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Nan Hua Primary School  
 Primary 4 Science  
 Term 3 Weighted Assessment 2024

Marks	
Section A:	/10
Section B:	/10
<b>Total:</b>	<b>/20</b>

Name: \_\_\_\_\_ (      )

Class: Primary 4/ \_\_\_\_\_

Date: \_\_\_\_\_

Duration: 30 minutes

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

**Answer all questions.**

**Section A: (5 x 2 marks = 10 marks)**

For each question from 1 to 5, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the brackets provided.

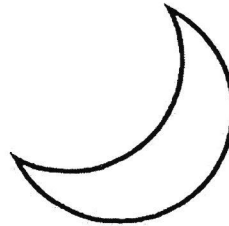
1 Which of the following is a source of light?

(1)



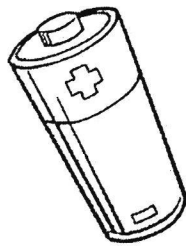
lighted candle

(2)



moon

(3)



battery

(4)



mirror

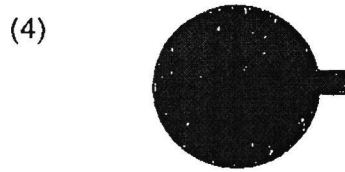
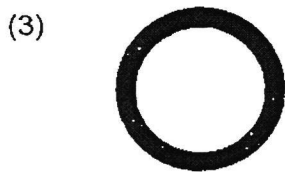
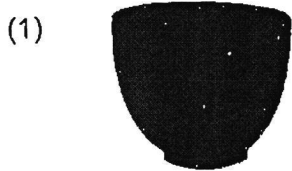
(      )

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2 The diagram below shows a teacup.

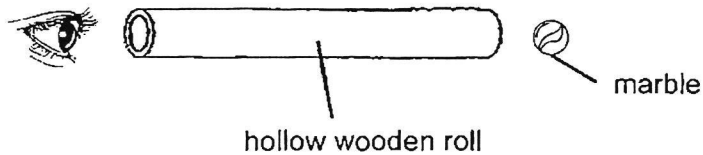


Which of the following shadows **cannot** be formed by the teacup?



( )

3 Hayley used a hollow wooden roll to look through a marble as shown in the diagram below.



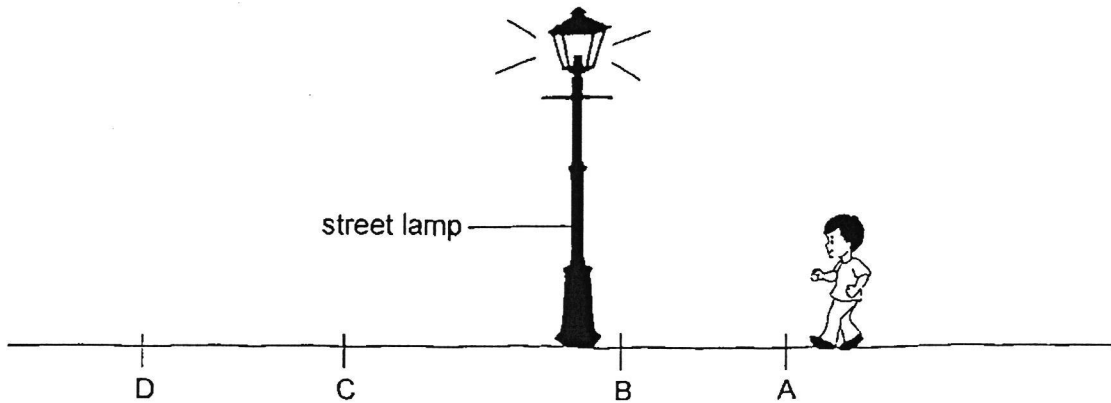
Why was Hayley able to see the marble through the hollow wooden roll?

- A Light is reflected away from her eye.
- B Light given out by the marble enters her eye.
- C Light reflected by the marble enters her eye.

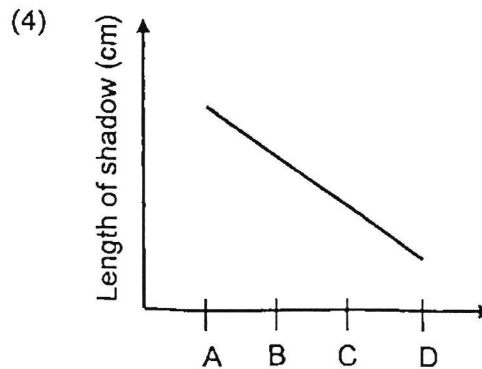
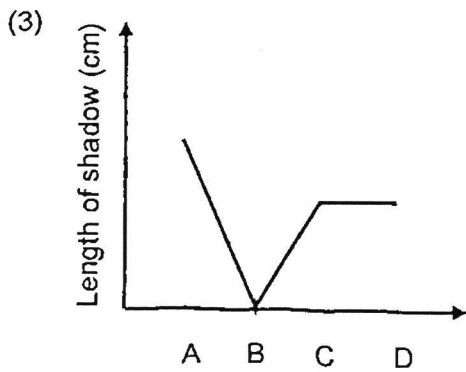
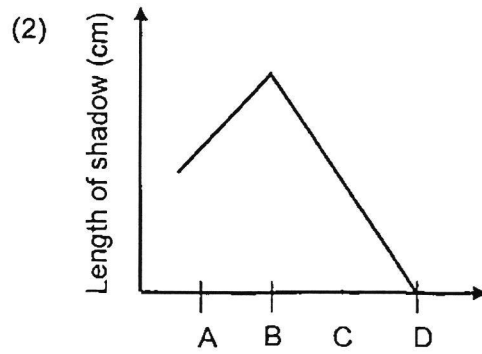
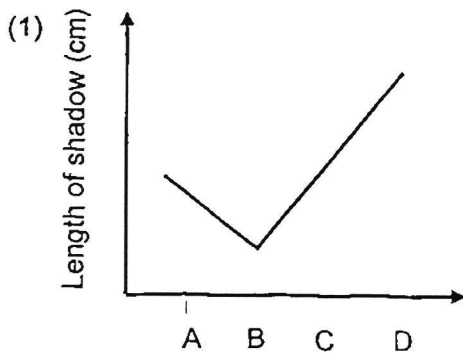
- (1) B only
- (2) C only
- (3) A and B only
- (4) A and C only

( )

- 4 The diagram below shows a boy walking on the street at night.

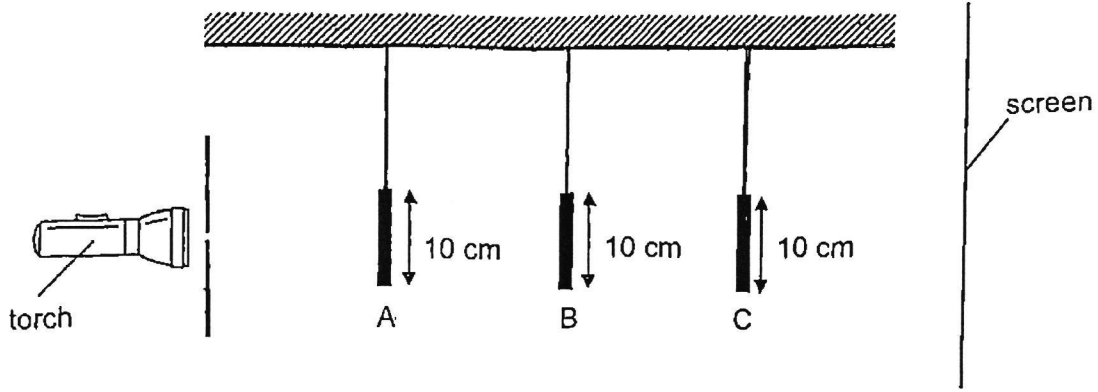


Which of the following graphs shows how the length of the boy's shadow changes from points A to D under the lit street lamp?

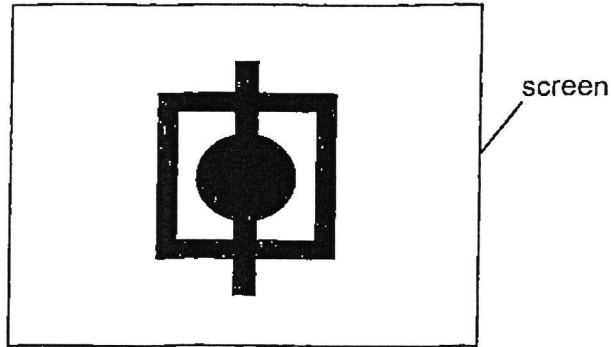


( )

- 5 The set-up below shows light shining on three wooden objects, A, B and C. They are placed at different distances from the torch.



The diagram below shows the shadow of the objects formed on the screen.



What are objects A, B and C?

	A	B	C
(1)		□	●
(2)	□	●	
(3)	●		□
(4)	●	□	

( )

Total score for Section A	/
	10

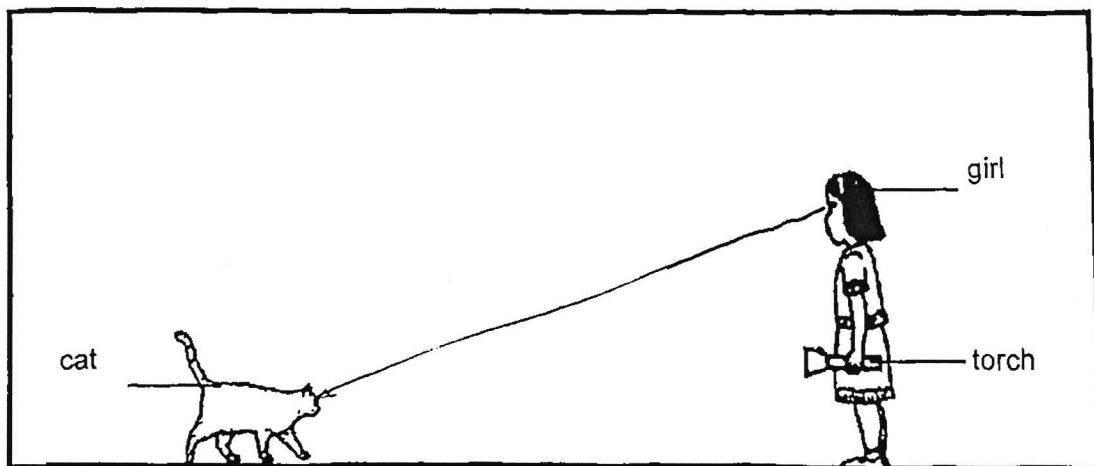
**Section B: Structured questions (10 marks)**

For questions 6 to 8, write your answers in the space provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

- 6 The diagram shows a girl using a torch to see a cat in front of her.



- (a) Using a ruler and a pencil, **draw one more line and two arrows** in the diagram below to correctly show the path of light so that the girl can see the cat. [2]

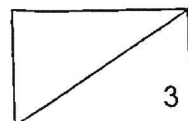


- (b) State a property of light that is shown from your drawing. [1]

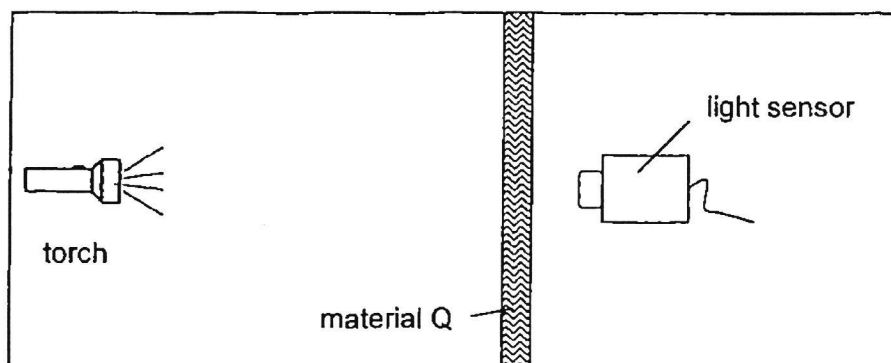
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- 7 An experiment was conducted in a dark room. The diagram below shows the set-up to find out the amount of light that can pass through two types of materials, Q and R, of the same thickness and length.



The results are shown in the table below.

Material	Amount of light detected by the light sensor (units)
Q	0
R	380

- (a) State the variable to be changed in this experiment. [1]

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- (b) Which material, Q or R, is more suitable to make a toilet door that provides privacy for the user? Explain your answer. [2]

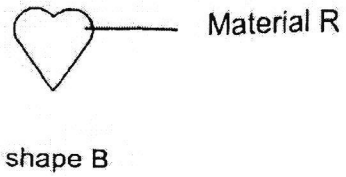
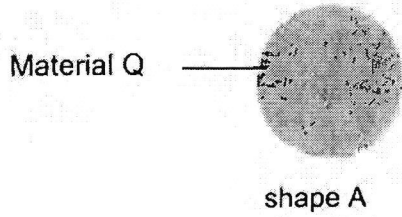
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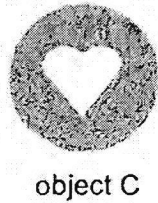
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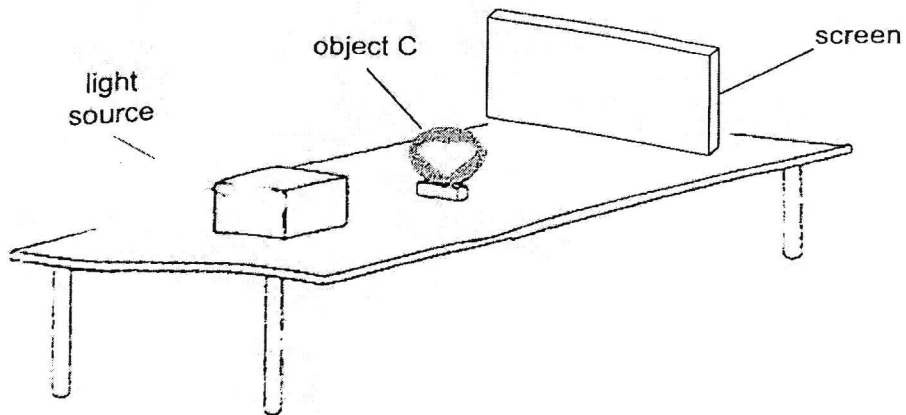
Two different shapes were cut out from materials Q and R.



Shapes A and B were glued together to form object C as shown below.

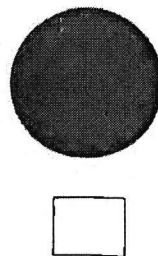
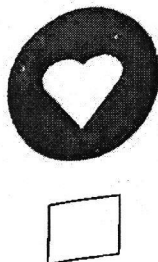


A light source was shone on object C and a shadow was formed on the screen.

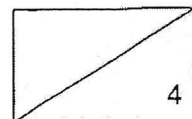


(c) Put a tick ( ) in one of the boxes below to show the shadow of object C that will be formed on the screen.

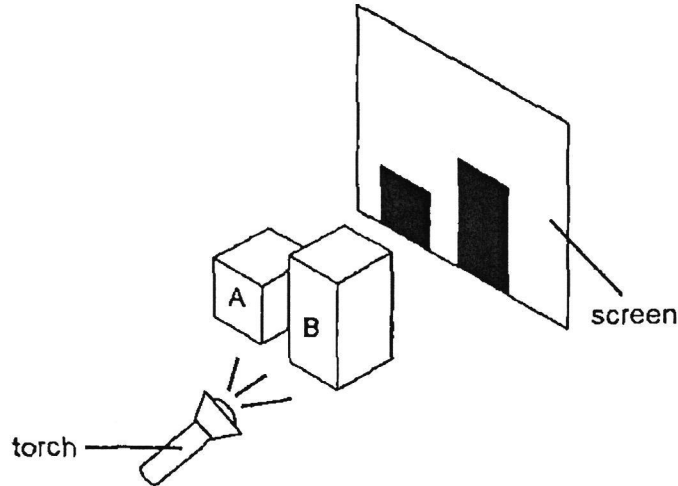
[1]



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- 8 Marcus placed two wooden boxes of different heights, A and B, in front of a screen and shone a torch on them as shown in the diagram below.



- (a) Explain how the two shadows are formed on the screen. [1]

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- (b) Moving only box A, suggest how Marcus can make the height of the shadow of box A taller than the height of the shadow of box B. [1]

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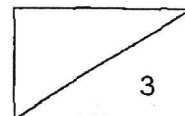
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- (c) Marcus replaced the wooden boxes with boxes made of a different material. He noticed that a lighter shadow was formed. State a reason why a lighter shadow was observed. [1]

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End of Paper

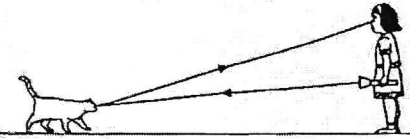



**Term 3 Weighted Assessment 2024  
ANSWER KEY**

**Section A**

Qn	Answer
1	1
2	3
3	2
4	1
5	1

**Section B:**

Qn	Answer
6a	
6b	Light travels in straight lines. / Light is reflected from the object into the eye.
7a	the <b>type</b> of material
7b	Ch : Material Q E : <b>No light</b> is detected by light sensor for material Q. C : Material Q is opaque. / Material Q <b>does not allow any light to pass through</b> . L : Hence, it will <b>ensure privacy</b> for the user of the toilet. / so others cannot see the user in the toilet.
7c	
8a	The shadows are formed when the <b>light</b> from the torch <b>is blocked by the boxes</b> .
8b	Move box A <b>closer to the torch</b> / <b>away from the screen</b> .
8c	The new boxes <b>allow some light to pass through/ blocks some light</b> thus a lighter shadow is formed. / The new boxes are made of <b>translucent material</b> .