



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

Name: _____ ()

Class: Primary 4/ _____

Date: _____

Duration: 30 minutes

| Marks | |
|---------------|------------|
| Section A: | /10 |
| Section B: | /10 |
| Total: | /20 |

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.

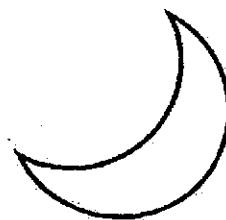
- 1 Which of the following is a source of light?

(1)



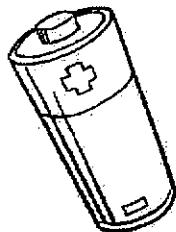
lighted candle

(2)



moon

(3)



battery

(4)



mirror

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(Go on to the next page)

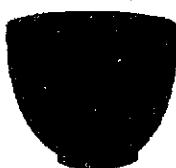
This booklet consists of 8 printed pages.

- 2 The diagram below shows a teacup.



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

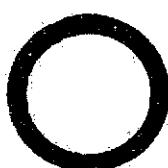
(1)



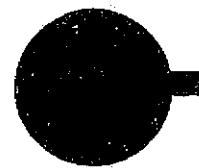
(2)



(3)

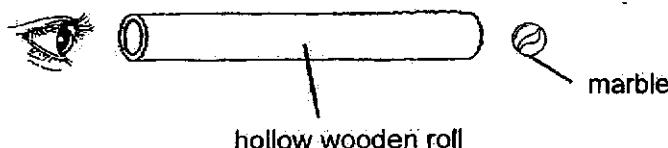


(4)



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



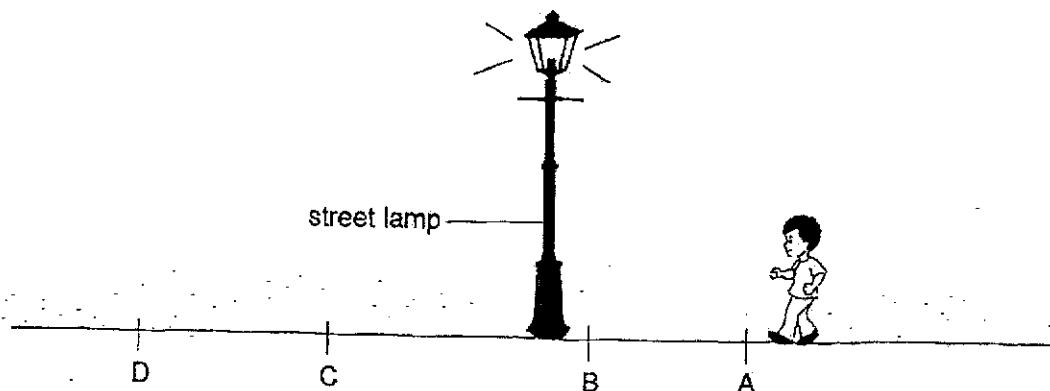
Why was Hayley able to see the marble through the hollow wooden roll?

- 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.

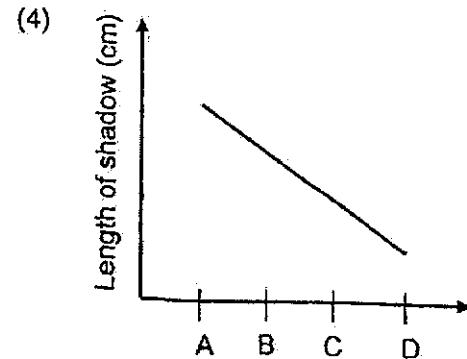
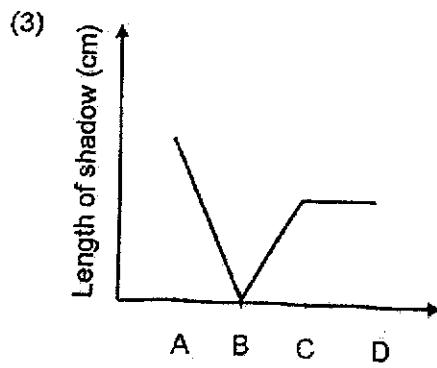
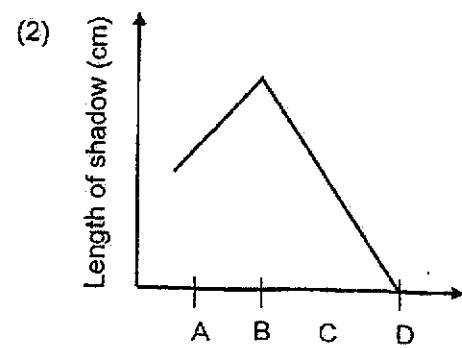
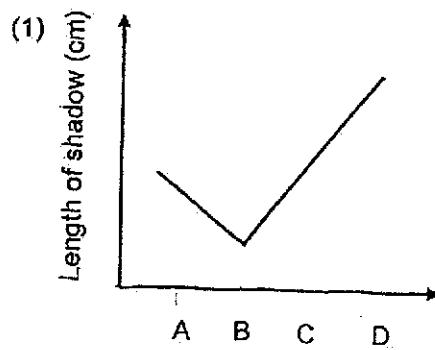
- (1) B only
(2) C only
(3) A and B only
(4) A and C only

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

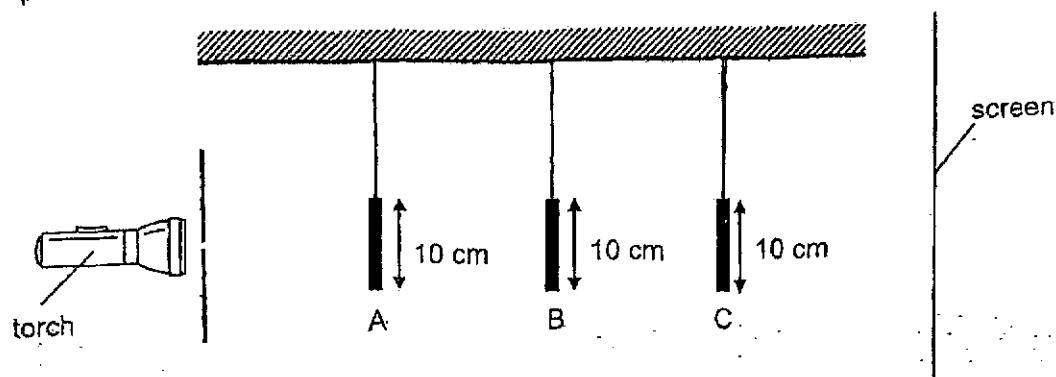


Which of the following graphs shows how the length of the boy's shadow changes from points A to D under the lit street lamp?

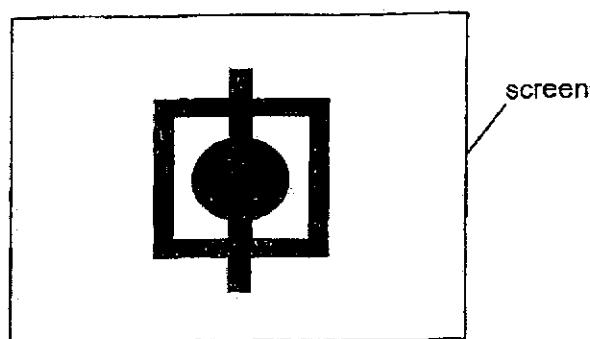


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- 5 The set-up below shows light shining on three wooden objects, A, B and C. They are placed at different distances from the torch.



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) | ○ | □ | |

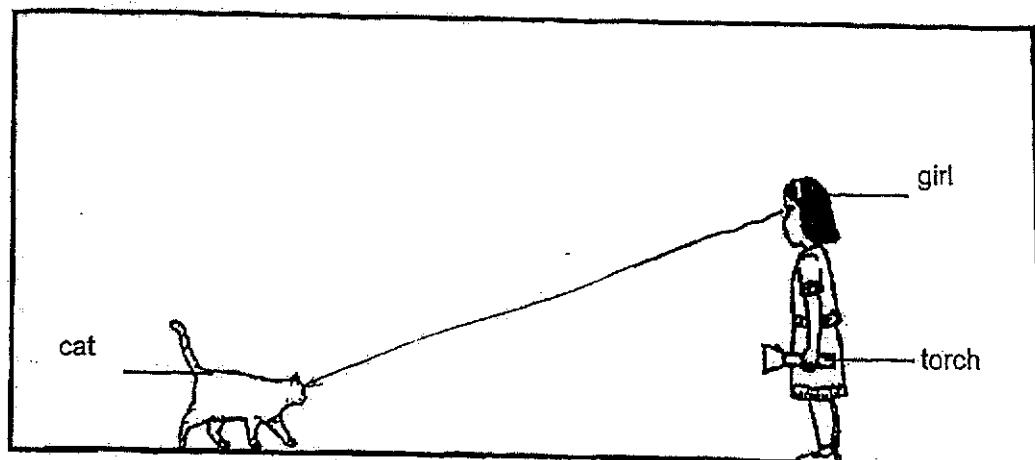
Section B: Structured questions (10 marks)

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.

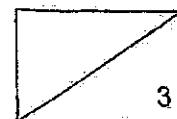


- (a) Using a ruler and a pencil, draw one more line and two arrows in the diagram below to correctly show the path of light so that the girl can see the cat. [2]

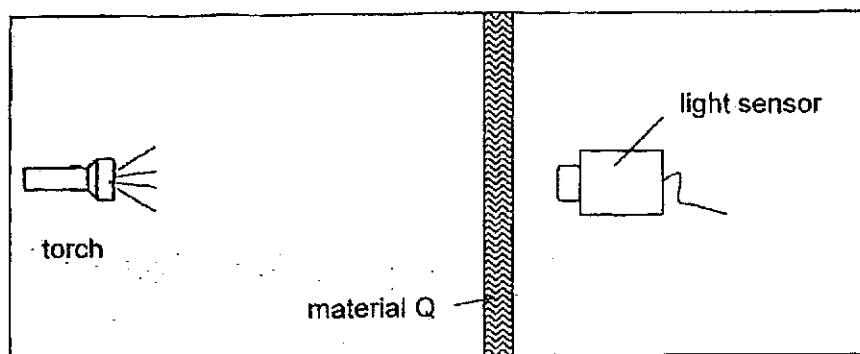


- (b) State a property of light that is shown from your drawing. [1]

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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 |

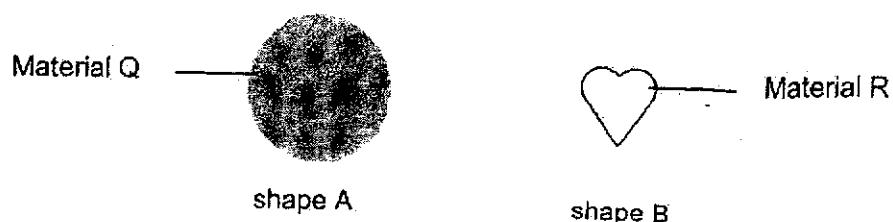
- (a) State the variable to be changed in this experiment.

[1]

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

[2]

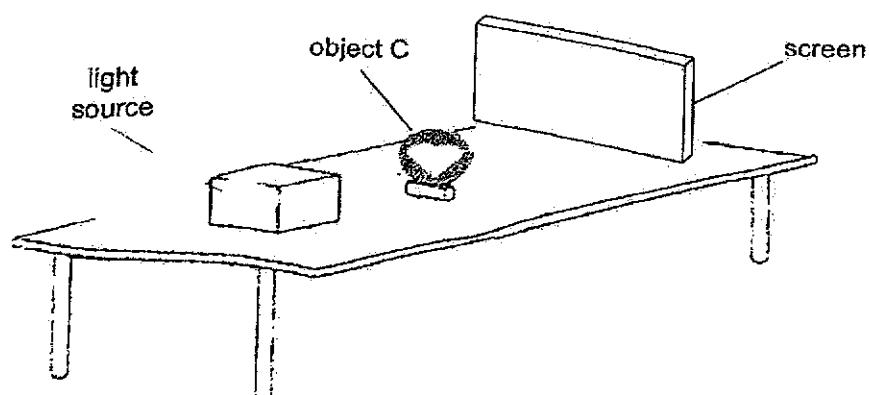
Two different shapes were cut out from materials Q and R.



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



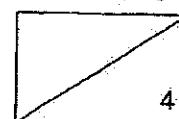
A light source was shone on object C and a shadow was formed on the screen.



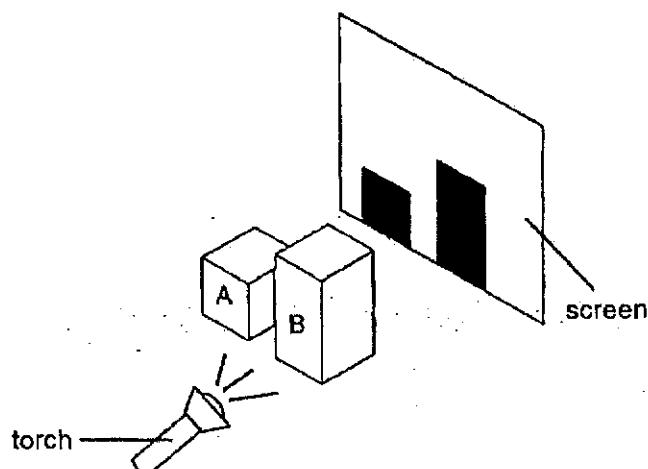
- (c) Put a tick () in one of the boxes below to show the shadow of object C that will be formed on the screen. [1]



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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.

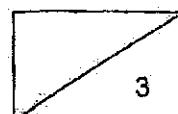


- (a) Explain how the two shadows are formed on the screen. [1]

- (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]

- (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]

End of Paper

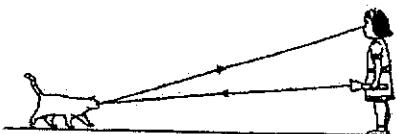
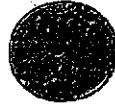


**Term 3 Weighted Assessment 2024
ANSWER KEY**

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

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