P5 Science Matters

2025 Parents Briefing

Scope of Briefing

- ✓Syllabus
- ✓Curriculum
- ✓Assessment
  - Exemplars and Mark Scheme
  - Answering Strategies
- ✓Support

Revised 2023 Syllabus

The twin goals of Science education are to:

- **Enthuse and nurture all students to be scientifically literate, so that they can make informed decisions and take responsible actions in their daily lives; and**

- **Provide strong Science fundamentals for students to innovate and pursue STEM for future learning and work.**

Aims of the Syllabus

The Primary Science Syllabus aims to provide students with experiences/ opportunities to:

- Build on their interest and stimulate their curiosity about themselves and their environment.
- Acquire basic scientific concepts to help them understand themselves and the world around them.
- Develop skills, dispositions, and attitudes for scientific inquiry.
- Apply scientific concepts and skills in making responsible decisions.
- Appreciate how Science influences people and the environment.

Overview of the Syllabus

Levels	P3	P4	P5	P6
Themes	**Diversity . Cycles . Systems . Interactions . Energy**			
Topics	• Diversity of living and non-living things (General characteristics and classification) • Diversity of materials • Cycles in plants and animals (Life cycles) • Interaction of forces (Magnets)	• Cycles in matter and water (Matter) • Human system (Digestive system) • Plant system (Plant parts and functions) • Energy forms and uses (Light) • Energy forms and uses (Heat)	• Cycles in matter and water (Water) • Cycles in plants and animals (Reproduction) • Plant system (Respiratory and circulatory systems) • Human system (Respiratory and circulatory systems) • Electrical system	• Energy forms and uses (Photosynthesis) • Energy conversion • Interaction of forces (Frictional force, gravitational force, elastic spring force) • Interactions within the environment

Note: Underlined topics are not required in the Foundation Science Syllabus

P5 Topics

✓Semester 1

- Water and Water Cycle
- Human and Plant Reproduction
- Man's Impact on the Environment

✓ Semester 2

- YI Programme (Theme: Sustainability)
- Electricity
- Human and Plant Systems

YI Programme

Young Investigators Programme

- ✓Non-weighted assignment
- ✓Assessed using a set of rubrics
- ✓Theme: Sustainability
- ✓Infuses STEM and Sustainability
- ✓Small group (2-4 students)
- ✓Most hands-on carried out during curriculum time
- ✓Promotes care for the environment, critical thinking and collaboration

P5 Science Lessons

- ✓Activity Booklets for Hands-on
- ✓Vitamindz Topical Booklet
- ✓SLS Lessons
- ✓LJs (Marina Barrage) and Outdoor Learning (Flower/Fern Garden)

Evaluate Learning

Semester 1	Semester 2
Term Review (Non-weighted) Weighted Assessment 1 – includes Performance Tasks	Weighted Assessment 2 YI Project (Non-weighted) Year End Examination

More details will be given later.

Assessment

- ✓Weighted Assessments (WA) / Term Review (TR)
- ✓Performance Tasks (WA) based on skills taught during hands-on
- ✓End of Year Examination

End of Year Exams

ASSESSMENT OBJECTIVES

The objectives describe the skills and abilities which candidates are expected to demonstrate at the end of the course.

I. Knowledge with Understanding

Candidates should be able to demonstrate knowledge and understanding of scientific facts, concepts and principles.

II. Application of Knowledge and Scientific Inquiry

Candidates should be able to (in words, or by using diagrams, tables and graphs):

a. apply scientific facts, concepts and principles

b. apply scientific inquiry which includes

- making predictions and formulating hypotheses
- interpreting and analysing information
- evaluating observations, information and methods
- communicating explanations with reasoning.

End of Year Exams

Section	Item Type	No. of Questions	Marks per Question	Weighting
A	MCQ	30	2	60%
B	OE	10 or 11	2, 3, 4 or 5	40%
Duration:		1h 45 min		

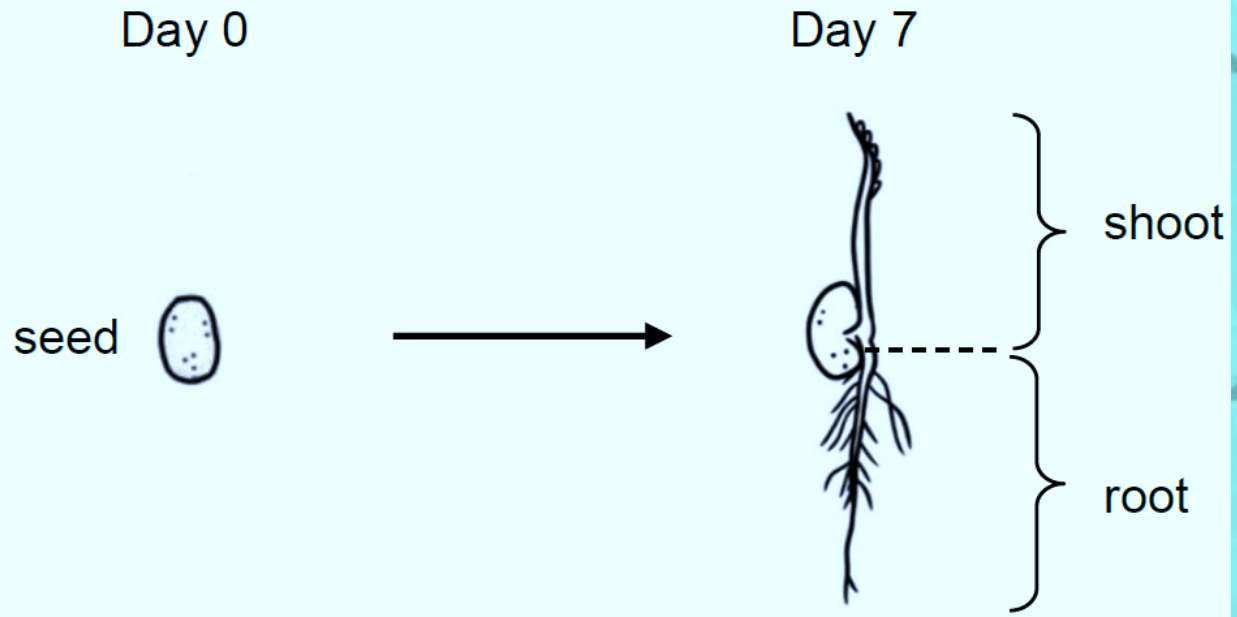
End of Year Exams - MCQ

What's different?

- 1 context, 2 MCQs (Example)

Use the information below to answer Questions **14** and **15**.

A seed grew into a seedling as shown after a few days.



2 questions tested are based on a common context.

End of Year Exams - MCQ

1 context, 2 MCQs (Example)

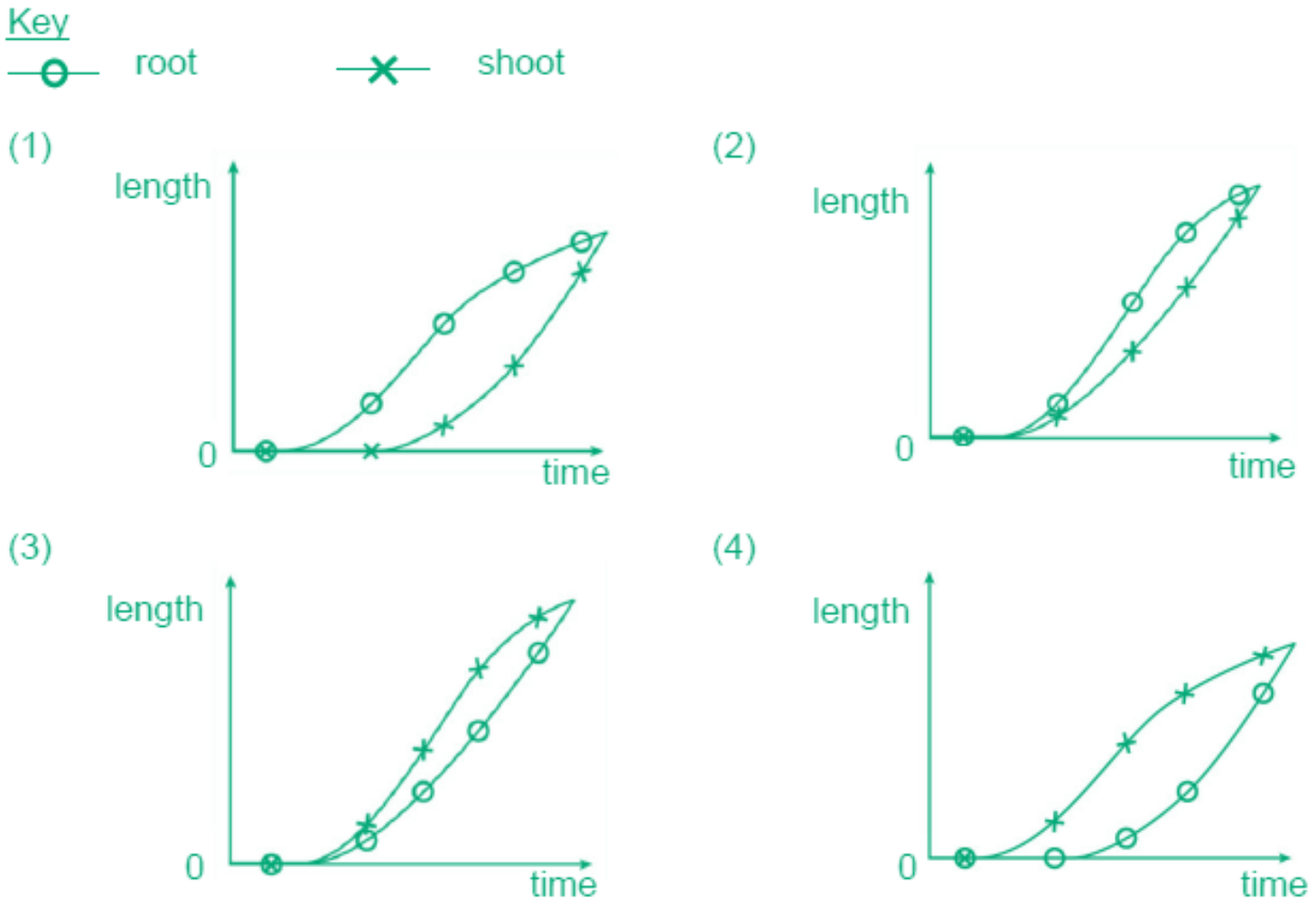
14 What is the direction in which food and water is transported in the shoot on day 7?

	direction for transport of	
	food	water
(1)	upwards	upwards
(2)	upwards	downwards
(3)	downwards	downwards
(4)	downwards	upwards

End of Year Exams - MCQ

1 context, 2 MCQs (Example)

15 Which graph shows how the lengths of the shoot and root of the seedling changed with time?



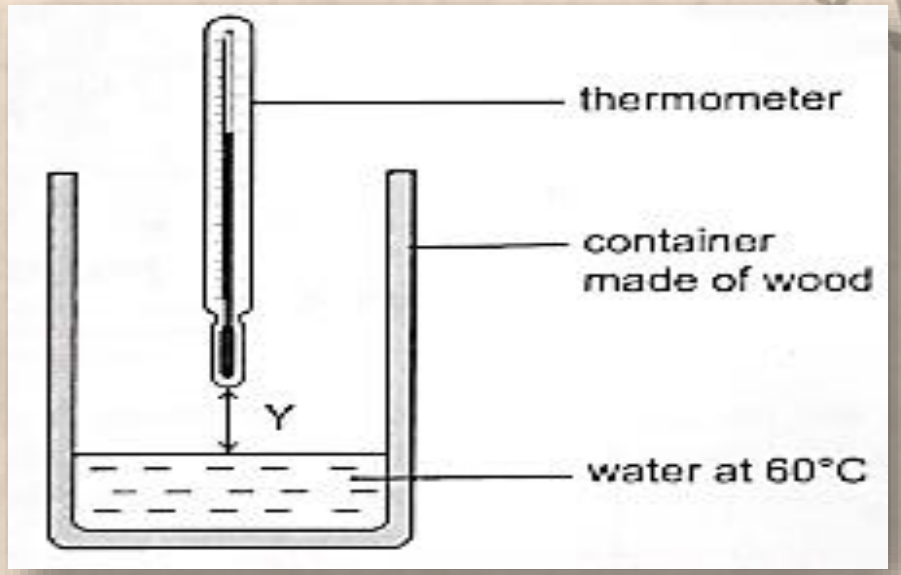
Exemplar

PSLE SCIENCE ITEM

Exemplar

Martin filled a container made of wood with water at 60°C. The temperature of water remained at 60°C throughout the experiment.

He measured the temperature of the air at various distance, Y, from the water surface.



His results are shown below.

Distance Y (cm)	2	4	6	8	10	12
Temperature of air (°C)	42	36	32	29	27	27

Exemplar

(a) Explain how using a container made of wood helped to make the experiment more accurate. [1]

(b) Give a reason why the experiment had to be conducted over a short period of time. [1]

(c) Based on the above results, what is the relationship between the temperature of the air and distance Y? [1]

Exemplar

Key Points

- An experiment is given as a scenario for the first part of the question. Students need to recognise the key idea based on the experiment and data given.
- In the second part of the question a real-world context will be given for students to apply this key idea.
- This type of test item that comes with a parallel example is the current trend observed in Primary Science Assessment.

Exemplar

Analysing part (a) - Key ideas

(a) Explain how using a container made of wood helped to make the experiment more accurate. [1]

- **Wood is a poor conductor of heat; it conducts heat away slowly (from the water to the surrounding)**
- **This ensures that temperature of hot water does not drop quickly. Otherwise, it will affect the temperature of the air that is being measured.**

Exemplar

Analysing part (b) - Key ideas

(b) Give a reason why the experiment had to be conducted over a short period of time. [1]

- **The temperature of water will not remain constant as water will lose heat to the surrounding.**
- **It will affect the temperature of the air that is being measured.**

Exemplar

Analysing part (c) - Key ideas

(c) Based on the above results, what is the relationship between the temperature of the air and distance Y? [1]

- **Key idea → Relationship between distance Y and the temperature of air**
- **As distance Y increases temperature of air decreases**

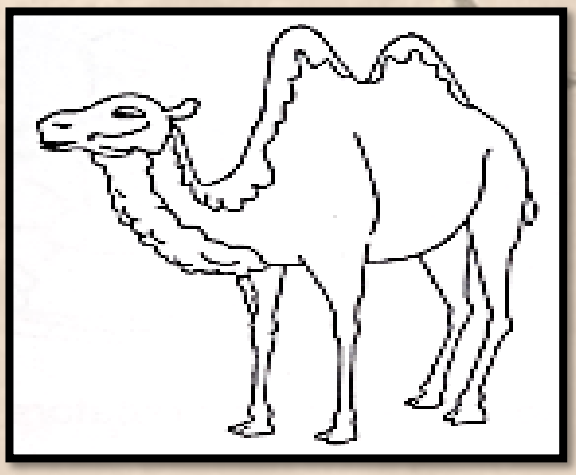
Exemplar

Animal H lives in the desert.

(d) It stands on the hot sand with its four long legs.

(i) Based on Martin's findings, explain why having long legs is an advantage for animal H. [1]

(ii) The temperature in the desert gets very low at night.
Animal H has thick fur to help it adapt to life in the desert. Explain why having thick fur is an advantage for animal H. [1]

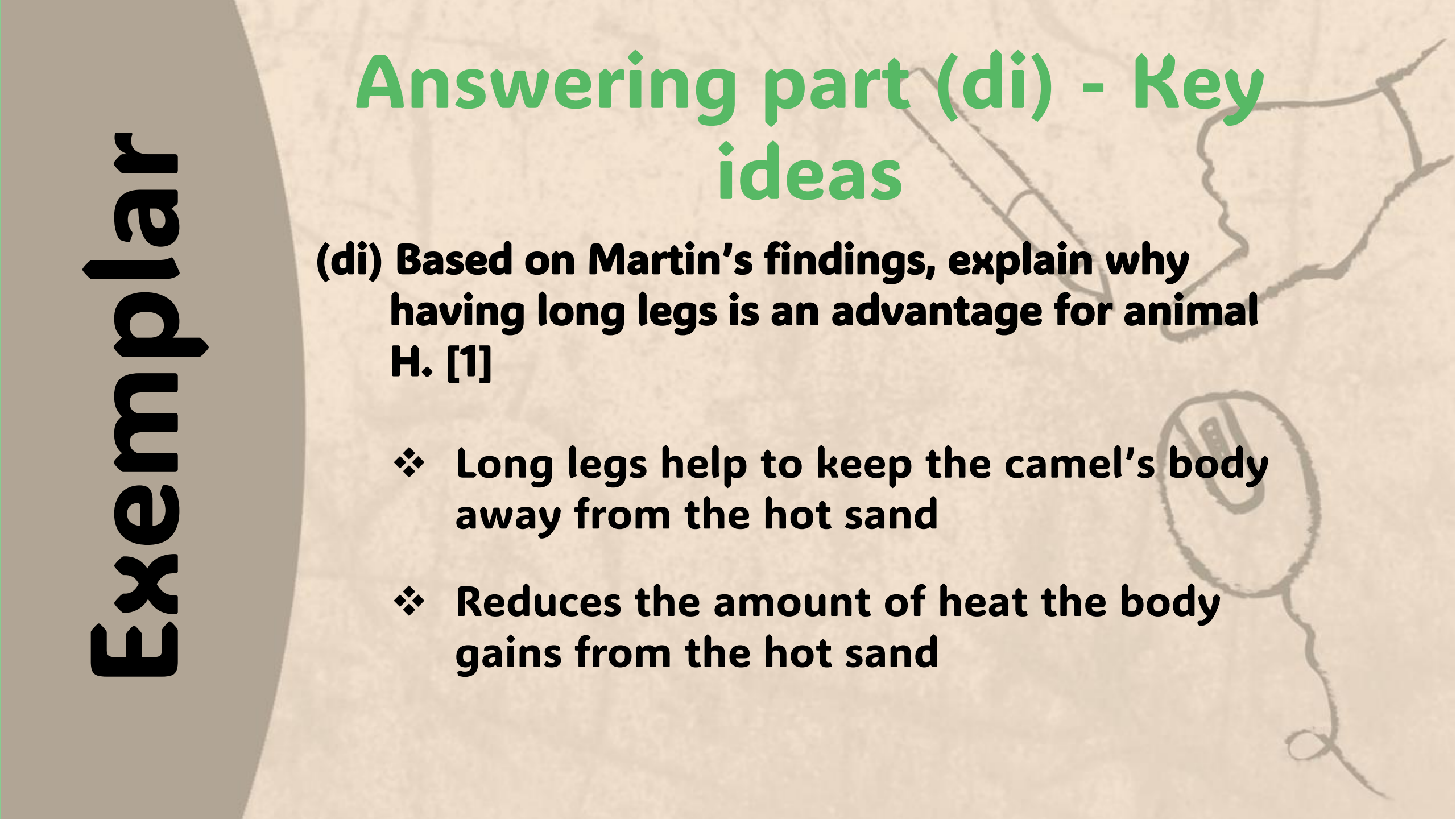


Exemplar

Answering part (di) - Key ideas

(di) Based on Martin's findings, explain why having long legs is an advantage for animal H. [1]

- Long legs help to keep the camel's body away from the hot sand
- Reduces the amount of heat the body gains from the hot sand



Exemplar

Answering part (dii) - Key ideas

(dii) The temperature in the desert gets very low at night. Animal H has thick fur to help it adapt to life in the desert. Explain why having thick fur is an advantage for animal H. [1]

- **Heat from the body would not be lost quickly to the cold surroundings**

Concepts from different topics are tested here. (Heat and adaptation)

Mark Scheme

- Broad and flexible
- Marks awarded for conceptual understanding
- Student's answers that are different from the mark scheme are carefully evaluated and included as acceptable answers if they are conceptually correct
- Marks are not awarded for merely stating 'correct' key words in the answer statement.
- Answer must be specific to the context.
- Answers must show evidence of understanding of relevant concepts and mastery of skills. Such answers will be given due credit.

Content and Application

- Knowing and understanding scientific knowledge is important. Some items will test on definitions (*what is temperature*) and functions (*function of small intestine*)

- But simply acquiring scientific knowledge does not prepare a student sufficiently for the examination.

- Scientific knowledge is only useful when a student knows which situations to apply it in and how to modify it for new situations.

Implications

- ❖ Accurate understanding of concepts is very, very important
  - ✓ **Make connections** between concepts learnt
    - ➢ Materials & Magnets
    - ➢ Heat & Energy
    - ➢ Global Warming
  - ✓ **Apply** concepts / skills in new situations (YIP / STEM)
  - ✓ **Give reasons** for choices made
- ❖ Revision of concepts learnt from P3 to P4

Gearing Towards PSLE

- Revise P3, P4 and P5 work which forms the bulk of PSLE Questions

- Concepts covered in P3 and P4 are tested through more challenging questions

Answering Technique

Claim → Evidence → Reasoning (CER)

Claim

- Answer to the question
- Usually, the easiest for the students

Evidence

- Must be appropriate / precise (usually quantitative data)
- Must be sufficient

Reasoning

- Explains how the evidence supports the claim
- Often includes scientific principles

Gearing Towards PSLE

In school, we provide our students ample opportunities for experiential learning in our Science Curriculum.

- Outdoor Learning
- Learning Journeys
- Enrichment at SSC
- Hands-on Activities
- YI Project
- STEM Infusion
- HPPS Library for reading materials

Support Learning@Home

- Read widely, beyond the text book.
  For example, Singapore Scientist

- Watch Science Programmes - Documentaries on TV
  For example, Animal Planet and Discovery Channel

- Helps to understand how concepts can be applied in varied contexts