



# 2024 P4 Science Curriculum Information

TAO NAN SCHOOL  
Established in 1904



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# Tao Nan School Science Department

## **Vision**

Curious children, Thinking minds

## **Mission**

Preparing children to understand the world





# Science Curriculum (New Science Syllabus 2023)

TAO MAN SCHOOL  
Established in 1963

# 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.



Relating Science-Technology-Society-Environment

### Relating STSE

There are risks and benefits associated with the applications of Science in society.

Applications of Science often have ethical, social, economic and environmental implications.

Application of new scientific discoveries often drive technological advancement while advances in technology enable scientists to make new or deeper inquiry.

Application of Science in society



# Overview of 2023 Syllabus

Demonstrating WOTD		
Investigating	Evaluating and Reasoning	Developing Explanations and Solutions
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Designing investigations	Making informed decisions and taking responsible actions	Constructing explanations and designing solutions
Conducting experiments and testing solutions		
Analysing and interpreting data		



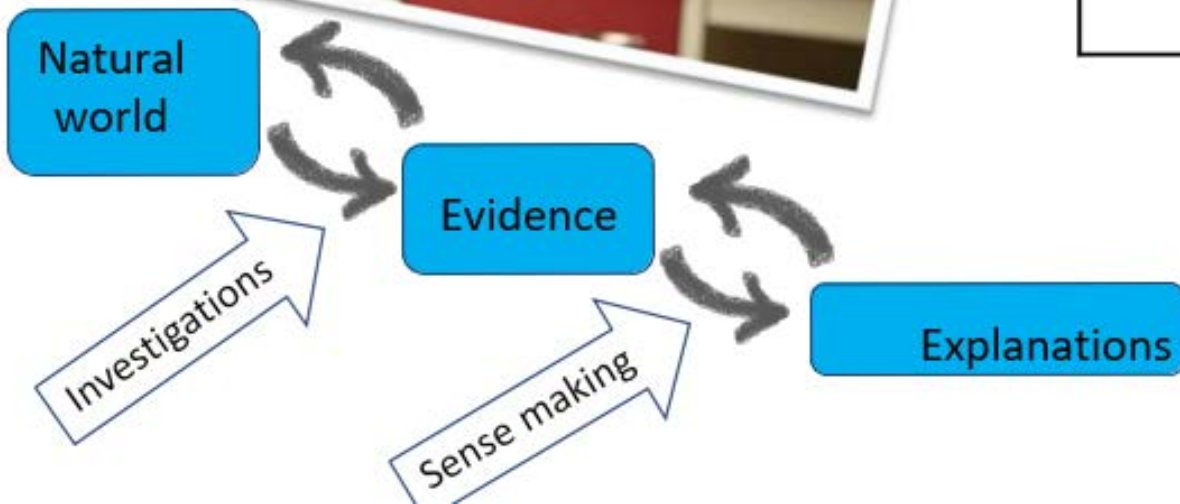


# Practices of Science

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

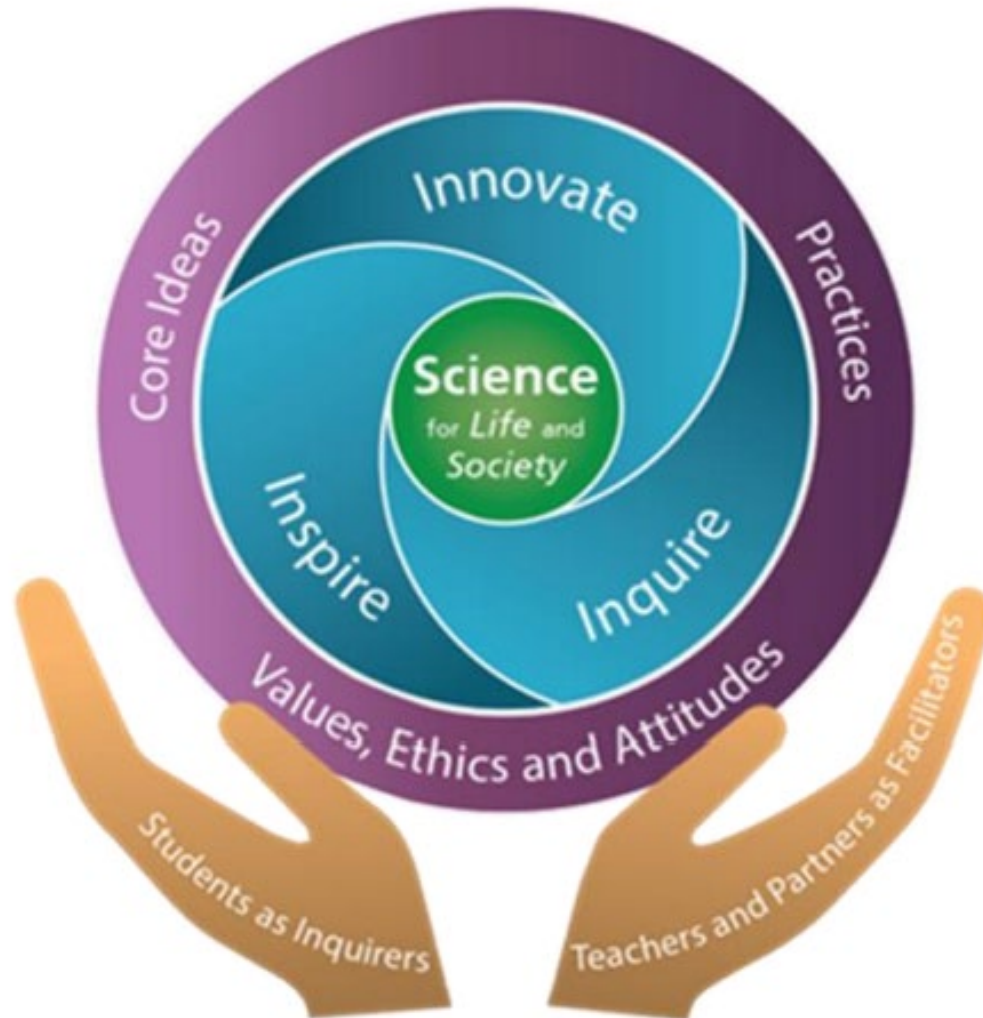


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# Students as Inquirers



# 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

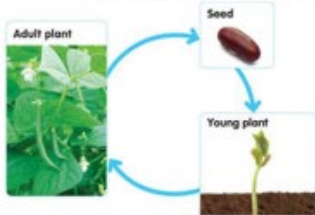
- Textbook & Activity book
- Topical Science Notes
- Topical Worksheets
- L.A.S.E.R. Worksheets
- EOY practice paper of previous year



# 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.



## Hands-on Kits

through manipulatives and games

**Game Rules:**  
This game is meant for 3 to 4 players.

**Let's set it up!**

- Write challenges on the 'Challenge' spaces on the game board.
- Place the question cards and 'Go Wild' discs on the game board.
- Place the stage discs facing down in the matching coloured zone on the game board.
- Take a game counter each and place at any empty space on the game board.
- Take turns to spin the spinner and collect the life cycle plates.

## 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

## Integrated Suite of Resources & Experiences

Cycles in Plants and Animals

## SLS

through videos and quick checks

**Life Cycle of Butterfly**

life cycle

One of a beetle's life cycle is shown below.

Correct words into the boxes below.

A beetle has \_\_\_\_\_ stages in its life cycle.  
A young beetle \_\_\_\_\_ does not look like \_\_\_\_\_ an adult beetle.

## 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

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





# Home-School Partnership

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# 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.

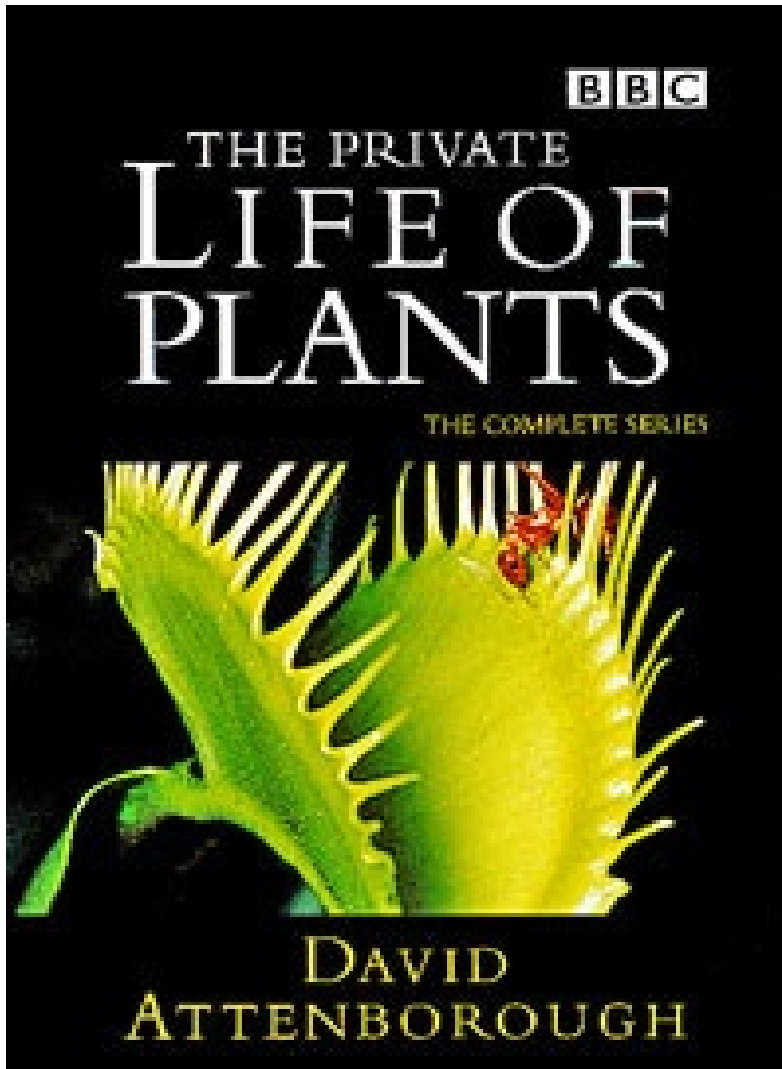


# Strategies to help your child

- 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.**

