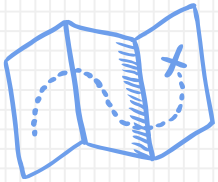
SCIENCE @ RMPS 2020

Vision

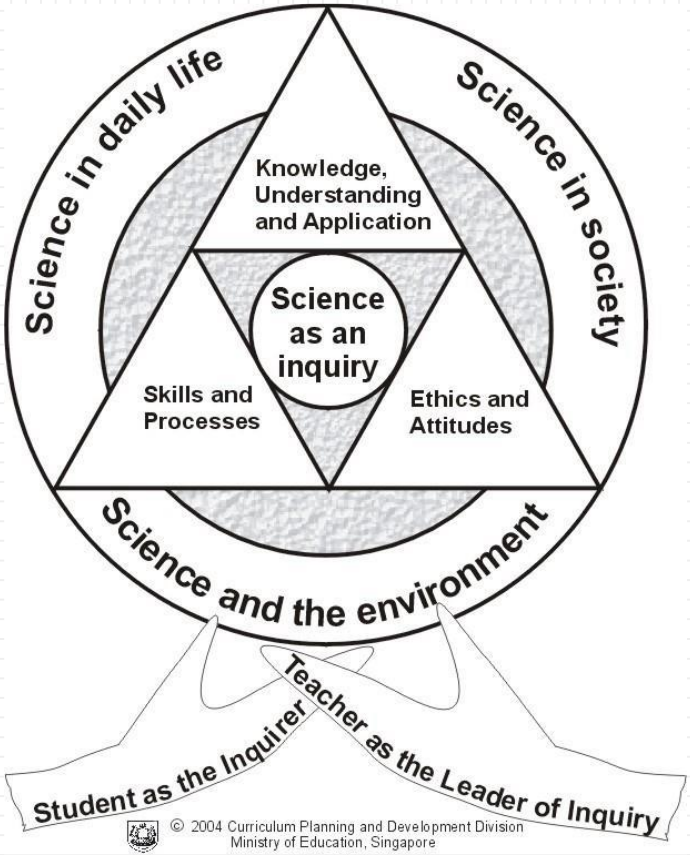
An inquirer with a passion for Science.



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

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.**

(Mr Sng Chern Wei, Director, CPDD1
From The Straits Times Forum, May 09, 2015)

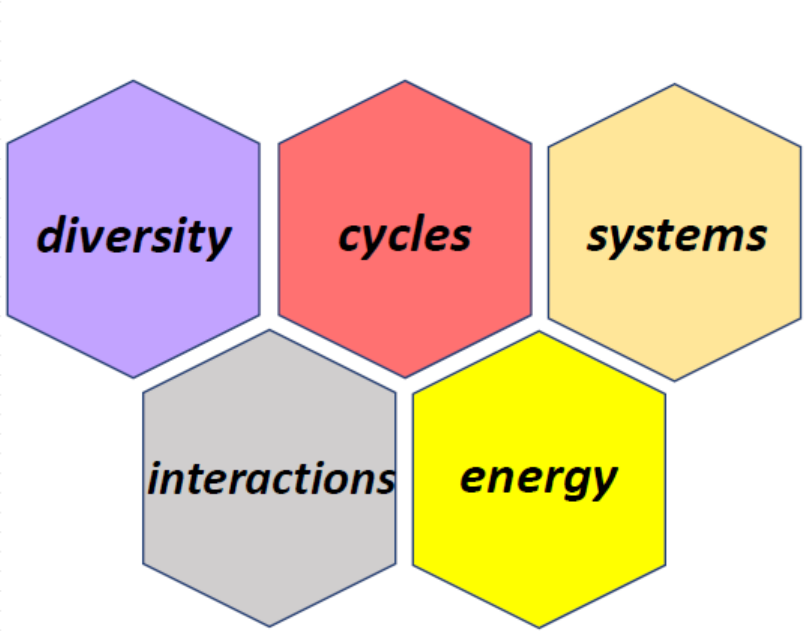
- The learning of science **does require a certain level of clarity though**, in the way concepts are explained, given the **context of the question**.
- Otherwise, **we may end up endorsing misconceptions** in students or rewarding them for ambiguous responses.

Mr Sng Chern Wei, Director, CPDD1
From The Straits Times Forum, May 09, 2015
Mr Sng is now Deputy Director-General of Education (Curriculum)

Strategies

- **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 **Concept – Apply – Link (CAL)** answering technique.

Themes in Primary Science



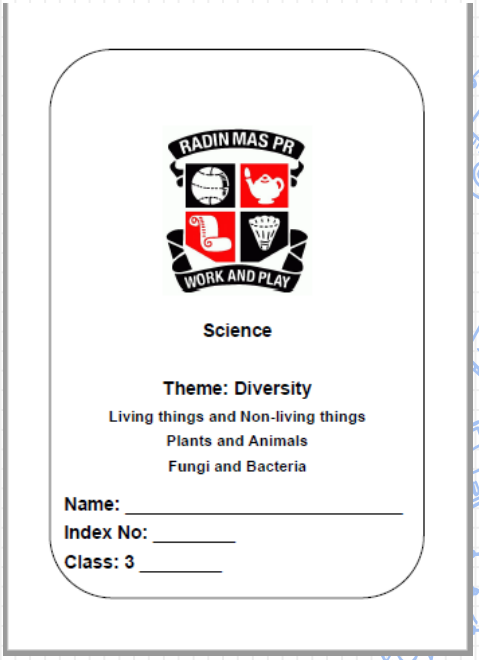
Primary Science Syllabus Overview (P3)

Themes	Lower Block (P3)
Diversity	• Diversity of living and non-living things • Diversity of materials
Cycles	• Cycles of plants and animals (Life cycles)
Systems	• Plant system (Plant parts and functions) • Human system (Digestive system)

Assignments

- P3 Package
- Worksheets (filed in the Science file)

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



Assessment

- **Non-weighted Assessment**
- **Weighted Assessment**
- **Semestral Assessment**

Weighted Assessments (40%)	**SA2 (60%)**
In the form of Performance Tasks / Topical Review Term 1 (10%) Term 2 (15%) Term 3 (15%)	1 hour 30 minutes 80 marks Booklet A: 24 questions Booklet B: 10-12 questions All topics covered in P3 will be tested.

Key Programmes

Integrated Trail

STEAM Week

Take home kits
Mealworms /
Caterpillar /
Seed planting

Green
Champions

E2K (Starting P4)

Parents as Facilitators

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

Speaking

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

Why X is a bird?

- It can fly.

X

Speaking

- **Concept**: Characteristics of bird

- It has feathers, a beak and a pair of wings.

Doing

Growing

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

Keeping small animals

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

Doing – E.g. growing green beans

Science Concepts:

- 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 …

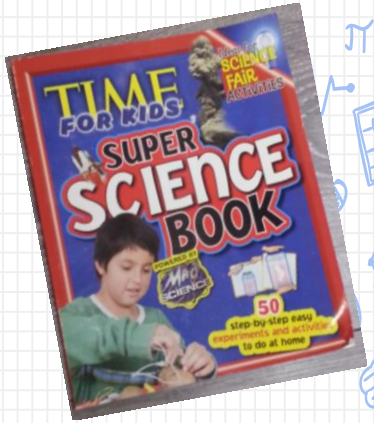
Observing, Comparing, Classifying, Using apparatus and equipment, Communicating, Predicting, Formulating Hypothesis

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
- Youtube channel:
- https://www.youtube.com/user/1veritasium
- MythBusters: http://dsc.discovery.com/tv-shows/mythbusters



Our Contacts

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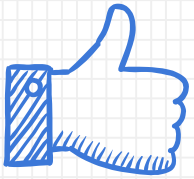

Thank you.