Curriculum Briefing
Primary 6 Science
5 Jan 2023

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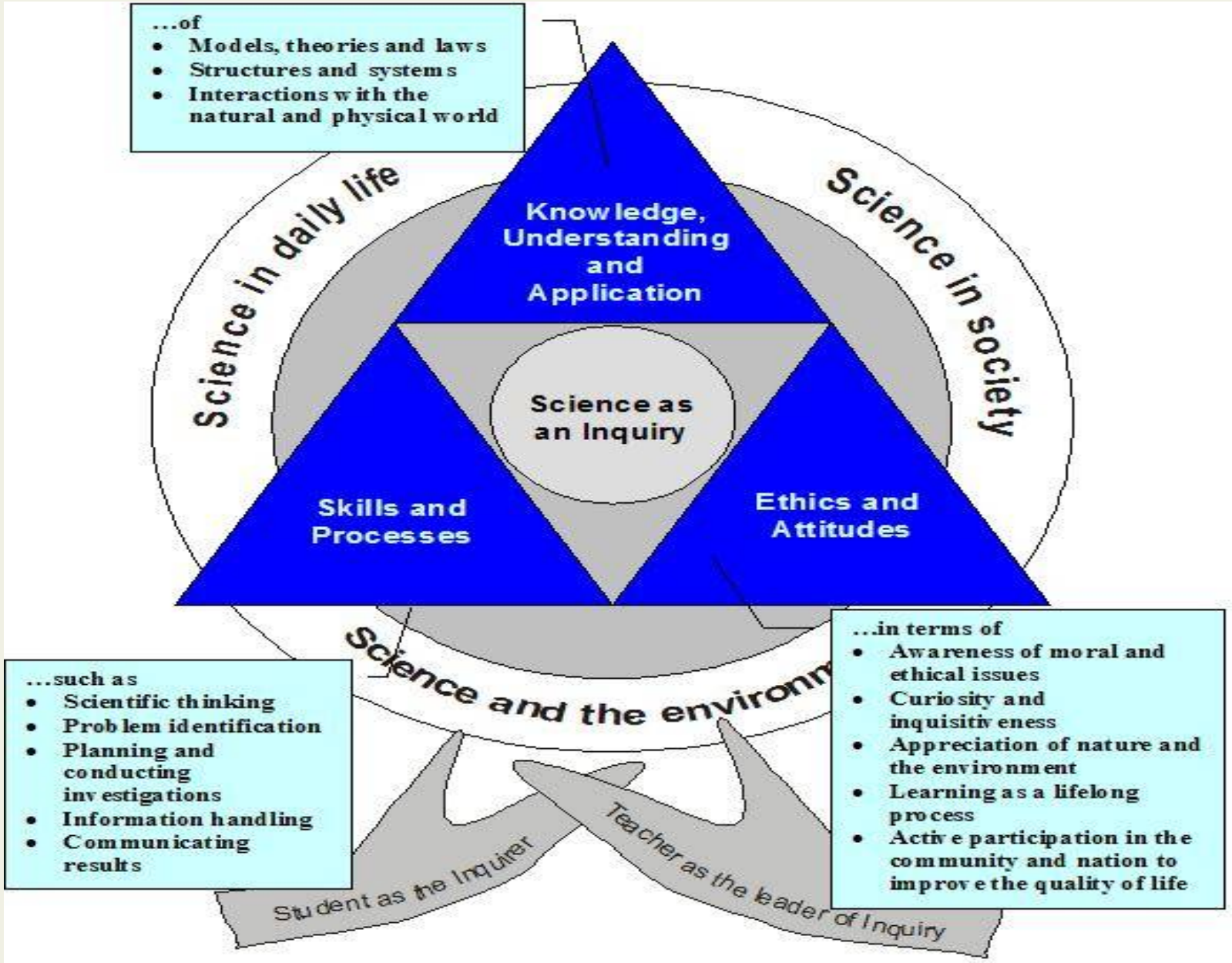
HOD,Science

Primary Science Framework



21st Century Competencies Framework

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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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P6 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

P6 Science

What is central to science inquiry?

Helping students use evidence to create explanations for natural phenomena.

P6 Science

SCIENTIFIC ARGUMENTATION

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

CLAIM + EVIDENCE + REASONING = EXPLANATION

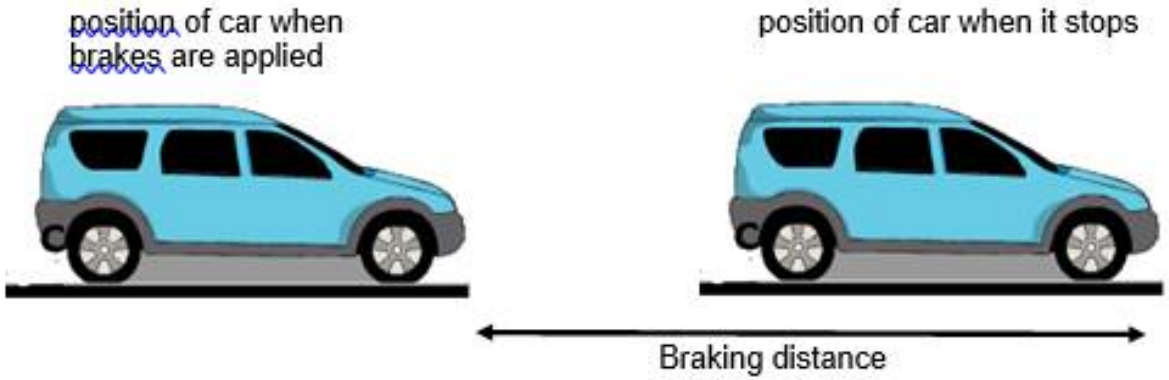
What do you know?
(The answer to the question)

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)

P6 Science (feature in topical worksheet)

6. The diagram and the table below show the braking distance of a car.



Type of road surface	Braking distance (m)	
	Car A (with new tyres)	Car B (with old and worn out tyres)
concrete	14	18

(a) Explain why there is a great difference between the braking distance of the 2 cars. [1]

Please check (√) in the box to make sure that your answer contains a claim, evidence and reasoning.

- ❑ CLAIM
- ❑ EVIDENCE
- ❑ REASONING

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.

Themes and Units taught at P6

Themes	Lower Block (P3 & 4)	Upper Block (P5 & 6)
Diversity	• Diversity of living and non-living things • Diversity of materials	
Cycles	• Cycles of Plants and Animals (Life Cycles) • **Cycles in matter and water (Matter)**	• Cycles in plants and animals (Reproduction) • Cycles in matter and water (Water)
Systems	• **Plant system (Plant parts and functions)** • **Human system (Digestive system)**	• **Plant transport system** • Human system (Respiratory and circulatory systems) • Cell system • Electrical system
Interactions	• Interaction of forces (magnets)	• Interaction of forces (Frictional, gravitational forces, force in springs) • Interaction within the environment (food chain /web, Adaptation, Man's impact & environment)
Energy	• **Energy forms and uses (light and heat)**	• Energy forms and uses (photosynthesis) • Energy conversion

P6 Science

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

P6 Science

Skills and Processes at P6 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

P6 Science

Components of Lessons

1) Theory - Concept teaching
2) Hands-on : Practical Sessions in the science laboratory
3) Topical notes
4) Topical Supplementary Worksheets :
5) Worksheet 1 : Misconception
   Worksheet 2 : MCQ
6) Worksheet 3 : Open-ended
7) Learning Log: Topical reflections by pupil for each unit (last reflection : concept map)
8) Learning Log: Pupil's self-evaluation of their own learning(checklist)

P6 Science

Written Assignments

1) Science Activity book (Energy & Interaction)
2) Topical unit Supplementary Worksheets
3) Topical Reflection (on Learning Log)

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

To be filed in the Science File

P6 Science

Enrichment

- **Learning Journey @ Science Centre Singapore (Term 3)**

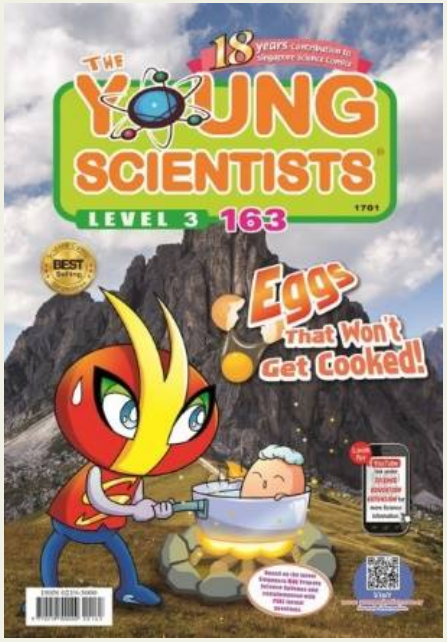
P6 Science

Enrichment

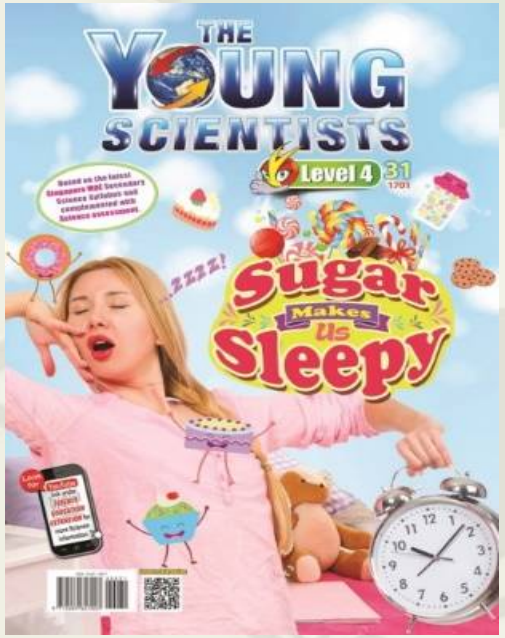
Science Supplementary Reading Material (Optional):

The Young Scientists (Level 3/4)

Online Subscription:



Recommended for P6



Recommended for P6 & Sec 1

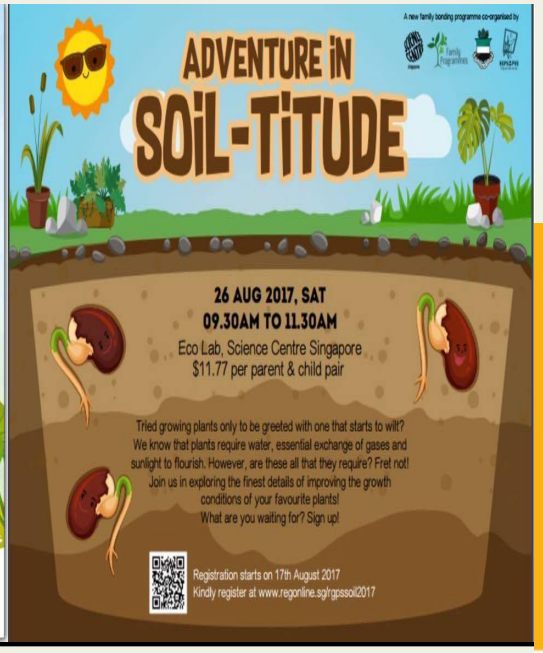
https://youngscientistsreader.com.sg/product category/subscriptions/

P6 Science

RGPS Family Science Programme

- **RGPS Family Science Club**

https://www.facebook.com/**rgpsfamilysscienceclub/**



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

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.

How well have I understood the science ideas/concepts?

1- Science ideas I understood the least **4 - Science ideas I understood the most**

	Science Ideas/ concepts	1	2	3	4
1	I know what energy is.				
2	I know what the different sources of energy.				
3	I know examples of renewable and non-renewable energy				
4	I know the different forms of energy around us.				
5	I know how energy convert from one form to another.				
6	I know some examples of energy conversion from one form to another.				
7	I am able to **apply** 'CER' technique to craft my scientific explanation.				
8	I am able to **determine** the aim, hypothesis, IV,DV and CVs in an investigative protocol				

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

TIME FOR REFLECTION!

When you reflect, spend time and think deep to make sense of
What you have learnt,
Why you learnt,
How you learnt,
How you apply the knowledge and skills learnt in real life.

My reflection on learning: *Before the start of unit lesson*
-What do I already know about this topic?
-What do I want to find out?
-What are the questions that I have for this unit?

Assigned as homework before the introduction of the unit

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

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

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

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 (WA1)	Weighted Assessment 2 (WA2)	Preliminary Exam (Prelim Exam)
Format	Open-ended: 8 questions	MCQ: 20 questions	Section A (MCQ): 28 questions Section B (OE): 13 questions
Duration	50 min	30 min	1 h 45 min
Marks	30	40	100 (100% of Prelim Exam)
Overall Weightage	0%	0%	100%

P6 Science Teachers:

6AB - Ms Shaheena Kandoth
6C - Mdm Roziyan Rahmat
6D - Ms Santha Selva Raju
6E - Mdm Roziyan Rahmat
6F - Mdm Aishah Aris
6G - Ms Loo Ching Yee
6H - Ms Lee Suan Khim
6AD - Mdm Aishah Aris
6EI - Ms Santha Selva Raju

Thank You