

SHUQUN PRIMARY SCHOOL  
SCIENCE DEPARTMENT  
FOUNDATION SCIENCE



*To Serve with Quality*

# SCIENCE PRIMARY SIX (2025)

## SCIENCE DEPARTMENT VISION AND MISSION

Vision: Every Shuqunite a creative and effective thinker

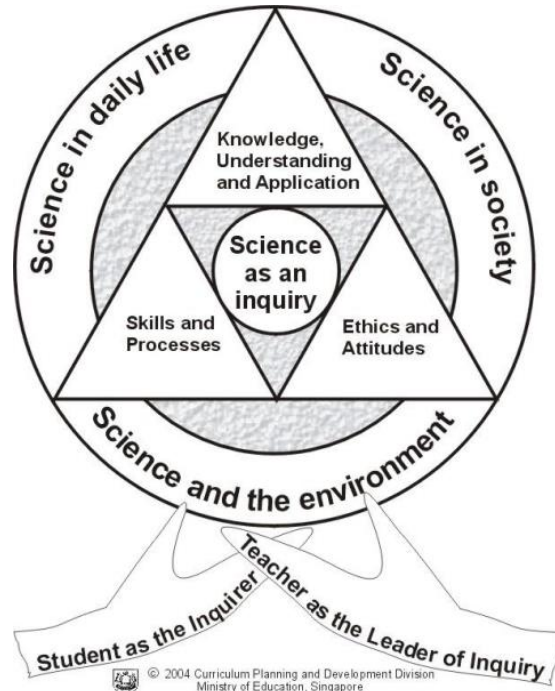
Mission: To nurture effective and creative thinkers with a sense of inquiry and passion for the learning of science

## OVERVIEW OF THE SCIENCE CURRICULUM

The Primary Science Syllabus is based on the **Science Curriculum Framework** which focus on three key areas namely acquisition of science knowledge, process and attitudes. Fundamental concepts in life and physical sciences are broadly covered to adequately prepare our students for scientific studies at higher levels of education.

Central to the curriculum framework is the inculcation of scientific inquiry. The three integral domains of inquiry are:

- (a) Knowledge, Understanding and Application,
- (b) Skills and Processes and
- (c) Ethics and Attitudes.



The science curriculum seeks to develop students' sense of inquiry and the inquiry is thus grounded in knowledge, issues and questions that students are able to relate to in their daily life, society and environment.

## SYLLABUS FRAMEWORK

The approach in the syllabus towards acquisition of science knowledge is based on five main themes: Diversity, Cycles, Systems, Energy and Interactions. These themes encompass fundamental concepts in both life and physical sciences to provide our students with a broad understanding of the environment. A key feature of the syllabus is the spiral approach. Scientific concepts and process skills are revisited at different levels and with increasing depth to allow students to integrate newly acquired knowledge and skills with their existing schemas.

## SKILLS AND PROCESSES

A strong foundation in scientific knowledge includes the development of core process skills which are important for responding to different contexts and inquiring things and phenomena around us.

The table below lists the skills set aligned to the essential features of inquiry.

Skills	Processes
Observing Comparing Classifying Using apparatus and equipment Communicating Inferring Formulating hypothesis Predicting Analysing Generating possibilities Evaluating	Creative problem-solving Decision-making Investigation

The skills and processes as stated above are part of the total process of scientific inquiry. In Shuqun Primary, these skills and processes are explicitly taught through appropriate learning activities starting from Primary Three.

## **TOPICS AND LEARNING OUTCOMES IN PRIMARY 6**

The full Primary Science Syllabus (2014) is available online at

<http://www.moe.gov.sg/education/syllabuses/sciences/files/science-primary-2014.pdf>

<b>Energy Forms and Uses</b>		
<b>Knowledge, Understanding and Application</b>	<b>Skills and Processes</b>	<b>Ethics and Attitudes</b>
<ul style="list-style-type: none"> <li>Recognise that the Sun is our primary source of energy (light and heat).</li> </ul>	<ul style="list-style-type: none"> <li>Investigate the requirements (water, light energy and carbon dioxide) for photosynthesis (production of sugar and oxygen) and communicate findings.</li> </ul>	<ul style="list-style-type: none"> <li>Show objectivity by using data and information to validate observations and explanations about photosynthesis.</li> </ul>

<b>Interactions of Forces</b>		
<ul style="list-style-type: none"> <li>Identify a force as a push or a pull.</li> <li>Show an understanding of the effects of a force.               <ul style="list-style-type: none"> <li>- A force can move a stationary object</li> <li>- A force can speed up, slow down or change the direction of motion</li> <li>- A force can stop a moving object</li> <li>- A force may change the shape of an object</li> </ul> </li> <li>Recognise and give examples of the different types of forces.               <ul style="list-style-type: none"> <li>- magnetic force</li> <li>- gravitational force</li> <li>- frictional force</li> </ul> </li> </ul> <p><i>Note: - Direction of friction for “rolling objects” such as wheels and balls is not required.</i></p> <ul style="list-style-type: none"> <li>Recognise that objects have weight because of the gravitational force acting on the object</li> </ul>	<ul style="list-style-type: none"> <li>Investigate the effect of friction on the motion of objects and communicate findings.</li> </ul>	<ul style="list-style-type: none"> <li>Show objectivity by using data and information to validate observations and explanations about forces.</li> <li>Value individual effort and team work by respecting different perspectives.</li> </ul>

<b>Interactions within the Environment</b>		
<ul style="list-style-type: none"> <li>• Identify the factors that affect the survival of an organism.               <ul style="list-style-type: none"> <li>- physical characteristics of the environment (temperature, light, water)</li> <li>- availability of food</li> <li>- types of other organisms present (producers, consumers, decomposers)</li> </ul> </li> <li>• Trace the energy pathway from the Sun through living things and identify the roles of various organisms in a food chain.</li> <li>• Recognise that different habitats support different organisms (garden, field, pond, seashore, tree, mangrove swamp).</li> <li>• Show an understanding that different habitats support different communities.</li> <li>• Recognise that adaptations serve to enhance survival and can be structural or behavioural.               <ul style="list-style-type: none"> <li>- cope with physical factors</li> <li>- obtain food</li> <li>- escape predators</li> <li>- reproduce by finding and attracting mates or dispersing seeds/fruits</li> </ul> </li> </ul> <p><i>Note: - Students are introduced to the types of dispersal methods and physical characteristics of different fruits and seeds in the theme of Cycles. The focus in this theme is to help students recognise that physical characteristics are the "structural adaptations" which help fruits and seeds in their dispersal.</i></p> <ul style="list-style-type: none"> <li>• Give examples of man's impact, (both positive and negative) on the environment.</li> </ul> <p><i>Note:</i> - <i>Positive impact: e.g. Conservation, Reforestation</i></p> <p>- <i>Negative impact: e.g. Depleting natural resources, deforestation, pollution (land/water/air), global warming</i></p>	<ul style="list-style-type: none"> <li>• Observe, collect and record information regarding the interacting factors within an environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Show concern by being respectful and responsible towards the environment and the organisms living in it.</li> <li>• Show concern for Man's impact on the environment.</li> <li>• Value individual effort and team work</li> </ul>

**TOPICS TESTED FOR PSLE**

<b>Theme</b>	<b>Life Sciences</b>	<b>Physical Sciences</b>
<b>Diversity</b>	Diversity of living things	Diversity of non-living things Diversity of materials
<b>Cycles</b>	Cycles in plants and animals	Cycles in matter and water
<b>Systems</b>	Plant system Human system	Electrical system
<b>Interactions</b>	Interactions within the environment	Interaction of forces
<b>Energy</b>	Energy forms and uses	Energy forms and uses
<b>Total weighting</b>	<b>45 – 55%</b>	<b>45 – 55%</b>

**PSLE PAPER FORMAT (FOUNDATION SCIENCE)**

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

The duration of the paper is 1 hour 15 minutes.

<b>Booklet</b>	<b>Item Type</b>	<b>Number of Questions</b>	<b>Number of marks per questions</b>	<b>Marks</b>
<b>A</b>	<b>Multiple-Choice</b>	<b>18</b>	<b>2</b>	<b>36</b>
<b>B</b>	<b>Structured</b>	<b>6 – 7</b>	<b>2 – 3</b>	<b>14</b>
	<b>Open-Ended</b>	<b>5 – 6</b>	<b>2 – 4</b>	<b>20</b>
<b>Total: 70 marks</b>				

### **Provision of Word List**

A word list is provided for students taking PSLE Foundation Science Paper to allow them to display their knowledge and understanding without being unduly disadvantaged by their weakness in the English language. Do take note that the word list is not exhaustive.

### **QUESTION TYPES**

1. Knowledge with Understanding (50%)

- Demonstrate knowledge and understanding of scientific facts, concepts and principles

2. Application of Knowledge and Process Skills (50%)

- Apply scientific facts, concepts and principles to new situations
- Use one or a combination of basic process skills

Below is the list of common scientific terms used in questions

Key words in Questions	What you should do
Classify	To group things based on common characteristics
Compare	To identify similarities or differences between objects, concepts or processes
Describe	To write a detailed description of the key points of a concept or observation
Explain/Why	To write a detailed answer, stating the cause and effect
Identify	To select or name the object, concept or process briefly
Infer	To draw a conclusion based on observations or data
Investigate	To find out by carrying out experiments
List	To state a number of points without any elaboration or explanation
Measure	To obtain a reading from an instrument
State/Give	To give a concise answer with little or no supporting reasons/justification
Trace	To follow a path

- Short answers with no explanation is required when questions consists of the following words:

**State, Identify, List, Name, Give an example**

e.g.

**Question:** Name the cell part that controls the movement of substances in and out of the cell. [1]

**Answer:** cell membrane

(1 mark is awarded. There is no need to describe the cell membrane or state that it is found in both plant cell and animal cell.)

- Answers must include scientific reasoning and reference to science concepts with relevant details when questions consist of the following words:

**Explain, Describe, Why, Infer, Conclude, Give a reason**



- Distinguish terms which appear similar but have different meanings. For example, students are confused between 'ovary' and 'ovule' and often used these terms interchangeably.
- Use relevant scientific concepts when studying a context. Do not use layman reasoning. Students must be able to identify the relevant concepts or apply the concepts appropriately to contexts. For example,

### EXAMINATION PREPARATION AND STRATEGIES

- Organise and link scientific concepts.
  - Make and organise notes by using any form of graphic organisers such as concept maps, tables.
- Use acronyms or acrostics to remember information
  - Acrostics involve the formation of a sentence or a story using the first letters of key words.

**E.g. WET (Factors affecting the rate of evaporation of water)**

W– presence of wind

E – exposed surface area

T – temperature

- Use science language at all times. Emphasize the use of correct science terms.  
E.g.  
*The nucleus controls everything in the cell. (×)*  
*The nucleus controls all activities in the cell. (✓)*
- Encourage your child to ask questions and observe things, phenomena or changes around us. Observation is an important step leading to scientific explanations.
- Learn spelling of key words.
- Practise and revise science questions in topical worksheets or practice papers. Correct mistakes and re-learn the erroneous concepts.

## R.I.S.E Strategy to Answering Science Questions

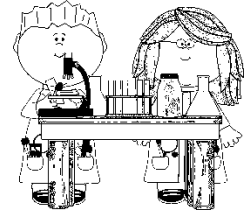
### Multiple-Choice Questions:

**R** – Read the question carefully. Study given diagrams, tables or graphs. Make comparisons if there is more than one diagram, tables of graphs.

**I** – Identify key words and topic(s)/concept(s) tested.

**S** – Study all options carefully.

**E** – Eliminate distractors to arrive at the best possible answer.



### Open-ended Questions:

**R** – Read the question carefully. Study given diagrams, tables or graphs. Make comparisons if there is more than one diagram, tables of graphs.

**I** – Identify key words and topic(s)/concept(s) tested.

**S** – Select relevant concepts to answer the question. Check the mark allocation and answer to the point.

**E** – Express and explain answers clearly. Support your answer with scientific reasoning. Do not unnecessary and unrelated information in your answer.

## SUGGESTED SCIENCE WEBSITES

Student Learning Space: <https://vle.learning.moe.edu.sg/home>

Young Scientist Badges Portal: <https://youngscientist.sscglobal.com.sg/>

National Geographic Kids: <https://kids.nationalgeographic.com/>