SCIENCE DEPARTMENT

Primary 4

Briefing on Subject Based Banding

Outline

- Overview of Primary Science Syllabus
- Assessment Objectives
- How you can support your child's learning

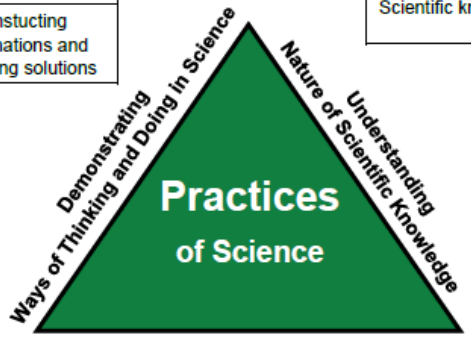
Science Curriculum Framework

https://www.moe.gov.sg/-/media/files/primary/syllabus/2023-primary-science.pdf

Science Curriculum Framework

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		

Understanding NOS
Science is an evidence-based, model-building enterprise to understand the real world.
Science assumes natural causes, order and consistency in natural systems.
Scientific knowledge is generated through established procedures and critical debate.
Scientific knowledge is reliable, durable, open to change in light of new evidence.



Relating
Science-Technology-Society-Environment

Relating STSE
There are risks and benefits associated with the applications of Science in society.
Applications of Science often have ethical, social, economic and environmental implications.
Application of new scientific discoveries often drive technological advancement while advances in technology enable scientists to make new or deeper inquiry.

https://www.moe.gov.sg/-/media/files/primary/syllabus/2023-primary-science.pdf

Inspiring Children…..Joy of Learning

- **Develop the love for science in your child**
  - encourage their questions
  - bring them outdoors to appreciate nature & Science
  - Bring them to Science Centre
  - relate science concepts to daily phenomenon

Basically Explore Together!






In Shuqun We have……

SQ Garden

Farming Zone

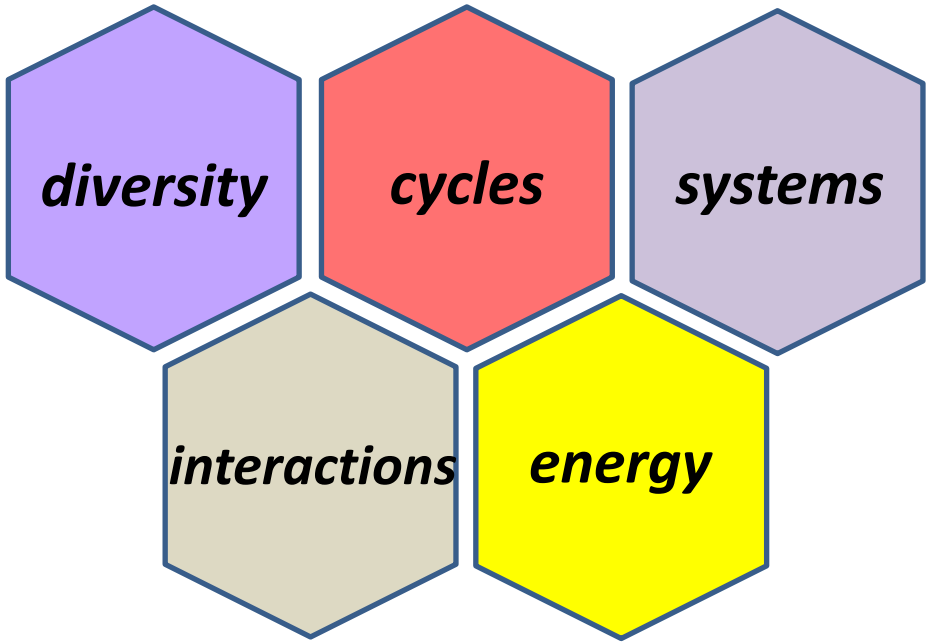
Imaginarium

Stemtopia

PRIMARY SCIENCE SYLLABUS

Shuqun Primary

Themes in Primary Science



Life Science

Physical Science

SYLLABUS COVERAGE (P3 – P4)

Levels	P3	P4
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)	• Plant system (Plant parts and functions) • Human system (Digestive system) • Cycles in matter and water (Matter) • Energy forms and uses (Light) • Energy forms and uses (Heat)

ASSESSMENT FORMAT

The end-of-year examination consists of one written paper comprising two booklets, Booklet A and Booklet B.

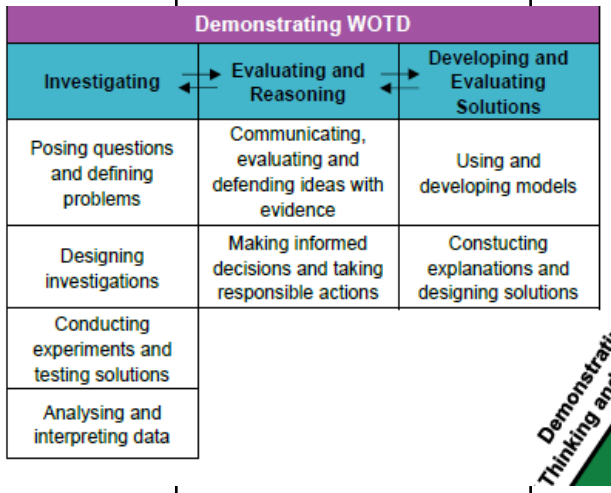
Booklet	Item Type	Number of Questions	Number of marks per question	Marks
A	Multiple-choice	30	2	60
B	Structured Questions	11	2 - 4	40
Total: 100 marks				

Duration of Paper: 1 hour and 45 minutes

Students can attempt any of the booklets first.

ASSESSMENT OBJECTIVES

Assessment Objectives	Weighting
Basic Questions (MCQ & Structured Questions)	**30%**
Knowledge with Understanding *(AOI)* Candidates should be able to demonstrate knowledge and understanding of scientific facts, concepts and principles	20%
Application of Knowledge and Scientific Inquiry (AOII) 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 method •communicating explanations with reasoning	50%



ITEM TYPE:MULTIPLE-CHOICE QUESTION

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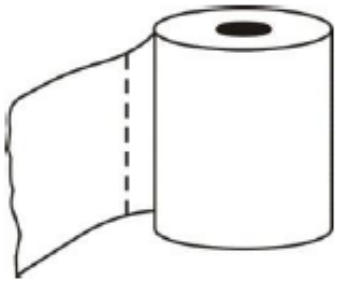
Which of the following objects is **not** made of waterproof material?

(1)

plastic umbrella

(2)*



toilet paper

Basic Question

(3)

metal fork

(4)

rubber gloves

ITEM TYPE: STRUCTURED QUESTION

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M and N are stages in the life cycle of a butterfly.

M

N

Basic Question

Choose the correct words from the box to answer the questions below.

larva	eats	pupa	reproduces

(a) Name stages M and N. [2]

M: _____

N: _____

(b) At stage M, it _____ a lot. [1]

ITEM TYPE:MULTIPLE-CHOICE QUESTION

Study the two groups of objects below.

group A	group B
 ceramic teapot  metal fork	 rope  blanket

AOI:
Knowledge with Understanding

Which headings correctly describe groups A and B?

	group A	group B
(1)	floats on water	sinks in water
(2)	allows light to pass through	does not allow light to pass through
(3)	not flexible	flexible
(4)	breaks easily	does not break easily

ITEM TYPE: Open-ended questions

Tom saw animal G as shown below.

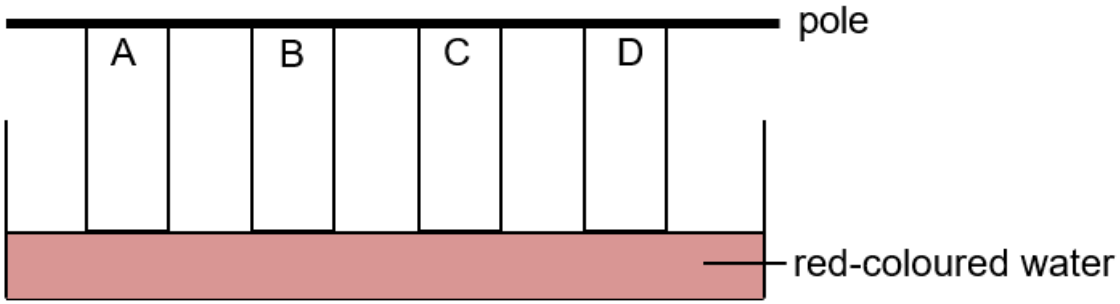
AOI:
Knowledge with Understanding

Which animal group does G belong to? State one characteristic of animal G.

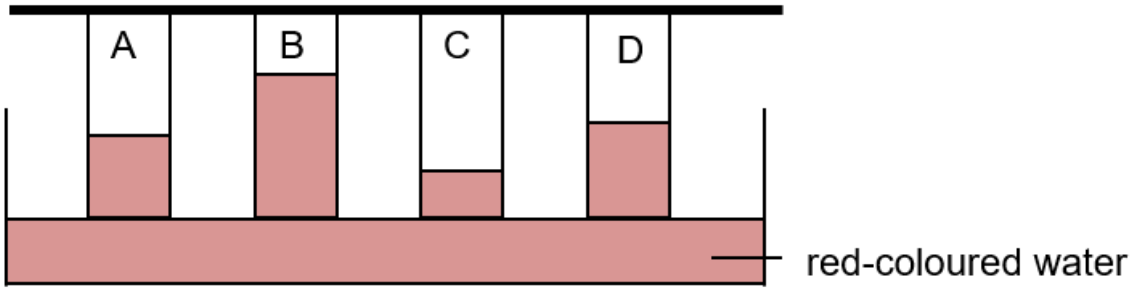
[1]

ITEM TYPE: MULTIPLE-CHOICE QUESTION

Alan wanted to measure the absorbency of four materials, A, B, C and D. He hung the materials in a container of red-coloured water, as shown below. The materials are of identical size and thickness.



He observed the amount of water absorbed by each material after five minutes, as shown below.



ITEM TYPE: MULTIPLE-CHOICE QUESTION

Based on his observation above, which material is most suitable for making part X of a mop?

(1) A

(2) B

(3) C

(4) D

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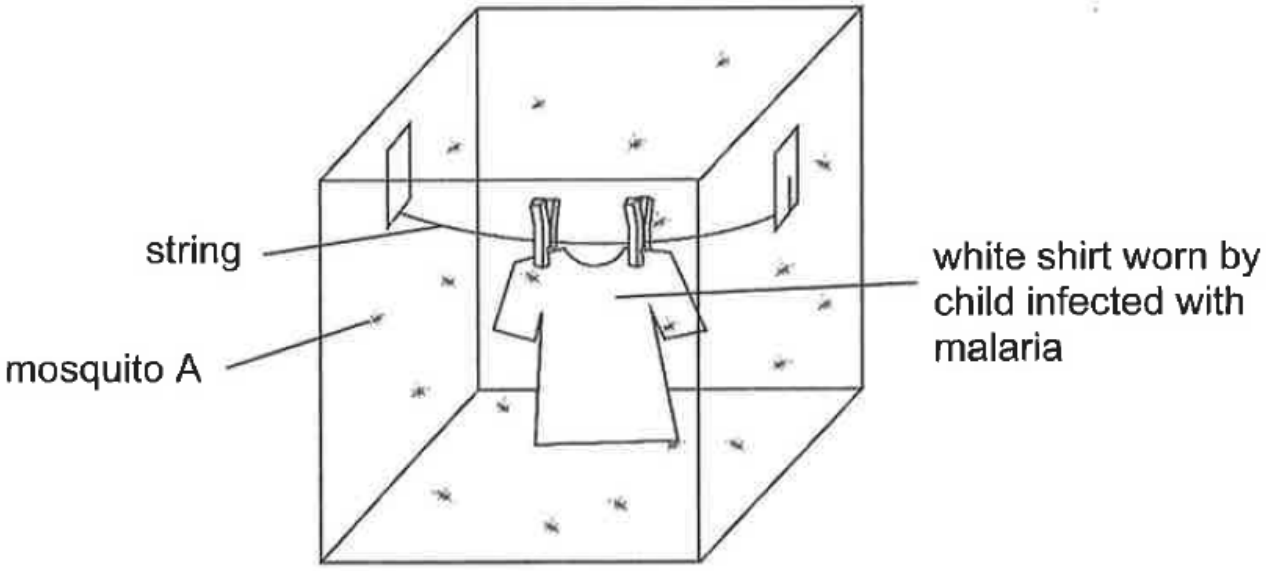
AOII:
Application of knowledge with Process Skills

ITEM TYPE: OPEN-ENDED QUESTION

Malaria is a disease spread by mosquito A. Children infected with malaria are found to be bitten more often by mosquito A.

Joel wanted to find out if children infected with malaria are more attractive to mosquito A due to a certain smell that they produce. He used the set-up shown with 20 of mosquito A in box P.



Box P

Joel counted the number of times mosquitoes landed on the shirt for 3 minutes. He repeated the experiment using another shirt worn by an uninfected child in box Q.

ITEM TYPE: OPEN-ENDED QUESTION

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(i) State a hypothesis on how the smell on a shirt affects its attractiveness to mosquito A. [1]

(ii) Joel used a white shirt instead of a black shirt for the experiment.
Suggest why using a white shirt allows him to obtain more accurate results.
[1]

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AOII:
Application of knowledge with Process Skills

Answering Techniques for MCQ

- Read questions carefully and study the given diagrams, tables or graphs.
- Underline key words.
- Study all the options carefully.
- Eliminate wrong options to arrive at the best possible answer.
- Do not spend too much time on one question!

Answering techniques for Structured Questions

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- Read questions carefully and study the given diagrams, tables or graphs.
- Underline key words.
- Check mark allocation and answer to the point.
- Write in short sentences and clear sentences to express and explain your answer. Do not write stories.

STRATEGIES IN ANSWERING OPEN-ENDED QUESTIONS

- Questions with the following terms:

  State , Identify, List, Name, Give an example

Requires short and direct answer. No explanation is needed.

- Questions with the following terms:

  Explain, Why, Describe, Infer, Conclude

Longer answers that require more details and keywords.
Involve scientific reasoning and reference to science concepts.

<u>DO NOT</u> give one or two word answers.

Claim-Evidence-Reasoning (CER) Answering Technique

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CLAIM

- A statement or a choice that answers the question.

EVIDENCE

- The scientific data (tables, graphs) or observations (diagrams) that supports the claim.

REASONING

- The scientific concepts that connects evidence to the claim. Explains how the evidence supports the claim.

STRATEGIES IN ANSWERING OPEN-ENDED QUESTIONS: C E R

- C: Material X
- E: The temperature of water is lower after 15 minutes.
- R: Therefore, Heat would flow from the surroundings to the water faster (as X is a better/good conductor of heat).

She recorded her results in the table below.

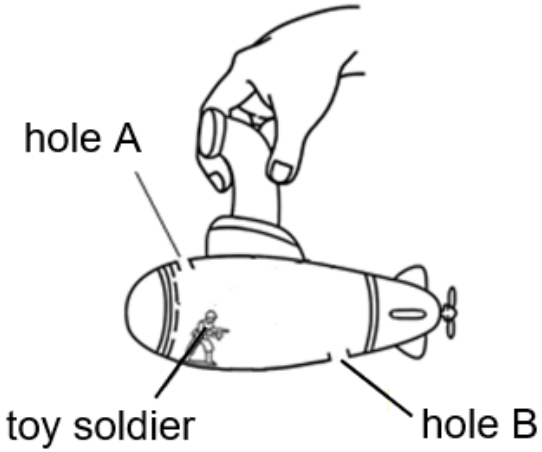
Material of container	Temperature of water in container after 15 minutes (°C)
X	70
Y	85

(c) Which material, X or Y, should Ziyan pick to make the tube of the water heater to heat the water in beaker B faster? [2]

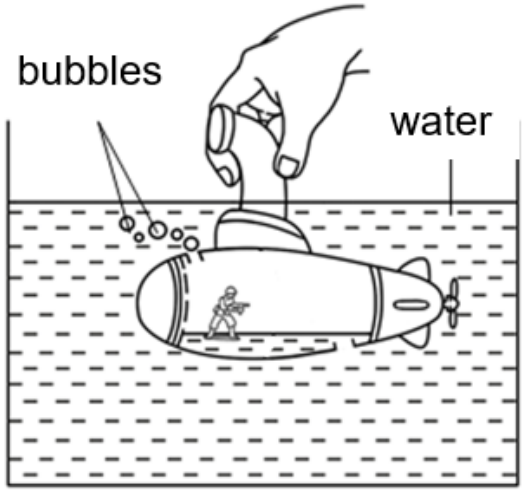
COMMON OBSERVATIONS

Students‘ answers lack precision and accuracy.

Eric placed a toy soldier in a submarine as shown below. There were two holes, A and B, on the submarine. When he pushed the submarine into a container of water, the toy soldier floated up and bubbles could be seen coming out from hole A.



before putting in the tank



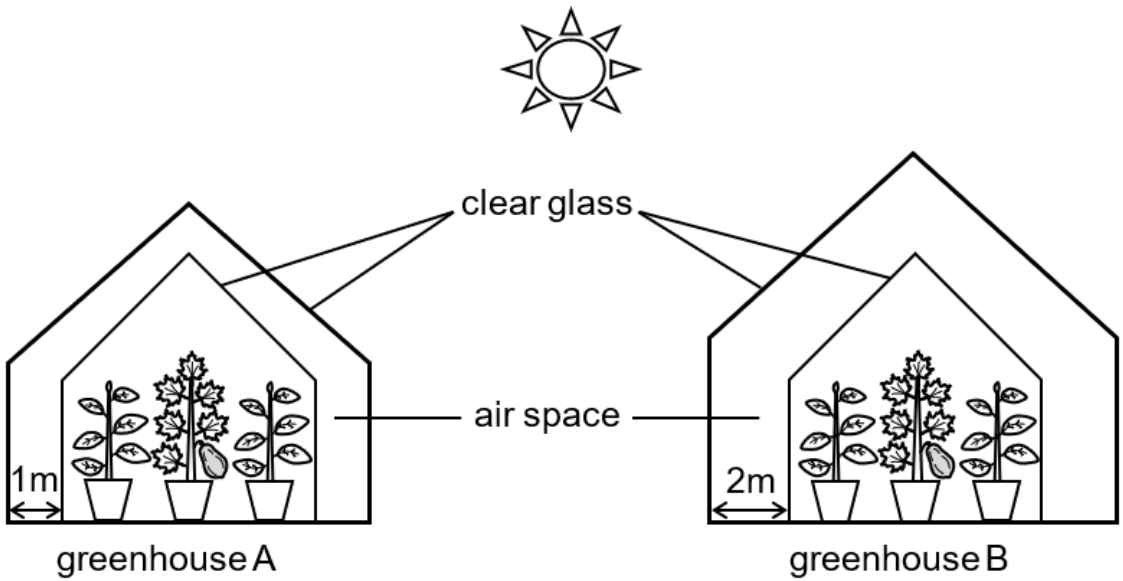
after putting in the tank

Air escapes from hole A [1] and then water enters from hole B to take the space previously occupied by the air [1].

COMMON OBSERVATIONS

- Students do not show comparison.

The diagram below shows two greenhouses, A and B.



(b) Based on the diagram above, which greenhouse, A or B, is cooler on a hot day?

- C: Greenhouse B
- E: It has a thicker air space
- R: Less heat would flow from the surroundings into the greenhouse

Strengthen your child's conceptual understanding…

- Revise P3 and 4 topics.
- Organise notes using mindmaps.
- Reflect and learn from mistakes. Avoid making the same mistakes again.
- Create a science vocabulary bank or word wall.
- Complete practice papers within the stipulated time. Good time management is important!
- Complete homework in a timely manner. Do not leave any questions unattempted.
- Do not memorise answers without understanding.
- Allowing them to carry out scientific investigations at home and discuss their results with you.
- Most importantly allow them to explore!

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Thank You!

For further queries, you may consult your child's 

teacher!