

MERIDIAN PRIMARY SCHOOL



Nurturing Future Learners, Future Citizens, Future Leaders

11 February 2023

Primary 5 and Primary 6 Science Curriculum Sharing

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Resilience · Responsibility · Care · Respect · Integrity · Teamwork ·

Overview

- Overview of Science Syllabus
- Assessment
- Answering Science Questions
- Q&A and Feedback

Overview of Science Syllabus

Overview of Science Syllabus

P3

Diversity

- Living and Non-living Things
- Materials

Systems

- What is a System?
- Human Body System
- Plants and Their Parts

P4

Cycles

- Life Cycles of Animals and Plants
- Three States of Matter

Energy

- Light and Shadows
- Heat and Temperature
- Effects of Heat

Interactions

- Magnets and their properties

Overview of Science Syllabus

P5

Cycles

- Reproduction in Plants
- Reproduction in Animals
- Cycles in matter & water (Water)

Systems

- Plant System
- Human System
- Cell System
- Electrical System

P6

Energy

- Forms of Energy
- Energy Conversion

Interactions

- Forces
- Interaction and the environment
- Adaptations
- Man and the Environment

Assessment

P 5 Mastery Assessment (Term 2 & 3)

Standard Science In Term 2 & 3			Duration : 1 h
15%	**Questions**	**Marks**	**Total**
Booklet A type	15 MCQ	2 marks each	30 marks
Booklet B type	4-5 Open-ended	2, 3 & 4 marks each	10 marks
Total:			40 Marks

Foundation Science Term 2 & 3			Duration : 1 h
15%	**Questions**	**Marks**	**Total**
Booklet A type	15 MCQ	2 marks each	30 marks
Booklet B type	4 – 5 Structured/Open-ended questions	1 , 2 or 3 marks	10 marks
Total:			40 Marks

P 5

End of Year Examination

Standard Science EOY Examination (70%)			Duration : 1 h 45 min
Format	**Questions**	**Marks**	**Total**
Booklet A	28 MCQ	2 marks each	56 m
Booklet B	12 - 13 Open-ended	2, 3, 4 & 5 marks Qns	44 m
Grand Total:			100 Marks

Foundation Science EOY Examination (70%) *(Helping wordlist of 76 commonly used words.)*			Duration : 1 h 15 min
Format	**Questions**	**Marks**	**Total**
Booklet A	18 MCQ	2 marks each	36 m
Booklet B	6-7 Structured 5-6 Open-ended	1 or 2 marks Qns 2, 3 & 4 marks Qns	14 m 20 m
Grand Total:			70 Marks

P6

Science Review (Term 1)

Standard Science Review			Duration : 1 h
Format	**Questions**	**Marks**	**Total**
Booklet A	28 MCQ	2 marks each	56 marks
Grand Total:			56 Marks (Non-weighted)
Foundation Science Review			**Duration : 45 min**
Format	**Questions**	**Marks**	**Total**
Booklet A	18 MCQ	2 marks each	36 marks
Grand Total:			36 Marks (Non-weighted)

P6

Timed-Practice (Term 2)

Standard Science Timed-Practice (0%)			Duration : 1 h 45 min
Format	**Questions**	**Marks**	**Total**
Booklet A	28 MCQ	2 marks each	56 marks
Booklet B	12 - 13 Open-ended	2, 3, 4 & 5 marks each	44 marks
Grand Total:			100 Marks (Non-weighted)

Foundation Science Timed-Practice (0%) *(Helping wordlist of 76 commonly used words.)*			Duration : 1 h 15 min
Format	**Questions**	**Marks**	**Total**
Booklet A	18 MCQ	2 marks each	36 marks
Booklet B	6-7 Structured 5-6 Open-ended	1 , 2 marks 2, 3 & 4 marks	14 marks 20 marks
Grand Total:			70 Marks (Non-weighted)

P6

PRELIM (Term 3)

Standard Science Prelim (100%)			Duration : 1 h 45 min
Format	**Questions**	**Marks**	**Total**
Booklet A	28 MCQ	2 marks each	56 marks
Booklet B	12 - 13 Open-ended	2, 3, 4 & 5 marks each	44 marks
Grand Total:			100 Marks

Foundation Science Prelim (100%) *(Helping wordlist of 76 commonly used words.)*			Duration : 1 h 15 min
Format	**Questions**	**Marks**	**Total**
Booklet A	18 MCQ	2 marks each	36 marks
Booklet B	6-7 Structured 5-6 Open-ended	1 , 2 marks 2, 3 & 4 marks	14 marks 20 marks
Grand Total:			70 Marks

P6

PSLE (Term 4)

- ✓ **P6 Science Review –** Term 1 Week 9 (early March)
- ✓ **P6 Timed Practice –** Term 2 Week 8 (late May)
- ✓ **Science Prelim examination –** Term 3 Week 9 (end August)
- ✓ **Science PSLE –** Term 4 Week 4 (early October)

School website: https://www.meridianpri.moe.edu.sg/

Answering Science Questions

Let’s think…

Question:

Substance X is seen coming out of the spout.

What is the state of matter of Substance X?

Let’s Experience…

Water and Its Change of State

Question:

(a) What is the state of matter of Substance X?

Answer: Liquid

Misconception: Gas

Water and Its Change of State

Question:

(b) Explain your answer.

What is happening?

Answer:

Part 1: Water in the kettle gains heat and boils to form steam.

Part 2: Steam escaping from the kettle loses heat when in contact with the cooler surrounding air and condenses to form water droplets.

Water and Its Change of State

Question:

(b) Explain your answer.

How can we help our students obtain this complete answer?

Answer:

Water in the kettle gains heat and boils to form steam.

Steam escaping from the kettle loses heat when in contact with the cooler surrounding air and condenses to form water droplets.

Science Skills & Processes

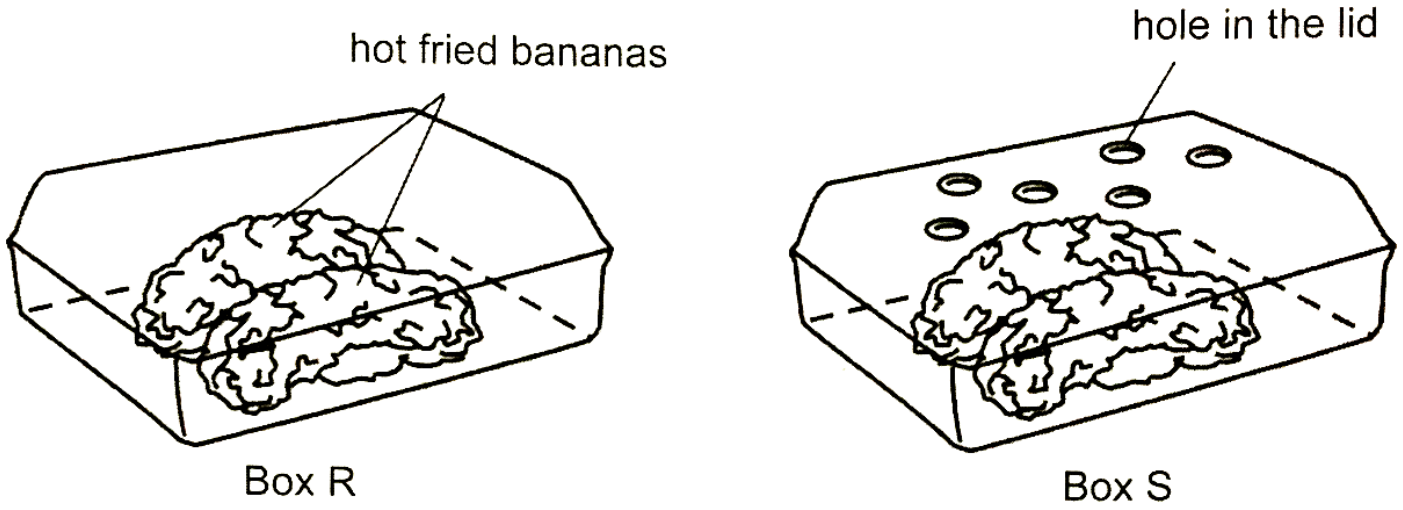
Knowledge, Understanding and Application	Skills and Processes	Ethics and Attitudes
• Scientific phenomena, facts, concepts and principles • Scientific vocabulary, terminology and conventions • Scientific instruments and apparatus including techniques and aspects of safety • Scientific and technological applications	*Skills* • Observing • Comparing • Classifying • Using apparatus and equipment • Communicating • Inferring • Formulating hypothesis • Predicting • Analysing • Generating possibilities • Evaluating *Processes* • Creative problem solving • Decision-making • Investigation	• Curiosity • Creativity • Integrity • Objectivity • Open-mindedness • Perseverance • Responsibility

The assessment of a concept can be done in various contexts.

Here are some examples…

Example 1

(b) Fatimah fried some bananas and put two pieces each in box R and box S as shown below.



She observed that the bananas in box R became slightly wet after some time, but not those in box S.

Explain why the bananas in box R became wet. [2]

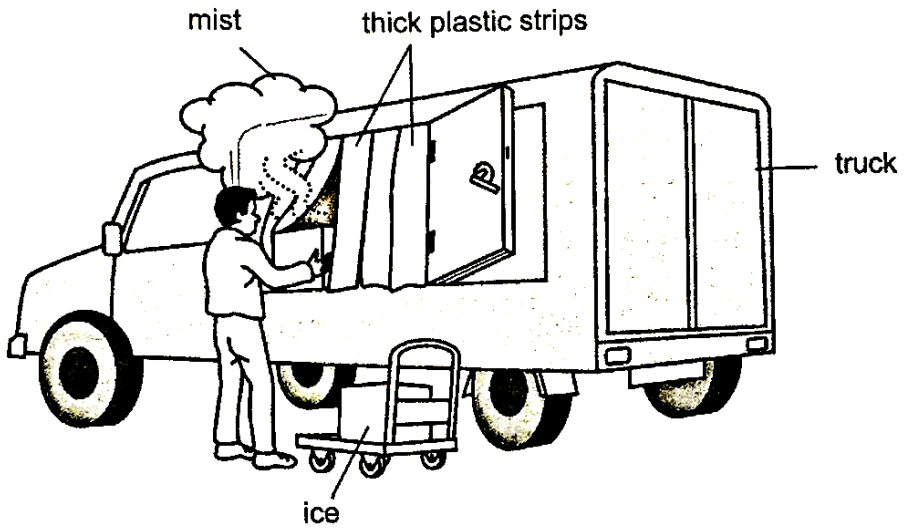
_____

_____

_____

Example 2

39 A worker used a truck to deliver blocks of ice. A mist was seen when ice was taken out of the truck as shown.



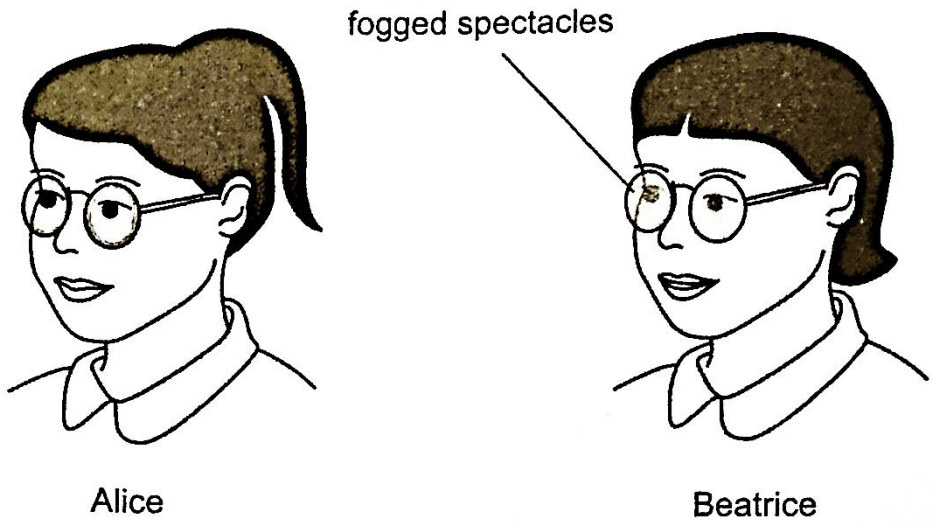
(a) Explain how the mist was formed. [2]

(b) The mist disappeared after a short time. Explain why. [1]

(c) Thick plastic strips were hung at the door to prevent the ice inside the truck from melting. Explain why. [1]

Example 3

40 Alice and Beatrice were travelling in an air-conditioned car. Both were wearing the same type of spectacles. Alice put her hands over her spectacles but Beatrice did not. When they stepped out of the car, there is less fogging on Alice's spectacles than Beatrice's as shown.



(a) Explain why there is less fogging on Alice's spectacles. [2]

_____

_____

_____

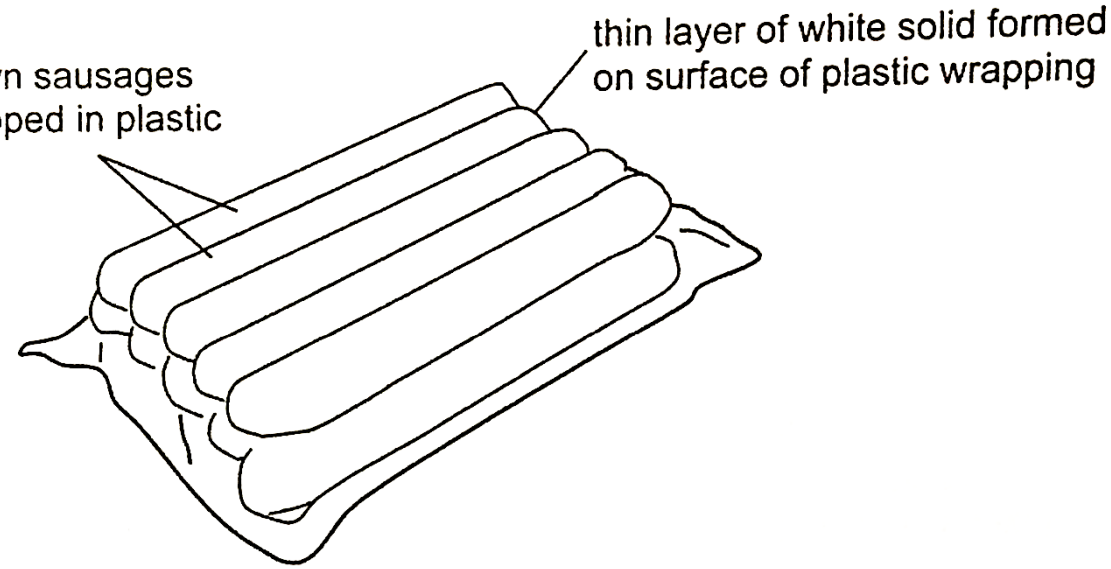
(b) Explain why their spectacles became clear again after some time. [1]

_____

_____

Example 4

40 John placed a pack of brown sausages wrapped in clear plastic from the freezer onto a table. After a short time, a thin layer of white solid was formed on the surface of the plastic wrapping.



(a) Explain how the white solid was formed. [2]

_____

_____

_____

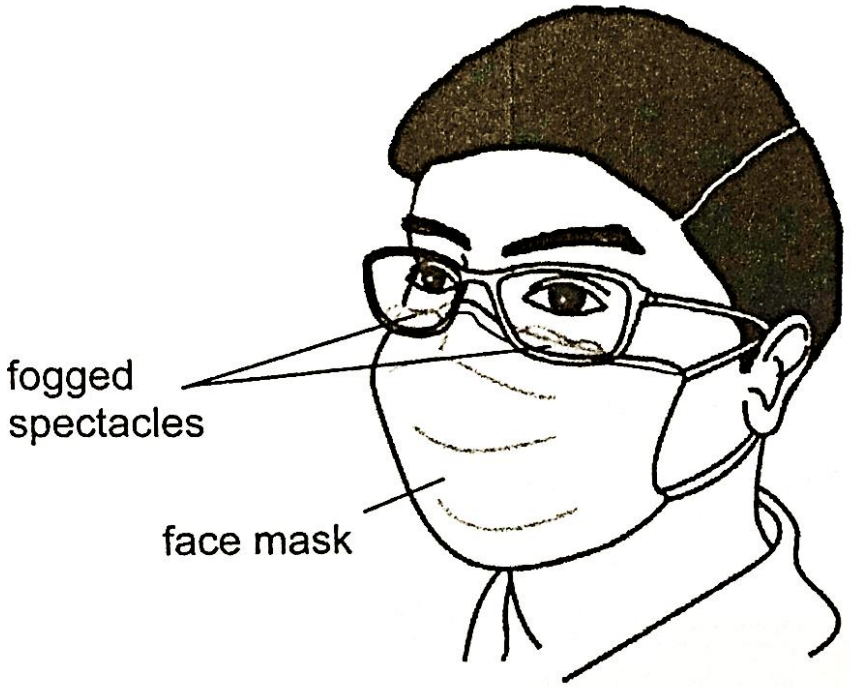
(b) The white solid cannot be seen after a while. Explain why. [1]

_____

_____

Example 5

Fook Choy wore a face mask in an air-conditioned room. His spectacles became fogged when he breathed.



Explain why his spectacles became fogged. [2]

_____

_____

_____

CER strategy to help our students to answer Open-Ended Questions

CER Strategy to Answer Open Ended Questions

A scientific explanation should consist of three parts:

Claim: to **state an answer**

Evidence: **information/proof** from the question and diagram.

Reasoning: justify answer using scientific **principles/facts/concepts**

*Note that not all “C”, “E” and “R” components are required for every question.

Example 1

Question:

(a) What is the state of matter of substance X?

(b) Explain your answer.

X

Answer:

(a) Liquid. C

(b) Water in the kettle gains heat and boils to form steam. E

Steam escaping from the kettle loses heat when in contact with the cooler surrounding air and condenses to form water droplets. R

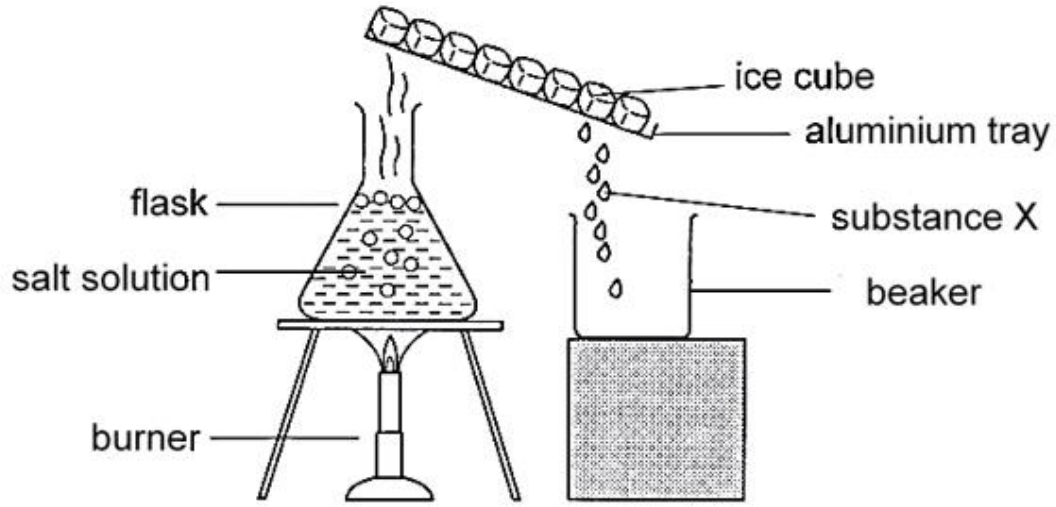
Example 2

Type of question:

Application of concepts in the context of an experiment.

The diagram below shows some salt solution being heated until it boils. An aluminium tray filled with ice cubes is placed in the path of the steam.

E



(a) What is the state of substance X?

C Liquid state

(b) Explain how substance X is formed on the underside of the aluminium tray.

E & R

E

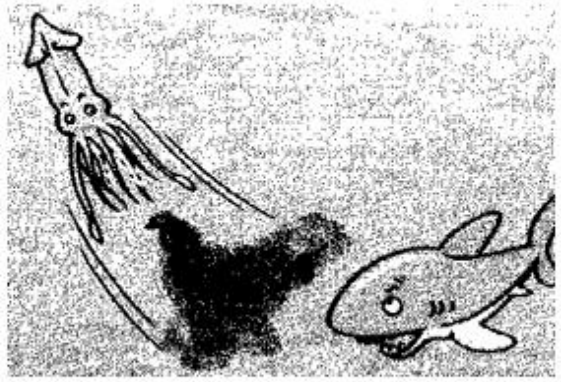
E&R

E&R

(b) The water in the salt solution gains heat from the flame and evaporates into water vapour. This water vapour comes into contact with the cooler surface of the aluminium tray, loses heat and condenses into water droplets which are in the liquid state.

Example 3

When a predator approaches a squid, it squirts out some black ink as shown below.



Explain its reason for doing so. [2]

To escape from predators

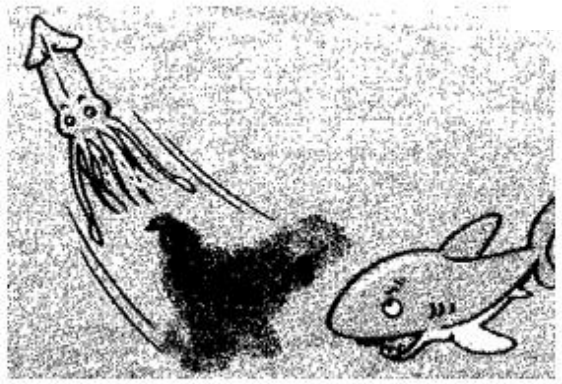
Example 3

Type of question:

Application of concepts in the context of an experiment.

When a predator approaches a squid, it squirts out some black ink as shown below.

E



Explain its reason for doing so. [2]

E R

E & R The squid squirts black ink to distract/cloud the vision of its predator, / it can escape and R prevent itself from being eaten.

Are key words important?

Water in the kettle gains heat and boils to form steam.

Steam escaping from the kettle loses heat when in contact with the cooler surrounding air and condenses to form water droplets.

Steam from the boiling water in the kettle loses heat when in contact with the cooler surrounding air and condenses to form water droplets.

Steam from boiling water loses heat and condense to form water droplets.

Q&A and Feedback

MERIDIAN PRIMARY SCHOOL

Thank You

for Nurturing Future Learners, Future Citizens, Future Leaders Together