RED SWASTIKA SCHOOL

SCIENCE
2019 SEMESTRAL EXAMINATION 1
PRIMARY 4

Name : _____( )

Class : Primary 4/ _____

Date : 15 May 2019

BOOKLET A

Total time for Booklets A & B: 1h 30 min

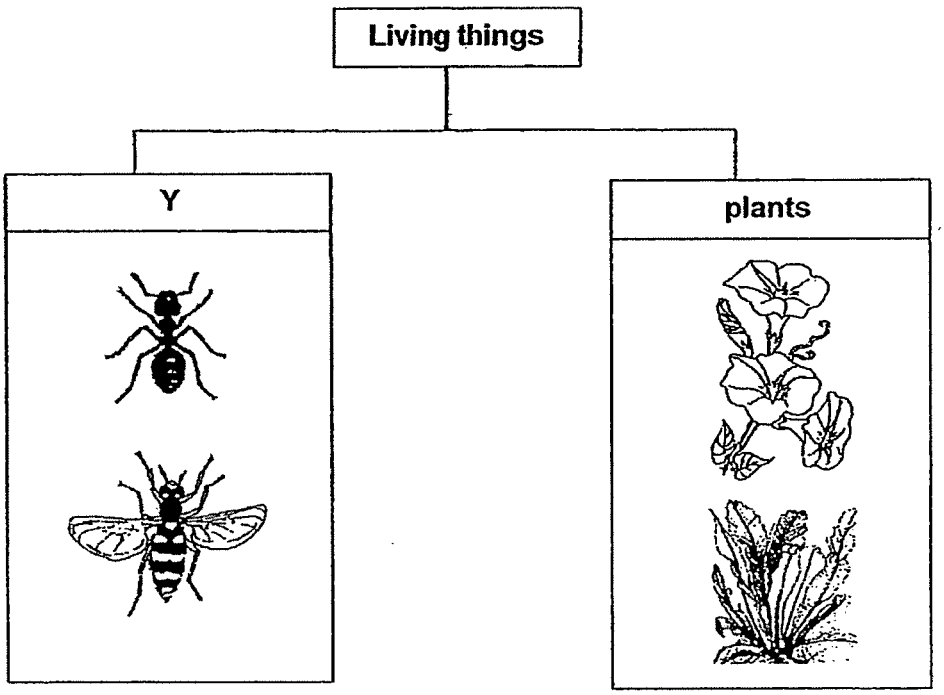
Booklet A: 24 questions (48 marks)

Note:

1. **Do not open the booklet until you are told to do so.**
2. **Read carefully the instructions given at the beginning of each part of the booklet.**
3. **Do not waste time. If the question is too difficult for you, go on to the next question.**
4. **Check your answers thoroughly and make sure you attempt every question.**
5. **In this booklet, you should have the following:**
   a. **Page 1 to Page 14**
   b. **Questions 1 to 24**

For Questions 1 to 24, choose the most suitable answer and shade its number the OAS provided.

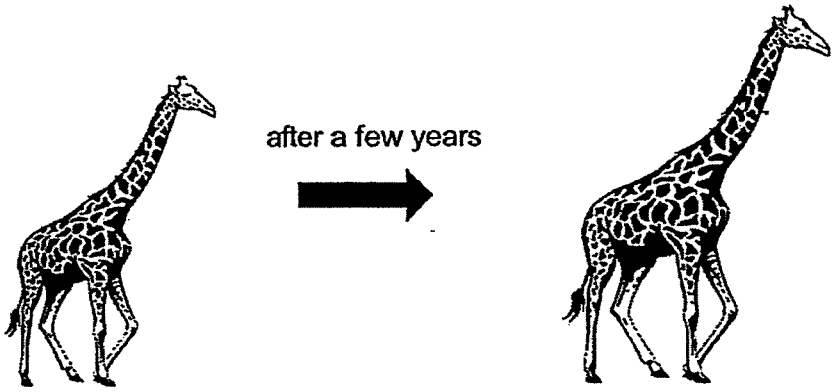
1. Study the classification table shown.



Which one of the following is the most suitable heading for group Y?

(1) birds
(2) reptiles
(3) insects
(4) amphibians

2. Study the diagram below.



What characteristic of living things does it show?

(1) Living things can die.
(2) Living things can grow.
(3) Living things can reproduce.
(4) Living things can respond to changes.

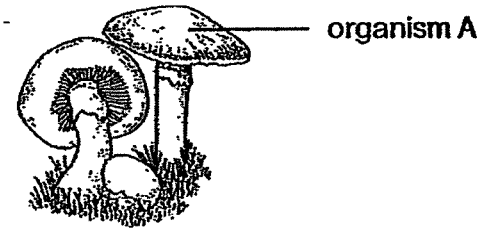
3. Kai Xin recorded some information in the table shown below.

Group	Characteristics	Example
fish	has scales and breathes through gills	dolphin
bird	has feathers and a beak	parrot
insect	has six legs and three body parts	mosquito
mammal	has hair and produces milk	monkey

Which one of the following examples is placed in the wrong group?

(1) dolphin
(2) parrot
(3) mosquito
(4) monkey

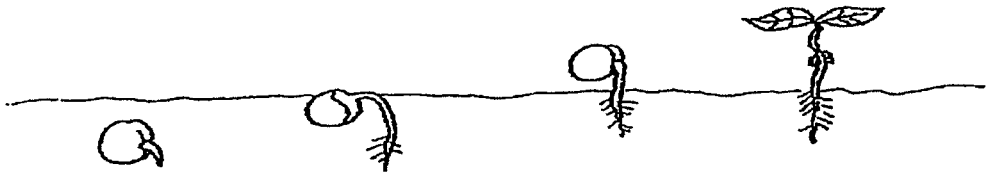
4. A student found organism A growing in the school garden.



Which one of the following is correct?

	Type of organism	Reproduce by
(1)	flowering plant	seeds
(2)	fungi	seeds
(3)	fungi	spores
(4)	non-flowering plant	spores

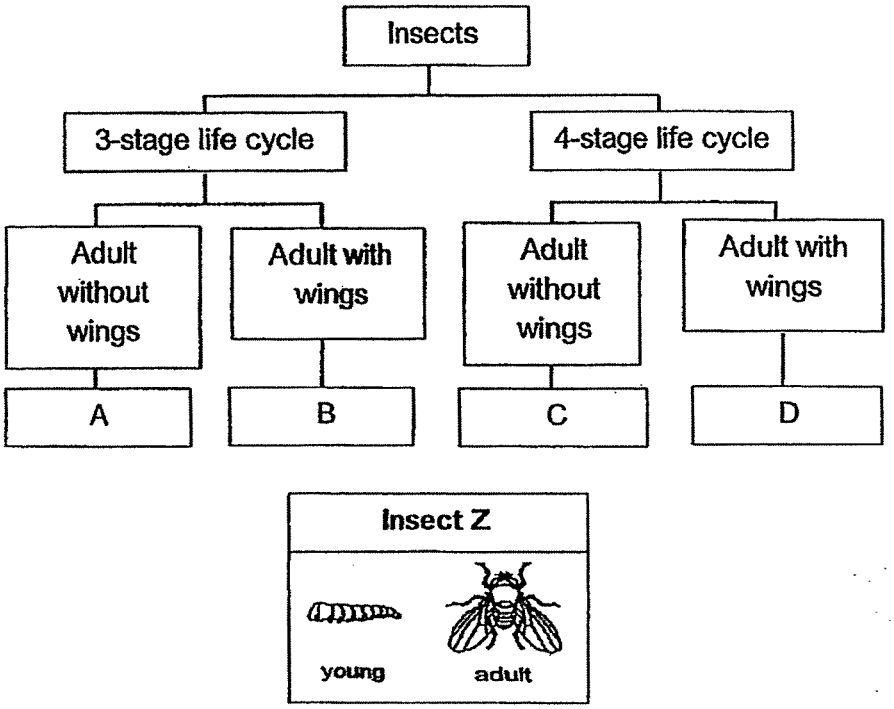
5. The diagrams show the development of a seed growing into a young plant.



Based on the diagrams, when will the young plant be able to start making food?

(1) Day 3
(2) Day 6
(3) Day 10
(4) Day 15

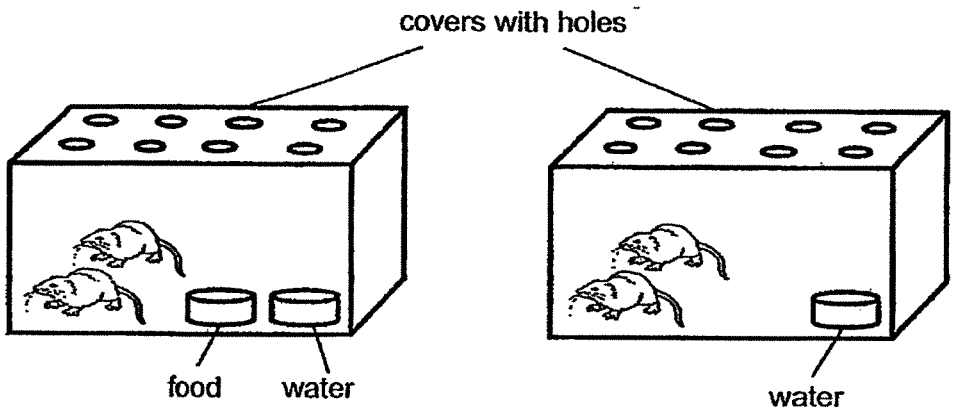
6. Study the classification chart below.



Which letter represents insect Z?

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

7. Megan placed two similar mice in each glass container as shown in the diagrams below.



Set-up A **Set-up B**

What was the aim of Megan's experiment?

(1) To find out if the presence of air affects the survival of mice.
(2) To find out if the presence of food affects the survival of mice.
(3) To find out if the presence of water affects the survival of mice.
(4) To find out if the covers with holes affect the survival of mice.

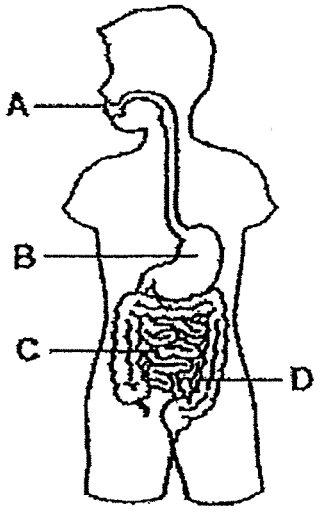
8. Study the classification table of the organ systems in a human body.

Respiratory system	Circulatory system	Skeletal system	Muscular system
lungs windpipe	nose heart	skull ribcage	muscles

Which organ is placed in the wrong group?

(1) nose
(2) skull
(3) lungs
(4) heart

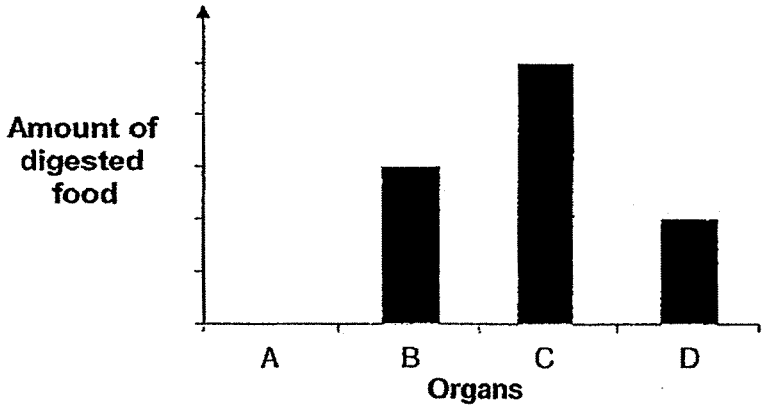
9. Study the diagram below.



Which one of the following is correct?

	Digestion starts	Digestion ends
(1)	A	C
(2)	A	B
(3)	B	C
(4)	B	D

10. The graph below shows the amount of digested food found in four different organs, A, B, C and D, of the human digestive system.



Which organ, A, B, C or D, is the large intestine?

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

11. Which of the following functions are correctly matched to the plant parts?

	Roots	Stem	Leaves
(1)	To trap sunlight to make food for the plant.	To support the plant to receive sunlight.	To absorb water for the plant.
(2)	To absorb water for the plant.	To support the plant to receive sunlight.	To trap sunlight to make food for the plant.
(3)	To absorb water for the plant.	To hold the plant firmly to the ground.	To trap sunlight to make food for the plant.
(4)	To hold the plant firmly to the ground.	To trap sunlight to make food for the plant.	To absorb water for the plant.

12. Which one of the following is a matter?

(1) shadow
(2) sound
(3) heat
(4) air

13. The table below describes three different states of matter, P, Q and R.

Property	P	Q	R
has a fixed shape	no	yes	no
has a fixed volume	no	yes	yes

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

	P	Q	R
(1)	liquid	solid	gas
(2)	liquid	gas	solid
(3)	gas	liquid	solid
(4)	gas	solid	liquid

14. A water tank used for flushing a toilet bowl is shown in diagram 1 below. After flushing, water enters and re-fills the tank. The tank will stop filling when the water reaches level H.

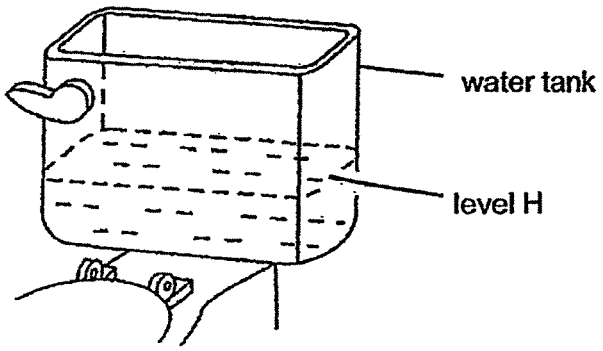


Diagram 1

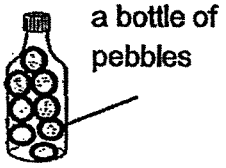


Diagram 2

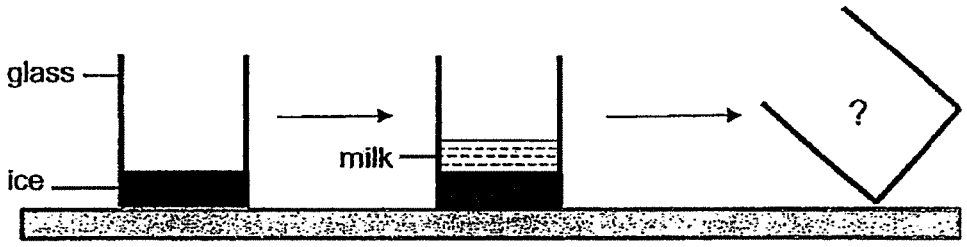
Mabel wanted to conserve water. She put a bottle of pebbles as shown in diagram 2 into the water tank.

Which of the following properties of matter was Mabel's method based on?

A: Solids have definite volume.
B: Solids occupy space.
C: Solids have no definite shape.

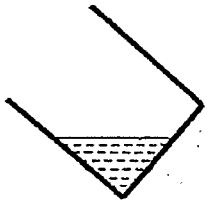
(1) A and B only
(2) B and C only
(3) A and C only
(4) A, B and C only

15. Sasha removed a glass containing ice from the freezer and poured some m. immediately into the glass as shown below. Then, she tilted the glass quickly as shown in the diagram below.

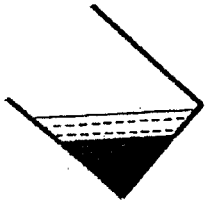


Which one of the following diagrams best represents Sasha's observation when she tilted the glass immediately after pouring the milk?

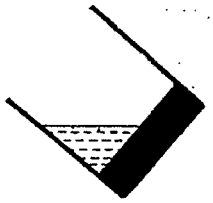
(1)



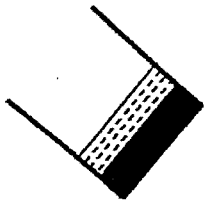
(2)



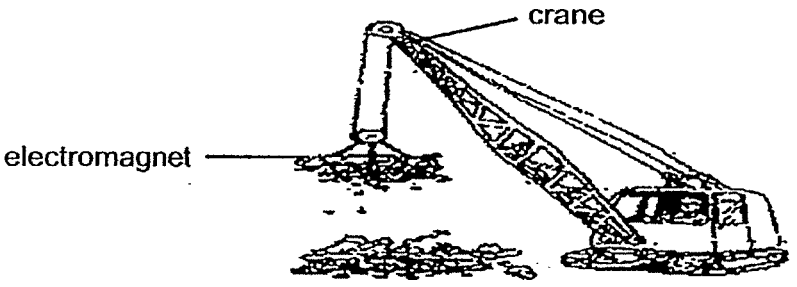
(3)



(4)



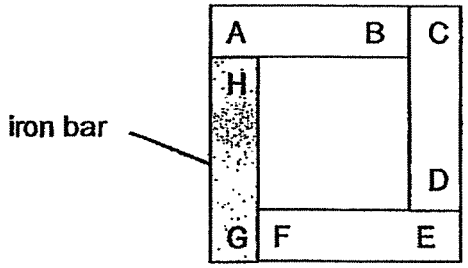
16. The picture below shows a crane that uses an electromagnet to collect metal pieces for recycling.



Which one of the following materials can the electromagnet attract?

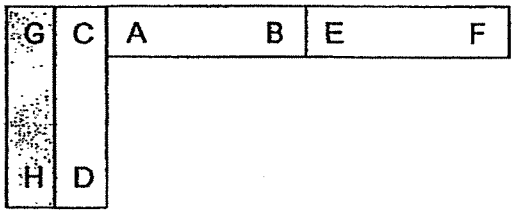
(1) steel
(2) silver
(3) copper
(4) aluminium

17. Study the three bar magnets, AB, CD, EF and an iron bar GH as shown in the arrangement carefully.

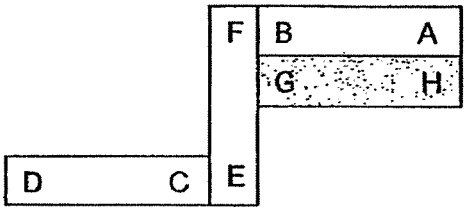


Which one of the following arrangements is possible?

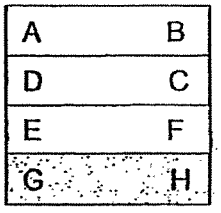
(1)



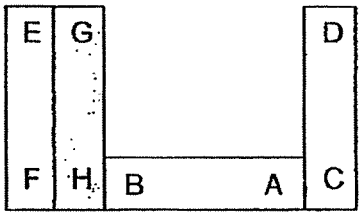
(2)



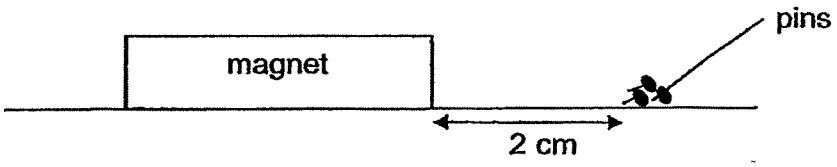
(3)



(4)



18. Heng Ying wanted to test the magnetic strength of four magnets, W, X, Y and Z. He placed the magnet 2 cm away from the iron pins and recorded his observations. He repeated the experiment for the other three magnets.



Magnet	Number of pins attracted to the magnet
W	6
X	5
Y	1
Z	3

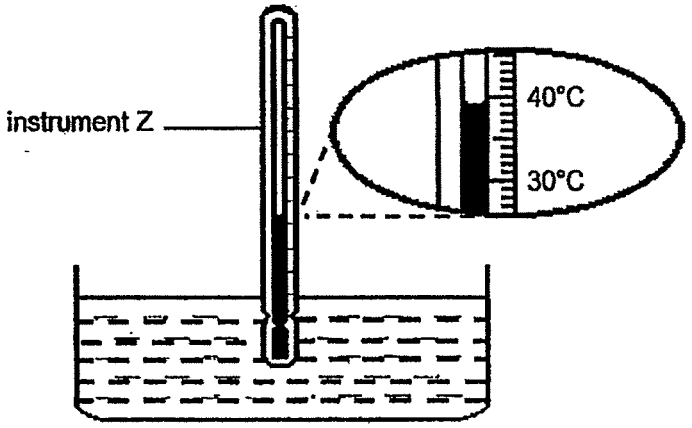
Which one of the following statements is most likely to be correct?

(1) Magnet W has the least magnetic strength.
(2) Magnet Y has the greatest magnetic strength.
(3) Magnet Z has less magnetic strength than magnet Y.
(4) Magnet X has greater magnetic strength than magnet Z.

19. Which one of the following is a source of heat?

(1) burning candle
(2) spoon
(3) moon
(4) pot

20. Edmund used instrument Z to measure the temperature of warm water in a basin.



Which one of the following shows the correct temperature of the warm water?

(1) 30°C
(2) 37°C
(3) 39°C
(4) 42°C

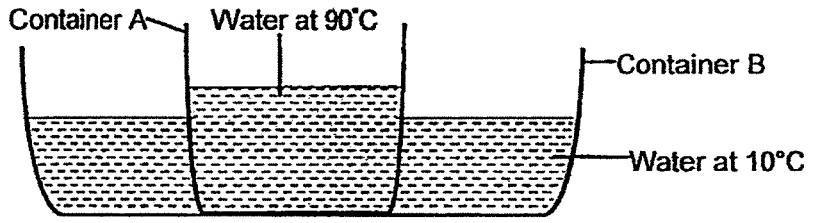
21. Rose places a metal spoon in a cup of hot drink.



The spoon becomes hotter after a while. Which one of the following explains this?

(1) The spoon loses heat to the hot drink.
(2) The cup gains heat from the hot drink.
(3) The spoon gains heat from the hot drink.
(4) The hot drink gains heat from the spoon.

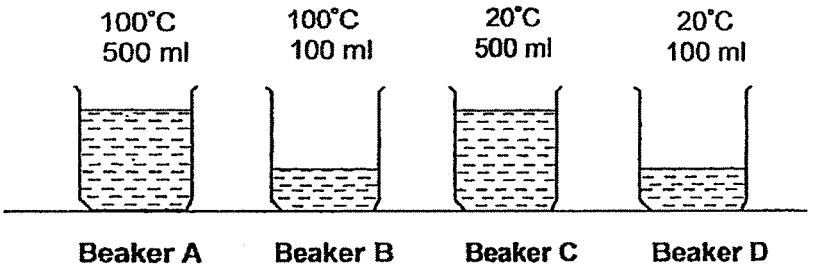
22. Abby set up an experiment as shown below. She placed Container A containing hot water at 90°C into Container B containing water at 10°C. Both containers were placed in a room for the next 20 minutes.



Which of the following best represents the change in temperature of the water after 20 minutes?

	Temperature of water in Container A	Temperature of water in Container B
(1)	90°C	100°C
(2)	60°C	40°C
(3)	100°C	10°C
(4)	10°C	90°C

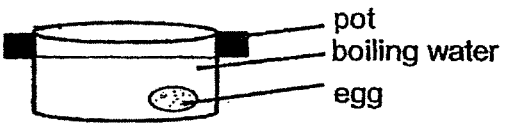
23. Sulaimah placed four empty identical beakers, A, B, C and D, on a table in the Science room. He poured water of different temperatures and volumes into the beakers shown below.



Which one of the following best represents the amount of heat in the water?

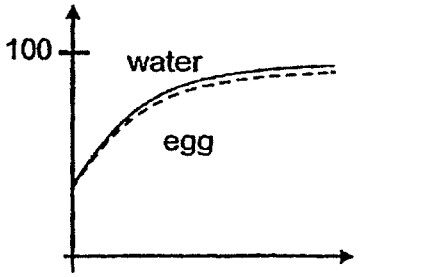
	Least heat → Most heat			
(1)	D	B	C	A
(2)	D	C	B	A
(3)	A	C	B	D
(4)	C	A	D	B

24. Mrs Ramah boiled some water in a pot. After the water had boiled at 100°C, she turned off the heat from the stove. She took an egg from the fridge and put it into the pot.

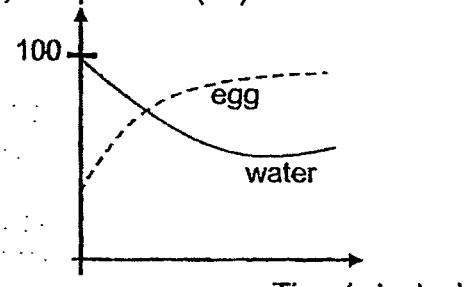


Which graph correctly shows the changes in the temperature of water and the egg during the duration when the egg was placed in a pot?

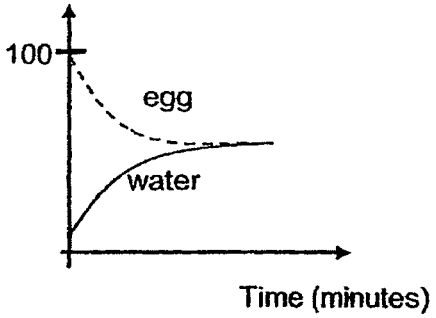
(1) Temperature (°C)



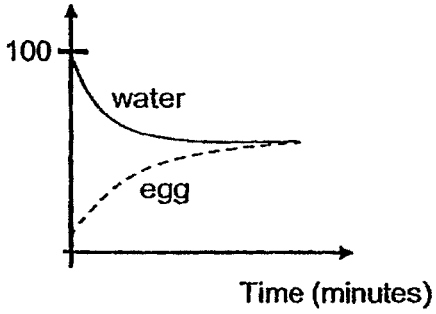
(2) Temperature (°C)



(3) Temperature (°C)



(4) Temperature (°C)



End of Booklet A

RED SWASTIKA SCHOOL

SCIENCE
2019 SEMESTRAL EXAMINATION 1
PRIMARY 4

Name : _____ ( )

Class : Primary 4/_____

Date : 15 May 2019

BOOKLET B

10 Questions
32 Marks

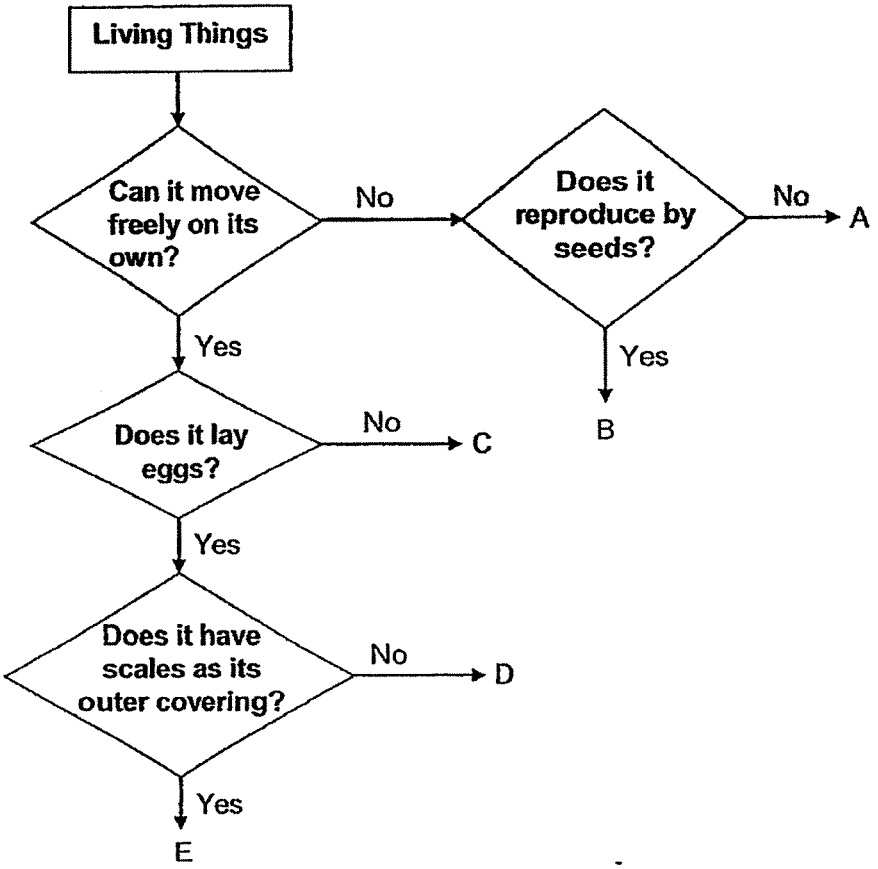
In this booklet, you should have the following:
a. Page 15 to Page 28
b. Questions 25 to 34

	MARKS OBTAINED	POSSIBLE
BOOKLET A		48
BOOKLET B		32
TOTAL		80

Parent's Signature: _____

Answer all the questions in the space provided.

25. Study the flow chart below.



(a) Based on the flow chart, what are the characteristics of organism A? (1m)

_____

_____

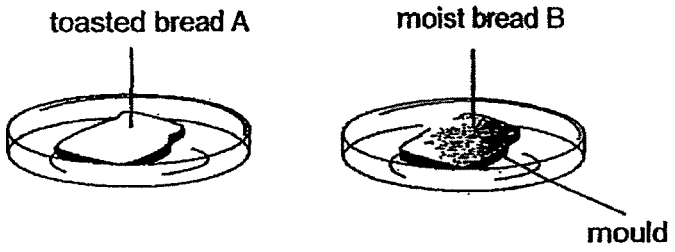
(b) Which letter (A, B, C, D or E) in the flow chart represent the following organisms? (1m)

(i) cockroach: _____

(ii) apple tree: _____

2

25. Mr Wong left two pieces of bread A and B in the Science room for five days.

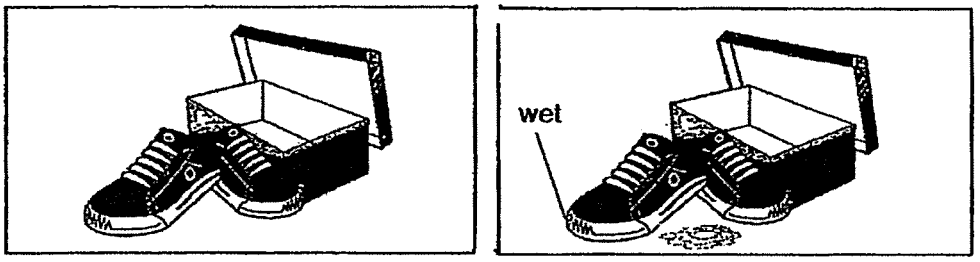


After five days, Mr Wong observed that some bread mould was formed on Bread B.

(c) Based on the information above, name the condition necessary for the bread mould to grow on the bread. (1m)

Presence of _____

(d) Mr Wong had two similar pairs of leather shoes, X and Y, as shown below.



X Y

Mr Wong kept the two pairs of leather shoes in two separate shoe boxes and left them in the shoe cabinet. After one week, he found some mould growing on one of the pairs of the leather shoes.

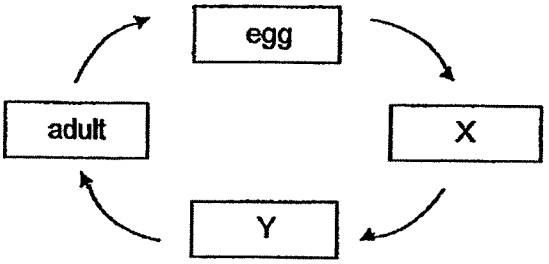
Which pair of leather shoes, X or Y, would mould be seen growing? Give a reason for your answer. (1m)

_____

_____

2

26. The diagram below shows the stages in the life cycle of a beetle.

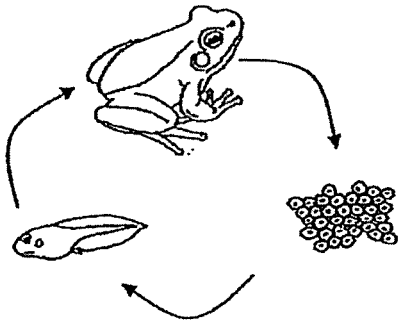


(a) Name the two stages **X** and **Y**. (1m)

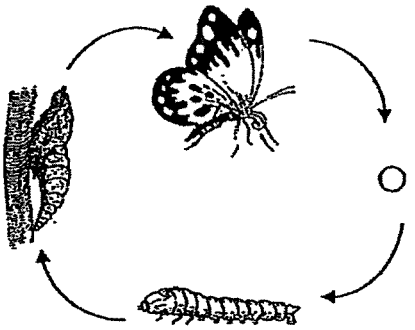
X : _____

Y : _____

The diagrams below show the life cycles of a frog and a butterfly.



Life cycle of a frog



Life cycle of a butterfly

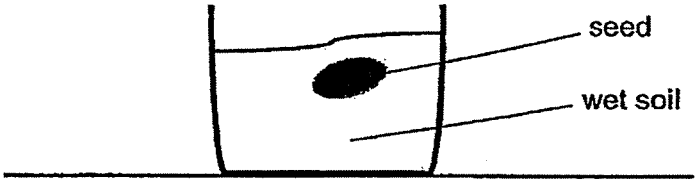
(b) Based on the life cycles above, state one similarity between the two life cycles. (1m)

_____

_____

2

26. May planted a seed in a pot of soil and placed it near the window. She observed the development of the seed into a young plant over a period of time.



(c) May recorded her observations but they were not in order. Fill in the boxes with 1, 2, 3 and 4 to show the correct order of the development of the seed. Stage '5' has been indicated for you. (1m)

Stage	Observation
5	The seed leaves shrink in size and drop off.
	The shoot emerges from the seed.
	The roots emerge from the seed.
	The leaves appear.
	The seed coat breaks open.

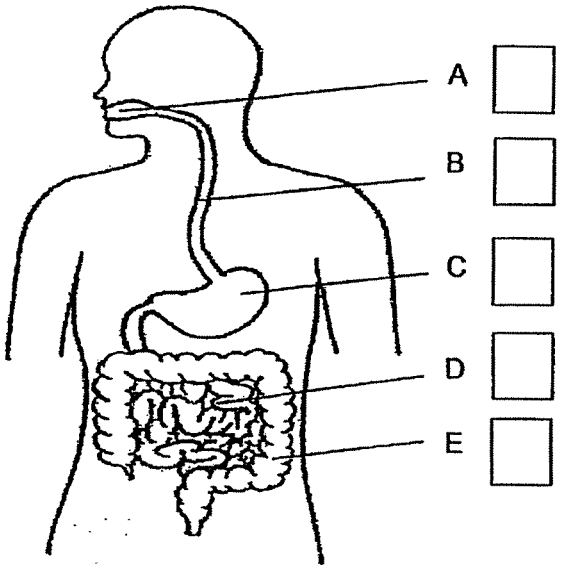
(d) May planted another seed of the same type in another pot of wet soil and placed it in a dark cupboard. Would the seed be able to germinate? Explain your answer. (1m)

_____

_____

2

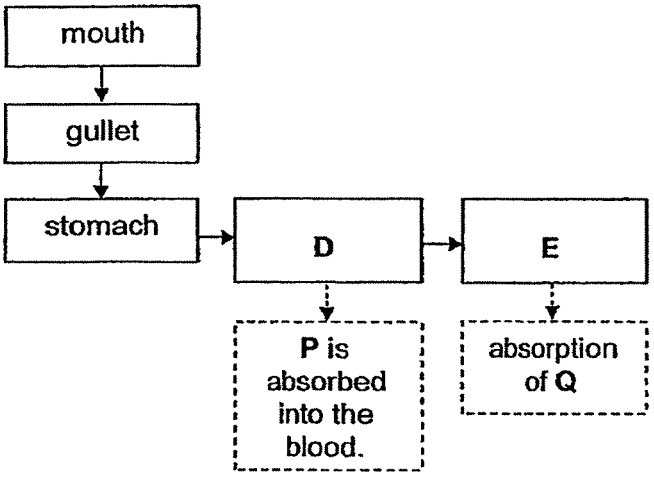
27. The diagram below shows the human digestive system.



(a) In which part(s) of the human digestive system, A, B, C, D and/or E, is digestive juice added? Tick (✓) your answer in the boxes provided. (1m)

1

27. The flow chart below shows the path of food in the human digestive system.



(b) Identify organs **D** and **E**. (1m)

Organ D: _____

Organ E: _____

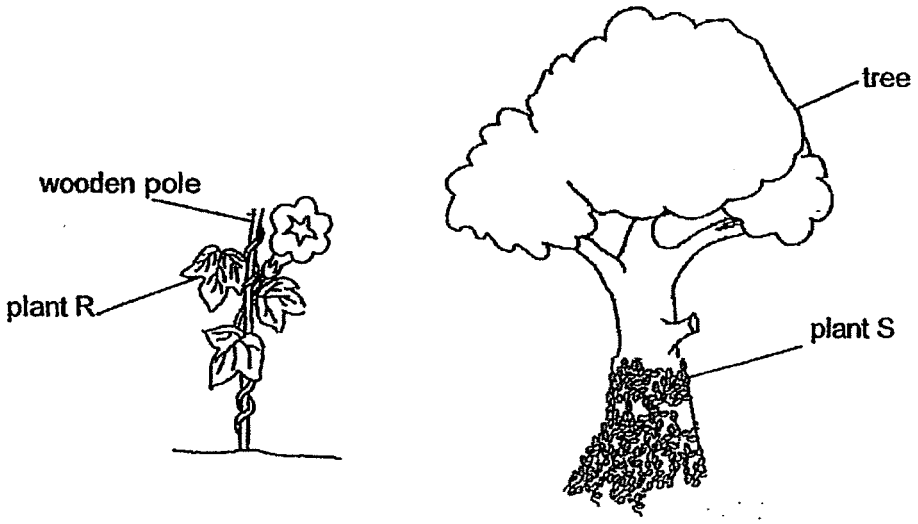
(c) Identify substances **P** and **Q**. (1m)

Substance P : _____

Substance Q : _____

2

28. Study the diagrams below.



Plant R grows around a wooden pole while plant S grows around a tree.

(a) Based on the diagrams shown, what is the common characteristic of the stems of plants R and S? (Do not compare size, shape and colour.) (1m)

_____

(b) Explain how the arrangement of the leaves at a higher position on the tree help plant S. (1m)

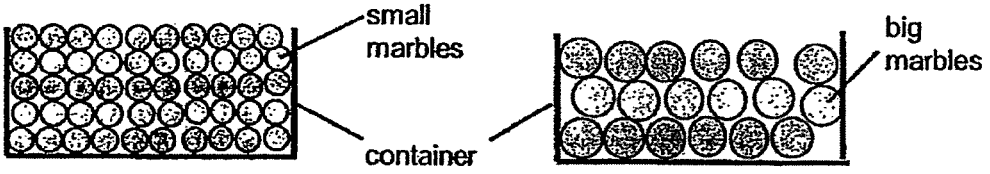
_____

(c) The skeletal system of the human body supports the body. Which part of the plant performs a similar function? (1m)

_____

3

29. Raymond filled up Container A with small marbles and Container B with big marbles. Containers A and B are of the same size. He then poured water into the containers until the water filled up to the brim of the containers. He recorded the amount of water poured in the table below.



Container A Container B

Container	Amount of water poured (ml)
A	?
B	50

(a) Based on the diagrams, predict if Raymond is able to pour **more** or **less** water into container A without water overflowing? (1m)

_____

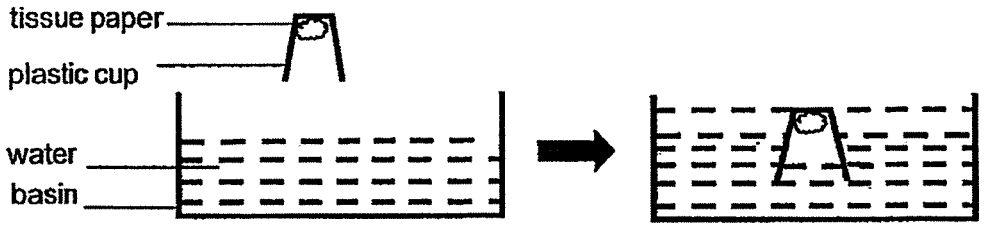
(b) Explain your answer in (a). (1m)

_____

_____

2

30. Caleb conducted an experiment as shown below. He pasted some tissue paper inside a plastic cup and pushed the cup into a basin of water as shown below.



The tissue paper felt dry when Caleb took it out of the cup.

(a) Explain why the tissue paper was dry. (2m)

_____

_____

(b) Did the volume of water in the basin **decrease, increase or remain the same** after the plastic cup was pushed into the basin? (1m)

_____

_____

3

31. Gabriel placed three discs, A, B and C, through a wooden holder as shown below in diagram 1. Two of the discs are magnets and one is an iron disc.

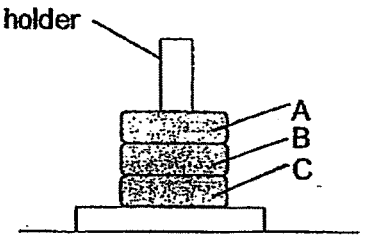


Diagram 1

Then, he changed the positions of the discs and noticed that disc C became suspended above disc A.

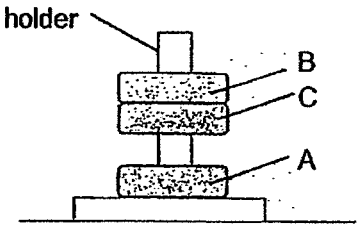


Diagram 2

(a) Based on the information above, complete the table below. (1m)

Disc	Is disc a magnet or an iron disc?
A	
B	

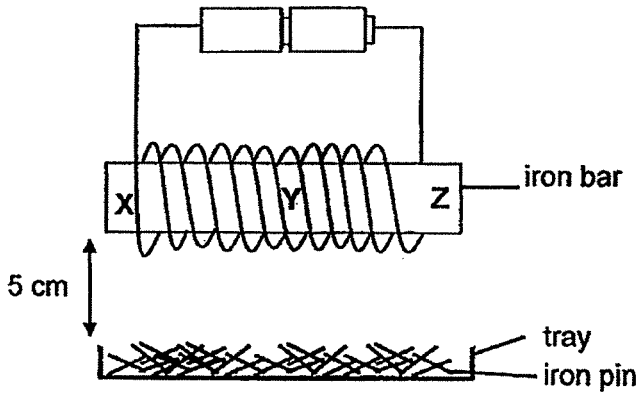
(b) Explain why disc C is suspended above disc A. (1m)

_____ _____

_____ _____

2

31. Gabriel constructed an electromagnet using an iron bar, as shown in the diagram below. The different parts of the iron bar were labelled X, Y and Z.



He placed a tray of iron pins 5 cm below the iron bar and recorded his observations in the table below.

Part of iron bar	X	Y	Z
Number of iron pins attracted to the iron bar	5	2	?

(c) Based on the information above, predict the number of iron pins attracted to part Z of the iron bar. Explain your answer.(1m)

_____

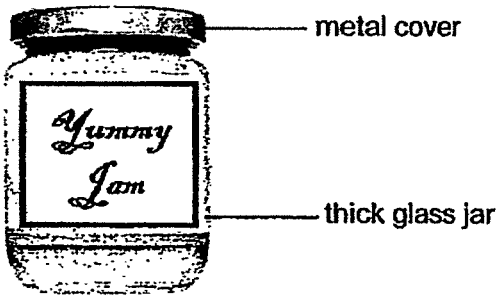
_____

(d) What is one way he could do to the set-up to attract more iron pins? (1m)

_____

2

32. Le Ming wanted to spread some jam on his bread. He tried to remove the metal cover but was unsuccessful.



He turned the jar over and dipped the metal cover into a basin of water for ten minutes. Then, he was able to open the cover.

(a) Did Le Ming use cold water or hot water? (1m)

_____

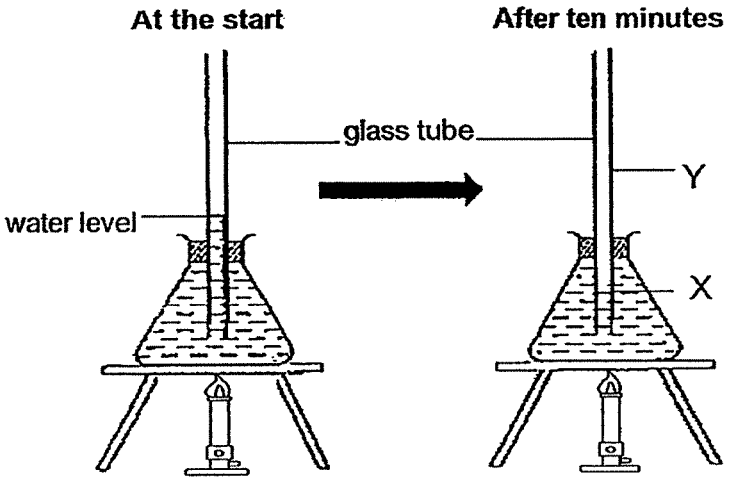
(b) Explain why Le Ming was able to open the cover of the bottle. (1m)

_____

_____

2

33. Jamie conducted an experiment as shown below. She observed the water level in the glass tube after the water in the flask had been heated for 10 minutes.



(a) At which position, X or Y, will the new water level be after heating? (1m)

_____

(b) Explain your answer in (a). (2m)

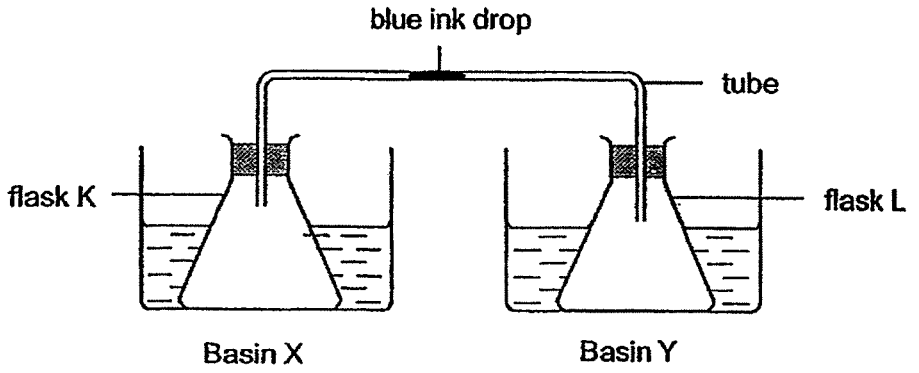
_____

_____

_____

3

34. Jay carried out an experiment as shown below.



Jay placed flask K into basin X and flask L into basin Y. Both basins contained water of different temperatures. After some time, he observed that the drop of blue ink moved away from flask K towards flask L. The temperature of the surrounding was 30°C.

(a) What are the most likely temperatures of the water in basins X and Y? Fill out the table with letters X and Y.(1m)

Basin	Temperature
	80°C
	10°C

(b) Explain how did the ink drop move from flask K to flask L. (2m)

_____

_____

(c) What will be the temperature of the water in basin Y after six hours? (1m)

_____

_____

End of Booklet B

4

2019 P4 SA1 SCIENCE ANSWER

Mr Gan Exam Paper 9299 8971 8606 5443

Booklet A

1	(3)	6	(4)	11	(2)	16	(1)	21	(3)
2	(2)	7	(2)	12	(4)	17	(3)	22	(2)
3	(1)	8	(1)	13	(4)	18	(4)	23	(2)
4	(3)	9	(1)	14	(1)	19	(1)	24	(4)
5	(4)	10	(1)	15	(3)	20	(3)		

Booklet B: Open-ended Questions

25a	Organism A **cannot move or its own** and **reproduce by spores**
25b	(i) cockroach: D (ii) apple tree: B
25c	Presence of **water**
25d	**Shoes Y** as there is **presence of** **water** so mould will grow.
26a	X: **larva** Y: **pupa**
26b	Both life cycles start with **a fertilized** egg in their life cycle.
26c	<table><tr><th>Stage</th><th>Observation</th></tr><tr><td>5</td><td>The seed leaves shrink in size and drop off.</td></tr><tr><td>3</td><td>The shoot emerges from the seed.</td></tr><tr><td>2</td><td>The roots emerge from the seed.</td></tr><tr><td>4</td><td>The leaves appear.</td></tr><tr><td>1</td><td>The seed coat breaks open.</td></tr></table>
26d	Yes. There is **water, oxygen, warm** for germination to take place.
27a	Boxes: A, C and D should be ticked.
27b	D: **small intestine** E: **large intestine**
27c	P: **digested food** Q: **water**
28a	Both plants R and S have **weak stems**
28b	Leaves reach a higher position to trap **more** sunlight to make **more** food

28c	It is the stem of a plant.
29	Raymond will be able to pour less water. There is less space between the small marbles that allows more water to occupy the spaces.
30a	Air occupies space in the cup. There was no more space for water to enter.
30b	The volume of water remains the same .
31a	<table><tr><th>Disc</th><th>Is disc a magnet or an iron disc?</th></tr><tr><td>A</td><td>magnet</td></tr><tr><td>B</td><td>iron</td></tr></table>
31b	Like poles of discs A and C were facing and they repel .This shows that they are both magnets.
31c	3/4/5 pins. Magnetic strength is the greatest at the poles of a magnet . Both **X and Z are the poles of the magnet** so they attracted the greatest number of pins.
31d	He can add more batteries to the set-up.
32a	He should use not water
32b	The metal cover gained heat from the hot water and expanded
33a	Position Y.
33b	Water in the flask gained heat from the burner and **expanded** to occupy more space. There was **no more space in the flask** so the water moved upwards.
34a	<table><tr><th>Basin</th><th>Temperature</th></tr><tr><td>X</td><td>80°C</td></tr><tr><td>Y</td><td>10°C</td></tr></table>
34b	Air in flask K gained heat from the hot water and expanded . There was no more space in the flask so the air pushed the ink drop towards flask L.
34c	The temperature of the water in basin Y will be 30°C .