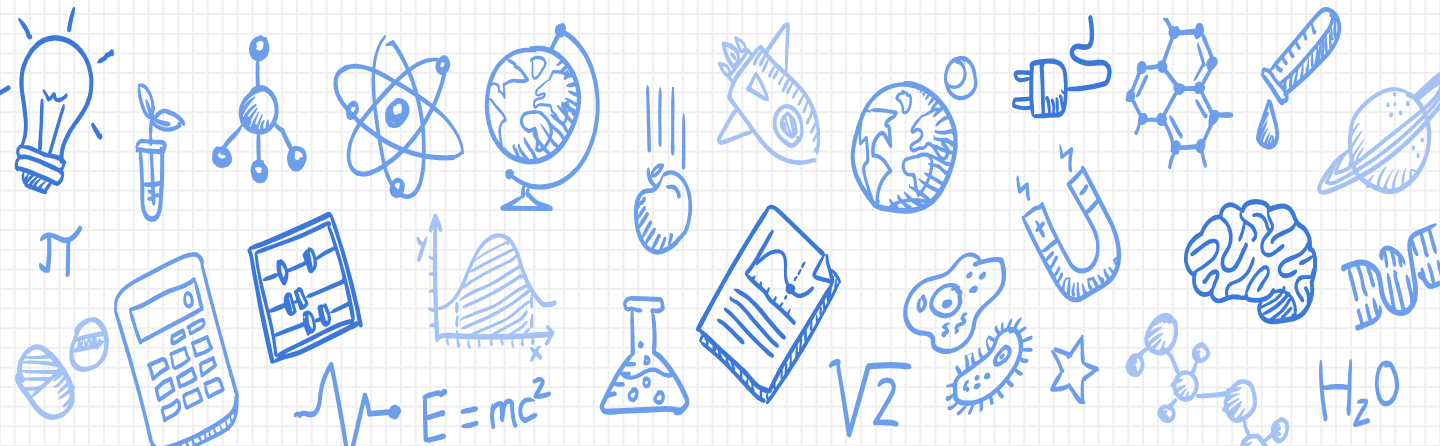


SCIENCE @ RMPS

2021

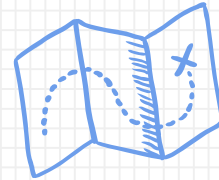


Vision

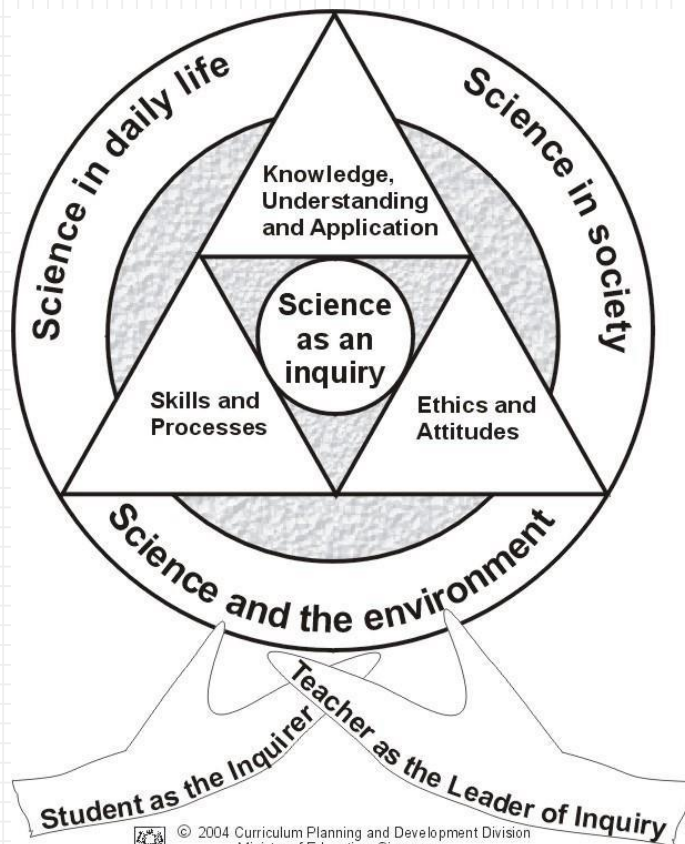
An inquirer with a passion for Science.

Mission

- To develop students with an inquiring mind.
- To equip students with scientific knowledge and skills.
- To make the learning of Science fun, meaningful and relevant.



Science Curriculum Framework



Inquiry-based learning starts by posing questions, problems or scenarios rather than simply presenting established facts or portraying a smooth path to knowledge. The process is facilitated by the teacher.

Content

- Scientific phenomena, facts, concepts and principles
- Scientific vocabulary, terminology and conventions
- Scientific instruments and apparatus including techniques and aspects of safety
- Scientific and technological applications

Ethics & Attitudes

Curiosity, Creativity, Integrity, Objectivity, Open-mindedness, Perseverance, Responsibility

Skills & Processes

Observing, Comparing, Classifying, Using Apparatus & Equipment, Communicating, Inferring, Formulating hypothesis, Predicting, Analysing, Generating possibilities, Evaluating

Good content knowledge is not enough...

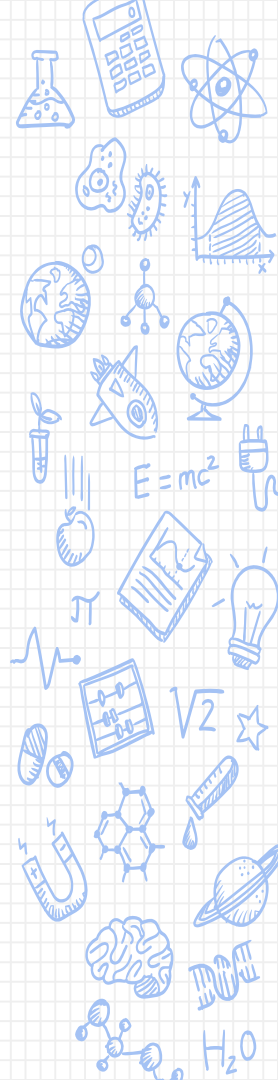
Content Knowledge

+

Skills and Processes
(Scientific Method and
Experimental Design)

+

Application and articulation of
concepts into **authentic situations**



What is Conceptual Understanding?

- Conceptual understanding requires students to **organise facts and ideas** into a meaningful concept and making connections in science.
- Moving beyond rote memorisation of facts. Therefore, students can **apply their understanding of concepts to multiple contexts.**

(Kang, N. G., & Howren, C., 2004)

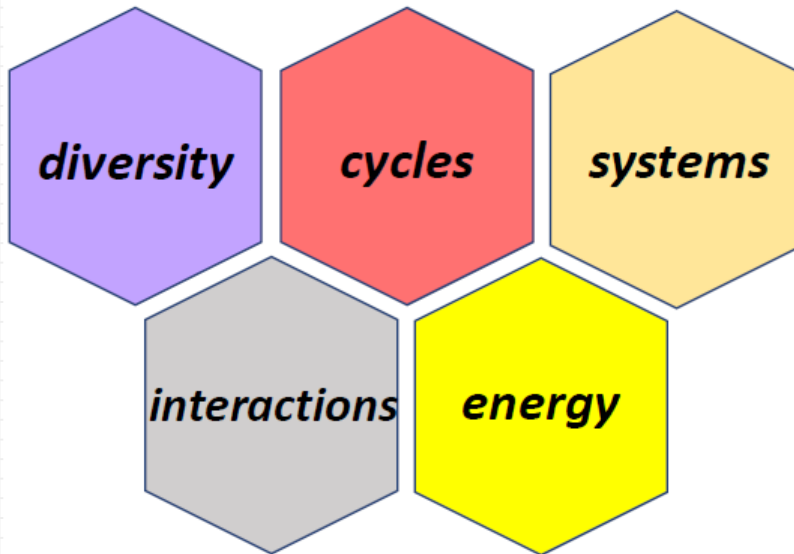


- While there are certain scientific terms and concepts taught, pupils can demonstrate their understanding by using their own words.
- The focus of learning science is **not** on giving “standard answers” or keywords, but on **developing students’ ability to inquire, understand and explain scientific phenomena.**

- The learning of science **does require a certain level of clarity though**, in the way concepts are explained, given the **context of the question**.
- Otherwise, **we may end up endorsing misconceptions** in students or rewarding them for ambiguous responses.

- **Read the questions carefully.**
- Identify key phrases and words in the question stem before attempting to answer.
- **Identify the concept** tested.
- **Model** answering techniques.
- Reinforce use of Visible thinking routines (**Concept – Apply – Link (CAL) / Claim – Evidence – Reason (CER)**) answering techniques.

Themes in Primary Science



Primary Science Syllabus Overview

Themes	Lower Block (P3 & P4)
Diversity	<ul style="list-style-type: none">• Diversity of living and non-living things• Diversity of materials
Cycles	<ul style="list-style-type: none">• Cycles of plants and animals (Life cycles)• Cycles in matter and water (Matter)
Systems	<ul style="list-style-type: none">• Plant system (Plant parts and functions)• Human system (Digestive system)
Interactions	<ul style="list-style-type: none">• Interaction of forces (Magnets)
Energy	<ul style="list-style-type: none">• Energy forms and uses (Light)• Energy forms and uses (Heat)

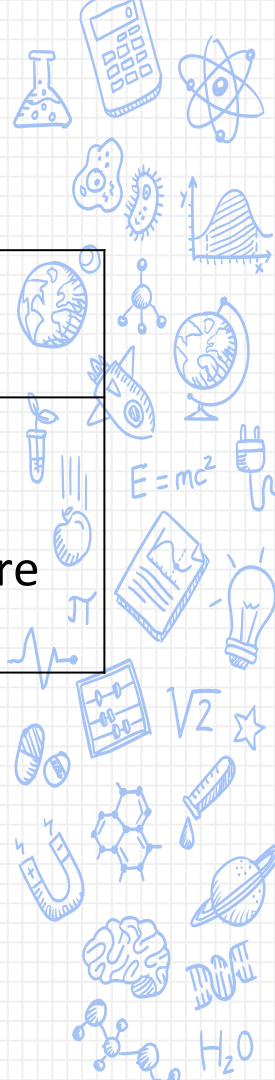
- *Please keep the P3-P6 work for revision!*



Assessment

- Paper format

<u>Multiple Choice</u>	<u>Open-Ended</u>
28 questions	12-13 questions
56 marks	44 marks



Assessment

SA1 (30%)	SA2 (70%)
<ul style="list-style-type: none">• All P3 topics• Magnets• Matter	<ul style="list-style-type: none">• All P3 topics• All SA1 topics• Heat & Temperature• Light & Shadow

Parents as Facilitators

- ✓ Speaking
- ✓ **Doing**
- ✓ **Visiting**
- ✓ **Reading**



Speaking

Language used in Science is very often different from our day-to-day language.

Why do your legs feel cold when you put them in the water in the swimming pool?

- The water is cold.
- Your body is warm.
- I'm not wearing any clothes.



[illegible]

- **Concept:** Heat travels from a hotter to a colder place.
- Your body temperature (37°C) is higher than the temperature of the water in the swimming pool.
- Your body **loses heat** to the water in the swimming pool (and the water gains heat). Thus, you feel cold.

[illegible]

- Green beans
- Chili seeds
- Peanuts
- Bread mould
- Mould on oranges

- Green beans
- Chili seeds
- Peanuts
- Bread mould
- Mould on oranges

- Mealworms
- Fish
- Crayfish
- Snails
- Bear in mind – responsibilities involved in pet ownership

- Mealworms
- Fish
- Crayfish
- Snails
- Bear in mind – responsibilities involved in pet ownership

- Living things need food, air and water.
- What are the conditions needed for germination?
- How can I prevent my green bean from germinating?
- When does the developing seed need sunlight?

Doing – E.g. growing green beans

- Plants need sunlight to make their own food.
- Plants can reproduce from seeds.
- How to conduct a fair test?
- And more ...

Observing, Comparing, Classifying, Using apparatus and equipment, Communicating, Predicting, Formulating Hypothesis



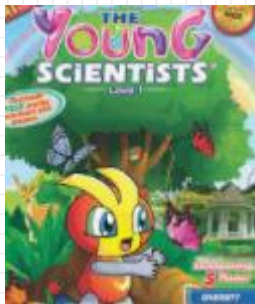
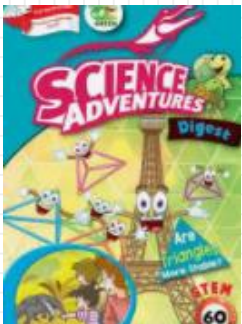
Visiting

- Singapore Zoo / Night Safari / River Safari
- Jurong Bird Park
- S.E.A. Aquarium, Sentosa
- Marina Barrage
- Artscience Museum
- Kranji Farms
- Parks (E.g. Hortpark)
- Gardens by the Bay
- Sungei Buloh Wetland Reserve
- Singapore Science Centre
- **Everywhere and Anywhere!**



Reading

- Science Books
- Newspapers
- Magazines (National Geographic)
- THINK Science
- Science Adventures
- Young Scientists



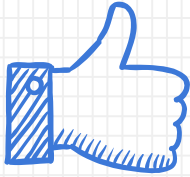
Our Contacts

Mrs Goh Hean Mei

chan_hean_mei@schools.gov.sg

Mrs Cindy Ten

han_qiuyan_cindy@schools.gov.sg



Thank you.