



2024

P4 Science Curriculum Information



Tao Nan School Science Department

Vision

Curious children, Thinking minds

Mission

Preparing children to understand the world





Science Curriculum

(New Science Syllabus 2023)

Overview of 2023 Syllabus

Practices of Science

Set of established procedures and processes associated with scientific inquiry

Demonstrating WOTD

| Investigating | Evaluating and Reasoning | Developing Explanations and Solutions |
|--|---|---|
| Posing questions and defining problems | Communicating, evaluating and defending ideas with evidence | Using and developing models |
| Designing investigations | Making informed decisions and taking responsible actions | Constructing explanations and designing solutions |
| Conducting experiments and testing solutions | | |
| Analysing and interpreting data | | |



How scientific knowledge is generated and established

Understanding NOS

Science is an evidence-based, model-building enterprise to understand the real world.

Science assumes natural causes, order and consistency in natural systems.

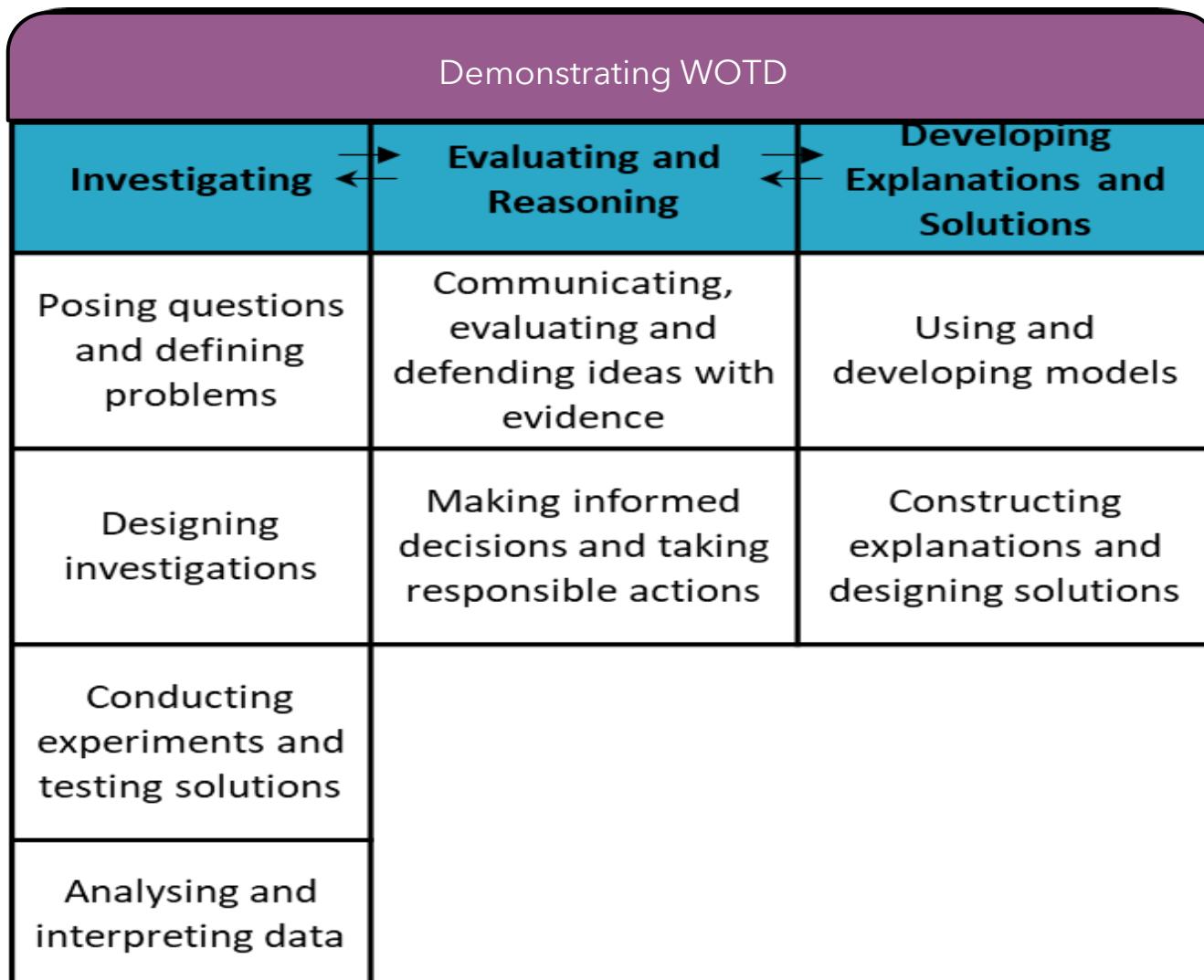
Scientific knowledge is generated through established procedures and critical debate.

Scientific knowledge is reliable, durable, open to change in light of new evidence.

Application of Science in society



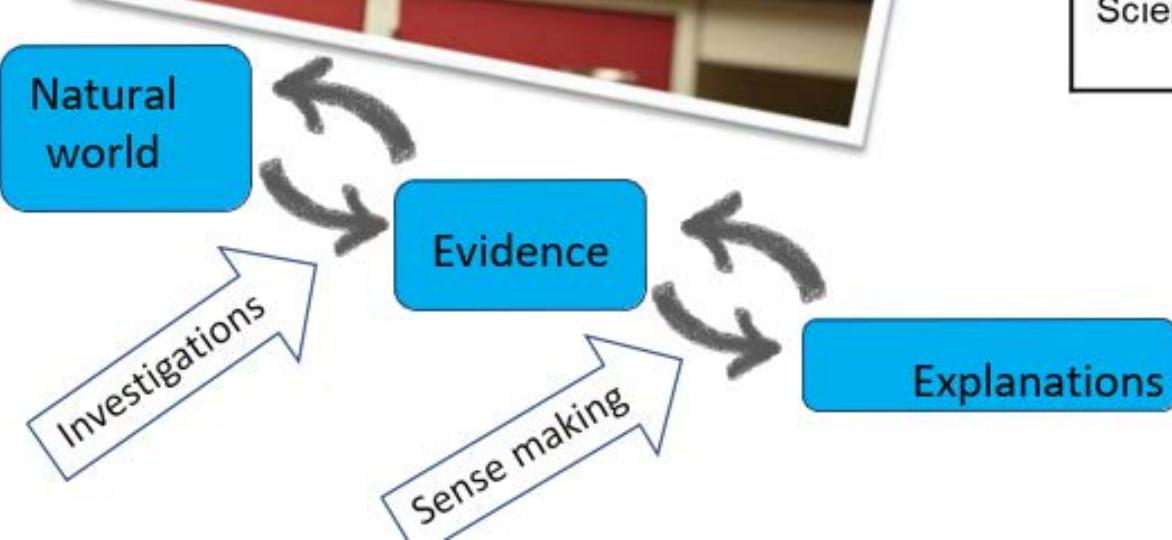
Overview of 2023 Syllabus





Practices of Science

Understanding Nature of Scientific Knowledge



Understanding NOS

Science is an evidence-based, model-building enterprise to understand the real world.

Science assumes natural causes, order and consistency in natural systems.

Scientific knowledge is generated through established procedures and critical debate.

Scientific knowledge is reliable, durable, open to change in light of new evidence.



Overview of 2023 Syllabus

Cultivate **Values, Ethics** and **Attitudes** through **discussions** on social and ethical issues



Curiosity



Open-mindedness



Creativity



Resilience



Integrity



Responsibility



Objectivity



Healthy scepticism



Themes and Topics Covered in P4

| Theme | Topic |
|---------|---|
| Systems | Plant System (Plant parts and functions) Human System (Digestive System) |
| Cycles | Matter |
| Energy | Light and Shadows Heat and Effects of Heat |



Pedagogy



Students as Inquirers



Students as Inquirers



Teaching Strategies

- **3C (Capture, Construct and Consolidate) pedagogical approach** incorporating **Differentiated Instructions (DI)**
- **Integrated Suite of Teaching Resources** to construct understanding of concepts
- **L.A.S.E.R. program**
- **Hands-On Experience**
 - ✓ Laboratory Experiments
 - ✓ Outdoor experiential learning experiences

Textbook

SPARKLE kits

Activity Book

SLS

Young Scientist Badge Scheme



3C Pedagogical Framework



Stages

Capture

(ideas and interest)

Construct

(understanding)

Consolidate

(learning)

This 3C Pedagogical Approach is adopted in the learning of Science. The process of scientific **inquiry** is facilitated by teachers who would help students make connections and build their understanding of Science concepts.



L.A.S.E.R. Program

- L.A.S.E.R stands for Learners' Assembly for Science Examination Requirements
- **Progressively equips** students with strategies and techniques to handle examination questions **from P3 to P6**
- **Expose** students to different question types and problem stimuli.
- **Empower** students with necessary skills and knowledge to understand and answer examination questions proficiently.
- **L.A.S.E.R.** worksheets would complement the PowerPoint teaching slides used in the classroom .



Materials used

- Textbook & Activity book
- Topical Science Notes
- Topical Worksheets
- L.A.S.E.R. Worksheets
- EOY practice paper of previous year



Enriching Formal and Informal Learning Experiences

Textbook

through multimodal representations and applications to daily life



Let's Explore

Dengue fever is a disease spread by infected Aedes aegypti mosquitoes.

With more rain and higher temperatures, the mosquitoes breed faster. Hence, there is an increasing number of dengue fever cases.

We can reduce the number of mosquitoes breeding by removing their breeding spots in our schools and homes.

DO THE 5-STEP MOZZIE WIPEOUT.

Get rid of stagnant water.



SLS

through videos and quick checks

Hands-on Kits

through manipulatives and games



Integrated Suite of Resources & Experiences

Cycles in Plants and Animals

Activity Book

through hands-on learning

Activity 2.1: Tell Me More About These Animals

- Aim** : To observe the animals with 3-stage life cycles
What we need : Transparent bag, paper towels, 2 seeds, paper strips, stapler
SLS (Life Cycles of Animals)

Let's inquire :

Part A: How do the animals with 3-stage life cycle change over time?

Dear Scientist,

I was walking in the garden yesterday and saw the following animals below.



Chicken

Frog

Grasshopper

Cockroach

I am curious about these animals and want to know more about them.

Can you tell me how these animals change over time?

Thank you.

Belle

Young Scientist Card

through activities and projects



I am a Young Botanist

I am a Young Zoologist





Assessment

Intent of changes in SBA:

Reduce excessive focus on testing and academic results and create time and space to further enhance the holistic development of students, including 21CC (e.g., inventive thinking, adaptive thinking, communication skills and civic literacy)



- **Intent of Weighted Assessments:**
 - **Bite-sized, targeted** at **selected** unit(s) and/or skills
 - Range of modes, e.g., pen-and-paper, performance tasks
 - An opportunity for students to **review and consolidate** their learning
 - For teachers and students to **affirm** learning **strengths**
 - Helps students be **equipped** with **understanding the next steps for improvement**
 - Strengthen their **confidence** and in doing so, find **greater joy in learning**



2024 Assessment Overview

| P4 Science | Term 2 | Term 3 | Term 4 |
|---------------|---|---|---|
| | Weighted Assessment 1 (15%) | Weighted Assessment 2 (15%) | End-of-Year Examination (70%) |
| Format | Pen and Paper Test (MCQs and Open-ended Questions) | Practical Test (Station-based activities involving process skills) | Pen and Paper Test (MCQs and Open-ended Questions) |
| Total | 100% | | |





Home-School Partnership

Strategies to help your child

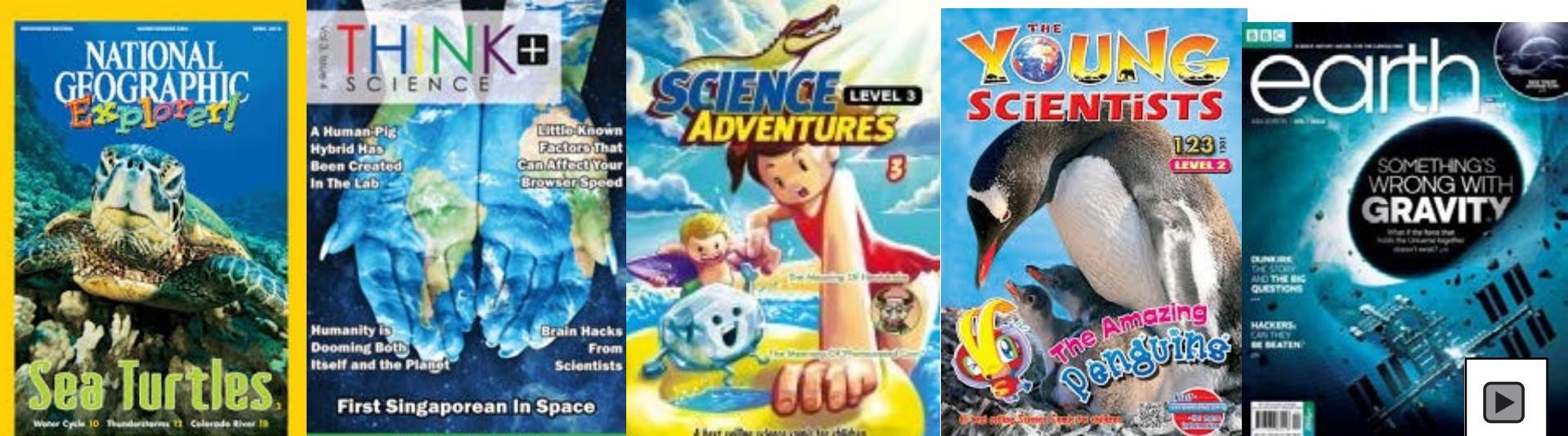
- a) Help your child to be familiar with the concepts/facts of the topics taught.

- b) Point out real life scenarios for your child to apply his/her Science concept.

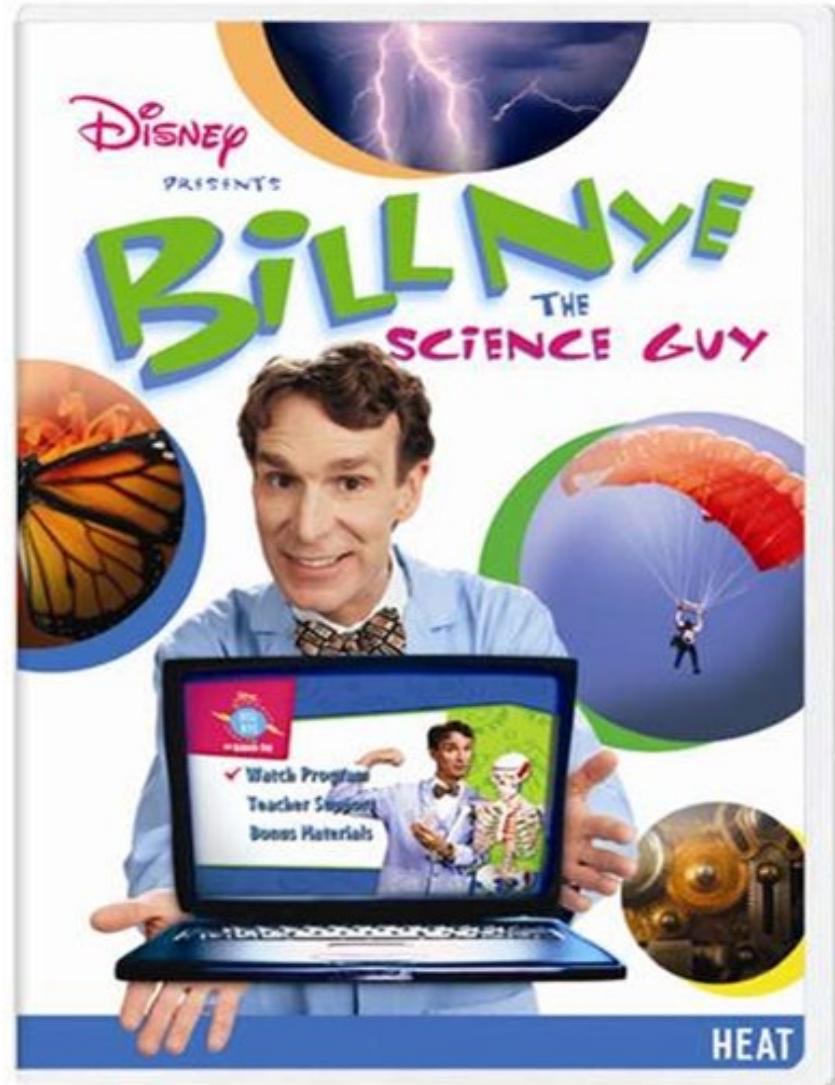
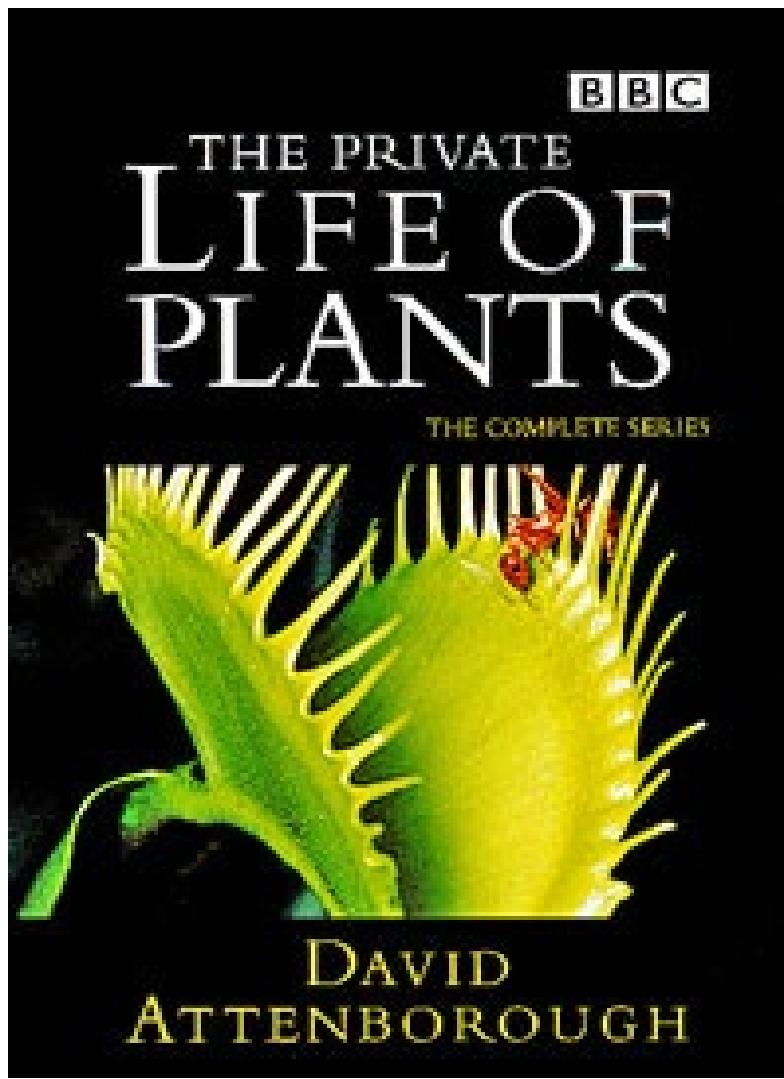


Strategies to help your child

- c) Ensure that all homework is carefully completed and submitted punctually.
- d) Encourage your child to read a wide variety of Science-related reading materials.



e) Encourage your child to watch Science documentaries. (Eg: Animal Planets, National Geographic channels, and other BBC videos)





Thank you.

