

Curriculum Briefing

Primary 5 Science

7 Jan 2026

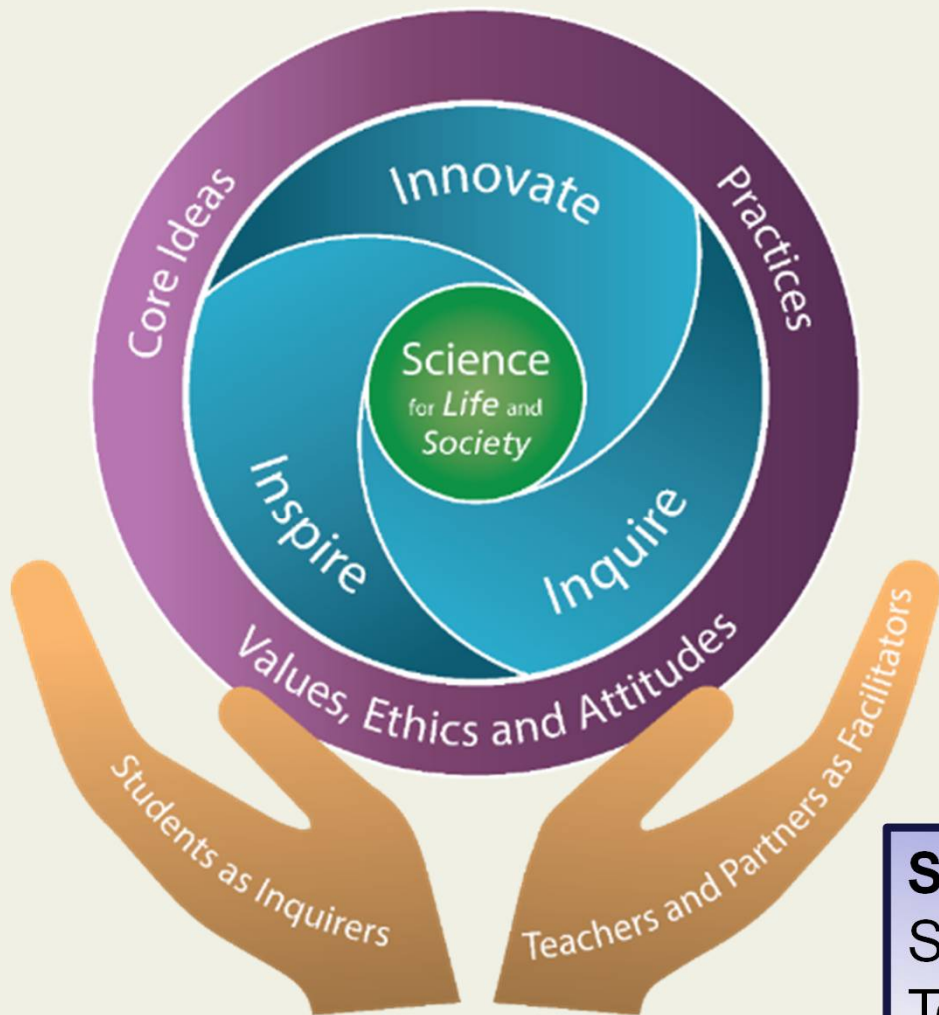
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P5 SCIENCE TEACHERS

5AB MS LOO CHING YEE, HOD SCIENCE
5C MS SANTHA SELVA RAJU, ST SCIENCE
5D MDM GUO FENGLING, SH SCIENCE
5E MDM HO SHWU HUEY
5F MS THIVYADLO GOPALKRISHNAN
5G MR YEO SIAH ONG
5HI MS SANTHA SELVA RAJU, ST SCIENCE

MDM AISHAH ARIS, ST 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



Scientific Literacy

We aim to :

- equip our pupils with the *skills* to enable them to :
 - use scientific knowledge to identify questions
 - draw evidence-based conclusions in order to understand and make decisions about the natural world and the changes made to it through human activity.
- *help our pupils to understand* the characteristic features of science as a form of human knowledge and inquiry.
- for our pupils to be aware of how science and technology shape our material, intellectual and cultural environments.
- equip our pupils with *ethics and attitudes* to engage in science-related issues as a reflective citizen.

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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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

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What is central to science inquiry?

Helping students use evidence to create explanations for natural phenomena.

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SCIENTIFIC ARGUMENTATION

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

CLAIM + EVIDENCE + REASONING = EXPLANATION

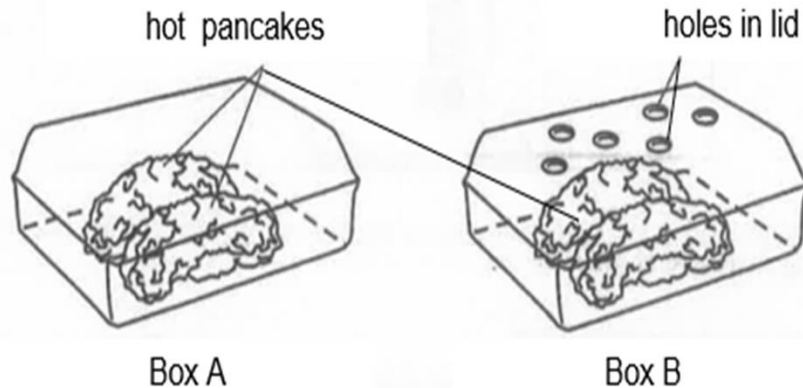
What do you know?
(The answer to the question)

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)

Joanne fried some pancakes and packed the pieces equally into boxes A and B as shown.



After some time, in which box would she find the pancakes become slightly wet?
Explain your answer clearly.

Checklist:

- ☐ CLAIM: Your answer to the question/Identify the claim in 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

C: Box _____

E: _____

R: _____

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	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Photosynthesis Interaction of forces (Frictional force, gravitational force, elastic spring force) Interactions within the environment Surviving in the Environment (Adaptations, Man's impact on the environment)

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Attitude Coverage

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

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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*

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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)**

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Written Assignments

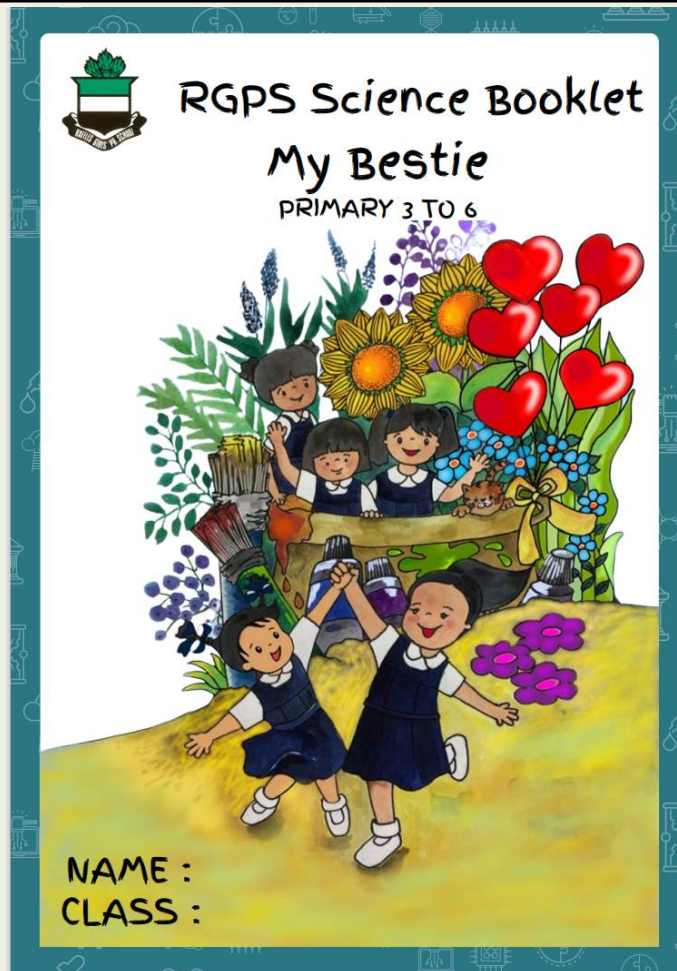
- 1) Inspiring Science Activity Worksheets
- 2) Topical unit Supplementary Worksheets
- 3) Topical Reflection (on Learning Log)

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

To be filed
in the
Science File

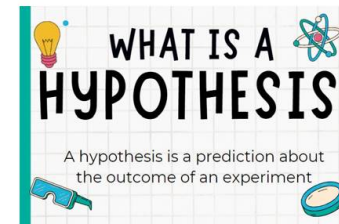
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RGPS Student Science Resource Book



3) The Scientific Method

Hypothesis:



What is a variable?

A variable is a thing or factor or condition you can modify and measure.

TYPES OF VARIABLES

Independent/Changed (IV)

The only thing that you change in an experiment



Dependent/Measured (DV)

The thing that you measure or observe in an experiment



Constant/Controlled (CV)

The things that remain the same in an experiment



'Science is a way of thinking, not just a body of knowledge.' ~ Carl Sagan

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Programme

Viridis Programme

- Develop a deep, actionable understanding of sustainability.
- Equip pupils with skills to assess, advocate for, and improve local environments.
- Cultivate a lifelong ethos of responsible stewardship.

STEM

- Fostering curiosity, building foundational science skills, and connecting learning to the real world through hands-on discovery

Electrical Kit

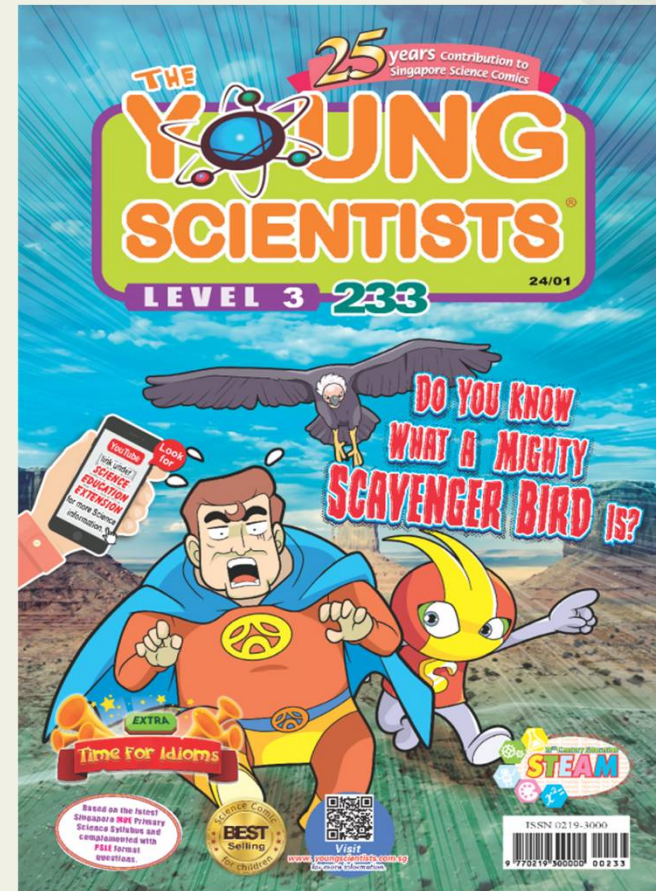
- To empower Primary 5 students to safely explore, build, and understand the basics of electricity and simple circuits through hands-on experimentation with everyday components.

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Enrichment

Science Supplementary Reading
Material (Optional):
The Young Scientists (Level 3)

Online subscription:



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

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Enrichment

Online Young Scientist Badge

- Pupils can complete self-directed activities, conduct hands-on experiments, research STEM topics, and collaborate with peers or family to earn online badges through the Young Scientist Badge Scheme

<https://youngscientist.sscglobal.com.sg/login/index.php>

What do pupils do?

- **Access Portal** – Use the online platform to explore self-directed activities and multimedia content. Sign in using the user-id and password provided by the science teacher.
- **Submit Work** – Upload task responses, experiment findings, and reflections for review.
- **Earn Rewards** – Receive **online badges** for completed tasks, plus optional **physical badges and certificates**



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 .	Feedback on the pupil's performance.		
▪ Made concerted effort to do timely corrections .			
▪ Updated the content page			
▪ Organised the complete set of unit worksheets for filing.			

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

Rubric: 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 <ul style="list-style-type: none"> • 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%

**Note : Practical test papers will not be issued for take-home. This is because a significant component of the assessment resides in the hands-on experiment, which is not captured on the paper. To support learning, teachers will review all papers in class, providing detailed feedback on Areas for Improvement (AFI) to guide pupil development.*

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Help Your Child to Develop Skills of An Independent Learner

(A) Self-Management Skills:

*-to help them to gain skill to **self-regulate** where they monitor, control and direct aspects of their learning for themselves; to overcome the lure of procrastination and reduce stress.*

1) Goal setting

- ability to set realistic, relevant, challenging and manageable goals

2) Time and Resource-management

- ability to manage their own time and resources
- ability to prioritise activities and tasks
- ability to break things into small, manageable pieces

3) Focus & Discipline

- ability to focus on the task in hand and work through distractions and exercise self-discipline to complete task
- ability to distribute study instead of cramming

4) Mind and Body

- ability to take care of oneself – eat, sleep, rest and exercise properly
- ability to recognise cause(s) of stress and manage it.

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Help Your Child to Develop Skills of An Independent Learner

(B) Thinking Skills:

-To help them create meaning, gain understanding, make judgements, make good decision, self- analyse and reflect

1) Identify purpose

- ability to identify purpose for reasoning

3) Make decision

- ability to make decisions considering relevant implications and consequences.

4) Ask relevant questions

- ability to ask a range of relevant questions

5) Evaluate Evidences

- ability to recognise and evaluate evidence offered to support claims.

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Help Your Child To Develop Skills Of An Independent Learner

(C) Information Skills:

-Empower them as learners and enable them to :

1) recognise information needed

- ability to recognise their own lack of knowledge and skills and need to obtain further information or deepen their understanding

2) locate relevant information

- ability to locate relevant information from a range of resources

3) recognise and select appropriate sources

- ability to choose appropriate information sources

4) identify prior knowledge

- ability to reflect on the existence of prior knowledge and experiences, showing awareness of one's tendency to count assumptions as prior knowledge

5) reflect and evaluation

- ability to reflect on their own learning skills, evaluate progress and set further goals

6) apply Information

- ability to apply information to meet the original intent, construct understanding or solve problem

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THE ROLE OF PARENTS

- Be a **role model** for learning
- Practise what your child learns at school
- Tune into how your child learns
- Set aside time to monitor their work and get them to review their daily work. **DO NOT TAKE OVER THE HOMEWORK/PROJECT**
- Connect what your child learns to everyday life and to the world
- Help your child to take charge of his learning.
- Refrain from over-scheduling your child.
- Limit media exposure.
- Provide emotional and moral support and encouragement

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Useful Websites

[*https://www.brainpop.com/*](https://www.brainpop.com/)

[*http://www.bbc.co.uk/bitesize/ks2/science/*](http://www.bbc.co.uk/bitesize/ks2/science/)

Science Video- Eureka!

[*https://www.youtube.com/playlist?list=PL07249EFA9038FDC1*](https://www.youtube.com/playlist?list=PL07249EFA9038FDC1)

- ***These short video programmes use comic animation to illustrate and present physical Science concepts***

Bill Nye The Science Guy

[*https://www.youtube.com/user/TheRealBillNye/videos*](https://www.youtube.com/user/TheRealBillNye/videos)

- ***These are live action Science educational videos.***

Thank You

