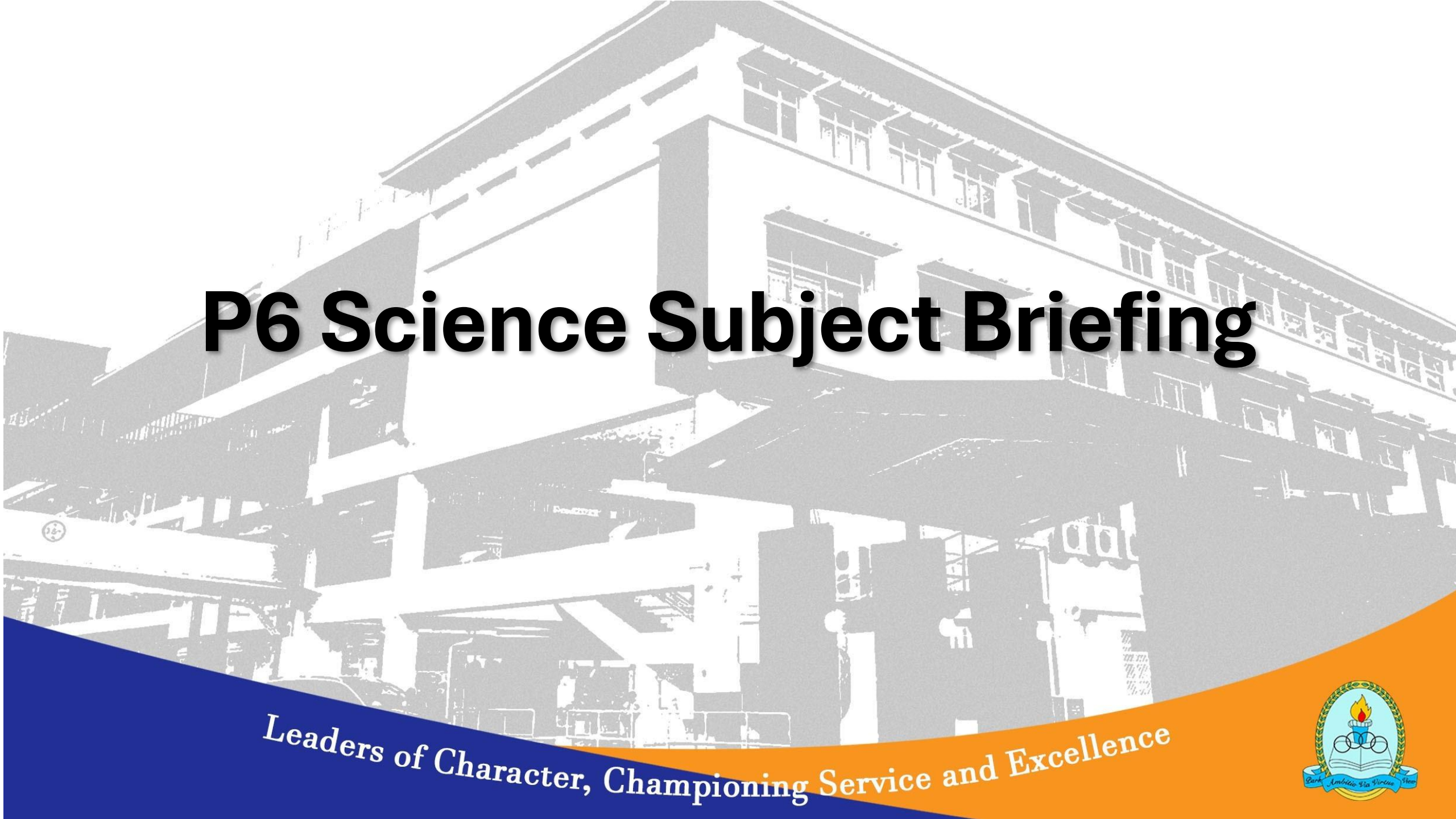
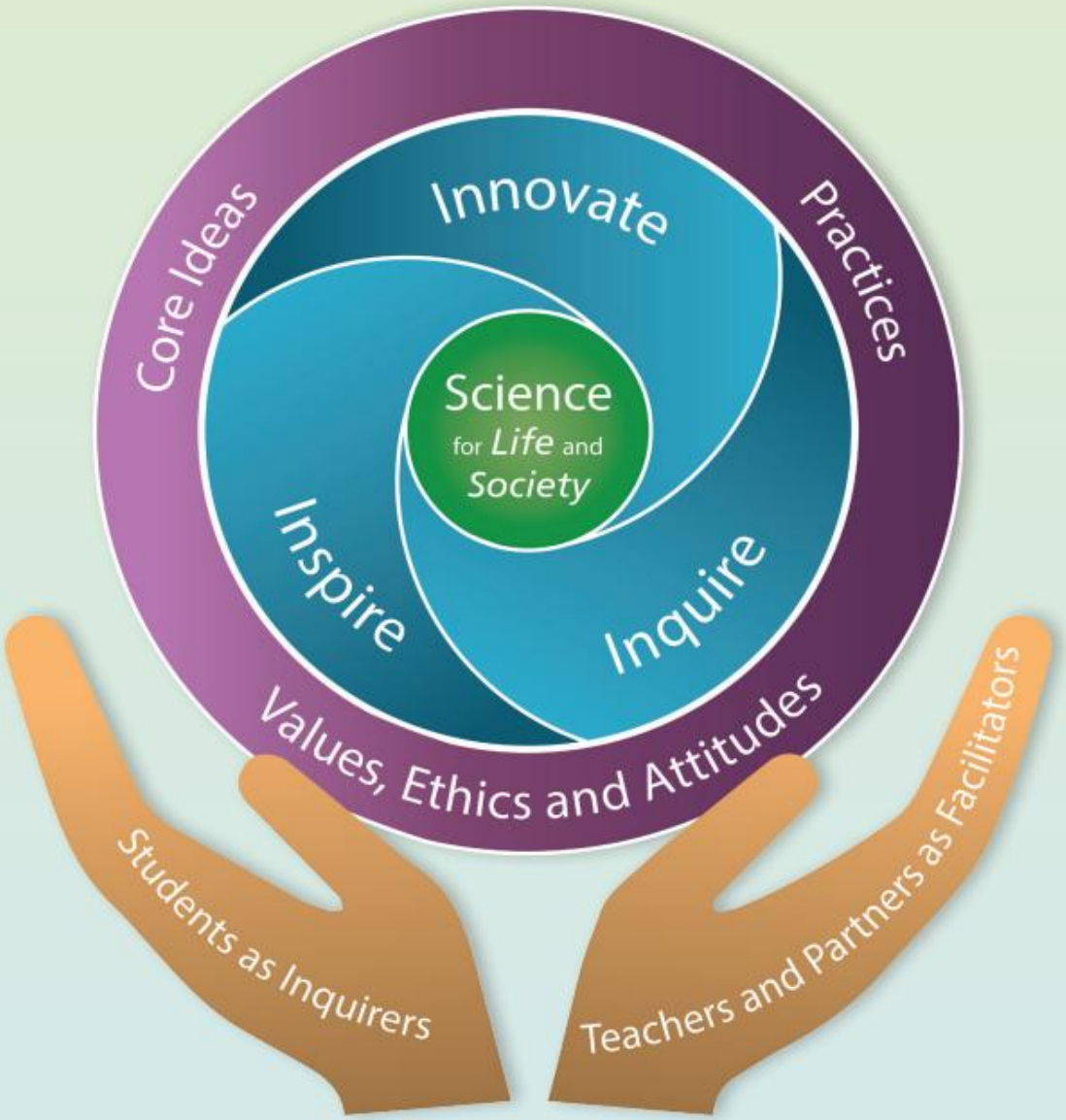


P6 Science Subject Briefing

Leaders of Character, Championing Service and Excellence

Science Curriculum Framework



Goals
The twin goals of Science education, as represented by the tagline ***Science for Life and Society,*** are central to the revised Science Curriculum Framework.

Vision (3 Ins)
Surrounding the innermost circle, the Vision of Science Education 2030 is articulated through the 3 **Ins** – *Inspire, Inquire, Innovate.*

Three Domains
The outermost layer of the framework shows three domains, *Core Ideas, Practices,* and *Values, Ethics and Attitudes.*

Stakeholders
The pair of hands shows *students as inquirers,* supported by *teachers and partners as facilitators* of the students' learning experiences.

Primary Science Syllabus

DIVERSITY	CYCLES	SYSTEMS	INTERACTIONS	ENERGY
Diversity of living and non-living things (General characteristics and classification)	Life cycles Reproduction of Plants and Human	Plant parts and functions Digestive system Plant Respiratory and Circulatory systems Human Respiratory and Circulatory systems	**Interactions within the environment**	**Photosynthesis**
Diversity of materials	Matter Water	Electrical system	Magnets **Frictional force, gravitational force, elastic spring force**	Light Heat **Energy Conversion**

Primary Science Assessment (Standard)

DIVERSITY	CYCLES	SYSTEMS	INTERACTIONS	ENERGY
5 – 10%	20 – 25%	10 – 25%	25 – 30%	15-25%

Item types	Number of questions	Weighting	Duration of Paper
Multiple Choice Questions	30	60%	1 h 45 min
Structured Questions *(each question carries 2, 3, 4 or 5 marks)*	10 – 11	40%	

Primary Science Assessment (Foundation)

DIVERSITY	CYCLES	SYSTEMS	INTERACTIONS	ENERGY
10 – 20%	15 – 25%	10 – 25%	15 – 30%	15-25%

Item types	Number of questions	Weighting (Marks)	Duration of Paper
Multiple Choice	20	40 marks	1 h 15 min
Short Response and Structured	9 – 11	30 marks	

P6 Science @ PVPS – Ways of Thinking & Doing Science

- Design a fair experiment including identifying the 3 types of variables.
- Analyse and interpret information and data in different representations (e.g. tables, pictures, graphs, flow charts etc.) to infer patterns and relationships or explain findings

P6 Science – some common misconceptions

- Respiration takes place in the lungs only. X
- Plants photosynthesises in the day and respires in the night. X
- Amount of gravitational force acting on an object increases as then object is raised. X
- Friction between 2 surfaces increases with greater surface area of contact. X
- Earthworms, termites, millipedes etc. are decomposers. X

Science @ PVPS – School-based Strategies

READ – a strategy to increase students' comprehension of science questions

Recall key concepts related to the question

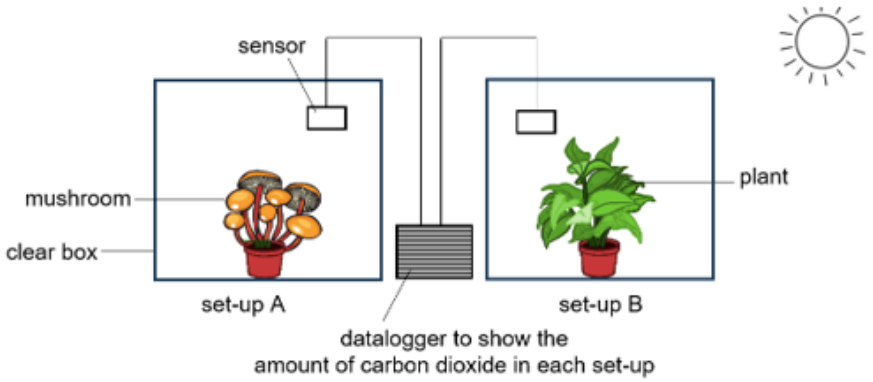
Eliminate wrong options (especially for MCQ)

Analyse and interpret data

Do annotations

P6 Science @ PVPS – School-based Strategies (READ)

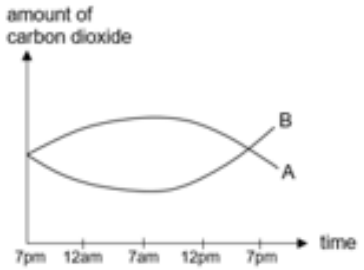
2 Jane conducted an experiment as shown below.



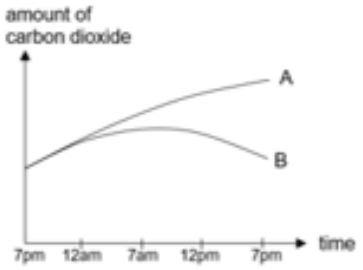
Both set-ups were placed in clear boxes and left in the garden for 24 hours. Jane plotted a graph to show the results of the experiment.

Which of the following graphs correctly shows the amount of carbon dioxide in each set-up over the 24 hours?

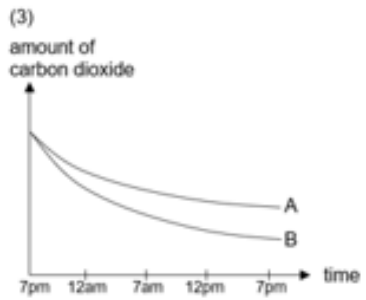
(1)



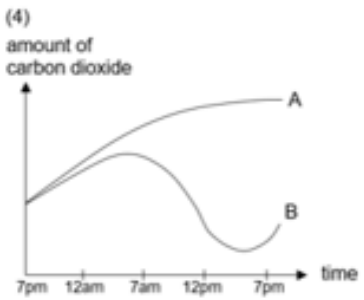
(2)



(3)



(4)



READ: suggested thinking process

Do **annotations** e.g. circle mushroom & plant

Recall Fungi cannot photosynthesize but plants can. Plants take in carbon dioxide in the presence of light to photosynthesise.

Analyse: Graph A must show increasing trend as fungi gives out carbon dioxide all the time - Eliminate options (1) and (2)

Analyse: Link time of day with intensity of light and amount of photosynthesis.

Science @ PVPS – School-based Strategies

CER – a **scaffold** for giving a scientific explanation
(usually for open-ended questions)

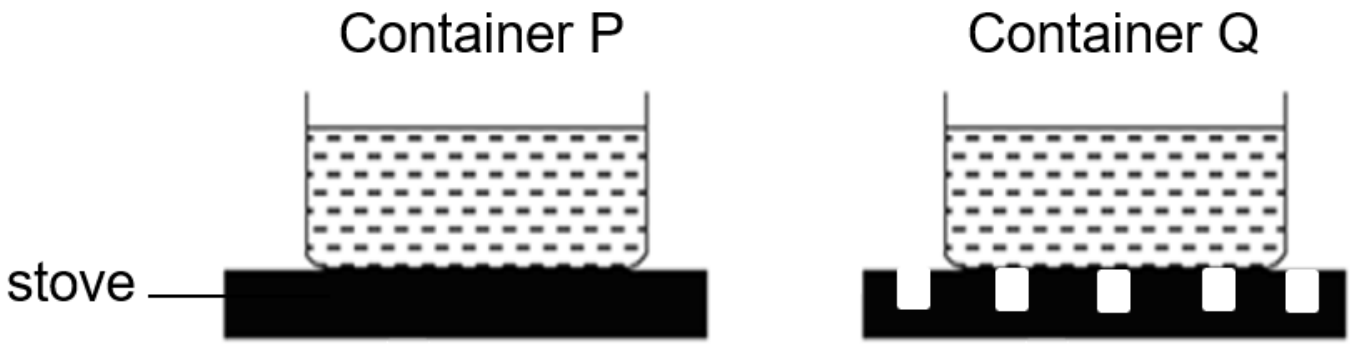
Claim – a direct answer to make a stand

Evidence – an observation / data taken from information provided in the question

Reason – a scientific concept that supports the claim

P6 Science @ PVPS – School-based Strategies (CER)

Jean placed two identical containers on two heated stoves of different shapes.
The containers have the same amount of water at room temperature.



(a) Which container of water would boil first?
Explain your answer.

Using CER as a scaffold for the explanation

Claim : P

Evidence: greater surface area of contact between water and stove

Reason: water in P gained heat faster and boiled first.

Science @ PVPS – Assessment

Students are assessed on their understanding and application of science concepts and the mastery of process skills.

To pace our students for the PSLE, every school-based assessment will include related topics from previous years.

1. Written assessment in Terms 1 and 2.
2. Preliminary Examination in Term 3
3. Topical worksheets and practice papers (non-weighted)

Science @ PVPS – The Parents' Guide

- Help your child relate science to the things she observes in her everyday life.
- Process skills such as observing, comparing, classifying, using apparatus and making measurements are skills often used in daily lives.
- Guide your child to make evidence-based decisions / choices.

Why is the glass wet when it is filled with a cold drink?

Matter

Properties of solids, liquids and gases are applied in our everyday life.

We can fill balloons of different shapes and sizes as gases have no definite shape and volume.

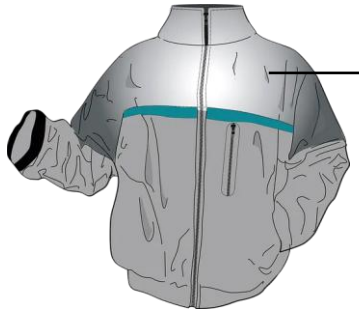
Water takes the shape of the containers as it has no definite shape.

We can also have ice sculptures in cold environment as ice has a definite shape and volume.

Heat

Air slows down heat flow.

This jacket keeps us warm because …



Air prevents coldness from reaching us.

Air is a poor conductor of heat.

The description of coldness being transferred is conceptually incorrect.
Heat is transferred from a warmer region to a colder region.
The air in jacket slows down heat flow away from the body rather than prevents coldness from reaching us.

Science @ PVPS – The Parents' Guide

Help your child to study science effectively.

(1) Equip your child with appropriate reading skills.

E.g. read slowly, make connections, read more than once

(2) Adopt good study habits *e.g. revise what the teacher taught every week, read up on topic in the textbook, jot down questions to ask in class*

(3) Make notes effectively *e.g. in point form, mapping information using graphic organiser*

Science @ PVPS – The Parents' Guide

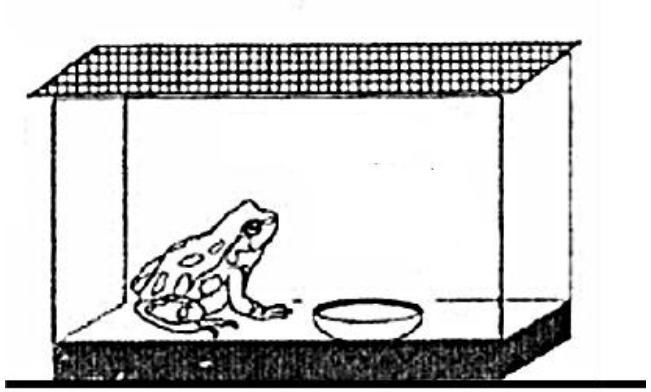
Reminders when answering science questions

(1) Avoid giving general statements. Answer by making reference to the question. This can be done by citing evidence from the question.

e.g. Why did the frog in the tank die eventually?

Living things need air, food and water to survive. (X)

The frog did not have food. (√)



Science @ PVPS – The Parents' Guide

Reminders when answering science questions

(2) Avoid using pronouns as they tend to be ambiguous.

e.g. What will happen to the plants in set-up P and set-up Q?

It will dry up and die while the other plant will continue to grow well. (X)

The plant in set-up P will dry up and die while the plant in set-up Q will continue to grow well. (√)

(3) Good to know the spelling of key scientific vocabulary.

Science @ PVPS – The Parents' Guide

Reminders when answering science questions

(4) Pay attention to words such as 'Explain', 'Describe', 'State', to determine how much information is needed when answering. The marks allocated is also a good indication.

Thank you

If there are further questions, feel free to contact your child's Science teacher.