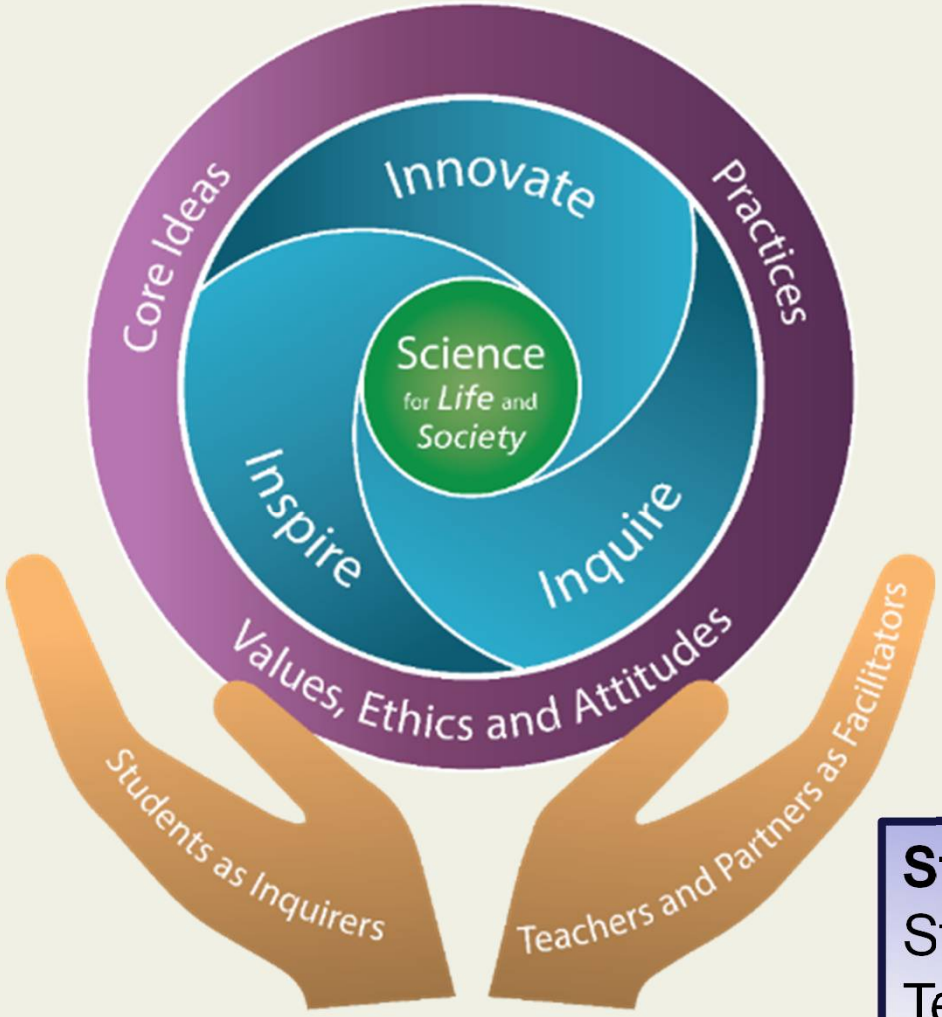
Curriculum Briefing
Primary 5 Science
8 Jan 2025

By Ms Loo Ching Yee
HOD Science

Science Curriculum Framework



Goals
Science for Life and Society

Vision - 3Ins
Inspire
Inquire
Innovate

Three Domains
Core Ideas
Practices
Values, Ethics and Attitudes

Stakeholders
Students as Inquirers
Teachers & Partners as Facilitators

21st Century Competencies Framework

.

Primary Science Syllabus

It aims to :

- provide students with experiences which build on their interest in and stimulate their curiosity about their environment

- provide students with basic scientific terms and concepts to help them understand themselves and the world around them

- provide students with opportunities to develop skills, habits of mind and attitudes necessary for scientific inquiry

- prepare students towards using scientific knowledge and methods in making personal decisions

- help students appreciate how science influences people and the environment

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P5 Science

Science as an Inquiry

1. **Question** - Learner engages in scientific questions

2. **Evidence** - Learner collects data in response to questions

3. **Explanation** - Learner formulates explanations from evidence

4. **Connection** - Learner connects explanations to scientific knowledge

5. **Communication** - Learner communicates and justifies explanations

P5 Science

What is central to science inquiry?

Helping students use evidence to create explanations for natural phenomena.

P5 Science

SCIENTIFIC ARGUMENTATION

How do you know that?
(Data in graphical, tabular or pictorial form)

CLAIM + EVIDENCE + REASONING = EXPLANATION

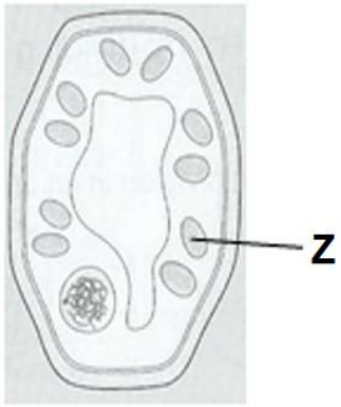
What do you know?
(The answer to the question)

Why does your evidence support your claim?

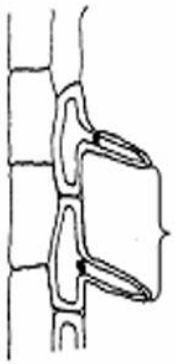
(Connects evidence to claim which involves the use of a scientific concept to describe why the evidence support the claim)

P5 Science (feature in topical worksheet)

2. The diagrams below show a plant cell and some root cells.



plant cell



root cells

Z contains a substance whict traps light energy.

(a) Predict what would happen to the plant when Z was removed from the plant cell. Giva a reason for your answer. [1]

Checklist:

- ❑ CLAIM: Your answer to the question.
- ❑ EVIDENCE: Scientific data/information (e.g. table, graphical, pictorial, text provided in the question that supports the claim.)
- ❑ REASONING: Explanation(s) using scientific concepts that supports the evidence.

The thought box after each part question is meant for the pupils to make their thinking visible by organising and sequence random thoughts that the pupils pen down before they craft their responses as well as guiding the pupils to use CER to frame sound scientific explanations.

Syllabus Organisation

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

P5 Science

Attitude Coverage
1) Curiosity 2) Creativity 3) Integrity 4) Objectivity 5) Open-mindedness 6) Perseverance 7) Responsibility

P5 Science

Skills and Processes at P5 level
Skills • Observing • Comparing • Classifying • Using apparatus and equipment • Communicating • Inferring • Predicting • Analysing • Generating possibilities • Formulating hypothesis

Skills and Processes
Processes • Creative Problem Solving • Decision Making • Investigation **At the level appropriate to P5*

P5 Science

Components of Lessons

1) Theory - Concept teaching

2) Hands-on : Practical Sessions in the science laboratory

3) Topical notes

4) Topical Supplementary Worksheets :

   Worksheet 1 : Misconception
   Worksheet 2 : MCQ
   Worksheet 3 : Open-ended

5) Learning Log: Topical reflections by pupil for each unit; concept-map (last reflection)

6) Learning Log: Pupil's self-evaluation of their own learning(checklist)

7) Topical Review (at the end of each unit)

P5 Science

Written Assignments

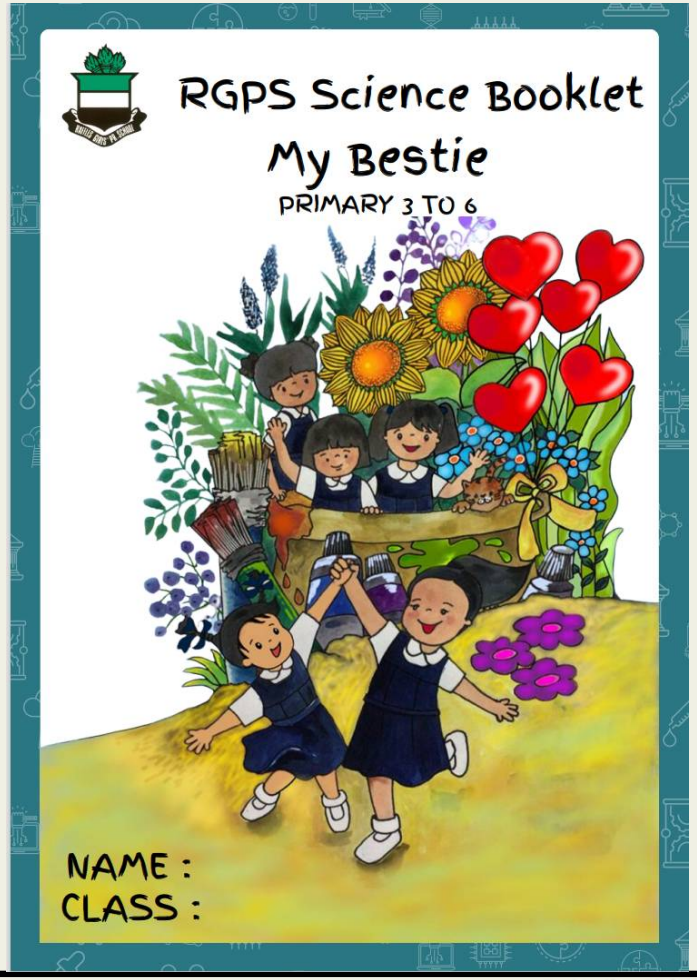
1) Inspiring Science Activity Worksheets
2) Topical unit Supplementary Worksheets
3) Topical Reflection (on Learning Log)

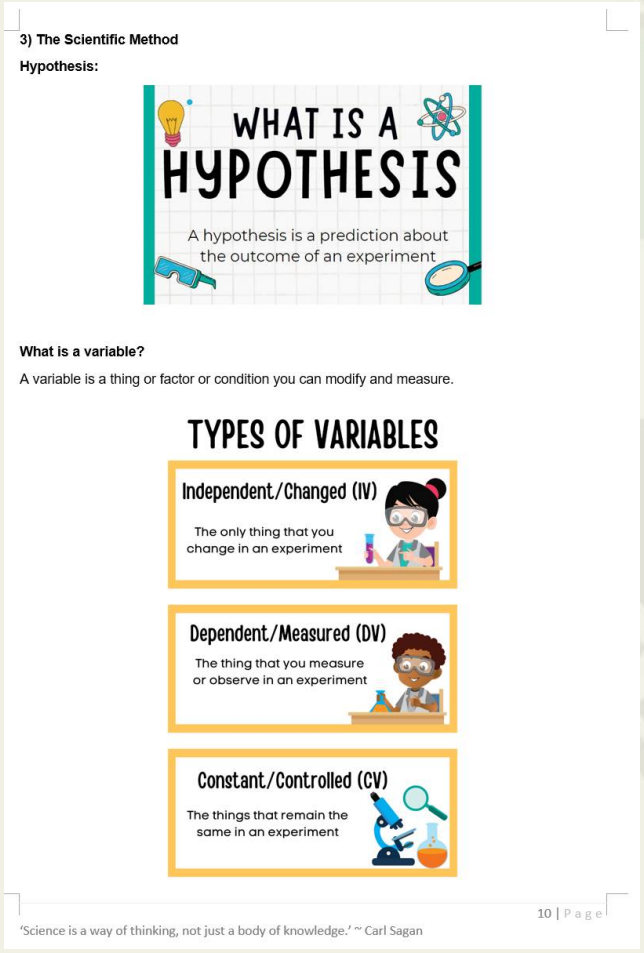
NOTE : Topical worksheets will be returned for parents' checking and signature upon completion of each topic.

To be filed in the Science File

P5 Science

RGPS Student Science Resource Book





P5 Science

Programme

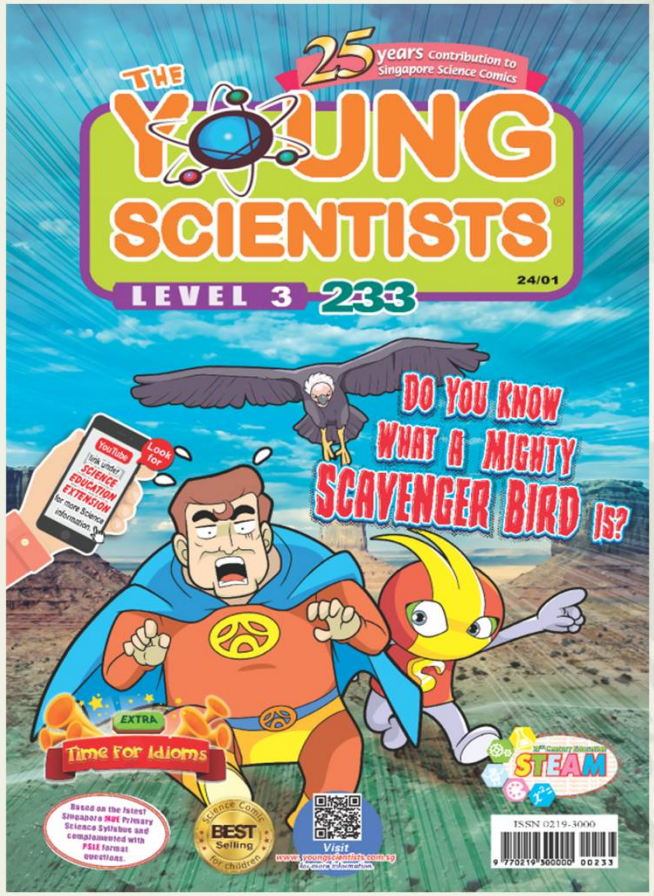
- **Veridis Programme**
- **STEM**

P5 Science

Enrichment

Science Supplementary Reading Material (Optional):

The Young Scientists (Level 3)



Online subscription:

https://youngscientistsreader.com.sg/product category/subscriptions/

ASSESSMENT MODES

- **FORMATIVE ASSESSMENT**
  (includes open resource assessment for identified topics)
- **SUMMATIVE ASSESSMENT**

ASSESSMENT MODES : FORMATIVE ASSESSMENT

Purpose:

- ❖Provides pupils continual feedback during the instructional and learning process to help pupils actively manage and adjust their own learning.
- ❖Non-graded.
- ❖Helps the pupils to answer these questions:
  - *"Where am I going?"*
  - *"Where am I now?*
  - *"How can I close the gap?"*

Through:

- ✓Teacher/ Self and peer assessment on identified performance tasks using rubric indicators
- ✓Teacher's feedback on identified qualities of pupil's learning on topical unit content page
- ✓ Pupils' self evaluation of own learning for each topic
- ✓Pupils' reflection of own learning for each topic

Feedback From the Science Teacher:

ASSIGNMENT	Needs improvement	Sometimes	Most of the time
▪ **Completed** assignments and **submitted on time.**			
▪ **Took initiative** to **clarify doubts by asking questions** in class.			
▪ Able to provide scientific explanation by making an **accurate and complete claim** which is **supported with appropriate and sufficient evidence; provides accurate and complete reasoning** that **links evidence to claim** which includes **appropriate and sufficient scientific concepts/principles**.			
▪ Made concerted effort to **do timely corrections.**			
▪ **Updated** the content page			
▪ **Organised** the **complete** set of unit worksheets for filing.			

Feedback on the pupil's performance.

After completion of the topic:

Parent's Signature: _____ **Date :** _____

Time For Reflection!

Before the start of lesson unit:-
What do I already know about this topic? What are the questions that I have for this unit?

How well have I understood the science ideas/concepts? Put a (✓) in the box.
1 - Science ideas I understood the **least** **4** - Science ideas I understood the **most**

	Science Ideas/ concepts	1	2	3	4
1	I know that water can exist in three interchangeable states.				
2	I understand how water changes from one state to another.				
3	I know what is meant by the melting point of ice and the boiling point of water.				
4	I know the difference between boiling and evaporation.				
5	I know what the water cycle is.				
6	I know the processes involved in the water cycle (e.g. evaporation and condensation)				
7	I know the differences in the processes of the water cycle.				
8	I know why the water cycle is important in our daily life.				
9	I know what the causes of water pollution are.				
10	I know the factors that affect rate of evaporation.				
11	I am able to **apply** 'CER' technique to craft my scientific explanation.				
12	I am able to **determine** the aim, hypothesis, IV, DV and CVs of an investigative protocol				

Time For Reflection!

After the lesson unit:
How can the science concept(s) that I have learnt in this topic be applied in daily life? Explain in detail.
What is/are the previous wrong science concept(s) that I had which had been corrected?

Assigned as homework before the introduction of the unit

Provide opportunity for the pupil to take charge of her own learning.

Assigned as homework upon the completion of the unit : concept mapping

:

Rubrics related to the activity

Raffles Girls' Primary School
Science
Rubics : Designing a Scientific Experiment

Name : _____ Class: _____

Topic : _____ Date : _____

Assessment*
*(*put a tick if criteria is observed)*

	Performance Criteria	Self	Peer	Teacher
1	There is a testable question for the experiment			
2	Research (literature review) was done to learn more about the question.			
3	The design of the experiment tests the hypothesis.			
4.	A list of all necessary materials and apparatus was included.			
5	A detailed step-by-step procedure is included.			
6.	The procedures were written clearly enough so that another person could repeat the experiments			
7.	The procedures shows that repeated trials were done			
8.	Data were collected and recorded for each trial			
9.	An appropriate graph was created to display the data			
10	Conclusion were drawn using the data and refer back to the hypothesis			
11.	A 3 or more sentence was written explaining and describing what was discovered or learned			

Assessment Modes : Summative

Type	Weighted Assessment 1 (WA 1) Term 2	Weighted Assessment 2 (WA 2) (Science Practical Test) Term 3	End of Year Exam (EYE) Term 4
Format	6 OE Questions	3 Questions on • Life Science • Physical Science	Section A (MCQ): 30 Questions Section B (OE): 11 Questions
Duration	40 min	30 min	1 h 45 min
Overall Weightage	15%	15%	70%

P5 Science Teachers:

5AB - Mdm Roziyana Rahmat
5C - Ms De Silva Julie Ann
5D - Ms Thong Kar Fong
5E - Ms De Silva Julie Ann
5F - Ms Ho Shwu Huey
5G - Mdm Roziyana Rahmat
5HI - Ms Thong Kar Fong
5EI - Ms Loo Ching Yee

Thank You