

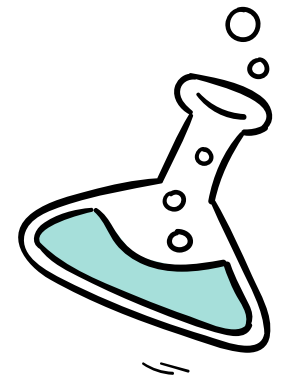
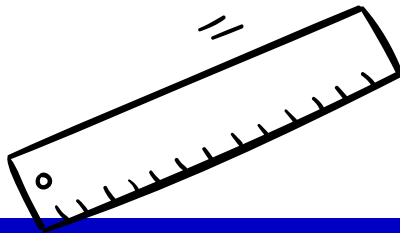
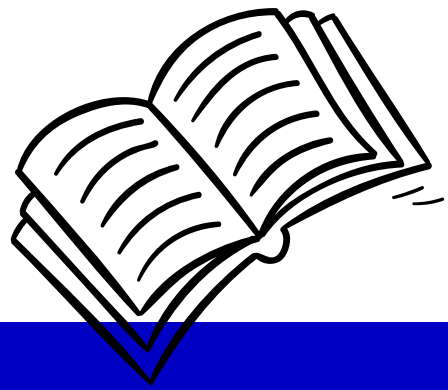
WOODLANDS RING PRIMARY SCHOOL

Every Child Is Unique and Able to Excel

2024 Parents Engagement (Science)



**Organised by Science Department
Woodlands Ring Primary School**



Passionate Learners



Gracious Citizens



Please scan the
QR code for
your
attendance.
Thank you.

<https://go.gov.sg/wrps2024pewa>



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SHINE
Strategy



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Q & A



Passionate Learners



Gracious Citizens



"Parents as Partners in Science Education" is an essential approach to fostering students' interest and success in science.

Objective:

Promote active parental engagement in their child's science education through continuous monitoring and fostering a collaborative partnership with their science teachers.



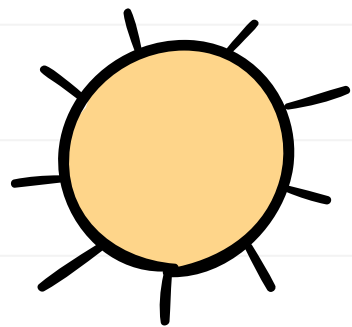
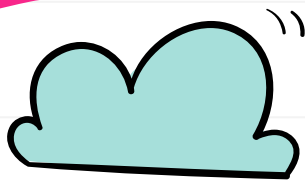


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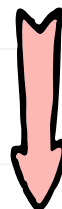


01



SHINE
Strategy

02



WRPS
Science
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Q & A



Passionate Learners  **Gracious Citizens**



S.H.I.N.E

- S - Study the question carefully
- H - Highlight the Keywords
- I - Identify the Scientific Concept
- N - Note down additional information
- E - Explain (Open-ended)/Eliminate (MCQ)



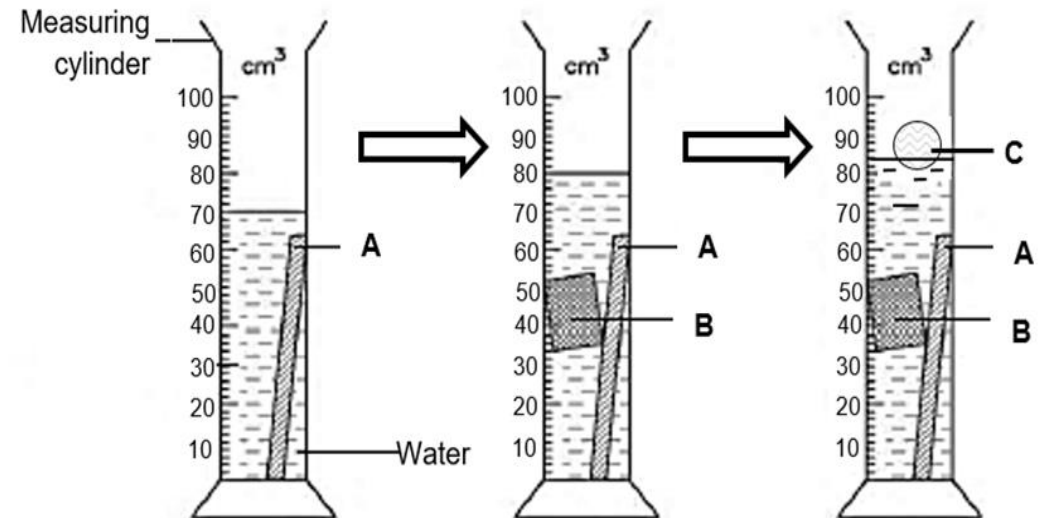
**Worked
example**

Let us study this question...

Process Skills Involved:

1. Observation
2. Comparing
3. Analysing

Ali put 3 objects of different shapes into a measuring cylinder containing 50 cm³ of water one after another. The changes in the water level after each object was put in the cylinder are as shown below.



From the readings, Ali made the following conclusions.

A: The volume of object A is 20 cm³.

B: The total volume of objects A and B is 30 cm³.

C: The total volume of the three objects is 34 cm³.

Which of the above conclusions is/are correct?

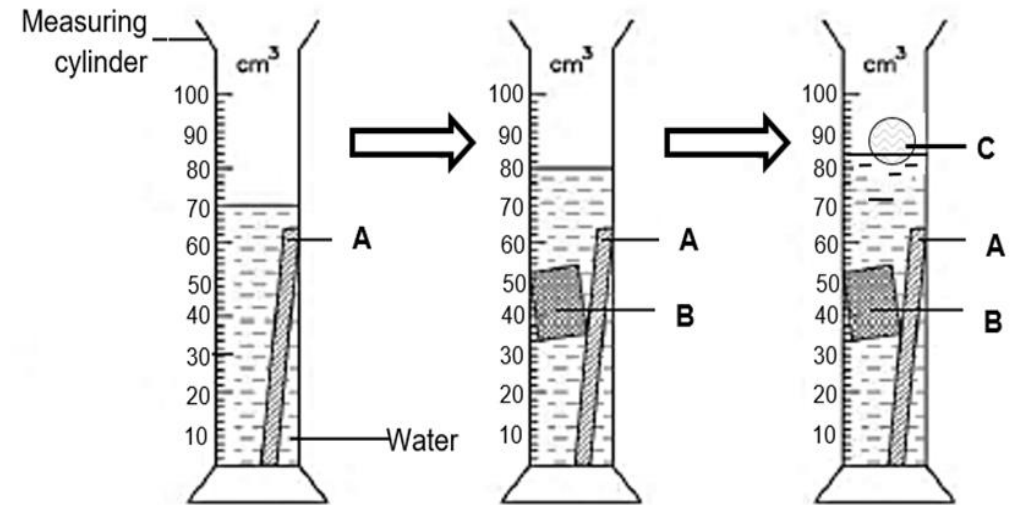
- | | |
|------------------|------------------|
| (1) A only | (2) A and B only |
| (3) A and C only | (4) A, B and C |

H – Highlight the keywords

Highlight **key words** that will **provide clues and context** to the questions to help the students understand the question better.

Some of these keywords from the question stem can be used as key words in answering open-ended questions.

Ali put 3 objects of different shapes into a measuring cylinder containing 50 cm³ of water one after another. The changes in the water level after each object was put in the cylinder are as shown below.



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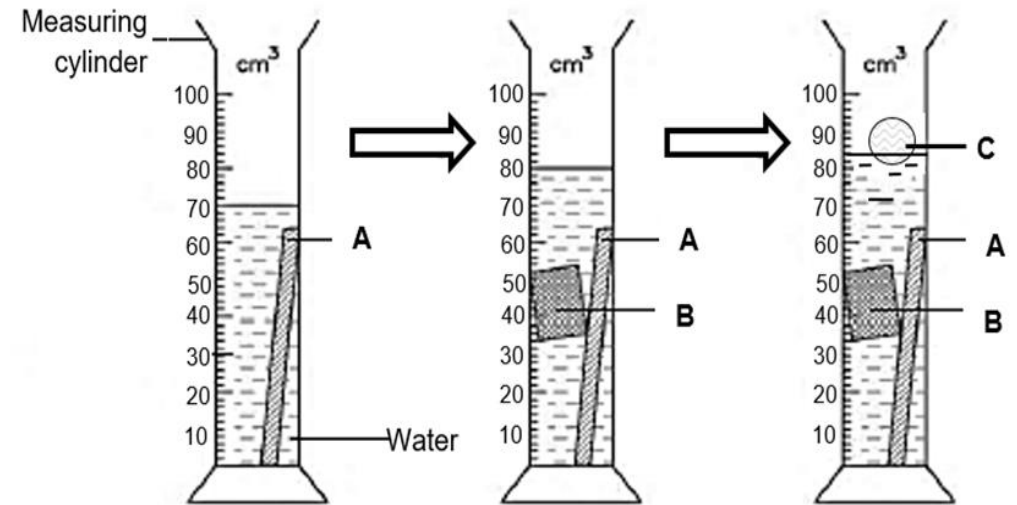
- (1) A only
- (2) A and B only
- (3) A and C only
- (4) A, B and C

I – Identify the science concept

Identify the **topic(s)** and **science concept(s)** tested in this question.
(Is it one topic or a combination of two topics?)

Provides the **frame** for their response.
(What are the possible items they can test for the topic?)

Ali put 3 objects of different shapes into a measuring cylinder containing 50 cm³ of water one after another. The changes in the water level after each object was put in the cylinder are as shown below.



From the readings, Ali made the following conclusions.

- A: The volume of object A is 20 cm³.
- B: The total volume of objects A and B is 30 cm³.
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Which of the above conclusions is/are correct?

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

Note – Note down the science concept

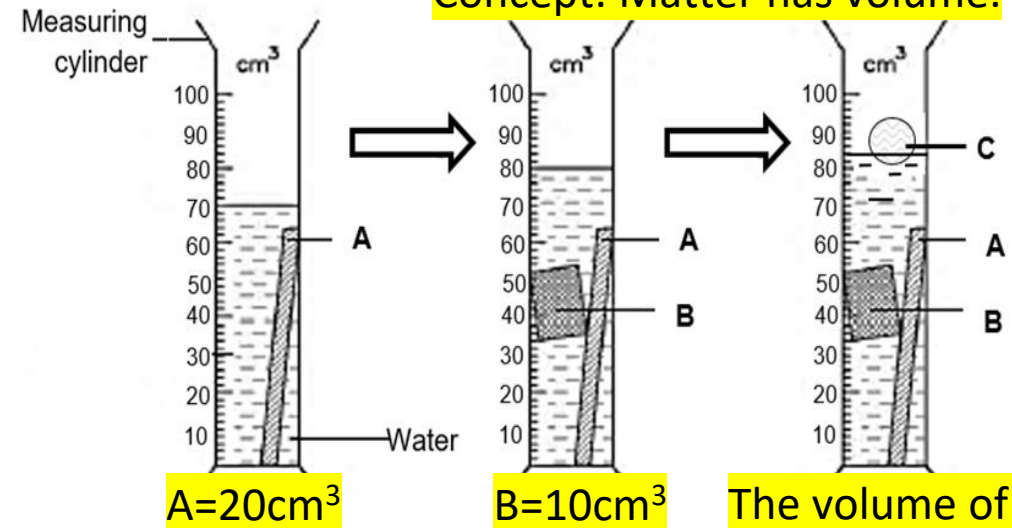
Write down the **topic(s)** and **science concept(s)** related to the question.

Write down **additional information** that is not provided but can be found using the information in the question.

Ali put 3 objects of different shapes into a measuring cylinder containing 50 cm³ of water one after another. The changes in the water level after each object was put in the cylinder are as shown below.

Topic: Matter

Concept: Matter has volume.



From the readings, Ali made the following conclusions.

A: The volume of object A is 20 cm³.

B: The total volume of objects A and B is 30 cm³.

C: The total volume of the three objects is 34 cm³.

Which of the above conclusions is/are correct?

(1) A only

(2) A and B only

(3) A and C only

(4) A, B and C

Explain (OE) / Eliminate (MCQ)

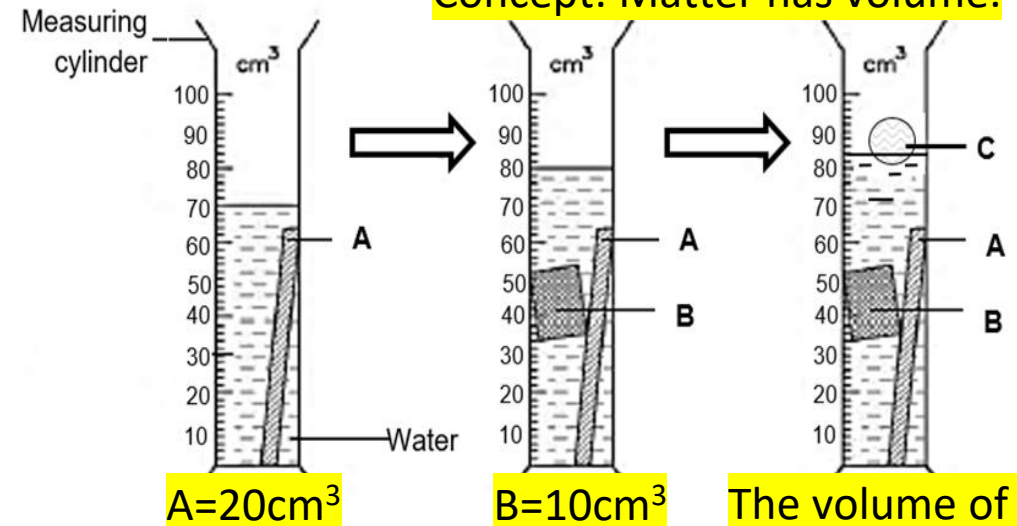
MCQ: **Eliminate false options** to increase the probability of getting correct.

OE: Explain using C.E.R.

Ali put 3 objects of different shapes into a measuring cylinder containing 50 cm³ of water one after another. The changes in the water level after each object was put in the cylinder are as shown below.

Topic: Matter

Concept: Matter has volume.



From the readings, Ali made the following conclusions.

- ✓ A: The volume of object A is 20 cm^3 .
- ✓ B: The total volume of objects A and B is 30 cm^3 .
- ✗ C: The total volume of the three objects is 34 cm^3 .

Which of the above conclusions is/are correct?

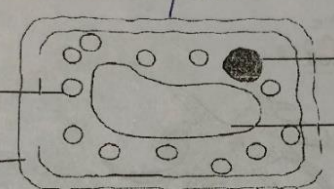
- ✗ A only
- ✗ A and ✗ only
- ✓ A and B only
- ✗ A, B and ✗

The volume of C cannot be found as it is not fully submerged in water.

Pupil's work

Pupils' Work

4. The diagram below shows a plant cell.



Handwritten labels: (chloroplast) V, (cell membrane) W, X (nucleus), Y.

Which part, V, W, X or Y, carries out photosynthesis?

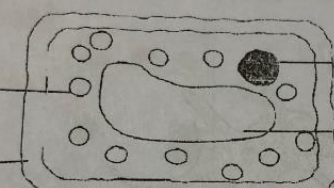
(1) V ✓
 (2) W X
 (3) X X
 (4) Y X

SHINE is used to identify the correct answer (1) V.

Photo 1

Using SHINE, correct answer

4. The diagram below shows a plant cell.



Which part, V, W, X or Y, carries out photosynthesis?

(1) V
 (2) W
 (3) X
 (4) Y

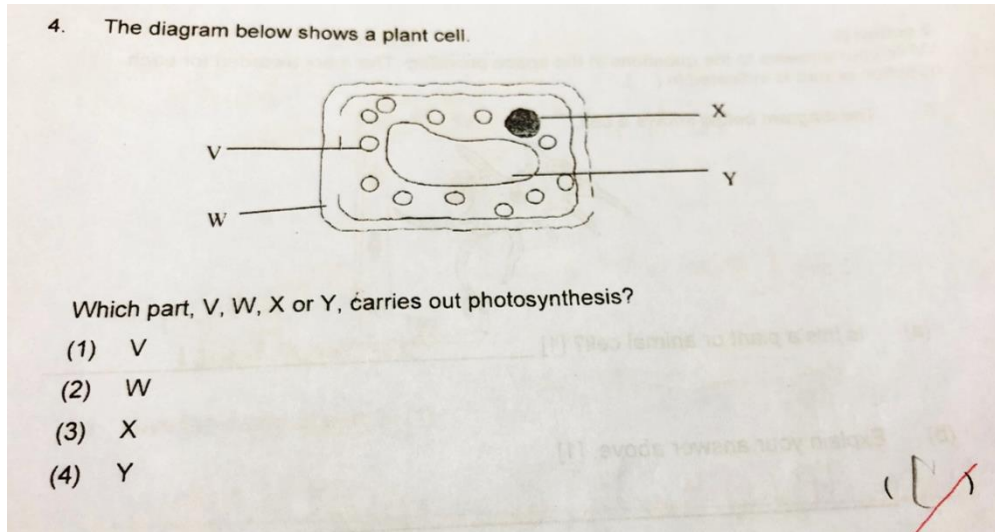
Handwritten answer: (3) X. The word 'plant' is written below the answer.

SHINE is not used, leading to an incorrect answer.

Photo 2

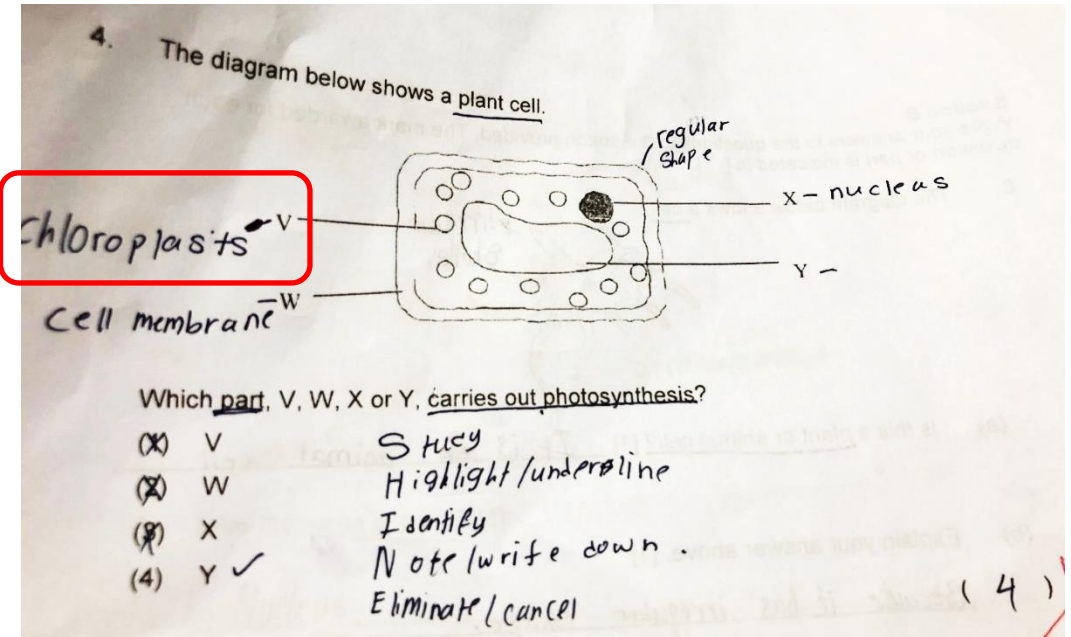
Not using SHINE, wrong answer

Examples of pupils' work



Pupil 3

Not using SHINE, correct answer



Pupil 4

Using SHINE, wrong answer

What could have gone wrong for Pupil 4?

- Did not know the function of chloroplasts
- Did not know the process of photosynthesis
- Did not understand the relation between photosynthesis and chloroplasts

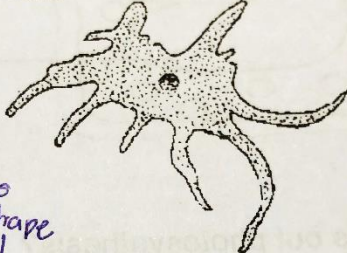


Teacher is able to use this to assess pupil's understanding of the topic.

Examples of pupils' work

Section B
Write your answers to the questions in the space provided. The mark awarded for each question or part is indicated in [].

one
↑
The diagram below shows a cell.



has shape
↓
no shape
↓

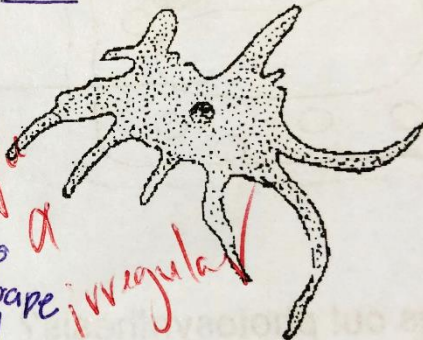
(a) Is this a plant or animal cell? [1] Animal cell

(b) Explain your answer above. [1]
The cell does not have a regular shape.

Pupil 5

Section B
Write your answers to the questions in the space provided. The mark awarded for each question or part is indicated in [].

one
↑
The diagram below shows a cell.



regular
↓
has shape
↓
no shape
↓
irregular
↓

(a) Is this a plant or animal cell? [1] Animal cell

Pupil 5

Teacher's feedback

What could have gone wrong for Pupil 5?

- Misunderstanding of regular = has shape, irregular shape = no shape



Teacher is able to use this to assess pupil's understanding of the topic.

Why S.H.I.N.E?

- For Pupils

Provide a structure for them to plan, monitor and reflect
Making their thinking process and routine more visible

- For Teachers

Assess pupils' conceptual understanding of Science concepts

S.H.I.N.E

Activity Time

Question: Compare the two living things A and B below.

Let us try SHINE Technique to this question.



A



B

- S - Study the question carefully
- H - Highlight the Keywords
- I - Identify the Scientific Concept
- N - Note down additional information
- E - Explain (Open-ended)/Eliminate (MCQ)

Which of the following statements is **incorrect**?

- (1) Both can grow.
- (2) Both reproduce by spores.
- (3) Both do not produce flowers.
- (4) Both cannot make their own food.

()

A suggested response

Compare the two living things A and B below.



A

mushroom
(fungi)



B

Fern (non-flowering plant)

Which of the following statements is incorrect?

- (1) Both can grow. ✓
- (2) Both reproduce by spores. ✓
- (3) Both do not produce flowers. ✓
- (4) Both cannot make their own food. ✗ B is a fern. All plant can make its own food

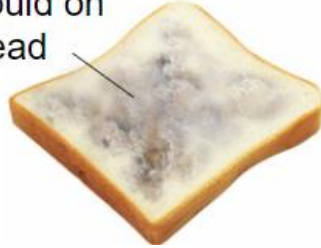
- S - Study the question carefully
- H - Highlight the Keywords
- I - Identify the Scientific Concept
- N - Note down additional information
- E - Explain (Open-ended)/Eliminate (MCQ)

(4)

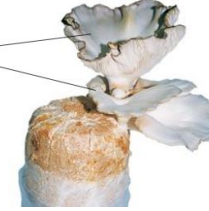
Let us try and understand a student's response

Compare the two living things A and B below.

mould on bread



mushrooms growing and feeding on wood



Which of the following statements is incorrect?

- (1) Both can grow. ✓
- (2) Both reproduce by spores. ✓
- (3) Both do not produce flowers. ✓
- (4) Both cannot make their own food. ✗

mushroom is a fungi - can't make its own food.

(3)
✗

S.H.I.N.E strategy helps us to unpack the students' misconceptions so that we can do proper intervention.

This student needs to revisit the concept on:

- 1) All plants (flowering and non-flowering) can make food.**
- 1) Mushroom is not a plant. It belongs to the Fungi group of living things. Fungi do not produce flowers.**
- 1) Fungi cannot make its own food. Fungi feed on other living things, which can be dead or alive.**

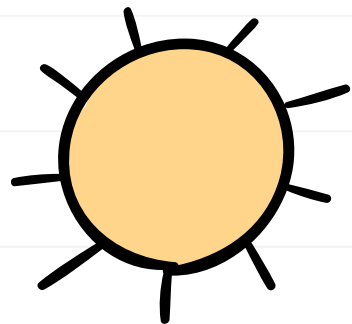
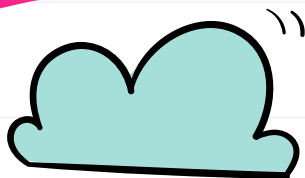
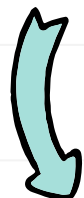


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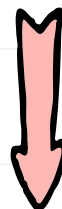


01



SHINE
Strategy

02

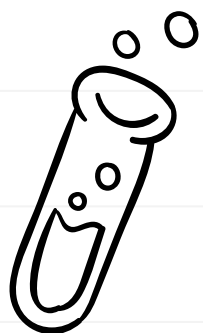


WRPS Science
Journal

03



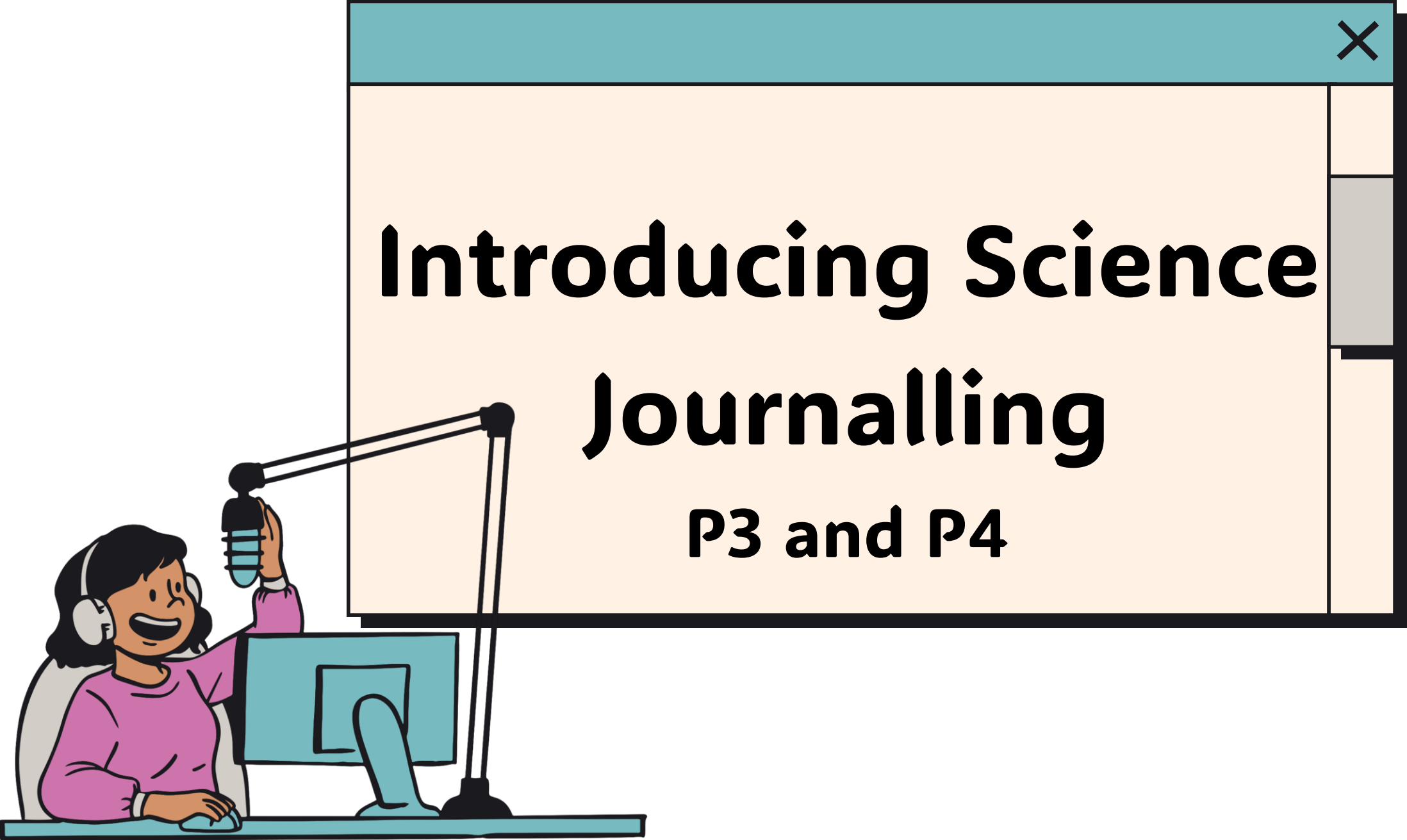
Q & A



Passionate Learners



Gracious Citizens

An illustration of a woman with dark hair and a headset, wearing a pink long-sleeved shirt, sitting at a desk. She is smiling and looking towards a large presentation screen. On the desk, there is a computer monitor and a microphone on a stand. The presentation screen has a teal header bar with a close button (X) in the top right corner. The screen displays the text 'Introducing Science Journalling' in a large, bold, black font, and 'P3 and P4' in a smaller, bold, black font below it. The screen also has a vertical scrollbar on the right side.

Introducing Science Journalling

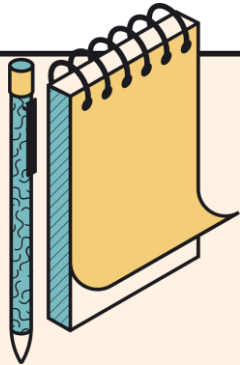
P3 and P4

Syllabus

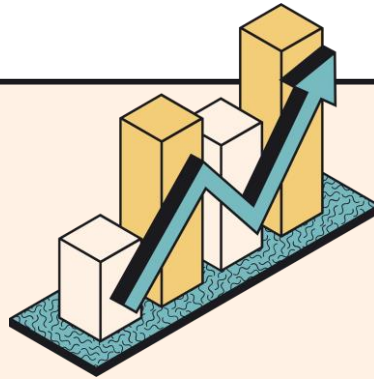


- Lower Block
 - Primary 3 and 4's New Syllabus Implementation
- Upper Block
 - Primary 5 and 6 – follow through with old syllabus.

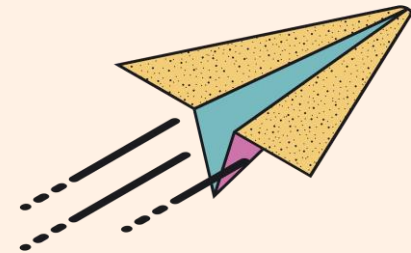
WHAT IS COVERED



PURPOSE

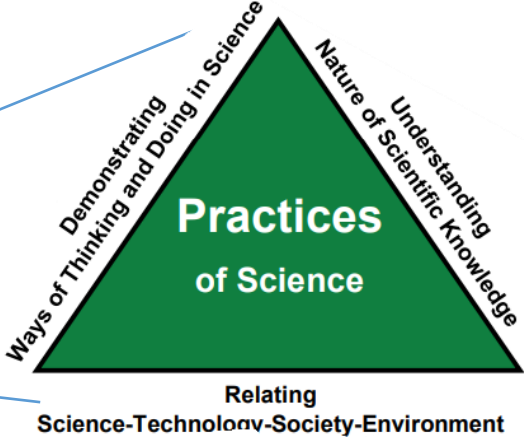


GUIDELINES



**MANAGING
EXPECTATIONS**

Purpose of Scientific Journalling in Primary Science

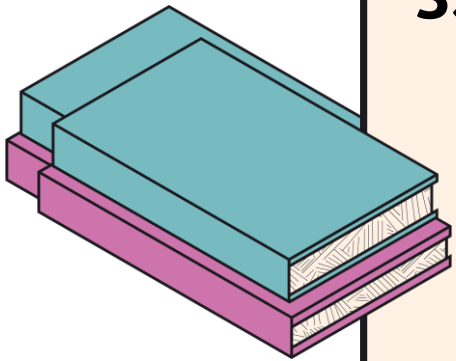


The Practices serve to highlight that the discipline of Science is more than the acquisition of a body of knowledge (e.g., scientific facts, concepts, laws, and theories); it is also a way of thinking and doing.

Demonstrating WOTD		
Investigating	Evaluating and Reasoning	Developing and Evaluating Solutions
Posing questions and defining problems	Communicating, evaluating and defending ideas with evidence	Using and developing models
Designing investigations	Making informed decisions and taking responsible actions	Constructing explanations and designing solutions
Conducting experiments and testing solutions		
Analysing and interpreting data		

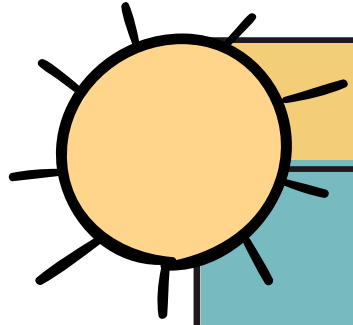
Scientific journalling is a crucial part in the learning of Science, and it is useful when demonstrating WOTD

Figure 1: The Science Curriculum Framework
Curriculum Planning and Development Division.



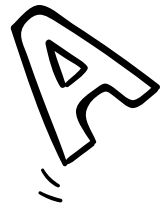
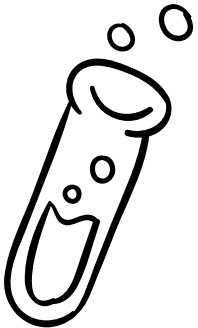
PURPOSE

- 1. Make Thinking Visible:** Encourages note-taking skills to organise information into an understandable format that will assist in their studying process.
- 2. Improve active listening, learning and comprehension** of material, and retention of concepts.
- 3. Allows scaffolding with a repertoire of strategies** for organising content and concepts, where students are given the opportunity to explore what is best suited for their learning and long-term knowledge retention.



GUIDELINES

- **Activities for activating prior knowledge**
(During introduction to topic: Flipped Classroom)
- **Activities for summarising topic**
(To be completed as HW at end of topic)
- **Activities for extending knowledge - Planning of experiment, Research**



Managing Expectations

- **Scaffolded journal worksheets are done in parallel with the teaching**
- **Journal files are kept in class and given to them should there be a need to: purpose to develop a portfolio over the years.**
- **Periodical checking by teachers to find a correlation between the journal and results**

- **It is not seen as a worksheet that need to be marked and graded but rather as platform to develop their practices in the learning of Science.**
- **Teachers can give feedback by showcasing their work.**
- **The ownership of the journal is on the pupils.**



Examples of Journals: student entry

MATTER DATE: _____

USE A COMIC STRIP TO EXPLAIN MASS OR VOLUME TO YOUR FRIEND!

BANG

What's matter?

You!

Volume is the amount of space a matter takes up!

You have volume

Apple has volume

And you probably know what's mass. But... anyway!

apple has mass

water has mass

3 states of matter

- Solid (ice)
- Liquid (water)
- gas (water vapor)

Hope you now know what's matter!

The End ✓ Dear Yi Xin,
Thank you for the cute comic strip! *Stx*

NOTES DATE: 18 January

(leaf stalk)

(Main vein)

(Leaf blade)

smaller veins

Science Vocabulary

NEW WORDS I HAVE LEARNT

- Small intestine
- Large intestine
- Muscular system
- circulatory system
- Respiratory system
- skeletal system
- digestive system
- Gizzard
- Skull
- Kim cage

QUESTIONS I STILL HAVE?

Why does someone have diarrhoea?

Ans. the large intestine so it's not able to absorb water from the undigested food.

Q & A

Thank You



We value your
feedback. Do give
us your feedback
through this link.
Thank you

<https://go.gov.sg/wrps2024pew>