# ANGLO-CHINESE SCHOOL (JUNIOR)

## SEMESTRAL ASSESSMENT 2 (2009)
## PRIMARY 4

## SCIENCE
## BOOKLET A

**Tuesday** **3 November 2009** **1 hour 30 minutes**

**Name** : _____ (  )

**Class** : **P 4**_____

**INSTRUCTIONS TO PUPILS**

**DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO**

Follow all instructions carefully.
There are 20 questions in this booklet.
Answer **ALL** questions.

**INFORMATION FOR PUPILS**

The total marks for this booklet is 40.
The total time for Booklets A and B is 1 hour 30 minutes.

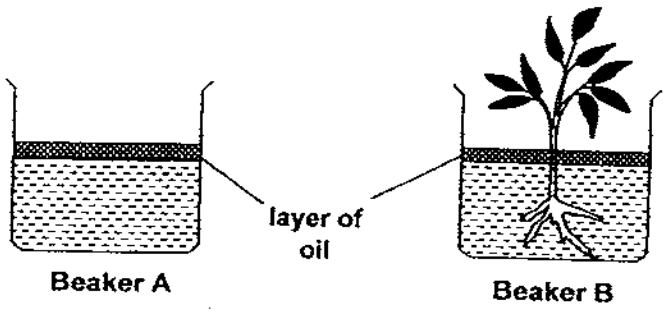
**This question paper consists of 10 printed pages. (Inclusive of cover page)**

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**Section A (40 marks)**

For each question from 1 to 20, four options are given. One of them is the correct answer. Choose the correct option (**1, 2, 3 or 4**) and shade the correct oval on the Optical Answer Sheet (OAS) provided.

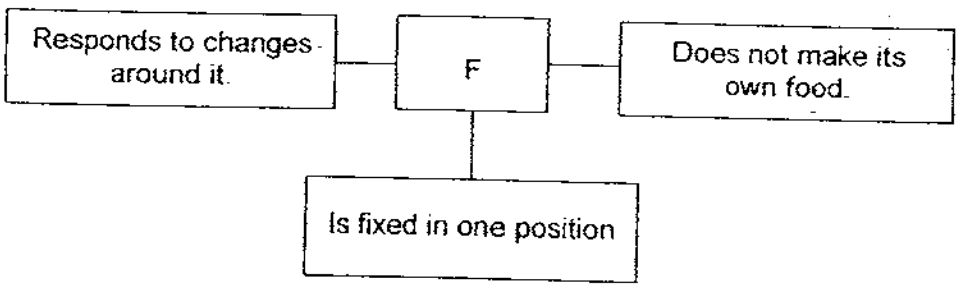
1 The diagram below shows two identical beakers, A and B, each containing 300ml of water and the same volume of oil. Brian put a plant in beaker B and placed both beakers on a table near the window.




Brian took out the plant from Beaker B after 3 days. Which one of the following shows the most likely amount of water left in the two beakers at the end of the experiment?

| | Volume of water left in Beaker A (ml) | Volume of water left in Beaker B (ml) |
|---|---|---|
| (1) | 300 | 300 |
| (2) | 250 | 280 |
| (3) | 300 | 250 |
| (4) | 280 | 250 |

2 Study the concept map below.




Which one of the following can F be?

(1) snail
(2) pine tree
(3) basketball
(4) mushroom



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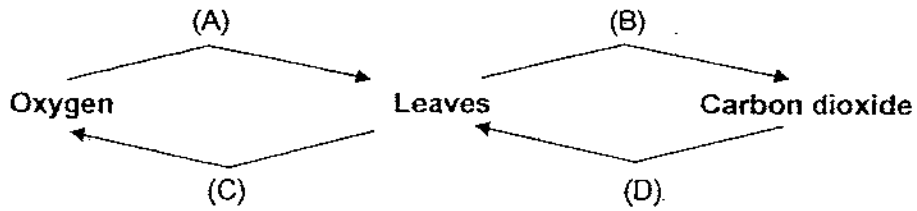
3 Mrs Lee asked the class, "In which parts of the digestive system can digestive juices be found?" Some of her pupils gave the following answers:

| | |
|---|---|
| Lisa | : gullet and large intestine |
| Marie | : mouth, gullet and stomach |
| Samuel | : mouth, stomach and small intestine |
| Jonathan | : stomach, small intestine and large intestine |

Which one of the pupils gave the correct answer?

(1) Lisa
(2) Marie
(3) Samuel
(4) Jonathan

4 Which pair of arrows correctly shows the exchange of gases in the leaves at night?




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

5 How are the life cycles of the butterfly, mosquito and mealworm beetle similar?

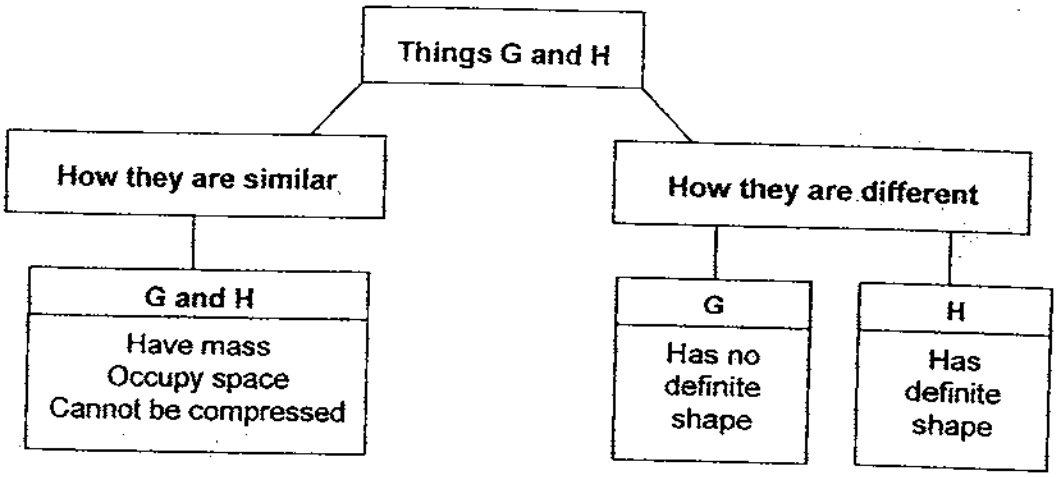
| | |
|---|---|
| W | The young resembles the adult. |
| X | They have 4 stages in their life cycle. |
| Y | They do not eat when they are at the pupal stage. |
| Z | They feed on similar food when they are at the larval and pupal stage× |

(1) W and X only
(2) W and Z only
(3) X and Y only
(4) Y and Z only



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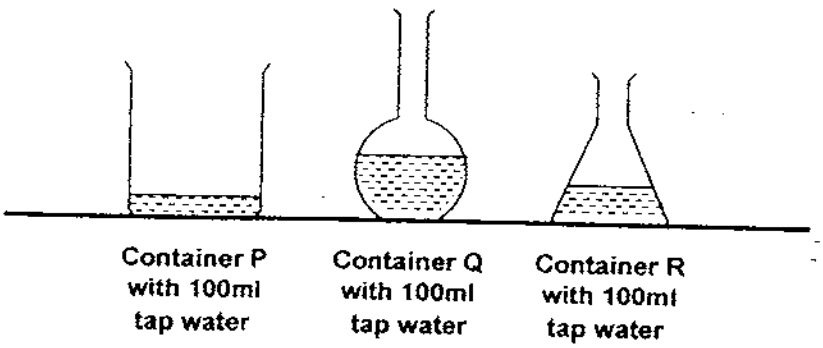
6 The diagram below shows how Things G and H are similar and different.




Which of the following can G and H be?

| | G | H |
|---|---|---|
| (1) | Lime Juice | Shadow |
| (2) | Oil | Coin |
| (3) | Ice | Table |
| (4) | Fire | Plasticine |

7 Siti set up the experiment as shown below.




Based on Siti's observation, which of the following properties can she conclude that water has?

(1) It has different height.
(2) It has different volume.
(3) It has no definite shape.
(4) It has no definite colour.



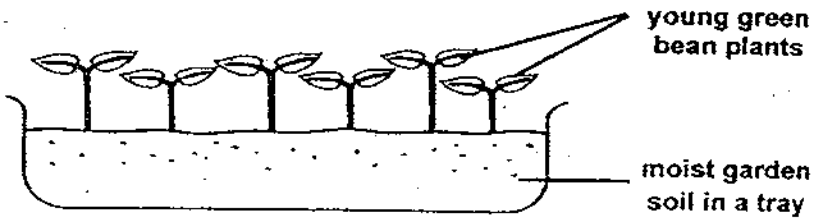
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8 When a scoop of ice-cream is left under the Sun for an hour, there is a change in _____.

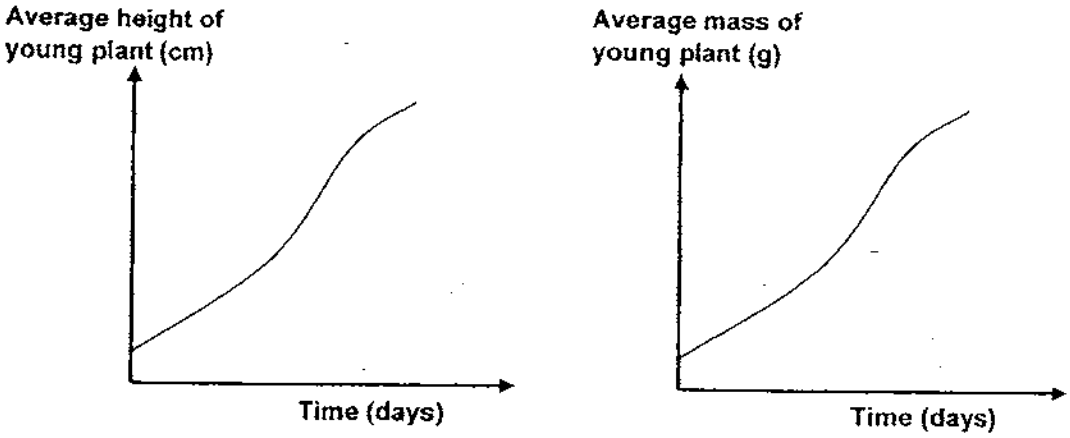
A state
B mass
C volume

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

9 Sam set up the experiment shown below in the garden.




He watered the plants every day with the same volume of water and observed their growth over a week. He plotted his observation in the graphs below.




Based on the results of Sam's experiment, we can conclude that _____.

(1) plants only need sunlight to grow
(2) plants cannot respond to changes
(3) the height of the plant increases with its mass
(4) only the height of the plant increases with time

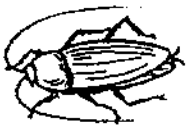


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10 Study the information given in the table below carefully.

| | Animal Y | Animal Z |
|---|---|---|
| Presence of wings at adult stage | Yes | Yes |
| Lays eggs in water | Yes | No |

Identify Animals Y and Z.

| | Animal Y | Animal Z |
|---|---|---|
| (1) |  |  |
| (2) |  |  |
| (3) |  |  |
| (4) |  |  |

11 Four pupils made the following remarks about magnets. Which of these pupils have made the correct remark about magnets?

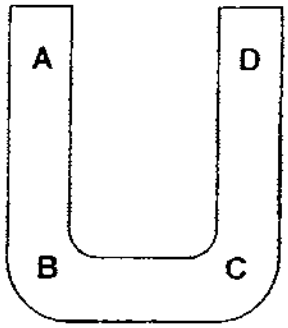
**John** : Magnets are only made of iron.
**Amos** : Every magnet has only two poles.
**Siti** : Objects made of nickel can be attracted to a magnet.
**Bala** : Magnets always come to rest in a North-East direction.

(1) Siti and John
(2) Amos and Siti
(3) Bala and John
(4) Amos and Bala



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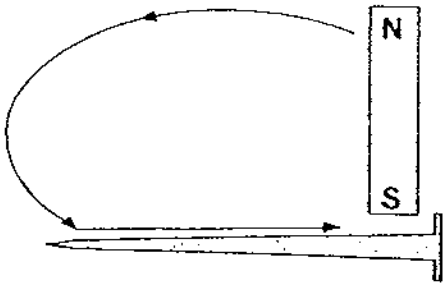
12 The picture below shows a U-shaped magnet.




Tom placed the entire U-shaped magnet into a box of iron pins. When he lifted the magnet out of the box, at which points will he see the most number of pins attracted to the magnet?

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

13 Jane used the stroking method shown below to turn her iron nails into temporary magnets. She then tried to pick up as many paper clips as she could with her magnetic nails. The table below shows the number of paper clips each magnetised nail managed to pick up.




| | Nail A | Nail B | Nail C | Nail D |
|---|---|---|---|---|
| Number of paper clips picked up | 2 | 7 | 5 | 10 |

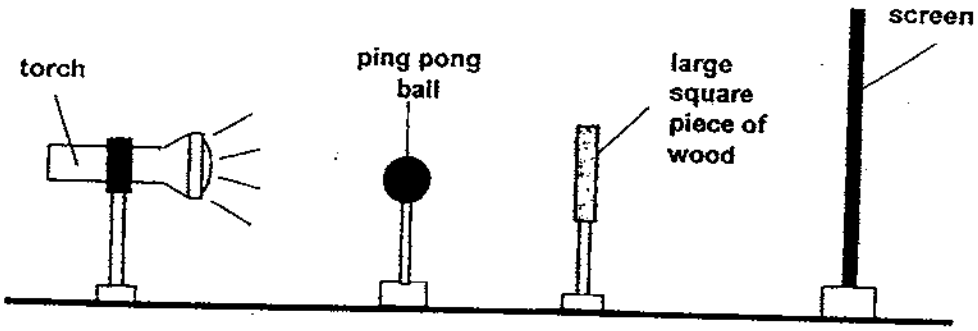
Arrange the strength of the magnetized nails from the weakest to the strongest.

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

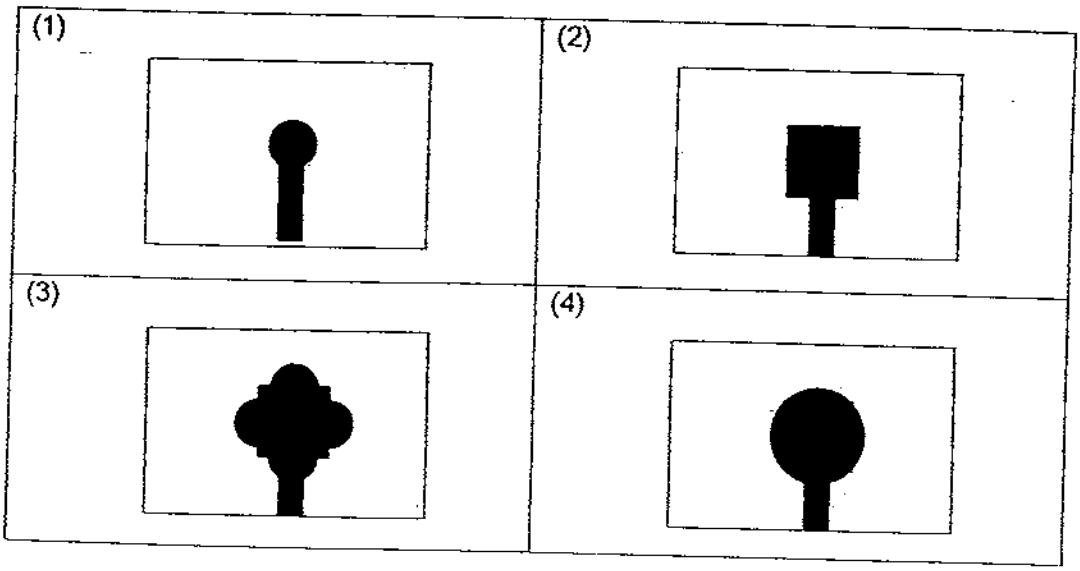


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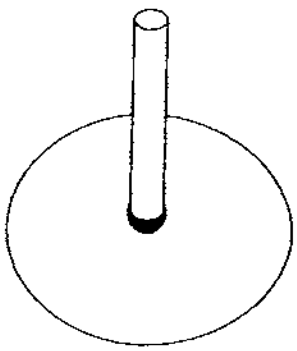
14 Timothy set up a torch, a ping pong ball, a large square piece of wood and a screen in a straight line as shown. He turned on the torch and a shadow was cast on the screen.




Which one of the following was the shadow cast by the two objects on the screen?




15 The sundial below shows a certain time of the day. Which of the following could be the possible time?

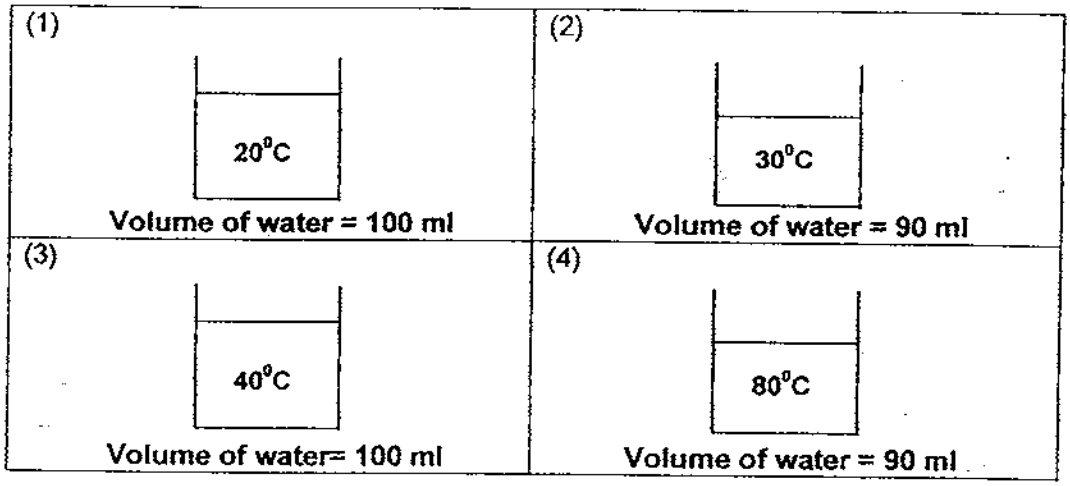


(1) At 7.30am
(2) At 12noon
(3) At 4.45pm
(4) At 8.35pm



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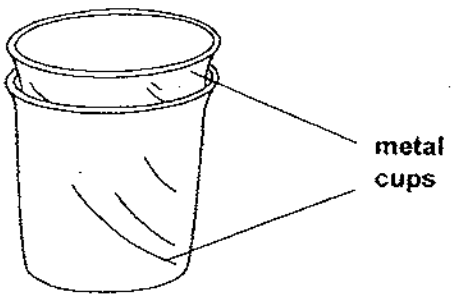
16 Sumei poured water of different temperatures and amount into four glasses. Which glass has the most amount of heat in it?




17 A laboratory thermometer is used to measure _____.

(1) the temperature of boiling water
(2) the temperature of the human body
(3) the amount of carbon dioxide in the air
(4) the amount of light passing through an object

18 Joe noticed that two metal cups were stacked together and they became stuck after a while.




What should Joe do to separate the cups?

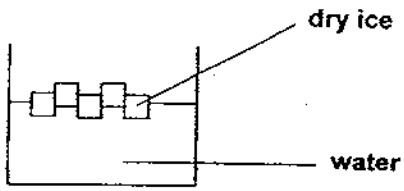
A Pour hot water into the inner cup.
B Pour cold water into the inner cup.
C Place the outer cup in a basin of hot water.
D Place the outer cup in a basin of cold water.

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



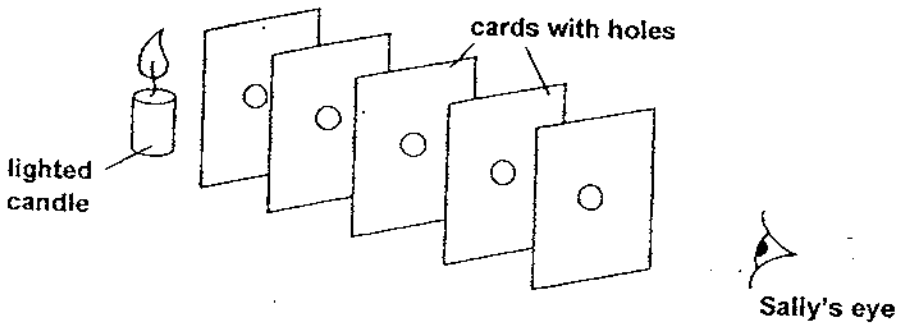
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19 Dry ice changes its state from solid to gas. Which one of the following correctly describes the **heat change** for dry ice and water?




| | Dry ice | Water |
|---|---|---|
| (1) | gains heat | loses heat |
| (2) | gains heat | gains heat |
| (3) | loses heat | gains heat |
| (4) | loses heat | loses heat |

20 Sally set up the experiment below. She placed five identical cards with holes in a straight line in front of a lighted candle and made some observations.




What was the aim of Sally's experiment?

(1) To find out how fast light travels.
(2) To find out if light can be reflected.
(3) To find out how light changes direction.
(4) To find out if light travels in a straight line.



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# ANGLO-CHINESE SCHOOL (JUNIOR)

## SEMESTRAL ASSESSMENT 2 (2009)
## PRIMARY 4
## SCIENCE
## BOOKLET B

**Tuesday** **3 November 2009** **1 hour 30 minutes**

**Name :** _____ ( )

**Class : P4**_____

**INSTRUCTIONS TO PUPILS**

**DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO**
Follow all instructions carefully.
There are 16 questions in this booklet.
Answer **ALL** questions.

**INFORMATION FOR PUPILS**

The number of marks is given in brackets [ ] at the end of each question or part question.
The total marks for this booklet is 40.
The total time for Booklets A and B is 1 hour 30 minutes.
**This question paper consists of 11 printed pages. (Inclusive of cover page)**

| Question Numbers | Possible Marks | Marks Obtained |
|---|---|---|
| 21 - 22 | 5 | |
| 23 - 24 | 6 | |
| 25 - 26 | 5 | |
| 27 | 2 | |
| 28 | 2 | |
| 29 | 3 | |
| 30 -31 | 5 | |
| 32 - 33 | 5 | |
| 34 - 35 | 5 | |
| 36 | 3 | |

| | |
|---|---|
| Booklet A | / 40 |
| Booklet B | / 40 |
| Total | ~~55~~ 65 / 80 |

Parent's Signature / Date

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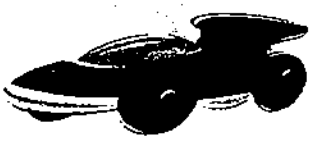
**Section B (40 marks)**

For questions 21 to 36, write your answers in this booklet. The number of marks is shown in the brackets [ ] at the end of the question or part question.

21 Lisa has a teddy bear, a toy car and a kitten in her bedroom. She recorded their characteristics in the table below.



teddy bear



toy car



kitten

| Characteristics | Thing A | Thing B | Thing C |
|---|---|---|---|
| Can it move? | Yes | Yes | No |
| Does it grow? | No | Yes | No |
| Does it respond to changes? | Yes | Yes | No |

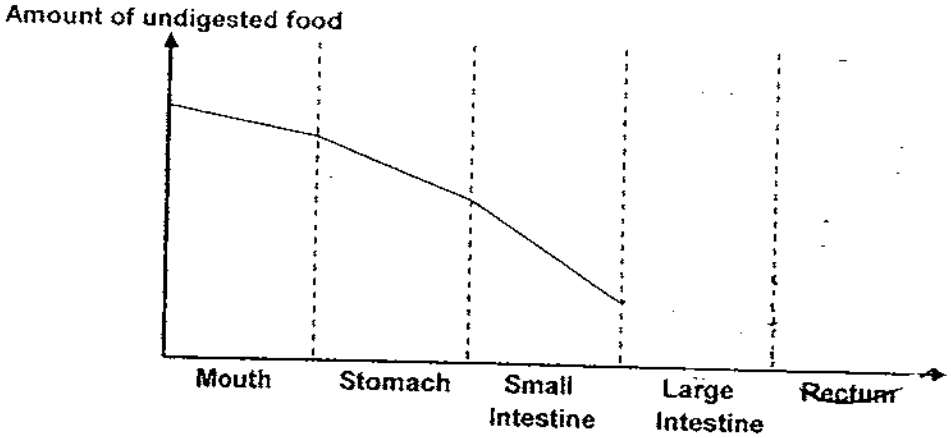
(a) Based on the above table, Thing _____ is most likely to be the kitten. [1]

(b) Name <u>2 other</u> characteristics of a living thing [2]

_____

_____

22 John ate a burger for lunch. The graph below shows how the amount of undigested food changes as it passes through his digestive system.




(a) **Complete the graph above** to show the amount of undigested food at the large intestine and the rectum. [1]

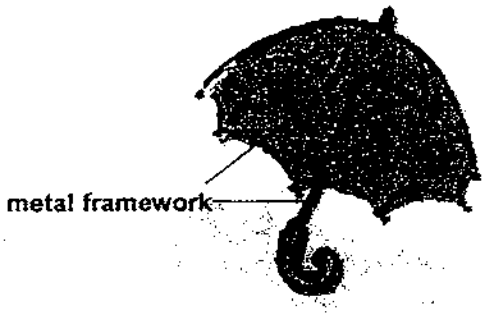
(b) Based on the graph, it can be concluded that the greatest amount of digestion took place in the _____. [1]



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23 The diagram below shows an umbrella.




(a) Why is the metal framework important to the umbrella? [1]

(b) Which human system performs a similar function as the framework of an umbrella? [1]

24 Bernard had 2 paper bags, C and D. He put similar marbles into each bag and noted the number of marbles each bag could hold when lifted before it tears.

| Number of marbles in each bag before the bag tears | |
|---|---|
| Bag C | Bag D |
| 30 | 27 |

(a) Based on the results of the experiment, what can Bernard conclude about the strength of the papers used to make the bags? [1]

(b) State **two** reasons why cloth and plastic are also commonly used to make bags. [2]



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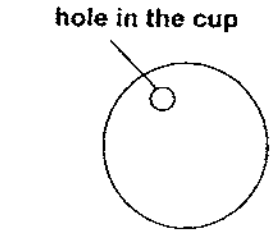
25 Study the following stages of the life cycle of Organism H.



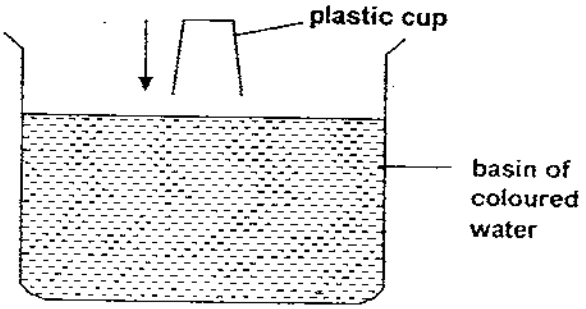

(a) State one difference between the organism at Stage P and Stage Q. [1]

(b) The organism is a pest to farmers at stage _____ [1]

26 Derrick made a small hole at the bottom of a transparent plastic cup as shown. He then lowered the cup into a basin of coloured water until it touches the bottom of the basin and observed the changes that took place.




view of the bottom of the cup




(a) State one observation which Derrick could see. [1]

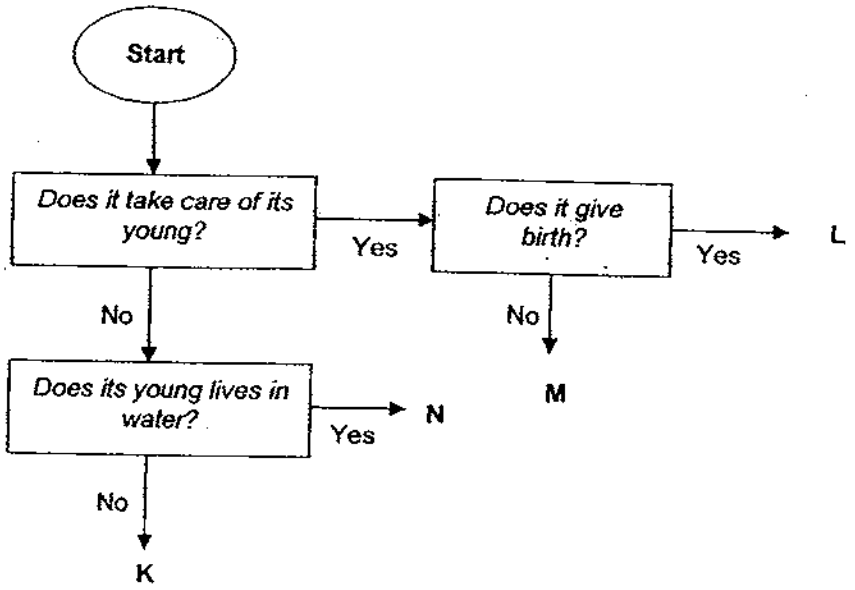
(b) Explain his observation. [2]



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27 The flowchart below shows how some animals have been classified. Study the flowchart carefully and answer the questions below.




(a) In what way are animals K and N similar? [1]

_____

_____

(b) Based on the flowchart, which animal (L, M, N or K) is most likely to be a dog? [1]

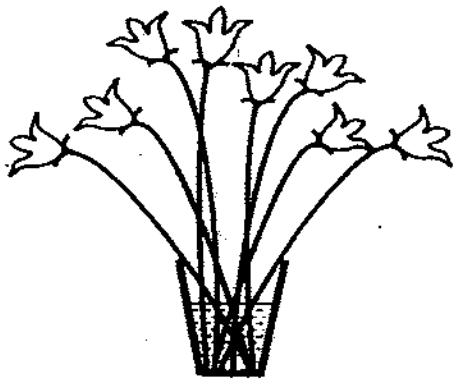
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28 Mrs Tay bought a bottle of Chemical M which can keep flowers fresh in the vase for a longer period of time. She wanted to find out if it was true. She set up Vase G as shown below.



**Vase G**

| Conditions for Vase G |
|---|
| Volume of water: 1000ml |
| Temperature of tap water: 28°C |
| Volume of Chemical M: 10ml |
| Number of stalks of lilies: 8 |
| Room temperature: 30°C |

In order to conduct a fair test, she had to set up a control for her experiment. The following materials and conditions were available to her.

- 100ml of Chemical M
- 5000ml of tap water
- 20 stalks of lilies
- Room temperature of 30°C

(a) List the variables needed for the control, Vase H. [1]

| Conditions for Vase H | |
|---|---|
| Volume of water (ml) | |
| Temperature of water (°C) | |
| Volume of Chemical M (ml) | |
| Number of stalks of lilies | |
| Temperature of the room (°C) | |

(b) What should Mrs Tay observe before she can conclude that Chemical M is effective? [1]

_____

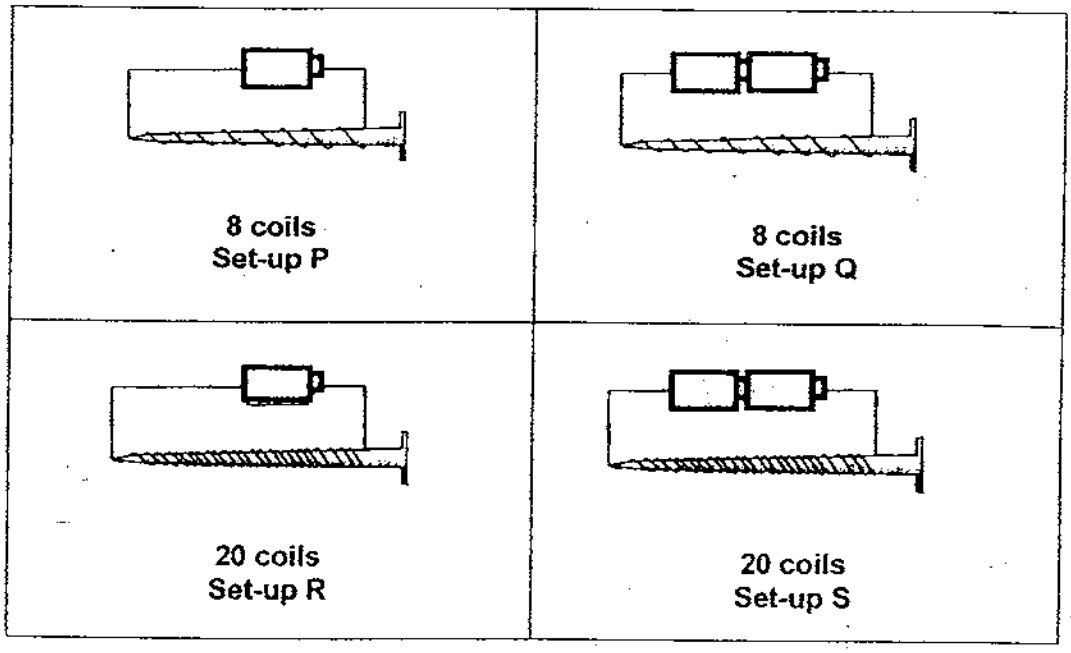
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29 Alfred set up 4 electromagnets using similar batteries and nails as shown.




(a) Study the 4 set-ups carefully and identify the set-ups which should be used to test the following objectives. [2]

| | Objective | Set-ups |
|---|---|---|
| (i) | Test how the number of coils around the iron nail will affect the strength of the electromagnet. | _____ and _____ |
| (ii) | Test how the number of batteries will affect the strength of the electromagnet. | _____ and _____ |

(b) How can Alfred pick up more paper clips using Set-up Q <u>without changing the number of batteries and the number of coils around the iron nail</u>? [1]

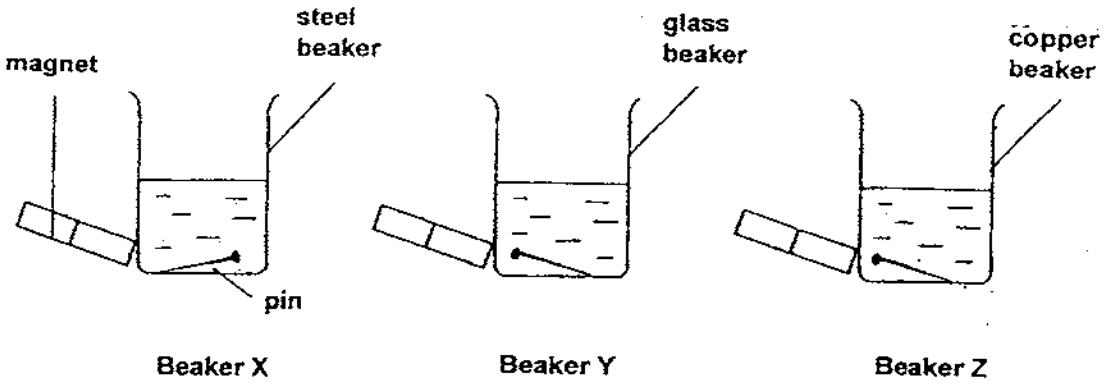
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30 Brandon tried to remove the iron pin from each of the beakers using a bar magnet.



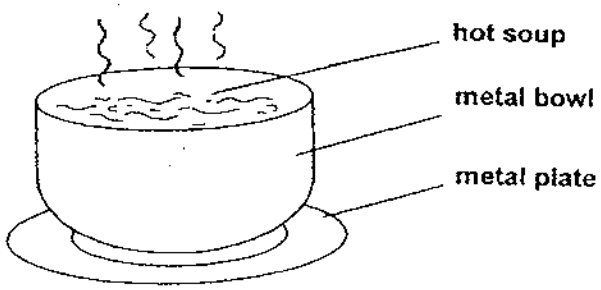

(a) From which beaker(s) was Brandon successful in removing the iron pin? [1]

_____

(b) Explain your answer in (a). [1]

_____

31 Jill places a bowl of hot soup on a metal plate.




(a) What will happen to the temperature of the metal plate? [1]

_____

(b) Give a reason for your answer. [1]

_____

_____

(c) Jill then made the following conclusion in her Science journal. Fill in the missing blanks.

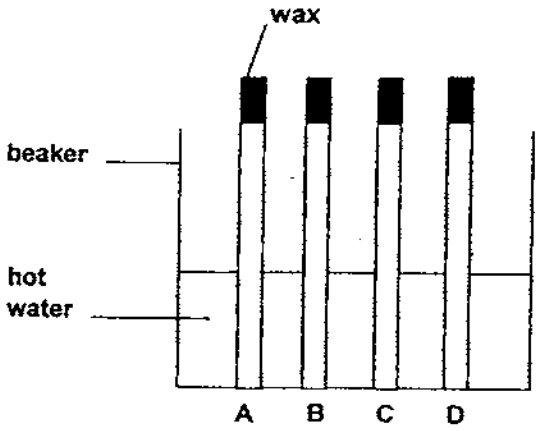
Heat flows from _____ objects to _____ objects. [1]



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32 Michael had four rods. He placed the same amount of wax at the end of each of the four rods. He then placed the rods into a beaker of hot water and observed the wax.




- Rod A is a steel rod.
- Rod B is a glass rod.
- Rod C is a plastic rod.
- Rod D is a wooden rod.

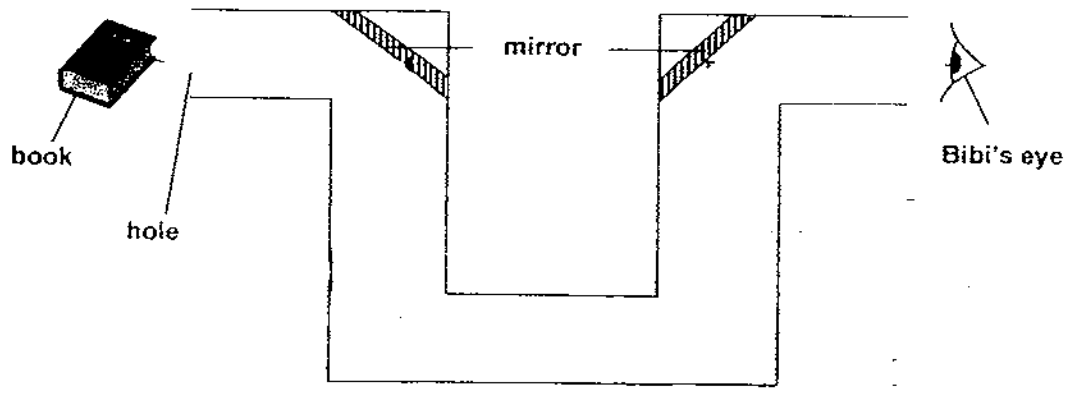
(a) After some time, Michael will observe that the wax on Rod _____ will melt first. [1]

(b) Explain your answer in (a). [1]

_____

_____

33 Bibi set up the following experiment during her science practical lesson.




(a) Draw **2 more mirrors** in the set-up so that Bibi can see the book. [1]

(b) Draw **arrows** to show the light path from the book to the eye. [1]

(c) If Bibi replaced the book and covered the hole with a white plate, what will she see? [1]

_____

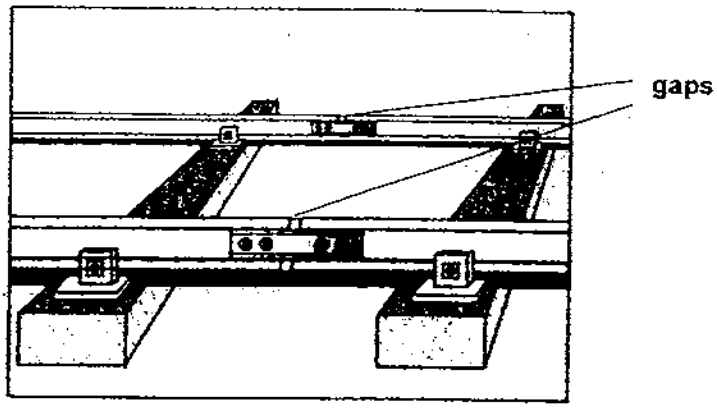
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Sub-total: [ ]

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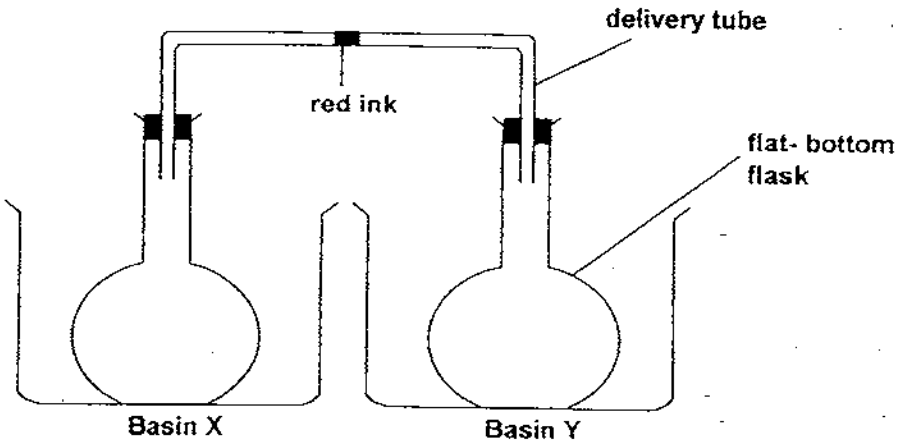
34 Mr Lee noticed that there are gaps in the rails of the MRT tracks.




(a) What would happen to the gaps on a hot day? Why? [2]

(b) What would happen on a hot day if there were no gaps in the rails? [1]

35 Kelly set up the experiment below.




(a) What should Kelly do if she wants the drop of red ink to move towards Basin X? [1]

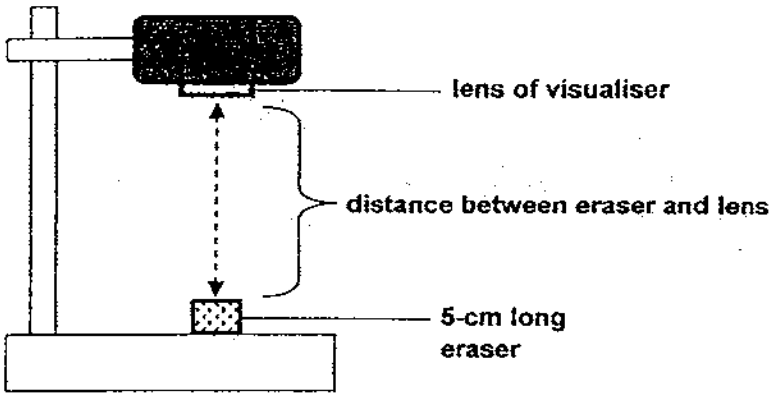
(b) Explain your answer in (a). [1]



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36 Xavier observed that the size of the image of an object changes as he adjusts the visualiser. He carried out an investigation by using an eraser and measured the length of the eraser on the screen. The results of his observation are shown in the table below.




| Distance between lens and eraser (cm) | Length of image (cm) |
|---|---|
| 30 | 36 |
| 25 | 41 |
| 20 | 50 |
| 15 | 69 |
| 10 | 98 |

(a) State the property of light that enables the visualiser to work. [1]

_____

(b) Based on the above results, how does the distance between the eraser and lens affect the size of the image? [1]

_____

_____

(c) Xavier wants to show his classmates the inner ~~parts~~ of a lily flower using the visualiser. Without using the "zoom" function, what can he do to make the image **bigger**? [1]

_____

_____

**End of paper**



**Sub-total:** _____

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# Answer Ke

**EXAM PAPER 2009**

**SCHOOL : ACS PRIMARY**
**SUBJECT : PRIMARY 4 SCIENCE**

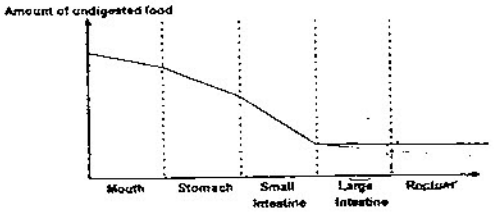
**TERM : SA2**

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 4 | 3 | 1 | 3 | 2 | 3 | 4 | 3 | 2 | 2 | 2 | 1 | 2 | 2 | 4 | 1 |

| Q18 | Q19 | Q20 |
|---|---|---|
| 3 | 1 | 4 |

**21)a)B.**
**b)A living thing can reproduce. It needs air, food and water.**

**22)a)**




**b)small intestine.**

**23)a)It gives the umbrella its shape and supports it.**
**b)Skeletal system.**

**24)a)The paper used to make bag C is stronger than the paper used to make bag D.**
**b)They are strong and durable.**

**25)a)Organism H eats a lot when it is in stage P, while organism H does not eat at all in stage Q.**
**b)P.**



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26)a)The coloured water would fill up the whole plastic cup.
b)The air in the plastic cup can escape through the hole and water can flow through the hole too.

27)a)Both animals K and N do not take care of their young.
b)Animal L.

28)a)1000ml
28℃
0ml
8
30
b)Mrs Tay should observe whether the flowers in vase G would be fresher than the flowers in vase H after some time.

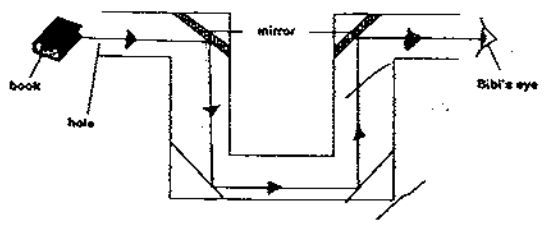
29)a)i)Q and S ii)R and S
b)He can use two batteries of higher voltage.

30)a)Beaker Y and Z.
b)Beaker X is a steel beaker which is a magnetic material and magnetic force cannot pass through it but it can pass through glass and copper.

31)a)It would become hotter.
b)Metal is a good conductor of heat and the heat would travel from the metal bowl to the metal plate.
c)hotter, colder

32)a)A.
b)Steel is a better conductor of heat than glass, plastic and wood.

33)a)b)




b)She will not see anything.



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**34)a)The gaps would close up on a hot day. The heat would make the coils gain heat and expand, causing the gaps to close up.**

**b)It would buckle.**

**35)a)She could heat up Basin Y.**

**b)The air inside the flat-bottom flask in basin Y would gain heat and expand, forcing air into the delivery tube and push the red ink towards basin X.**

**36)a)Light travels in a straight line.**

**b)The longer the distance between the lens and the eraser, the smaller the length of the image.**

**c)He could move the lily flower closer to the lens of the visualiser.**



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