St Hilda's Primary School
Primary 4
Science
Term 3 Weighted Assessment, 2024

Section A	20
Section B	15
Total Score	35

Name: _____ ( )

Class: P4 / _____
Duration: 45 minutes
Total no. of pages: 13

Date: 16 August 2024

Section A: 20 Marks

Parent's Signature: _____

For questions 1 to 10, write your answer (1, 2, 3 or 4) in the bracket provided.
[2 marks each]

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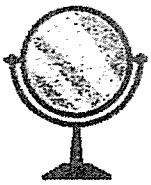
1. Which one of the following is a source of light?

(1)

moon

(2)

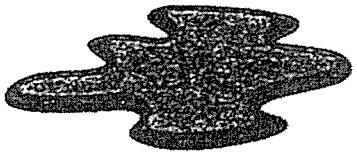


mirror

(3)

lit matchstick

(4)

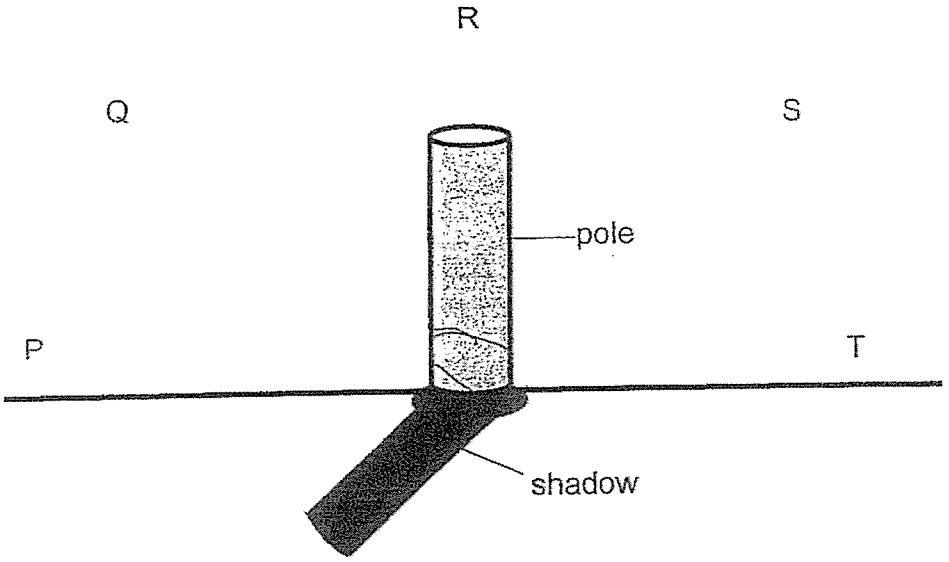


puddle of water

( )

SCORE	2

2. Study the diagram below. There are two light sources shining on the pole.



Based on the diagram, which of the following statements are correct?

A The light sources were at Q and T only.

B The light sources were at R and S only.

C The pole is made of a material that allows most light to pass through.

D The pole is made of a material that does not allow light to pass through.

(1) A and C only

(2) A and D only

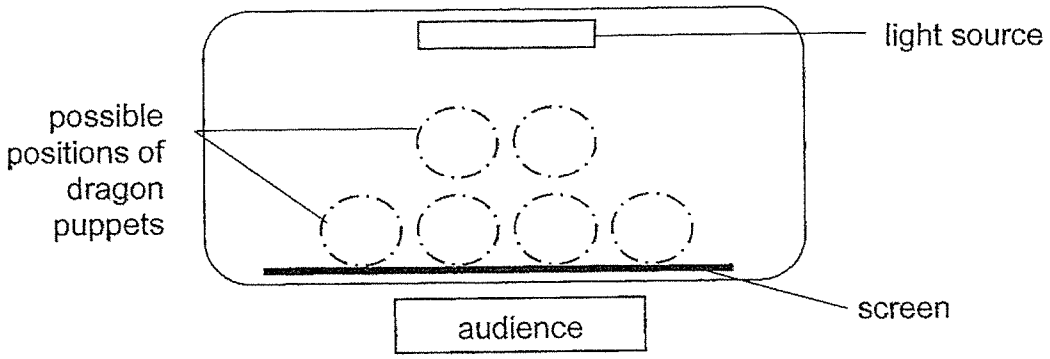
(3) B and C only

(4) B and D only

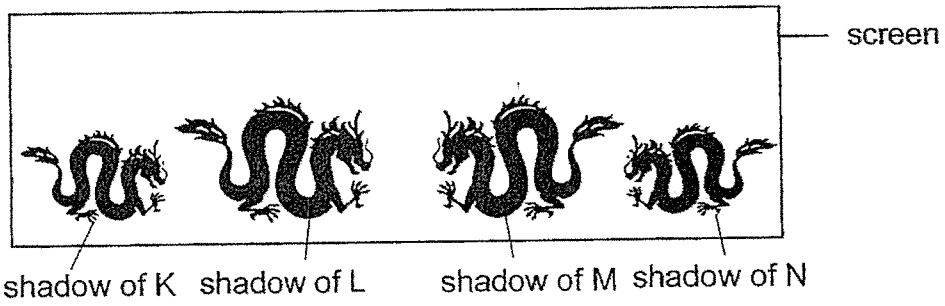
( )

SCORE	2

3. The diagram below shows the top view of the stage for a dragon puppet show.

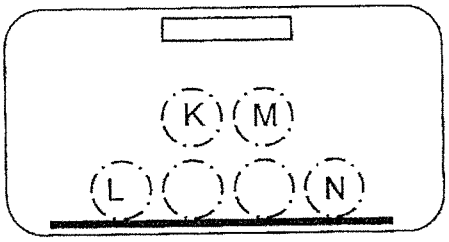


The four dragon puppets, K, L, M and N are of the same height and size. The audience saw the shadows of the dragon puppets on the screen as shown below.

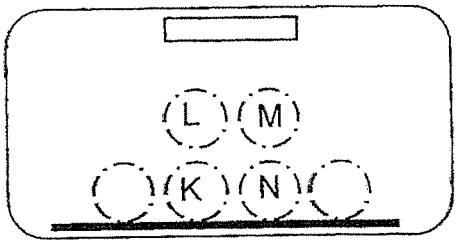


Which one of the following shows the correct positions of the dragon puppets K, L, M and N on the stage?

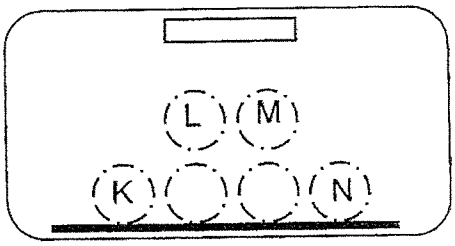
(1)



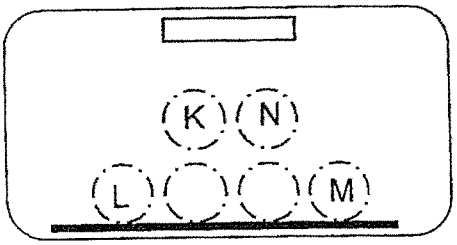
(2)



(3)



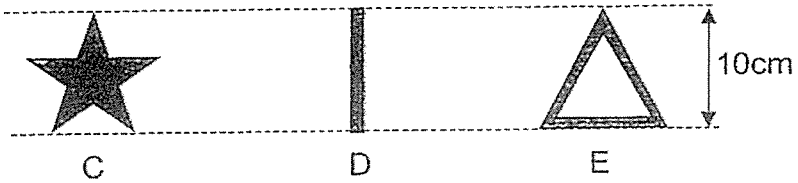
(4)



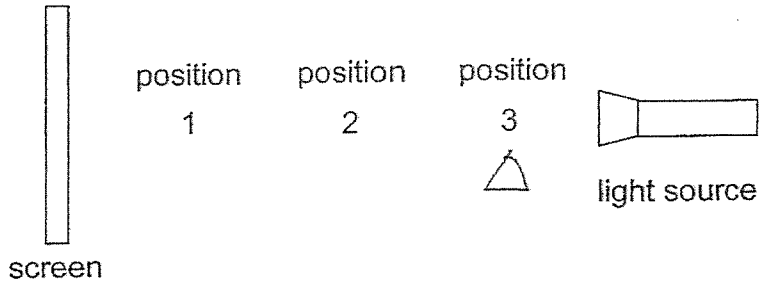
( )

SCORE	2

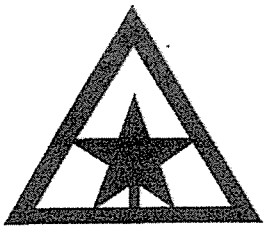
4. The diagram shows three objects, C, D and E of the same height.



The three objects are placed at different positions, 1, 2 and 3 between a screen and a light source.



Which positions, 1, 2 or 3, should the objects be placed at to form the shadow below?

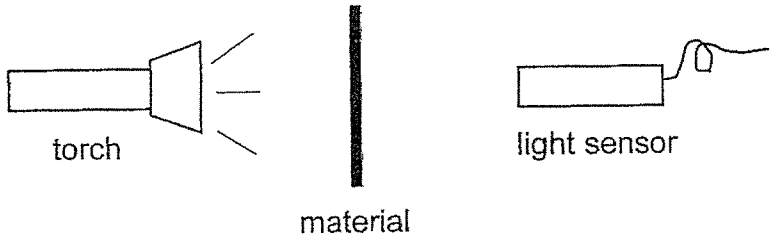


	Position 1	Position 2	Position 3
(1)	D	C	E
(2)	C	E	D
(3)	E	D	C
(4)	E	C	D

( )

SCORE	/ 2

5. Raine had three different types of material, D, E and F. She shone a torch at each material and recorded the amount of light passing through with a light sensor for 15 seconds.

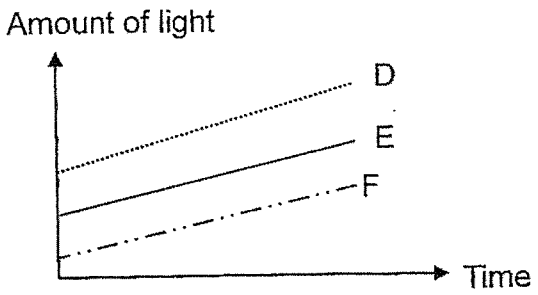


Her observations are shown below.

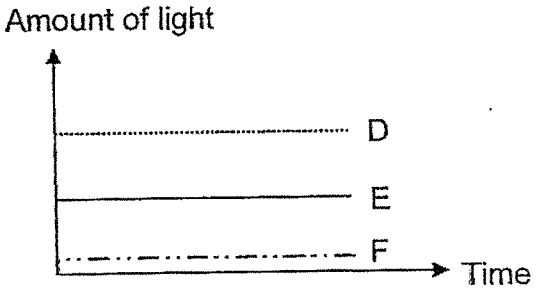
Material	Amount of light passed through
D	most light
E	some light
F	very little light

Which graph shows her results correctly?

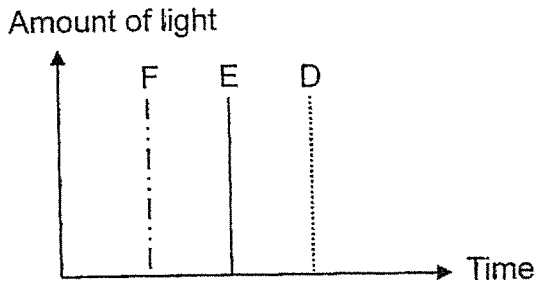
(1)



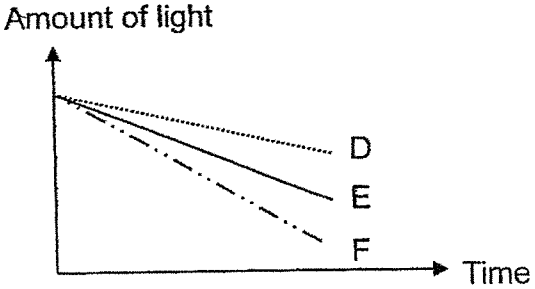
(2)



(3)



(4)



( )

SCORE	2

6. Felisha put a metal bowl and a wooden bowl in the refrigerator overnight. When she removed the bowls from the refrigerator at the same time, her hands felt that the metal bowl was colder than the wooden bowl.

Which one of the following best explains why her hands felt that the metal bowl was colder than the wooden bowl?

(1) The metal bowl lost heat faster to her hands than the wooden bowl.

(2) The metal bowl gained heat faster from her hands than the wooden bowl.

(3) The metal bowl allowed coldness to travel faster to her hands.

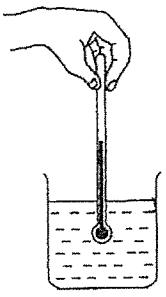
(4) The metal bowl was a poorer conductor of heat than the wooden bowl.

( )

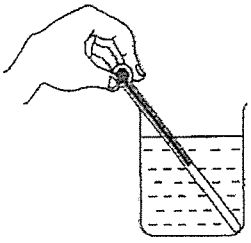
7. Sally used a thermometer to measure the temperature of water in a beaker.

Which one of the following shows the correct position of the thermometer when taking the temperature reading?

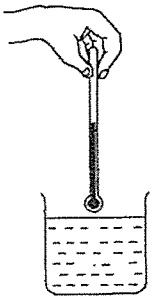
(1)



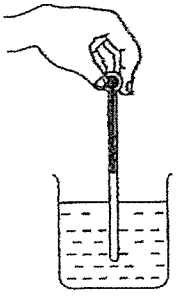
(2)



(3)



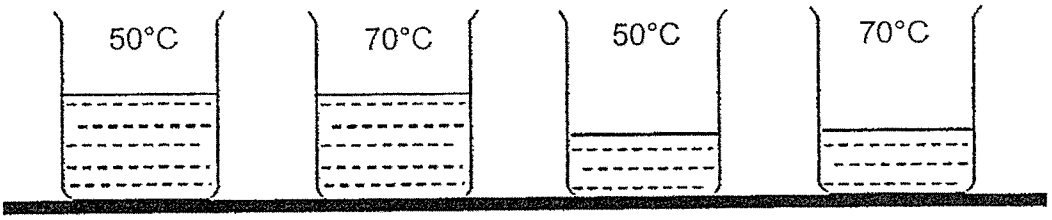
(4)



( )

SCORE	4

8. Dennis prepared four beakers of water of different volumes and temperatures.



Which beaker had the least amount of heat?

(1) A

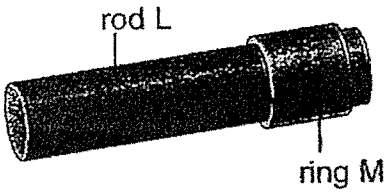
(2) B

(3) C

(4) D

( )

9. Ring M and rod L are made of metals. Both are stuck together as shown in the diagram below.



Which of the following is the best way to separate ring M from rod L?

(1) Heat rod L and put ice over ring M.

(2) Heat both ring M and rod L over a flame.

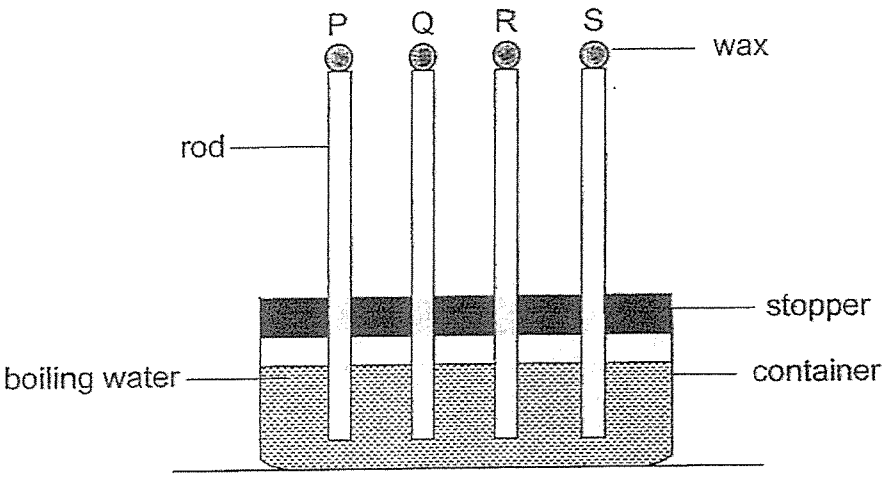
(3) Put ring M and rod L in a beaker of ice cubes.

(4) Heat ring M and put rod L in a beaker of ice cubes.

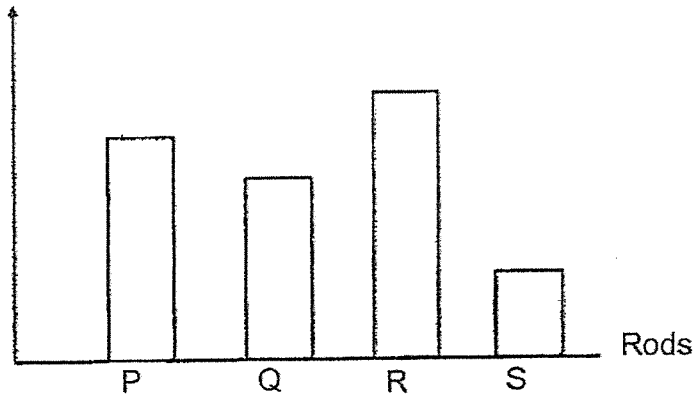
( )

SCORE	4

10. Raja set up an experiment with four identical sized rods, P, Q, R and S made of different materials. The rods were placed into a container of boiling water. He put an equal amount of wax on the tip of each rod.



He then recorded the time taken for the wax to melt and fall off each rod. The results are shown in the graph below.



Which material of the rods is most suitable for making a container to keep hot food hot and cold drinks cold for the longest period of time?

(1) P

(2) Q

(3) R

(4) S

( )

SCORE	2

Section B: 15 marks

For questions 11 to 14, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

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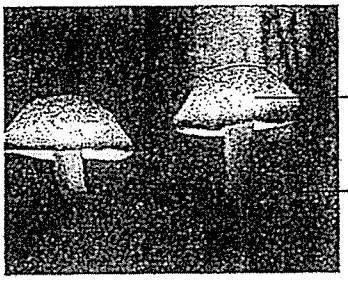
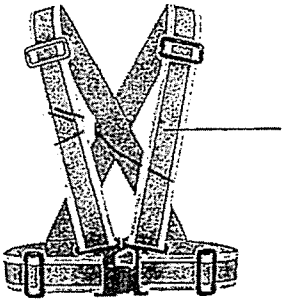
11. Mike went to MacRitchie reservoir one night for a jog and spotted some glowing mushrooms growing in the soil.



(a) Explain why Mike was able to spot the glowing mushrooms in the dark. [1]

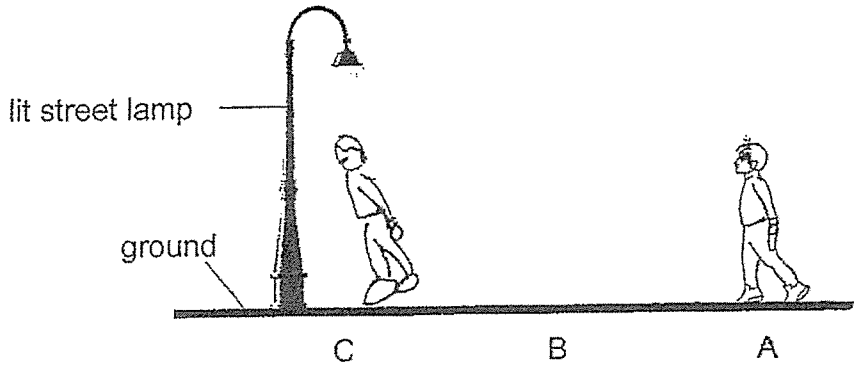
On his way home, Mike saw a group of cyclists wearing reflective safety vests as they were cycling past him along the road.



(b) Explain how the reflective strip on the vest keeps the cyclist safe on the road. [2]

SCORE	/ 3

12. Ali walked from position A to C as shown below.



(a) Explain how a shadow is formed? [1]

The length of Ali's shadow on the ground at position A, B and C was measured and recorded in the table below as he walked from A to C.

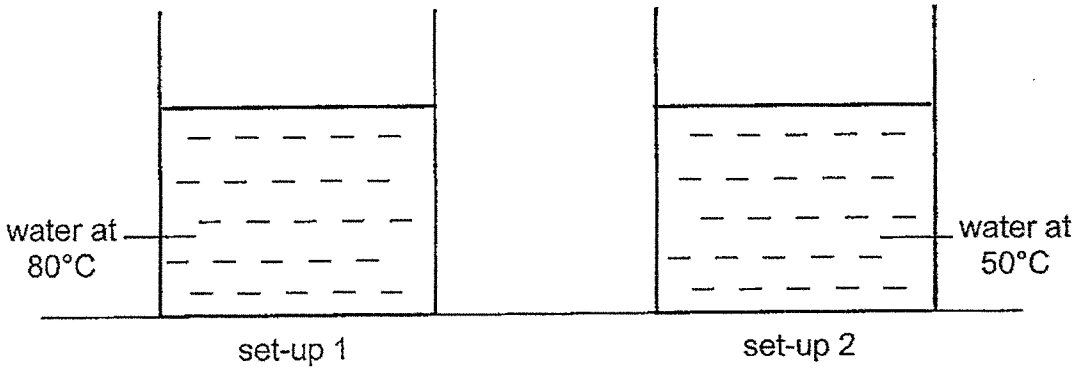
Position	Length of shadow on the ground (cm)
A	150
B	100
C	50

(b) State how the length of shadow changed as Ali walked from A to C? [1]

(c) Explain why the length of shadow on the ground at position C is the smallest in length? [2]

SCORE	/ 4

13. Fika conducted an experiment to find out if the temperature of water will affect the time taken for the water to cool down. She filled two identical containers with the same volume of water but of different temperatures as shown below.



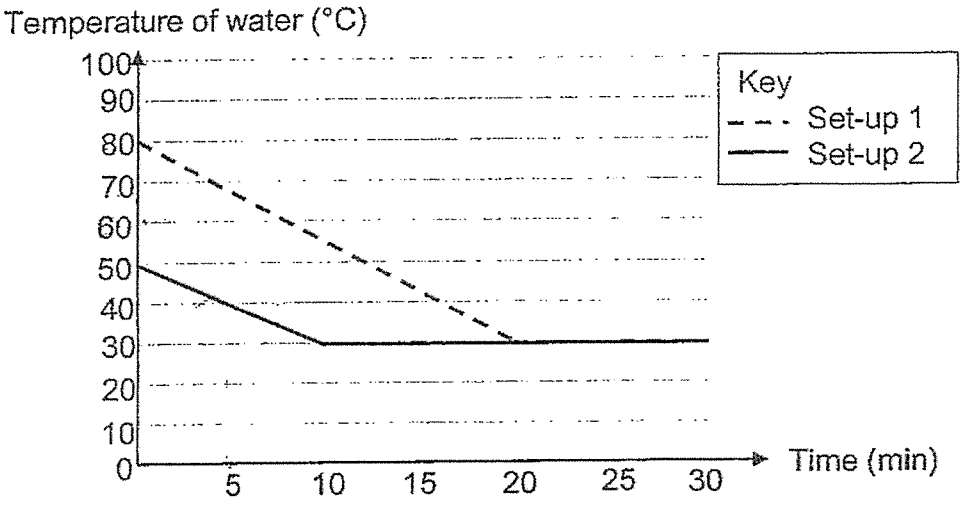
(a) Tick (✓) the variable(s) that Fika should keep constant to ensure that the experiment is fair. [1]

Variables	To be kept constant
Type of container	
Temperature of surrounding	
Volume of water in the container	
Temperature of water in the container	

(Continued on next page)

SCORE	/ 1

Fika then left both set-ups to cool for 30 minutes. She measured the temperature of the water in both containers at every 5-minute interval and plotted the graph as shown below.



(b) Based on the graph, state the room temperature. [1]

_____

(c) State the time taken for the temperature of water in set-up 2 to reach 40°C. [1]

_____

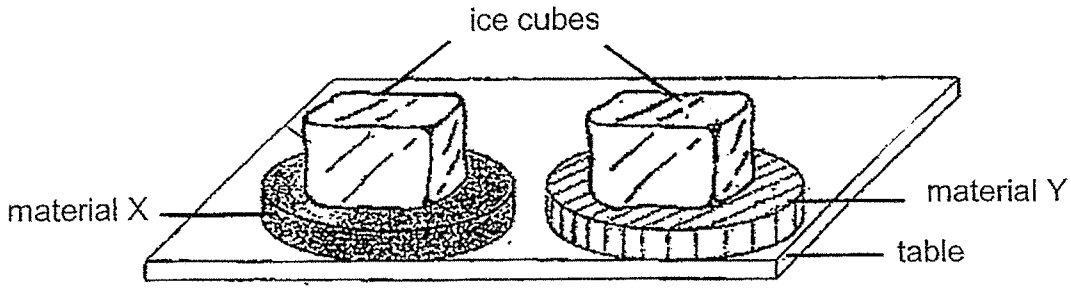
(d) Explain why the temperature of water in both setups decreases? [1]

_____

_____

SCORE	3

14. Yuheng wanted to find out which material, X or Y, is a better conductor of heat. He prepared the setups in a room as shown below.



After five minutes, Yuheng observed that the ice cube on material X was bigger than the ice cube on material Y.

(a) Based on the experiment above, which material, X or Y, is a better conductor of heat? Explain your answer. [2]

_____

_____

_____

(b) Which material X or Y will be most suitable to be used to make a cup so that Yuheng can hold the cup of hot drink in his hands without being burnt? Explain your answer. [2]

_____

_____

_____

SCORE	/ 4

END OF PAPER

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ST. HILDA'S PRIMARY SCHOOL
PRIMARY 4 SCIENCE
TERM 3 WEIGHTED ASSESSMENT, 2024
Simplified Answer Key

Section A

1.	**3**	6.	**2**
2.	**4**	7.	**1**
3.	**3**	8.	**3**
4.	**1**	9.	**4**
5.	**2**	10.	**3**

Section B

This simplified answer key only provides a reference and the key concepts have been bolded. Variation of students' answers have been accepted if they have shown conceptual understanding.

11 (a)	The mushroom gives off its own light and the light enters Mike's eyes.
(b)	The reflective stripes reflect light from the light source into Mike's eyes so driver can see the cyclist clearly.
12 (a)	Shadow is formed when light is partially or completely blocked by an (opaque) object.
(b)	The length of shadow decreased.
(c)	At position C, he is nearest/closest to/ under the light source. So, he blocks least amount of light from the lamp.
13 (a)	
(b)	30°C
(c)	5 minutes
(d)	The hot water in the container loses heat to the surrounding.
14 (a)	Claim: Y Evidence: The ice cube on Y melted faster. Reason: Heat travels faster from material Y to ice cube.
14 (b)	Claim: X Evidence: The ice cube melted slower. Reason: X is a poorer conductor of heat so heat will travel slower from the cup made of X to his hands.

Variables	To be kept constant
Type of container	✓
Temperature of surrounding	✓
Volume of water in container	✓
Temperature of water in the container	

END