YISHUN SECONDARY SCHOOL
Subject & Code: **Pure Biology 6093**
Level & Stream**: Sec 4E (Express)**

<table>
<tr><th colspan="2">The Curriculum and Approaches to Learning</th><th>Key Programmes / Competitions</th></tr>
<tr><td colspan="2">To cultivate the joy of learning Science by developing students' knowledge, skills and attitudes in scientific-thinking through a well-designed curriculum that focuses on scientific inquiry and authentic learning. To prepare students for a life-long passion in learning Science and enable them to innovate and contribute to a technologically-driven society.</td><td>Selected school competitions and enrichment programmes.

All class structured group work develops communication competency.

All data based and planning questions develop adaptive thinking competency.</td></tr>
<tr><th>Term / Week</th><th>Learning Experiences (Chapter, Activity)</th><th>Learning Outcomes & Assessment</th></tr>
<tr><td>1/ 1-2

1/ 3-5

1/ 6-8

1/ 9-10</td><td>Chapter 10: The Nervous System and the Eye
[W2] Practical 1: 2022 5078 P5

Chapter 12: Nutrition & Transport in Flowering Plants
[W4] Practical 2: 2013 5078 P5

Chapter 13: Organisms and their Environment
[W7] Practical 3: YSS 2022 Prelim P3

Chapter 14: Molecular Genetics
[W10] Practical 4: YSS 2021 Prelim p3</td><td>W0: back to school program
W4: 29-30 Jan (CNY)

WA1 (W8): C8 (Excretion), C9 (Homeostasis & Hormonal Control), C10 (The Nervous System and the Eye)</td></tr>
<tr><td>2/ 1-2

2/ 3-4

2/ 6-9</td><td>Chapters 15-16: Reproduction in Plants
[W2] Practical 5: 2018 6093 Specimen P3

Chapter 17: Reproduction in Humans

Chapter 18: Inheritance
[W7] Practical 6: 2021 6093 P3

<u>June Holiday:</u>
Practical 7: 2023 6093 P3 + 2018 P3 Q2
Practical 8: 2019 6093 P3
HW: 2020 6093 P2</td><td>W2: 31 Mar (Hari Raya Puasa)
W4: 18 Apr (Good Friday)
W6: 1 May (Labour Day)
W8: Student Learning Fest*
W8: 12 May (Vesak Day)
W10: MTL Intensive (Sec 4E5N only)

WA2 (W9): C12 (Nutrition and Transport in Plants), C13 (Organisms and their Environment), C14 (Molecular Genetics)

*Adaptive Thinking competency</td></tr>
<tr><td>3/ 1-2
3/ 3-8</td><td>Buffer to finish content
Revision and Prelim</td><td>W2: 7 July (Youth Day)</td></tr>
</table>

	- Yearly papers from 2021 to 2024 [W2] Practical 9: YSS **2024** Preim P3 [W4] Practical 10: **2020** 6093 P3 [W6/7] Practical 11: **2022** 6093 P3	W3: 15-17 July (Oral Exam) W6: 8 Aug (ND celebration) W7: 11 Aug (ND School Hol) W8: Start of Prelim Exams W10: 4 Sep (Teachers' Day Celebration) W10: 5 Sep (Teachers' Day) **WA3 [50 min] (W6 Curriculum):** C15-17: Reproduction in Plants & Humans, C18: Inheritance
4/1-10	Prelim Script Checking / Revision for O-levels Practical 12: **2024** 6093 P3	W6: 20 Oct (Deepavali)

Fostering Adaptive Thinking

Through Chapter 13: Nutrition and Transport in Plants & Chapter 10: Organisms and Their Environment [SLF: Interdisciplinary outdoor inquiry-based learning]

(1) Purpose

The purpose of this interdisciplinary learning journey is to deepen students' understanding of the interconnection between organisms and their environment, incorporating aspects of nutrition and transport in plants. By visiting Rifle Range Nature Park, students examine real-life examples of ecosystems and conservation efforts. This hands-on approach encourages students to explore the roles of science and geography in environmental stewardship, fostering an appreciation for the balance between human activities and nature and supporting them in developing informed perspectives on sustainability and biodiversity.

(2) Process

This interdisciplinary, inquiry-based learning journey, designed collaboratively by Biology and Geography teachers, takes students to Singapore's Rifle Range Nature Park. With a focus on sustainability, conservation, and the human-nature relationship, students investigate the impact of urbanization on forests. Working in groups, students select inquiry questions and gather evidence to support their positions, engaging critical thinking, collaboration, and civic literacy skills. After the learning journey, students create infographics to present their findings. Teachers then provide structured feedback based on a rubric assessing each group's stance on their inquiry question, the relevance of their supporting evidence, and the aesthetic appeal of their infographic. Through this iterative process, students refine their ideas, gain insights into effective communication, and develop a nuanced understanding of environmental issues.

(3) Impact on Students' Learning

This learning journey fosters critical 21st-century skills in students, such critical thinking, collaboration, and information literacy, while cultivating civic awareness. By actively exploring an environment within their own community, students develop a greater appreciation for conservation efforts and Singapore's park restoration initiatives. The activity's interdisciplinary nature promotes adaptive thinking, as students draw connections between biology and geography, enhancing their understanding of how both fields contribute to sustainable ecosystem management. Ultimately, students learn to view natural spaces not just as passive environments but as dynamic systems integral to societal and environmental health.