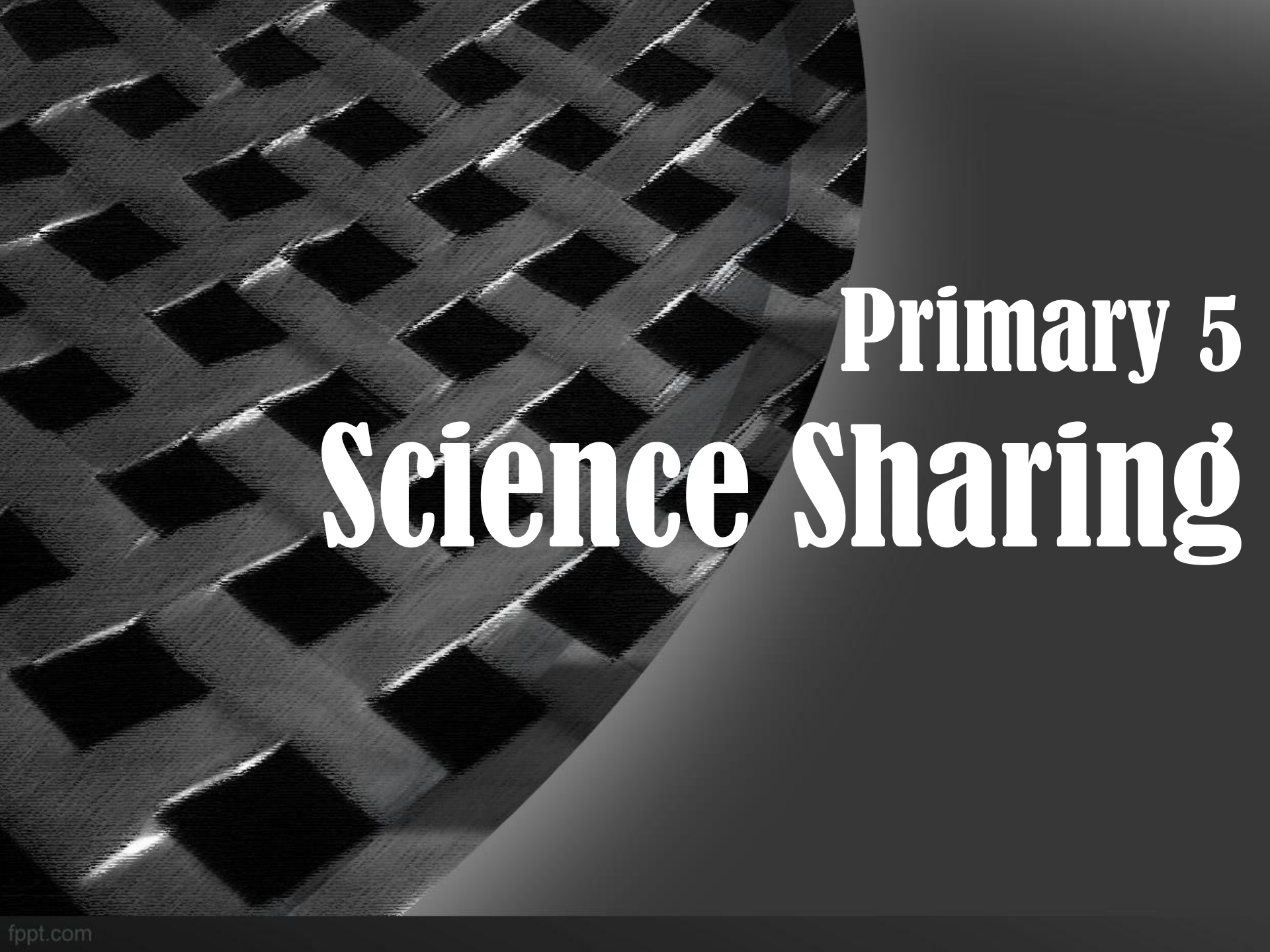


Scope of Briefing

- Primary Science Syllabus
- HPPS Science Curriculum
- Science Assessment
- Exemplars and Mark Scheme
- Answering Strategies
- Home Support

2014 Primary Science Syllabus

- To provide the student with a strong foundation in scientific concepts
- To nurture and develop the student's skills and necessary attitudes for Scientific inquiry
- To develop the student in using these process skills to apply the scientific concepts to different contexts

P5 Science Curriculum Updates

Semester 1

1. Water and changes of state
2. Water cycle
3. Cells
4. Reproduction in Humans and Plants
5. Environment and YI / STEM Project (Planning)

Semester 2

6. STEM YI Projects (Experiments)
7. Electrical System
8. Human & Plant System (not tested in Year End Exams)

P5 Science Curriculum Updates

Young Investigators STEM YI Project

- Non-weighted
- Assessed using rubrics
- Project ideas are based on content covered in lessons on Environment in Term 2
- YI / STEM Project Experiments in Term 2 / 3
- Group Work (2 - 4 students in a group)
- Most will be carried out during curriculum time, some activities via **SLS**

P5 Science Lessons

- Activity Booklets (for hands on)
- Vitamindz Booklets
- Student Handouts
- Review Practice
- Semestral Exam Practice Papers
- SLS Lessons & Assignments
- Learning Journey & Outdoor Learning

Please DO NOT discard any materials at the end of P5 as all the materials from P3 onward are needed for P6 work.

Assessment Matters

Evaluating Learning

Class Work: Hands-on Activities, Written Work & SLS Assignments

Semester 1	Semester 2
Term Review – 25m (Non-weighted) **Weighted Assessment 1** – Pen & Paper (15%) -includes 1 performance task	**Weighted Assessment 2** – Pen & Paper (15%) **STEM YI Project** (Non-weighted, Rubrics / Quiz) **Semestral Exam** (70%)

Format of Paper (Standard Science)

Section	Item Type	No. of Qns	Marks per Qn	Weighting
A	MCQ	28	2	56%
B	OE	12 or 13	2, 3, 4 or 5	44%

Duration of Paper : 1h 45 min

Assessment Objectives (AOs) of P5 End of the Year Exam

Students should be able to

AO1: To demonstrate their **knowledge** and **understanding** of scientific concepts

AO2: To use various **process skills** to interpret and analyse data and **apply scientific concepts** to **different contexts**

P5/ PSLE SCIENCE AOs Weighting

STANDARD SCIENCE	
(I) Knowledge with understanding	40%
(II) Application of knowledge and process skills	60%

FOUNDATION SCIENCE	
(I) Knowledge with understanding	50%
(II) Application of knowledge and process skills	50%

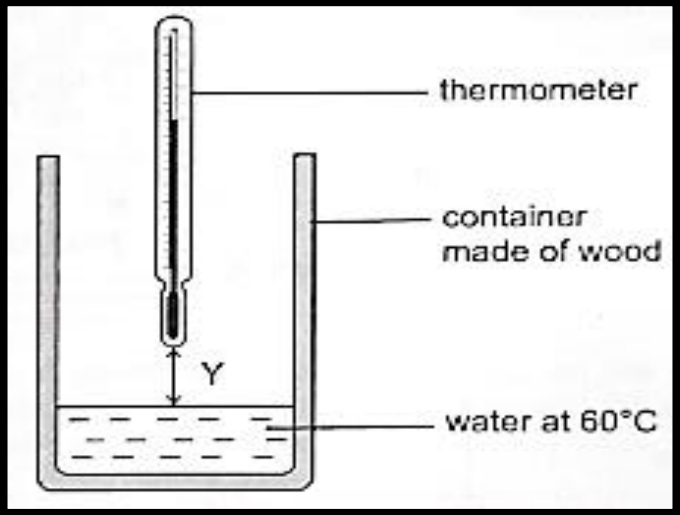
Distribution of Marks

According to Syllabus Content	
Life Science	**45% - 55%**
Physical Science	**45% - 55%**

Exemplar (PSLE TEST ITEM)

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

(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]

General 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.

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.

Analysing part (b) - Key ideas

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

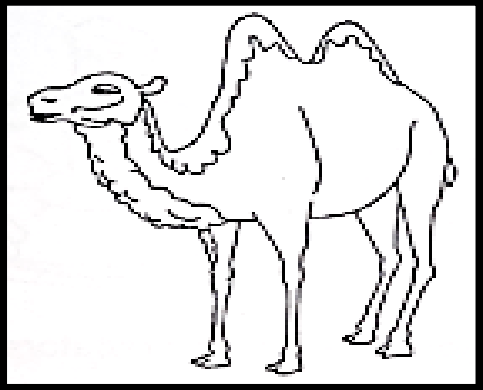
- The temperature of water will not remain constant as water will lose heat to the surrounding.
- It will affect the temperature of the air that is being measured.

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

(d) Animal H lives in the desert.



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]

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

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 temperatur*e) 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

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

Support at 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

Support from School

In school, we provide our P5 students ample opportunities for experiential learning in our Science Curriculum, in the event they do not have sufficient time at home.

- Outdoor Learning
- Learning Journeys
- Enrichment at SSC
- Hands-on Activities
- YI Project
- Use of Environment Blog
- ICT Infusion
- HPPS Library for reading materials

Thank You