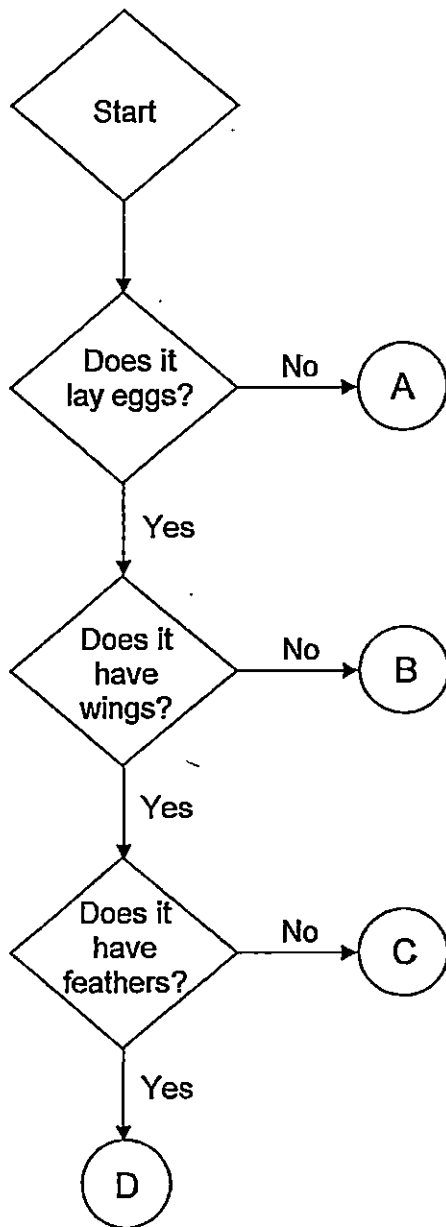
2. Study the classification chart below.



What are living things A and B likely to be?

	A	B
(1)	Plants	Fungi
(2)	Plants	Bacteria
(3)	Fungi	Plants
(4)	Bacteria	Fungi

3. Study the flow chart below carefully.



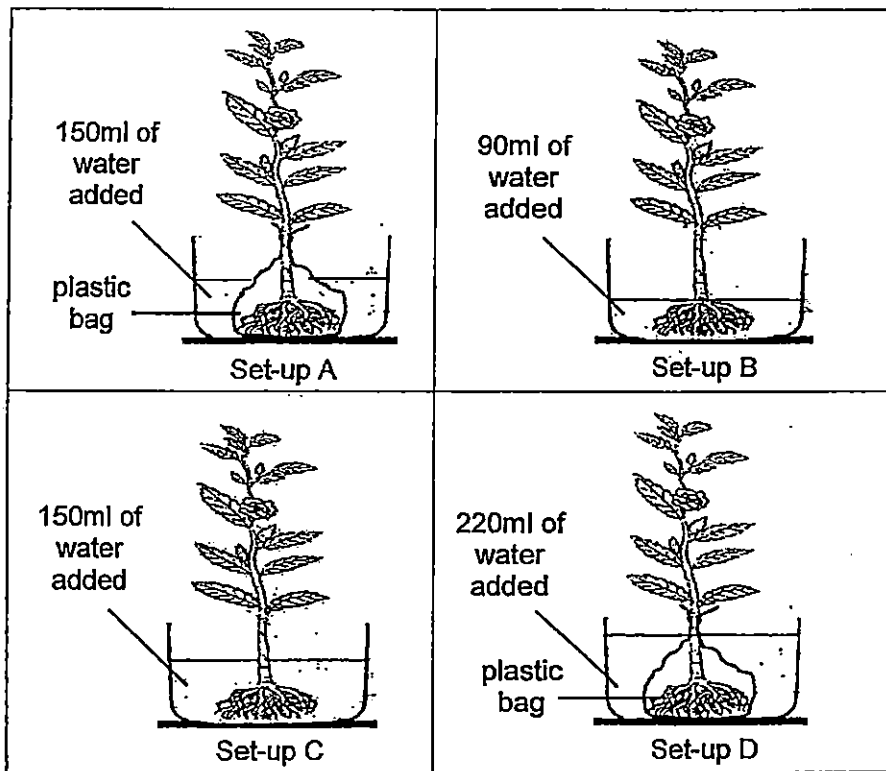
Which group of animals would C most likely represent?

- |             |             |
|-------------|-------------|
| (1) Fish    | (2) Birds   |
| (3) Insects | (4) Mammals |

4. James is able to blow a balloon to make it bigger. What property of the material allows him to blow the balloon?

- (1) Strength
- (2) Flexibility
- (3) Waterproof
- (4) Transparency

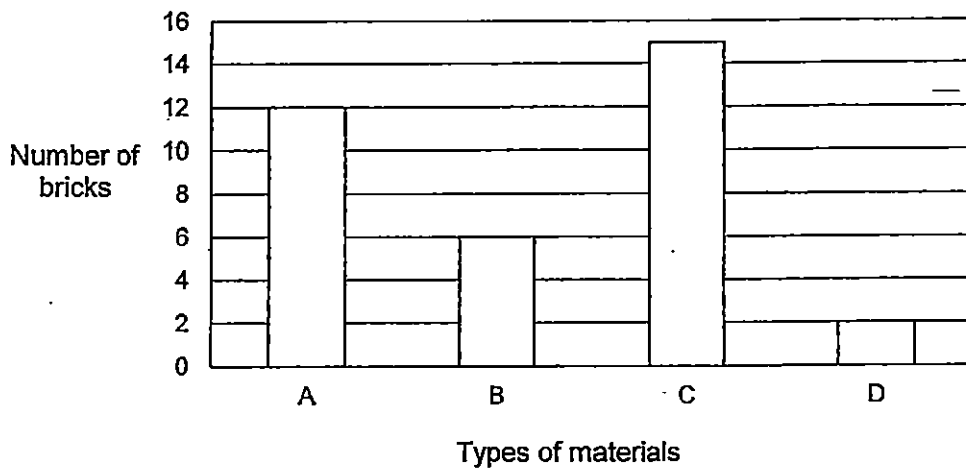
5. Leela carried out an experiment on two similar plants to find out if the presence of roots would affect the growth of the plants.



Which of the following set-ups did Leela choose to ensure a fair test?

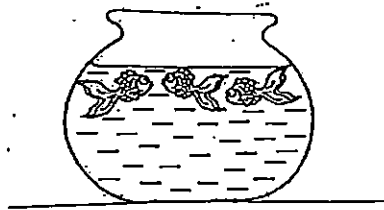
- (1) A and B
- (2) A and C
- (3) B and C
- (4) C and D

6. Mrs Lim had 4 similar bags made of different materials, A, B, C and D. She then carried out an experiment to find the number of bricks that the bags could hold before breaking. The results are shown in the graph below.



Based on the results above, which one of the following statements best describes the materials of the bags correctly?

- (1) Material D is the strongest.
  - (2) Material C is the most flexible.
  - (3) Material A is stronger than material B.
  - (4) Material D is less flexible than material C.
7. Mr Tan placed three fish in a bowl. The next day, after he had fed the fish, he noticed that the fish were swimming near to the water surface as shown below.



Which is a possible reason that Mr Tan's fish swam near to the water surface?

- (1) The fish are looking for food.
- (2) The fish do not like the cold water.
- (3) There is more air at the water surface.
- (4) There is more sunlight near the water surface.

8. The mealworm beetle has 4 stages, W, X, Y and Z. The description for each stage is shown in the table below.

Stages	Descriptions
W	The larva hatches from the egg then moults several times at this stage.
X	The pupa develops into an adult and soon the female mealworm beetle lays eggs to repeat the life cycle all over again.
Y	The female mealworm beetle lays small and white eggs.
Z	The larva develops into a pupa and stops moving around.

Which of the following shows the correct order of stages in the life cycle of a mealworm beetle?

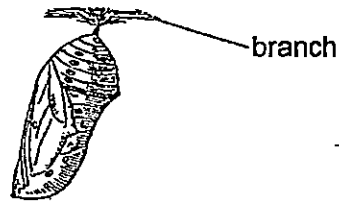
- (1) Z, W, X, Y                      (2) Y, W, Z, X  
 (3) W, Y, X, Z                      (4) Y, Z, W, X
9. Four animals, P, Q, R and S are described in the table as shown below.

Descriptions	Animal P	Animal Q	Animal R	Animal S
The adult has wings.	No	Yes	No	Yes
The adult has feelers.	No	Yes	No	No
The young resembles the adult.	Yes	No	Yes	Yes
The animal has 3 stages in its life cycle.	No	No	Yes	Yes

Based on the information in the table above, which of the animal best describes a chicken?

- (1) Animal P                          (2) Animal Q  
 (3) Animal R                          (4) Animal S

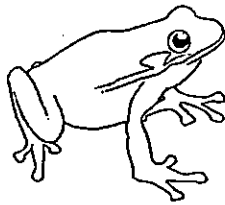
10. Four children found a pupa hanging on a branch. They looked at it and made the following statements about the pupa.



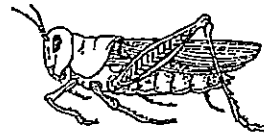
Jim: It is developing into an adult.  
Muthu: It feeds on leaves at this stage.  
Sarah: It does not breathe at this stage.  
Nurul: It is inactive but changes are taking place inside.

Which of the children gave the correct statements?

- (1) Jim and Sarah  
(2) Muthu and Sarah  
(3) Jim and Nurul  
(4) Muthu and Nurul
11. Sam wanted to compare the life cycles of a frog and a grasshopper.



frog



grasshopper

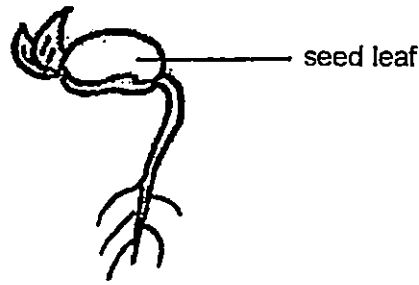
He wrote the similarities of the two life cycles in his worksheet.

A: Both begin from the egg stage.  
B: Both the adults lay eggs in water.  
C: Both the young look like the adult.  
D: Both have 3 stages in their life cycles.

Which of his statements are correct?

- (1) A and D only  
(2) B and C only  
(3) C and D only  
(4) A, B and D only

12. The diagram below shows a young seedling.

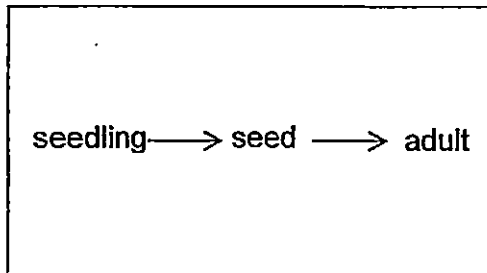


How does the seed leaf help the seedling?

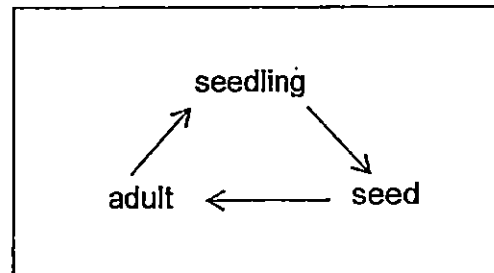
- (1) It absorbs water.
- (2) It protects the seedling.
- (3) It makes food for the seedling.
- (4) It provides food for the seedling.

13. Look at the diagrams below. Which one of the following shows the correct life cycle of a flowering plant?

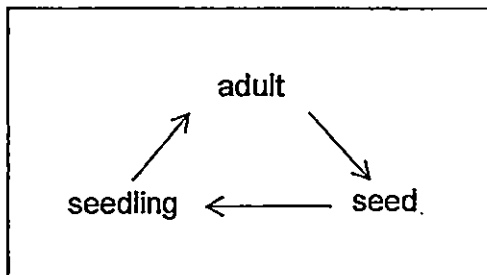
(1)



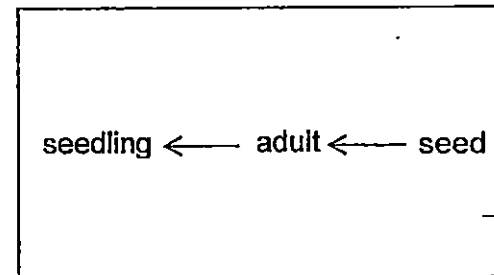
(2)



(3)



(4)





14. Manisha placed 4 identical seeds in containers, J and K as shown below.



After a few days, Manisha observed that the seeds in container J germinated but the seeds in container K did not germinate.

What were the most likely conditions that caused the result in both the containers?

	J	K
(1)	Placed in a sealed box.	Placed under a lamp.
(2)	Placed on a dry cotton pad and put in a sealed box with holes.	Placed on a damp cotton pad and put in a sealed box.
(3)	Placed near a sunny place and not watered.	Placed in a refrigerator and not watered.
(4)	Placed on a damp cotton pad and put in a dark cupboard.	Placed on a dry cotton pad and put in a dark cupboard.

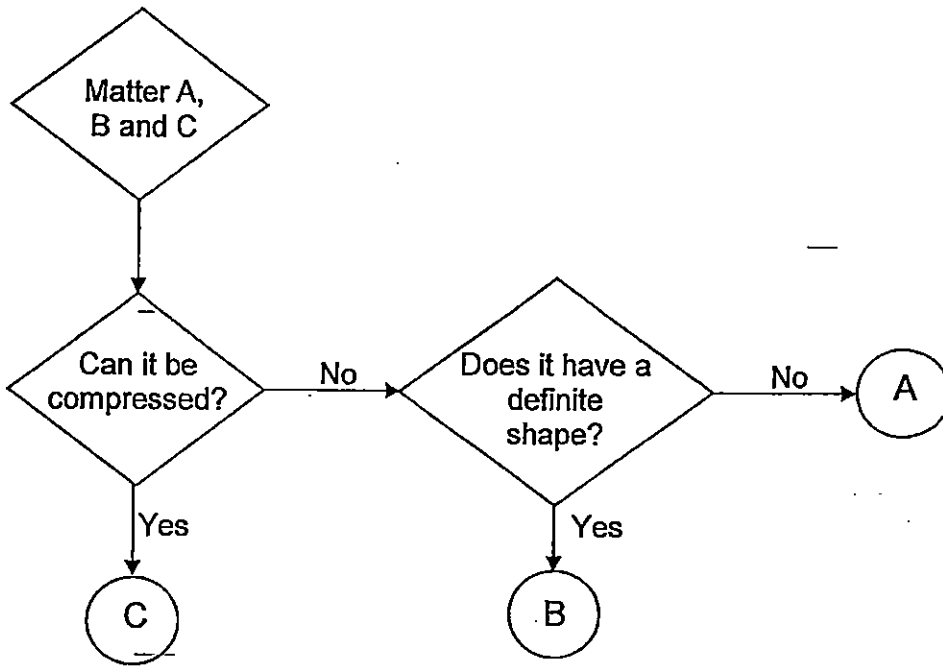
15. Emma wanted to find out if the amount of water would affect the growth of the plant over five days.

Which of the variables should be kept the same?

- A: Size of plants
- B: Type of plants
- C: Amount of water given to each plant
- D: Location where the plants are placed

- (1) B and C only
- (2) A, B and C only
- (3) A, B and D only
- (4) B, C and D only

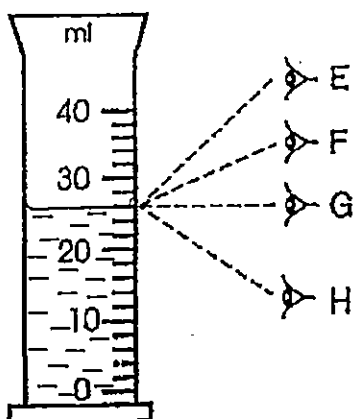
16. The flow chart below is used to differentiate between Matter A, B and C.



Which one of the following identifies Matter A, B and C correctly?

	A	B	C
(1)	Gas	Solid	Liquid
(2)	Solid	Gas	Liquid
(3)	Liquid	Solid	Gas
(4)	Solid	Liquid	Gas

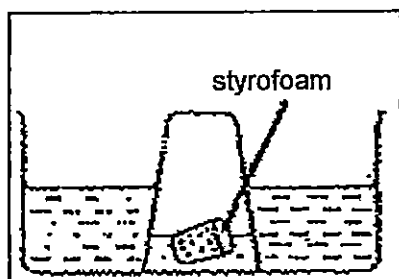
17. The diagram below shows a measuring cylinder containing some water.



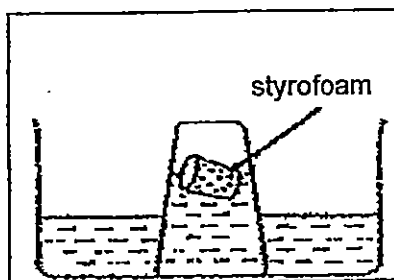
Which one of the following shows the correct position of the eye on the measuring cylinder when reading the volume of water?

- |       |       |
|-------|-------|
| (1) E | (2) F |
| (3) G | (4) H |
18. An empty glass is inverted over a piece of styrofoam floating in a basin of water. Which one of the following shows the correct observation?

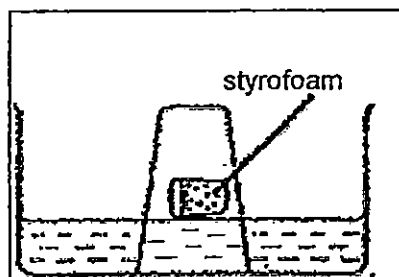
(1)



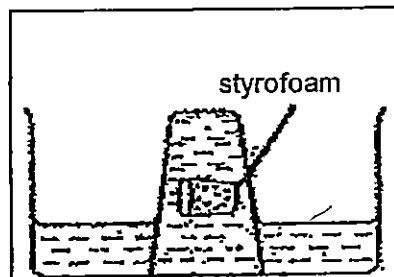
(2)



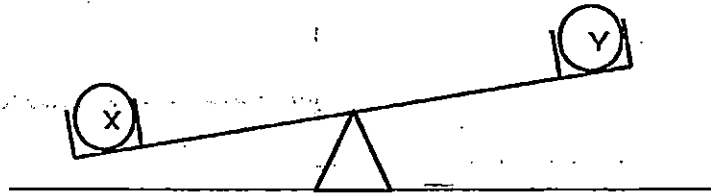
(3)



(4)

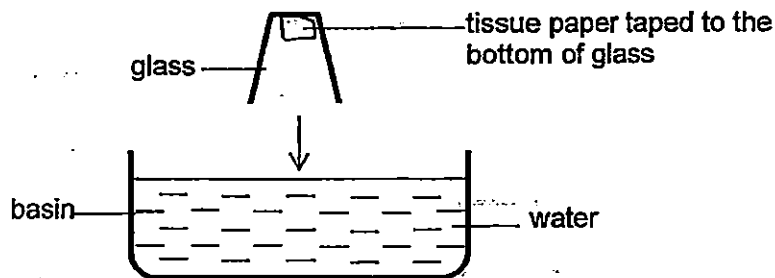


19. An experiment was carried out with two sponge balls, X and Y of similar mass. Ball X was soaked in water but ball Y was dry. When both balls were placed on the lever balance, the following observation was made.



Based on the observation above, which one of the following statements is correct?

- (1) Water has mass.
  - (2) Water takes up space.
  - (3) Air in the sponge balls have mass.
  - (4) Ball X occupies more space than Ball Y.
20. Ali pushed an inverted glass into a basin of water as shown in the diagram below.



He noticed that the glass was not filled completely with water and the tissue paper was not wet. What should Ali do to ensure that the tissue paper is wet?

- A: Add more water into the basin.
- B: Tilt the glass slightly at an angle.
- C: Make a hole at the base of the glass.
- D: Push the glass straight down directly to the bottom of the basin.

- (1) A only
- (2) C only
- (3) A and D only
- (4) B and C only

21. Four children, Adam, Betty, Charlie and Diane, each used a piece of plasticine to conduct an experiment. They made the following observations:

Adam : When the plasticine is rolled, it became round like a ball.

Betty : When the plasticine is placed in an empty beaker, it remained unchanged.

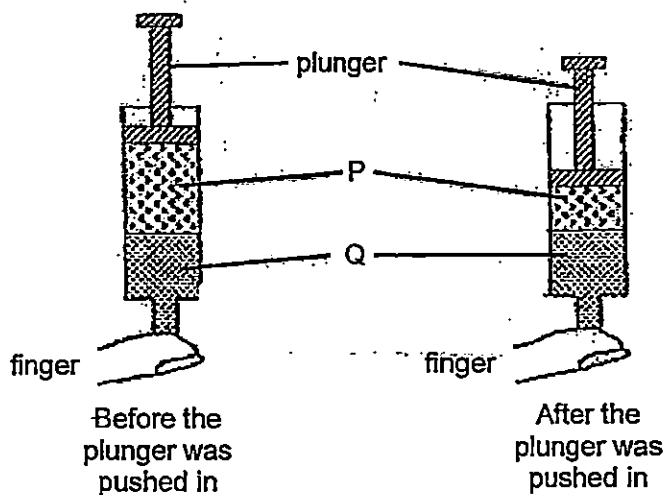
Charlie: When the plasticine is placed on one pan of a lever balance, the pan goes down.

Diane : When the plasticine is lowered into a cylinder of water, the water level rises.

Whose observation shows that the piece of plasticine has mass?

- (1) Adam's  
 (2) Betty's  
 (3) Charlie's  
 (4) Diane's

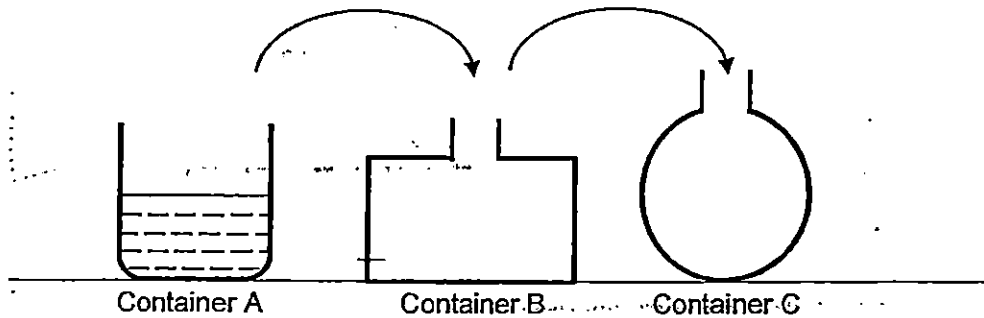
22. The diagrams below show the syringe before and after the plunger was pushed in.



Which one of the following would P and Q most likely to be?

	P	Q
(1)	Oil	Sugar
(2)	Sugar	Oxygen
(3)	Oxygen	Oil
(4)	Sugar	Oil

23. Container A contains 250ml of water as shown below.

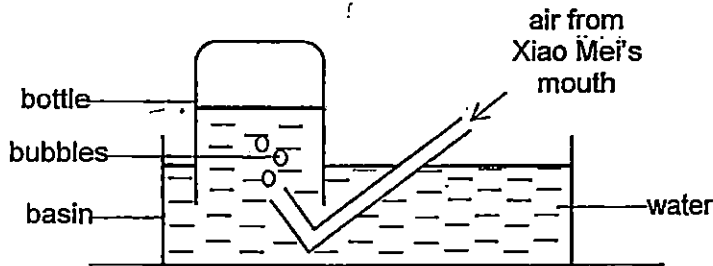


What changes will be observed when all the water is poured from Container A to Container B, then to Container C, with no loss of water?

- A: Change in the mass of water
- B: Change in the shape of water
- C: Change in the volume of water

- (1) A only
- (2) B only
- (3) A and B only
- (4) B and C only

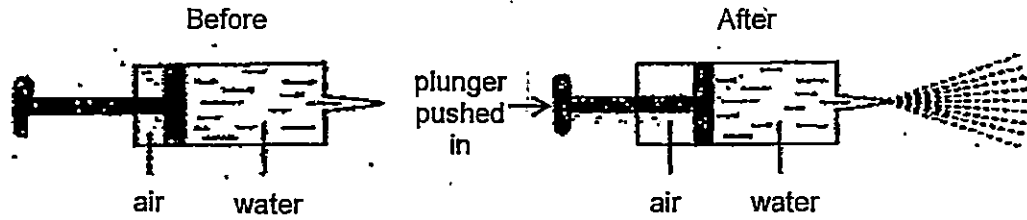
24. Xiao Mei blew air into an inverted bottle of water through a tube as shown in the diagram below.



What will happen to the water level in the bottle?

- (1) The water level in the bottle will rise.
- (2) The water level in the bottle will drop.
- (3) The water level in the bottle will rise then drop.
- (4) The water level in the bottle will remain unchanged.

25. A syringe is filled with water. When its plunger is pushed, a jet of water shoots out in the direction as shown below.



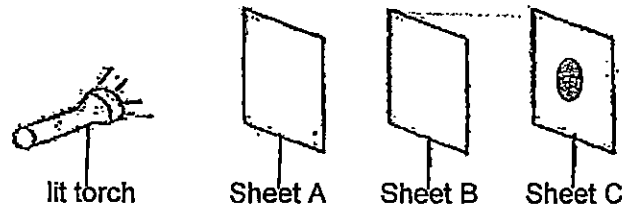
Which one of the following correctly describes what has happened to the volume of air and water in the syringe after the plunger is pushed in?

	Volume of air	Volume of water
(1)	Increase	Decrease
(2)	Increase	Remained the same
(3)	Decrease	Increase
(4)	Remained the same	Decrease

26. Which one of the following is not a source of light?

- (1) Torch  
 (2) Fireflies  
 (3) Mirror  
 (4) Mobile phone

27. The experiment below was carried out in a dark room. Sheet A, B and C were arranged in a straight line.

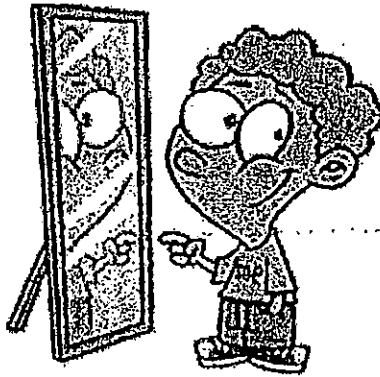


When the torch was switched on, bright circular patch of light was seen on Sheet C only.

Which of the following correctly classifies Sheet A, Sheet B and Sheet C according to their properties?

	Allows light to pass through	Does not allow light to pass through
(1)	B	A and C
(2)	C	A and B
(3)	A and B	C
(4)	A and C	B

28. Aaron stood in front of a mirror. He was able to see his reflection.

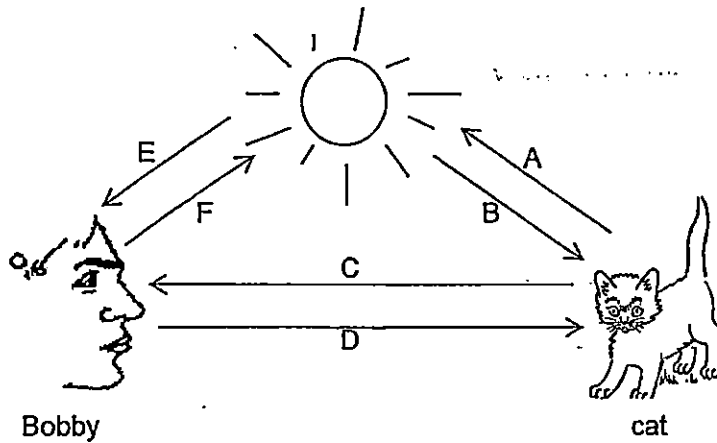


Which of the following statements explain why Aaron was able to see his reflection?

- A: The mirror blocked all the light.
- B: The mirror allowed light to pass through.
- C: The mirror reflected some light back into Aaron's eyes.

- (1) A only
- (2) C only
- (3) A and C
- (4) B and C only

29. The diagram below shows some paths of light, A, B, C, D, E and F.



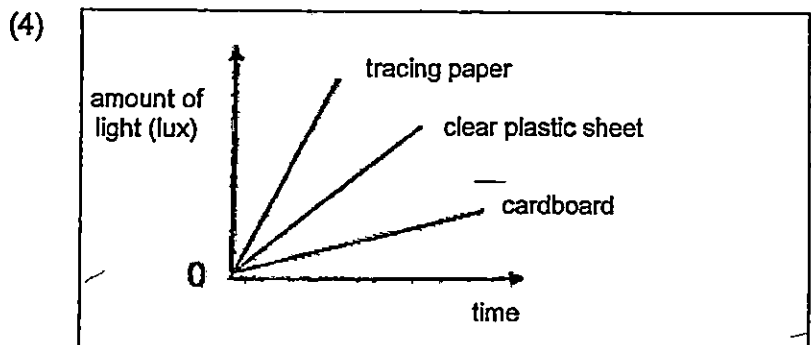
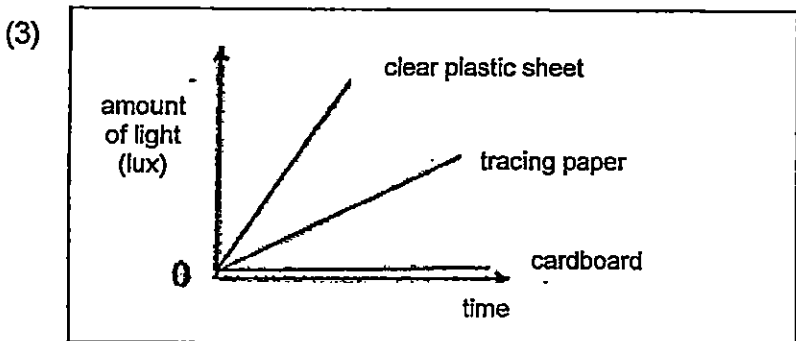
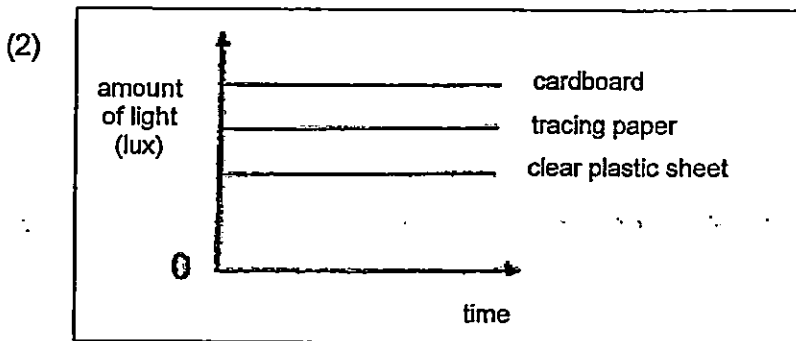
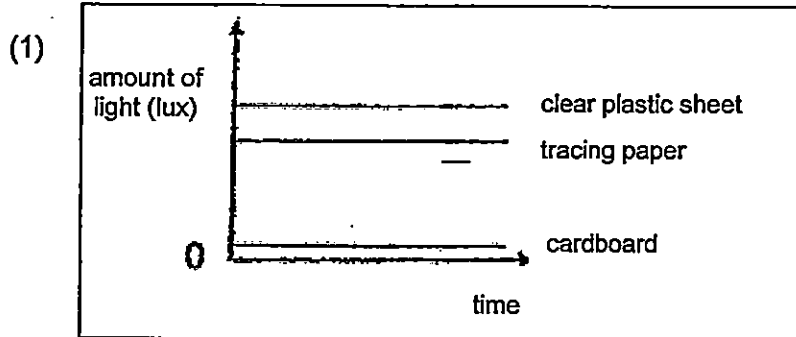
Which one of the following path of light allowed Bobby to see the cat?

- (1) A and D
- (2) B and C.
- (3) D and E
- (4) C and F



30. Kathy conducted an experiment to find out the amount of light that could pass through three materials, tracing paper, clear plastic sheet and cardboard, of the same thickness. She drew a graph to show the amount of light recorded.

Which one of the following graphs best shows the results recorded?

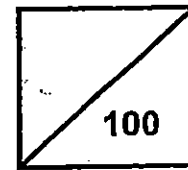


End of Part 1



**Rosyth School**  
**First Semestral Examination for 2015**  
**SCIENCE**  
**Primary 4**

Total  
Marks:



Name: \_\_\_\_\_

Class: Pr 4 \_\_\_\_\_

Register No. \_\_\_\_\_

Duration: 1 h 45 min

Date: 14<sup>th</sup> May 2015

Parent's Signature: \_\_\_\_\_

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## Booklet B

**Instructions to Pupils:**

1. For questions 31 to 44, give your answers in the spaces given in this Booklet B.

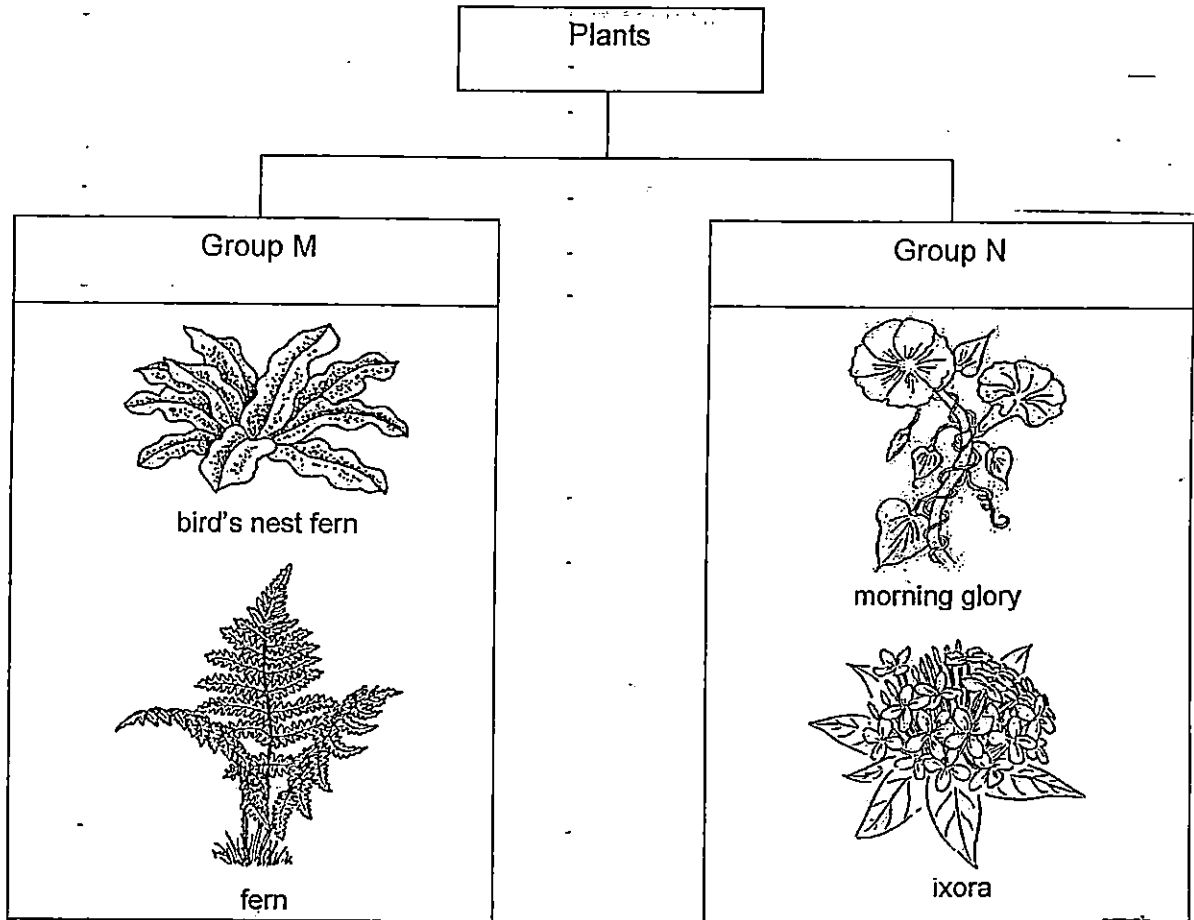
	Maximum	Marks Obtained
<b>Booklet A</b>	<b>60 marks</b>	
<b>Booklet B</b>	<b>40 marks</b>	
<b>Total</b>	<b>100 marks</b>	

\* This booklet consists of 14 pages.

For questions 31 to 44, write your answers in this booklet.

(40 marks)

31. The classification chart below shows how plants are being classified.



(a) Give a suitable heading for

(1m)

(b) Maria found Plant X in a park. She observed the leaves and found many spore bags on the underside of the leaves.

Based on her observation, which group M or N does Plant X belong to?

Support your answer.

(1m)

32. Based on each of the observation, state the characteristic of the living things in the table below. (2m)

Observations	Characteristics of Living Things
A lioness gives birth to its young.	<hr/> <hr/>
Alice removes her hand quickly when she accidentally touches the hot kettle.	<hr/> <hr/>
A plant withers as it lacks of water and sunlight.	<hr/> <hr/>
Marcus is taller this year than last year.	<hr/> <hr/>

33. The table below shows the characteristics of four different animals, K, L, M and N.  
 — A tick (✓) indicates that the animal has the characteristics.

Characteristics	Animals			
	K	L	M	N
Has feathers			✓	
Has wings			✓	
Has six legs				✓
Lives on land only	✓	✓	✓	✓
Reproduces by laying eggs		✓	✓	✓

- (a) Based on the information given above, state the similarities between animals L and M. (1m)

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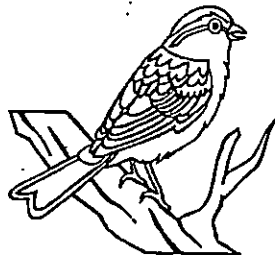
- (b) Based on the information given above, which animal, K, L, M or N is most likely to be an insect? Support your answer. (1m)

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- (c) Study Animal R below.



Animal R

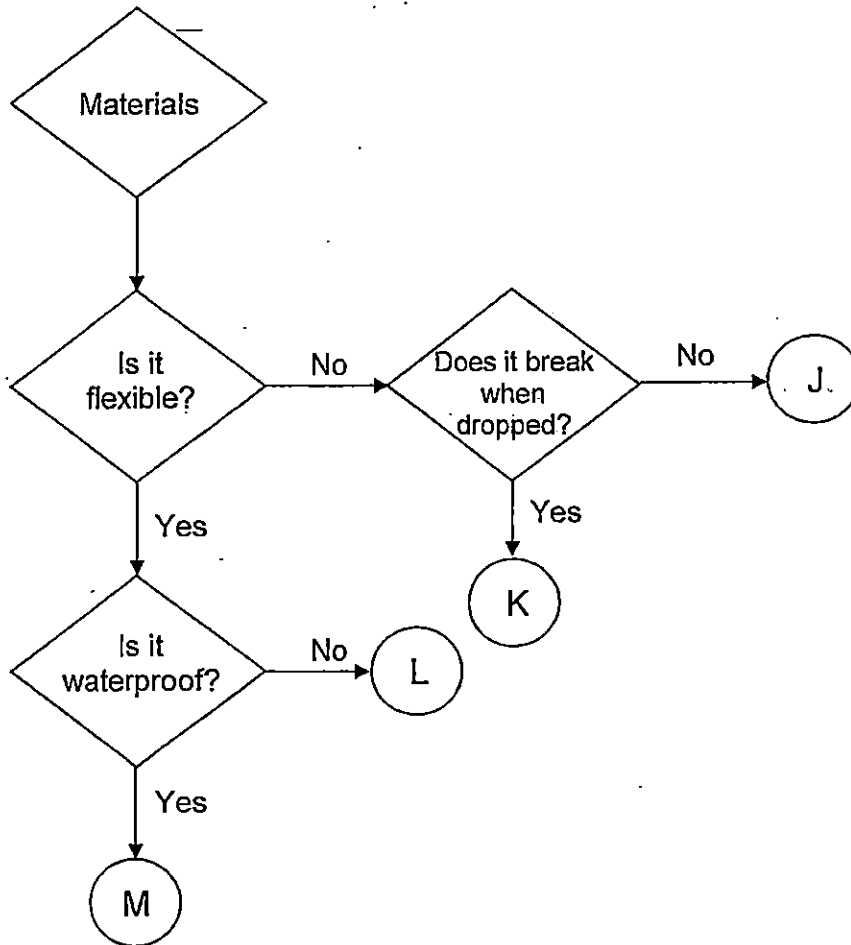
Johan said that Animal R is definitely a bird. State a characteristic that is not mentioned in the table above that determines Animal R is a bird. (1m)

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34. Study the flow chart below.



(a) State all the characteristics of material J. (1m)

---

(b) State one difference between materials M and L. (1m)

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(c) Mrs Tan wore a pair of gloves when washing the bathroom. Should she use the gloves made of Material L? Support your answer. (1m)

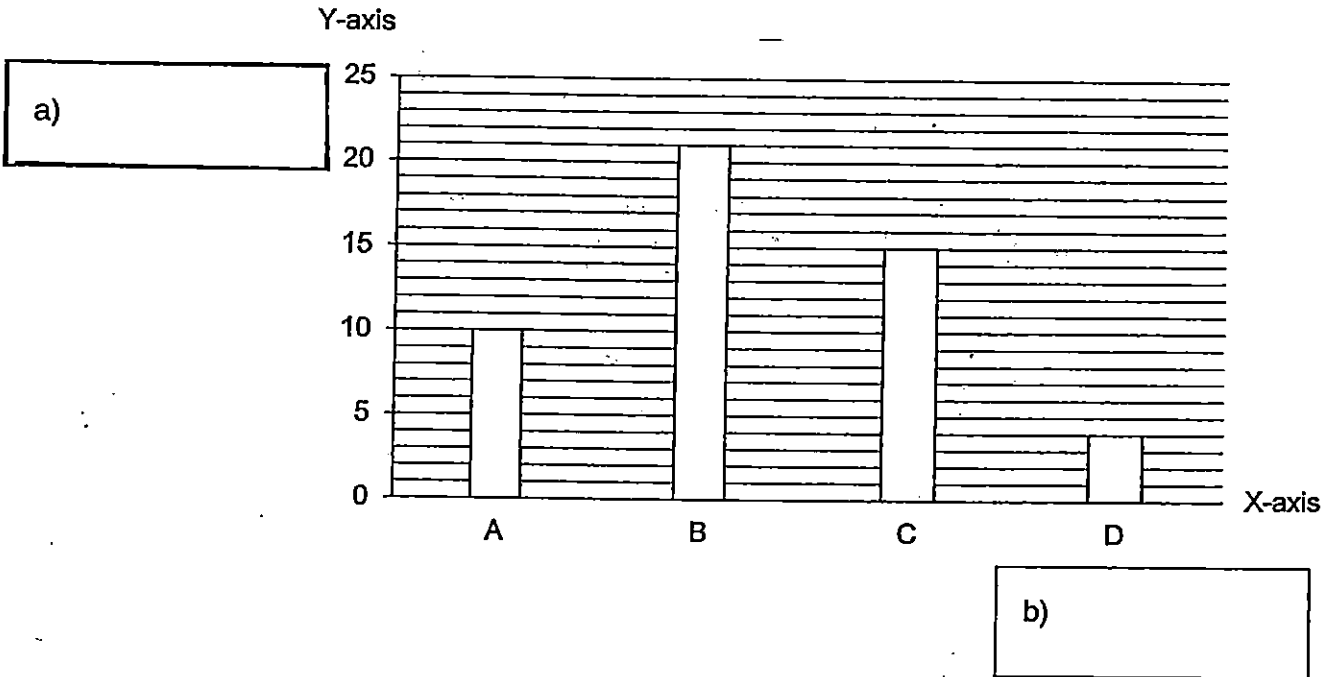
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35. The graph below shows the number of days in each stage of the life cycle of Animal Y.

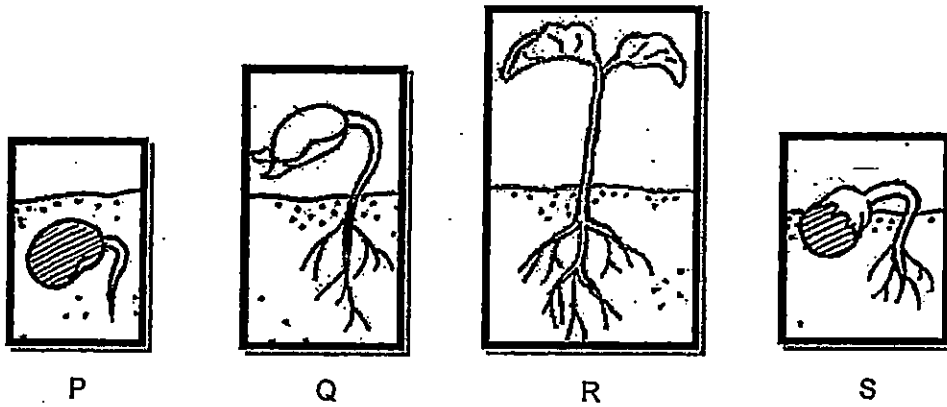
Label the graph below with the following variables, 'Number of days' and 'Stage'.  
(1m)



(c) Using the information from the graph, put a tick (✓) in the correct box to indicate whether each statement is 'True', 'False' or 'Not possible to tell'. (2m)

Statements	True	False	Not possible to tell
Animal Y is an insect.			
It takes less than 40 days for Animal Y to develop from an egg to an adult.			
Animal Y is a butterfly.			
There are 3 stages in the life cycle of Animal Y.			

36. The diagrams below show the developmental stages in the growth of a bean plant.



(a) Arrange the stages in the life cycle of a bean plant. Write the letters P, R and S in the boxes provided. (1m)

,  ,  ,

(b) At which stage, P, Q, R or S is the plant able to make its own food? (1m)

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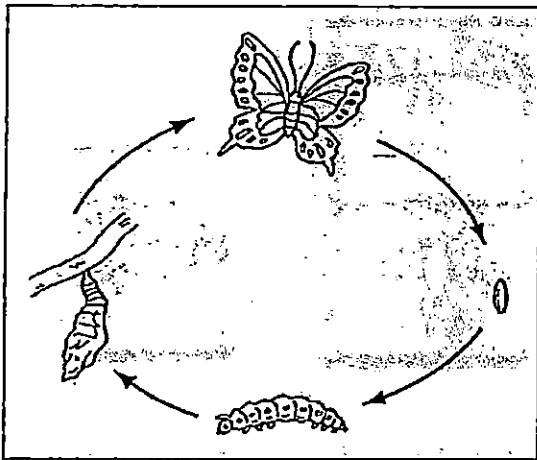
(c) Give a reason for your answer in (b). (1m)

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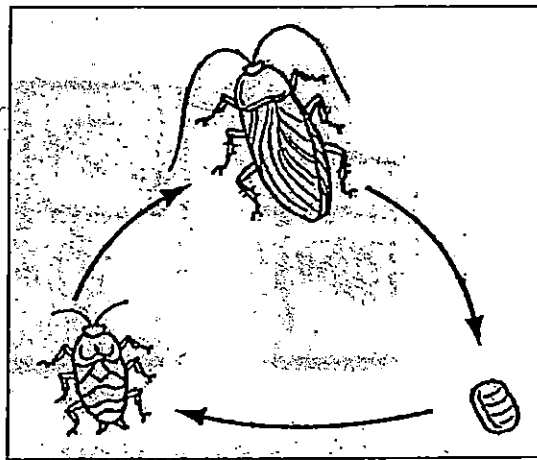
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37. The diagrams below show the life cycle of organisms X and Y.



Life cycle of Organism X



Life cycle of Organism Y

(a) State a similarity between the life cycle of organism X and Y. (1m)

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(b) State a difference between the life cycle of organism X and Y. (1m)

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(c) Name one way in which the young of organism Y looks like the adult. (1m)

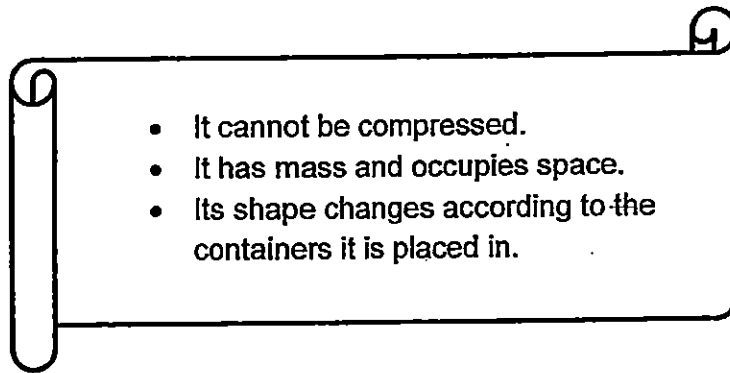
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(d) Organism X was found to have eaten up many of the leaves on a plant. Which stage of organism X eats the leaves? (1m)

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38. Read the following information about Item X.



Based on the information above, which of the following could be Item X?  
Tick in the boxes provided. (1m)

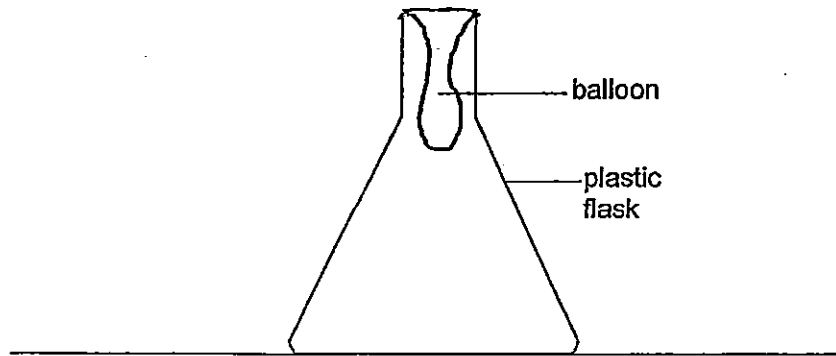
(a)

Items	Tick
Oxygen	
Styrofoam	
Cooking oil	
Wooden block	

(b) Name an instrument that can be used to measure the mass of Item X. (1m)

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39. Ahmad set up an experiment as shown below by inserting a balloon into a plastic flask.



- (a) What will happen to the balloon when Ahmad tried to blow some air into it? (1m)

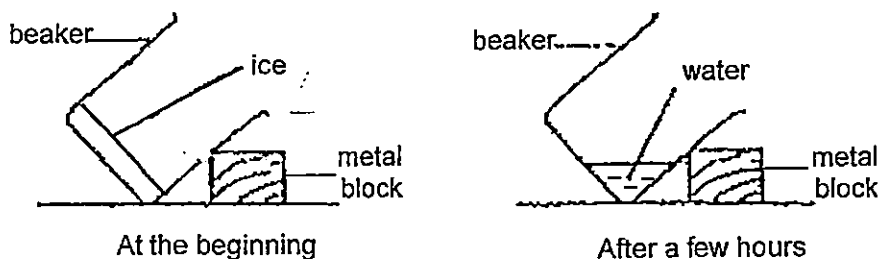
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- (b) Explain the observation in part (a). (2m)

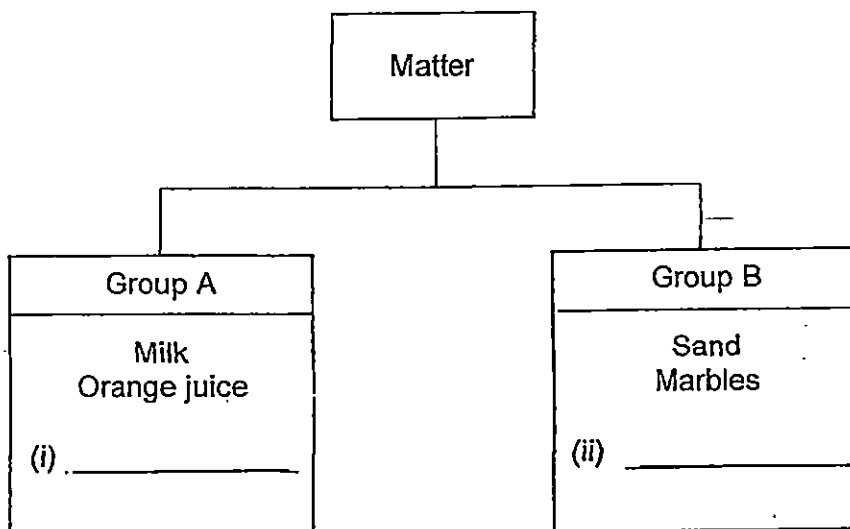
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40. The diagram below showed what had happened to ice at the beginning and after a few hours.



- (a) Based on the observations above, write 'ice' and 'water' in the correct groups in the classification diagram below. (1m)



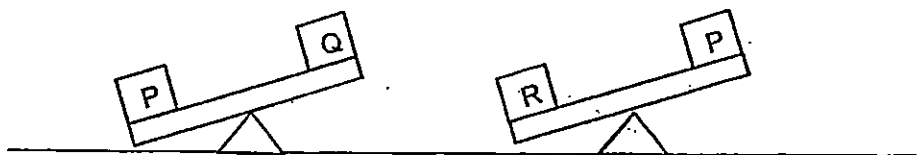
- (b) State one difference between the items in Group A and the items in Group B. (1m)

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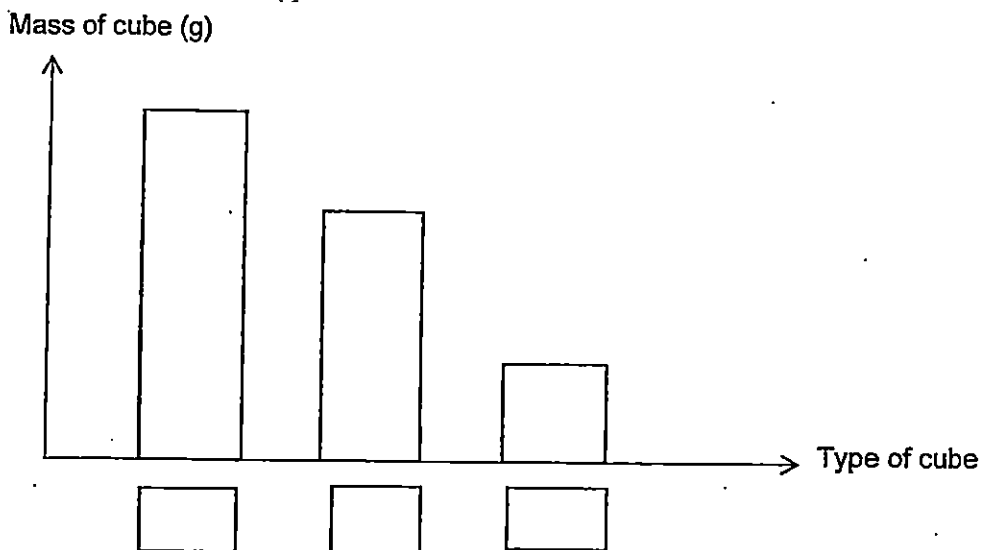


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41. Susan measured the masses of 3 similar cubes, P, Q and R. They were made of different materials. The diagrams below showed her observations using a lever balance.



After observing the mass of each cube, she recorded her observations in the bar graph as shown below.

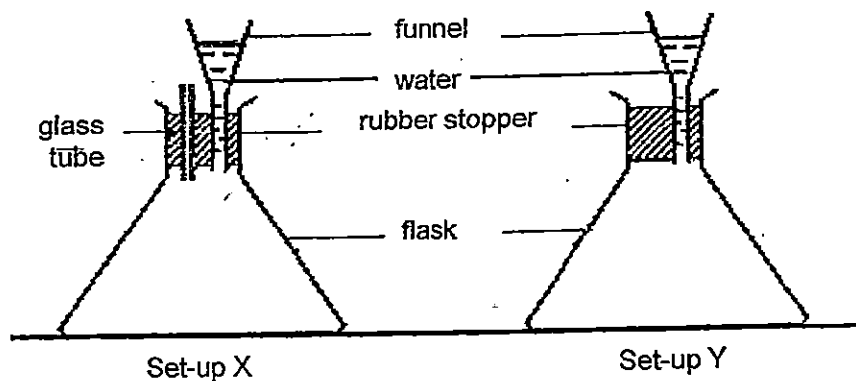


- (a) Based on the observation, write the letters, P, Q and R in the correct boxes in the graph above. (1m)
- (b) Using the same cubes, she wanted to find out if cubes of different mass will affect the volume. (2m)

Identify the correct variables for this experiment by putting a tick (✓) in the correct boxes below.

	Changed variable	Measured variable	unchanged variable
Shape of cubes			
Mass of cubes			
Volume of cubes			
Type of measuring instrument used			

42. Siti prepared Set-up X and Y as shown in the diagrams below. She wanted to find out which set-up would allow water to flow through the funnel in the shortest time.



The results were shown in the table below.

Volume of water in the flask (ml)	Time taken (min)
0	0
10	2
20	4
30	6
40	8
50	10

Volume of water in the flask (ml)	Time taken (min)
0	0
10	1
20	2
30	3
40	4
50	5

- (a) Based on the results above, which set-ups do Table 1 and 2 belong to? (1m)
- (i) Table 1: Set-up \_\_\_\_\_
- (ii) Table 2: Set-up \_\_\_\_\_

- (b) State the measured variable in the experiment above. (1m)

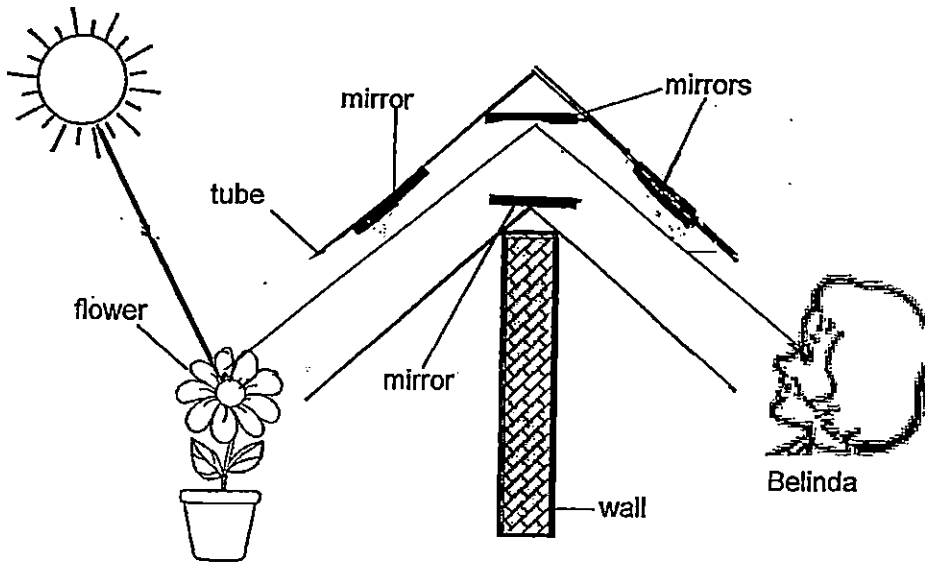
\_\_\_\_\_

- (c) For the set-up that allowed water to flow slower, what could Siti do to decrease the time for water to flow into the funnel? (1m)

\_\_\_\_\_

\_\_\_\_\_

43. Belinda wanted to see the flower at the other side of the wall. She used the tube containing 4 mirrors placed at different angles as shown in the diagram below.



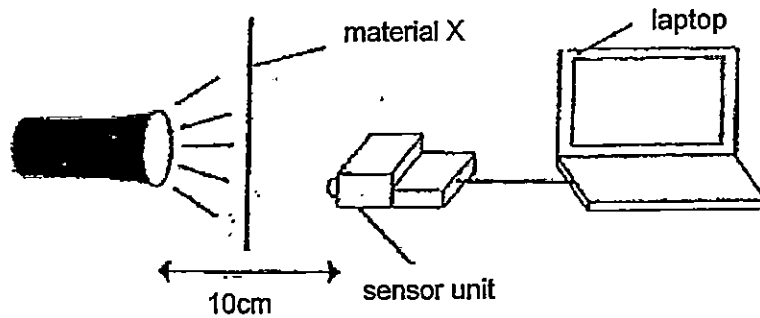
- (a) — Using a ruler, draw the light rays in the diagram above that enabled Belinda to see the flower. (1m)
- (b) Explain why Belinda was able to see the flower. (2m)

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44. Devi wanted to find out if the thickness of Material X affects the amount of light passing through it. She set up the experiment as shown below.



She measured the amount of light that could pass through and recorded the result in the table below. She repeated the experiment using different number of Material X.

Number of sheets of Material X	1	2	3	4	5
Amount of light that could pass through (lux)	100	80	60	40	20

- (a) What is the relationship between the number of sheets of Material X used and the amount of light that could pass through? (1m)

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- (b) Devi decided to change Material X to Material Y. She discovered that the sensor did not detect any amount of light. Explain why. (1m)

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- (c) Devi wanted to make a lantern. Which material (X or Y) would be most suitable? Give a reason to support your choice. (2m)

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END.





**SCHOOL : ROYSTH SCHOOL**  
**SUBJECT : SCIENCE**  
**TERM : SA1**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
3	1	3	2	2	3	3	2	4	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
1	4	3	4	3	3	3	1	1	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	2	2	1	3	3	2	2	1

Q31a. Flowering Plants.

Q31b. M. Plant X has spores, all non – flowering plant reproduce by spores.

Q32. Living things reproduce, Living things respond to changes, Living things need air, food and water to survive, Living things grow.

Q33a. They live on land only and reproduce by laying eggs.

Q33b. N. All insects have six legs and reproduce by laying eggs.

Q33c. It has a beak.

Q34a. Material J is not flexible and does not break when dropped.

Q34b. M is waterproof but L is not. Q34c. No, it is not waterproof.

Q35a. Number of days, Q35b. stages, Q35c. True, False, Not possible to tell, False.

Q36a. Q,R,P,S, Q36b. R, Q36c. It has fully grown green leaves.

Q37a. Their life cycle starts with an egg.

Q37b. Y has three stages in its life cycle but X has four stages in its life cycle.

Q37c. It has six legs. Q37d. Caterpillar.

Q38a. Cooking oil. Q38b. Electronic balance.

Q39a. The balloon will not be bigger. Q39b. Air occupies space; the air from the flask could not escape.

Q40a. i) water ii) ice Q40b. B has definite shape but A has no definite shape.

Q41a. R P Q Q41b. unchanged variable, changed variable, measured variable, unchanged variable

Q42a. i) Y ii) X Q42b. Time taken for water to flow in.

Q42c. She should add more glass tubes to let the air escape faster.

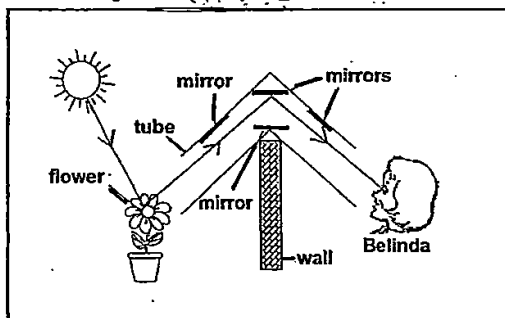
Q43b. The flower is not a light source so it reflects light from the sun. The light is then reflected by the mirror and enters our eyes thus enabling Belinda to see the flower.

Q44a. The more the number of sheets the amount of light that could pass through will be lesser.

Q44b. Material Y is a opaque.

Q44c. X. Material X allows light to pass through and the lantern can be used as a light source

Q43a. SEE PICTURE



THE END