

G3~EXPRESS COURSE



**2025**  
**SECONDARY 3**  
**SUBJECT COMBINATIONS**  
**Information Booklet**

*Updated April 2024*

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## **Preface**

At the end of Secondary 2 education all students will be taking part in the Subject Combinations exercise to pursue a particular course from Secondary 3 to Secondary 4.

For the Secondary 2 students, choosing O-Level subjects is a significant phase of their Secondary School education. This information booklet is prepared with the objective of assisting parents and their daughters in making an informed decision on the Secondary 3 subject combination that best suits the child.

The information in this booklet is organised to provide general expectations of each O-Level subject and possible post-secondary education pathways. The information is provided with the best intentions and is accurate based on current knowledge. However, they do not guarantee future prospects in either education or career.

We hope you will find the information booklet useful. If you need further clarification, you may seek assistance from your daughter/ward's Form Teachers. We also welcome feedback to improve the Information Booklet.

On behalf of our teachers, we wish every student a meaningful educational journey in PLMGS(Sec) and beyond.

## **PART 1: SECONDARY 3 SUBJECT COMBINATIONS EXERCISE**

The Secondary 3 Subject Combinations Exercise is an important step in our students' educational journey. The first two years of education in Secondary School has allowed our students to be exposed to a wide variety of subjects. As the students move towards Secondary 3, they have become better equipped to take on a more specialised course of education. Students have to make a choice on the course which suits them best based on their competency, interest and aspirations. The streaming process as detailed below is put in place to guide students' decisions in choosing their subject combinations.

### **1.1: Process**

- Using this information booklet, students are advised to have an active discussion with their parents.
- Upon release of the overall results, students will be briefed on the submission of Secondary 3 Subject Combinations Option Form through the online option portal. (October 2024).
- Students to receive their Login ID and password for <https://plmgs.schoolhub.sg/> via their plmgss email 3 days before the release of online option portal. (October 2024).
- Based on the performance of their overall results, **ONLY** options that the students are eligible for will be displayed on the online option portal for selection.
- A subject combination will be allocated to a student based on the following criteria:
  1. Competency of the student based on her results. **(Merit)**
  2. Demand for the Subject Combination of her choice. **(Choice)**
- Students are to complete the online submission of the Subject Combinations Options Form after collecting their overall results. (October 2024).
- Students will receive the outcome of the streaming exercise. (October-November 2024).

### **1.2: Secondary 3 Subject Combinations 2025**

We understand that there are students who are able to handle a more demanding educational course yet maintain active participation in their CCA, school and other enrichment programmes. To stretch their potential to the fullest, these students will be allowed to offer one additional subject (8<sup>th</sup> or 7<sup>th</sup> subject), such as Pure Physics, Pure Humanities, Art and Music in the afternoon.

While the school will always try to cater to the needs and interest of our students, we would like to reiterate that the deciding factors will still be your daughter/ward's overall results, subject teachers input on her aptitude towards the subjects chosen. However, constraints in school resources such as manpower and physical facilities are also part of the important factors for consideration in eventual offering and allocating the subjects to our students.

**OPTIONS FOR SEC 3 EXPRESS/G3 SUBJECT COMBINATIONS IN 2025**

	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	
<b>Languages</b>	English Language  Mother Tongue/ Higher Mother Tongue	English Language  Mother Tongue/ Higher Mother Tongue	English Language  Mother Tongue/ Higher Mother Tongue	
<b>Mathematics</b>	Mathematics  Additional Mathematics	Mathematics  Additional Mathematics	Mathematics	
<b>Sciences</b>	Pure Chemistry  Pure Biology	Pure Chemistry  Pure Physics	<b>a.</b> Combined Science (Physics, Chemistry) or <b>b.</b> Combined Science (Biology, Chemistry)	
<b>Combined Humanities<sup>^</sup> (select one)</b>	<b>a.</b> Social Studies & Elective Geography or <b>b.</b> Social Studies & Elective Literature* or <b>c.</b> Social Studies & Elective History			
	<b>7 subjects</b>	<b>7 subjects</b>	Choose one from <b>Grp A</b> and/or <b>Grp B</b>	
<b>8<sup>th</sup> subject<sup>`</sup></b> – for those eligible (max. 40 studs per subj except for <b>Pure Literature</b> cap extends to Option 3)	<b>a.</b> Pure Physics or		<b>Grp A<sup>^^</sup></b>	<b>Grp B<sup>^^</sup></b>
	<b>b.</b> Pure Geography or	<b>a.</b> Pure Geography or	a. Additional Mathematics or	c. Principles Of Accounts or
	<b>c.</b> Pure History or	<b>b.</b> Pure History or	b. Nutrition & Food Science	d. Pure Geography or
	<b>d.</b> Pure Literature*	<b>c.</b> Pure Literature*		e. Pure Literature*
	<b>8 subjects</b>	<b>8 subjects</b>	<b>6 or 7 subjects</b>	

\* Subjected to availability of staff resource. At maximum the school can offer 1 Pure Literature and 1 Elective Literature class. If additional teacher resource is available, we may extend to 2 Elective Literature classes across all the Express classes.

<sup>^</sup>Subjected to maximum class size to 40 students for the Humanities subject Teaching Groups (TGs)

<sup>^^</sup>Subjected to minimum of 20 students to offer the subject TG option

<sup>`</sup> Art/Music will be offered as the 8<sup>th</sup> subject. They will be conducted at the same time with the 8<sup>th</sup> subject-offerings under Options 1 and 2.

The 8<sup>th</sup> subject will be offered at the end of the schooling day.

## Points to note

1. To be eligible for **Option 1 (Physics - 3rd Pure Science subject)**,
  - students should obtain a **minimum average of 70%** for English Language, Science and Mathematics.
  - In addition, the overall average should be **70% and above**.
  - Subject to **minimum of 20** students and **maximum of 40** students class size per subject.
2. To be eligible for **Option 1 or 2 (2nd Pure Humanities subject)**,
  - students should obtain a minimum of **65%** for English Language, Science and Mathematics.
  - In addition, the overall average should be **65% and above**.
  - Subjected to **minimum of 20** students and **maximum of 40** students class size per subject.
  - Offering of the **Pure Humanities** subjects are subjected to the availability of manpower resources for the year.
3. Elective 2 subjects Additional Mathematics, Pure Literature, Pure Geography are offered in **Option 3**.
  - To be eligible for these subjects, students should obtain a **minimum of 65%** for Sec 2 Mathematics, Literature, Geography (Express).
  - Subjected to **minimum of 20** students and **maximum of 40** students class size per subject.
  - Offering of the **Pure Humanities** subjects are subjected to the availability of manpower resources for the year.
4. To be eligible for **Higher Mother Tongue (HMT)**, students should obtain a minimum of 50% for **HMT** at Sec 2.
5. Art & Music are subjects that will be conducted in the afternoon, students should obtain the following.
  - To be eligible for Art, students should obtain a minimum of 65% for Sec 2 Art.
  - To be eligible for Art and Music, students should pass an audition and interview.
6. Students who are currently taking 3rd languages, they will be having a total of 8/9 subjects.
7. Students are to seek approval if they wish to exceed the maximum number of subjects stated in any of the options. Approval will be granted on a case-by case basis.

### 1.3: “How to decide” Guide

*What must I consider when choosing the subject combination that suits me best?*

As you move on your journey from Lower Secondary to Upper Secondary, you will need to make some important choices. One of them is the subject combination that you would like to take in Secondary 3. This is an important decision because it will affect the next few years of your school life, as well as the future educational and career paths that you would like to take.

Here are a few matters you should consider while deciding on which subject combination suits you best:

**Competency in the subject** – Competency refers to the ability of an individual to handle the requirements of a subject. Some of us have an innate ability in certain subjects or areas. For example, some find Mathematics a subject easy to manage; they tend to find it quite easy to solve difficult mathematical questions. However, there are some who will take a little longer to grasp a mathematical concept. Competency in the subject is important because it suggests that the students are able to manage difficult topics at the Upper Secondary level.

**Interest in the subject** – Many students tend to excel in the subjects they are interested in. They go beyond the classroom to read up on information related to the subject. It is important to make sure that it is the subject content that you like and not the teaching style of the subject teacher.

**Aspirations** – Planning for a career at Secondary 2 is not too far-fetched. Entry to certain careers could be affected by the subject combination you choose now. If you find planning a career difficult, you might want to think about the jobs you definitely do not want to take up and that may help to narrow down your options. Consider your plans for post-secondary education. (Would you like to further your education in junior college, polytechnic or specialised schools?)

**Aptitudes and Abilities** – Consider the talents and skills you have. For example, are you musically or artistically talented? What does your RIASEC code say about your strengths and interests?

## PART 2: SUBJECT INFORMATION

The following information on the respective subjects offered in Upper Secondary is extracted from the O- Level syllabi provided by MOE.

### 2.1 ENGLISH [Syllabus 1184]

#### SCHEME OF ASSESSMENT – G3~Exp

Paper	Type of Paper	Duration	Marks	Weighting
1	Writing	1h 50min	70	35%
2	Comprehension	1h 50min	50	35%
3	Listening	About 45min	30	10%
4	Oral Communication	About 20min	30	20%
	<b>Total</b>		<b>180</b>	<b>100%</b>

#### SUBJECT CONTENT FOR EXPRESS [G3] STREAM

Paper 1 Writing	<p><u>Section A</u> (Editing) Candidates identify and edit grammatical errors in a short written text.</p> <p><u>Section B</u> (Situational Writing) Candidates write 250-350 words on a given situation which will involve viewing a visual text.</p> <p><u>Section C</u> (Continuous Writing) Candidates write 350 – 500 words on one of the four topics set.</p>
Paper 2 Comprehension	<p><u>Section A</u> Candidates respond to questions based on Text 1 and 2, which will include visuals.</p> <p><u>Section B</u> Candidates respond to a variety of questions based on Text 3 which is a narrative or a recount.</p> <p><u>Section C</u> Candidates respond to a variety of questions based on Text 4, a non-narrative text, and write an 80-word response to a summary writing task.</p>
Paper 3 Listening	<p><u>Section A</u> Candidates respond to a variety of listening tasks based on a number of audio recordings, which the candidates will hear twice.</p> <p><u>Section B</u> Candidates listen to an audio recording and do a simple note-taking exercise. Candidates will hear the recording only once.</p>
Paper 4 Oral Communication	<p>The two parts may be thematically linked.</p> <p>Part 1 – Planned Response</p> <p>Part 2 – Spoken Interaction</p>



## 2.2 MOTHER TONGUE LANGUAGE

\*The following information from SEAB for all Mother Tongue languages are accurate as of March 2024.

### SCHEME OF ASSESSMENT

**Higher Chinese Language (HCL): 高级华文**  
**Examination Syllabus: 考试大纲**

Paper	Type of Papers	Marks (Weighting)	Duration
1 试卷一	Composition 作文 (记叙文、说明文、议论文, 包括演讲词) (3 选 1)	60 marks (30%)	2 h
	Letter writing 实用文 (电子邮件、网上论坛等) (2 选 1)	20 marks (10%)	
2 试卷二	Language use, Comprehension and Summary 语文理解与运用: <ul style="list-style-type: none"> <li>● 短文填充 (多项选择)</li> <li>● 病句改正 (自由作答)</li> <li>● 阅读理解一 (多项选择 / 自由作答)</li> <li>● 阅读理解二 (自由作答)</li> <li>● 片段缩写 (自由作答)</li> </ul>	80 marks (40%)	1h 45min
3 试卷三	Oral 口试 <ul style="list-style-type: none"> <li>● 口头报告: 根据话题, 结合录像短片的内容, 呈献一个不超过 2 分钟的口头报告</li> <li>● 讨论: 根据学生口头报告的内容跟考生进行讨论</li> </ul>	40 marks (20%)	10-15 min
<p><b>* HCL students will sit for O Level MT Language examination at the end of Sec 3 (Nov).</b>            选修高级华文的学生, 于中三年终考 O 水准华文, 于中四年终考 O 水准高级华文。</p>			

## Express [G3] Chinese Language (CL): 快捷课程— 华文

### Examination Syllabus: 考试大纲

Paper	Type of Papers	Marks (Weighting)	Duration
1 试卷一	Composition 作文 (记叙文、议论文和说明文) (3 选 1)	40 marks (20%)	2 h
	Email writing 实用文——电子邮件 (私人电邮、公务电邮) (2 选 1)	20 marks (10%)	
2 试卷二	Language use and Comprehension 语文理解与运用: <ul style="list-style-type: none"> <li>● 综合填空、词语替换</li> <li>● 阅读理解一 (多项选择)</li> <li>● 阅读理解二 (自由作答)</li> </ul>	70 marks (35%)	1 h 30 min
3 试卷三	Oral 口试 <ul style="list-style-type: none"> <li>● 朗读短文</li> <li>● 会话: 看录像短片, 然后跟主考员进行对话</li> </ul>	10 marks (5%) 40 marks (20%)	10-15 min
	Listening Comprehension 听力理解 (多项选择)	20 marks (10%)	30 min

## Higher Malay Language (HML) Examination Syllabus

Paper	Type of Papers	Marks (Weighting)	Duration
1	Functional writing	20 marks (10%)	2 h
	Essay	60 marks (30%)	
2	<u>Language use and Comprehension</u> Bahagian A (Golongan Kata & Menggantikan perkataan) Bahagian B (Kefahaman 1) Bahagian C (Kefahaman 2) Bahagian D (Peringkasan)	80 marks (40%)	1 h 45 min
3	<u>Oral</u> Oral presentation based on video stimulus Conversation based on oral presentation	40 marks (20%)	10-15 min
<p><b>* HML students will sit for O Level MT Language examination at the end of Sec 3 (Nov).</b> Para pelajar Bahasa Melayu Lanjutan akan menduduki peperiksaan Bahasa Melayu peringkat O pada akhir tahun menengah 3 (Nov).</p>			

## Express [G3] (ML) Examination Syllabus

Paper	Type of Papers	Marks (Weighting)	Duration
1	Functional writing	20 marks (10%)	2 h
	Essay	40 marks (20%)	
2	<u>Language use and Comprehension</u> Bahagian A (Golongan kata & Menggantikan perkataan) Bahagian B (Pemahaman 1-2 teks pendek dari bahan autentik) Bahagian C (Pemahaman 2 – 1 teks naratif)	70 marks (35%)	1 h 30 min
3	<u>Oral</u> Reading (10/5%) Conversation (40/20%)	50 marks (25%)	10-15 min
	Listening Comprehension	20 marks (10%)	30 min

## Higher Tamil Language (HTL) Examination Syllabus

Paper	Type of Papers	Marks (Weighting)	Duration
தாள் 1	<p><b>கட்டுரை</b></p> <p><b>‘அ’ பிரிவு</b> நடைமுறை சார்ந்த எழுத்துப் படைப்பு – மின்னஞ்சல் \ கருத்துக்களம் எழுதுதல் (130 சொற்களுக்குக் குறையாமல்)</p> <p><b>‘ஆ’ பிரிவு</b> கட்டுரை (300 சொற்களுக்குக் குறையாமல்) வகைகள்: நிகழ்வு, விளக்கம் (கருத்துரை, விவாதம்) (சிற்றுரை வடிவிலும் அமையலாம்)</p>	<p><b>80 (40%)</b></p> <p>20 (10%)</p> <p>60 (30%)</p>	2 மணி
தாள் 2	<p><b>மொழி பயன்பாடும் கருத்தறிதலும்</b></p> <p><b>‘அ’ பிரிவு</b> A1 முன்னுணர்வுக் கருத்தறிதல் A2 பிழை திருத்தம்</p> <p><b>‘ஆ’ பிரிவு</b> B3 சொற்புணர்ச்சி</p> <p><b>மொழி பயன்பாடும் கருத்தறிதலும்</b></p> <p><b>‘இ’ பிரிவு</b> C4 கருத்தறிதல் 1 (தெரிவுவிடை, சுயவிடை, இலக்கண வினா, சுருக்கி வரைதல்)</p> <p><b>‘ஈ’ பிரிவு</b> C5 கருத்தறிதல் 2 (சுயவிடை, சொற்பொருள்)</p>	<p><b>80 (40%)</b></p> <p>10(5%)</p> <p>10(5%)</p> <p>10(5%)</p> <p>22(11%)</p> <p>28(14%)</p>	1 மணி 45 நிமிடங்கள்

தாள் 3	<u>வாய்மொழி</u>	<b>40 (20%)</b>	15 நிமிடங்கள்
	~ ஒளிக்காட்சியையொட்டிய வாய்மொழி படைப்பு	20(10%)	
	~ வாய்மொழி படைப்பையொட்டிய கருத்துரையாடல்	20(10%)	

### Express [G3] (TL) Examination Syllabus

Paper	Type of Papers	Marks (Weighting)	Duration
தாள் 1	<u>கட்டுரை</u>	<b>60 (30%)</b>	2 மணி
	<u>'அ' பிரிவு</u> நடைமுறை சார்ந்த எழுத்துப்படைப்பு - மின்னஞ்சல் (110 சொற்களுக்குக் குறையாமல்)	<b>20 (10%)</b>	
	<u>'ஆ' பிரிவு</u> கட்டுரை (200 சொற்கள்) வகைகள்: நிகழ்வு, விளக்கம், கதை	<b>40 (20%)</b>	
தாள் 2	<u>மொழி மரபும் பயன்பாடும் மற்றும் கருத்தறிதல்</u>	<b>70 (35%)</b>	1 மணி 30 நிமிடங்கள்
	<u>'அ' பிரிவு</u> A1 இணைமொழி/மரபுத்தொடர் A2 முன்னுணர்வுக் கருத்தறிதல்	<b>10(5%)</b> <b>10(5%)</b>	
	<u>'ஆ' பிரிவு</u> B3 தெரிவுவிடைக் கருத்தறிதல் B4 பிழை திருத்தம்	<b>10(5%)</b> <b>10(5%)</b>	
	<u>'இ' பிரிவு</u> C5 சுயவிடைக் கருத்தறிதல் (5 சொற்பொருள் வினாக்கள் உட்பட)	<b>30(15%)</b>	

தாள் 3	வாய்மொழி	70 (35%)	15 நிமிடங்கள்
	1. வாய்விட்டு வாசித்தல் 2. உரையாடல் (ஒளிக்காட்சி ஊக்கக்கூறையொட்டி அமையும்)	10(5%) 40(20%)	
	கேட்டல் கருத்தறிதல் (6 பனுவல்கள்)	20(10%)	30 நிமிடங்கள்

## 2.3 MATHEMATICS

### 2.3.1 MATHEMATICS (O-LEVEL) [Syllabus 4052]

#### SCHEME OF ASSESSMENT

Paper	Description	Duration	Marks	Weighting
1	There will be about 26 short answer questions. Students are required to questions all questions.	2 hours 15 mins	90	50%
2	There will be 9 to 10 questions of varying marks and lengths. The last question in this paper will focus specifically on applying mathematics to a real-world scenario. Students are required to answer all questions.	2 hours 15 mins	90	50%

#### SUBJECT CONTENT

Number & Algebra		Geometry & Measurement	
N1	Numbers and their operations	G1	Angles, triangles and polygons
N2	Ratio and proportion	G2	Congruence and similarity
N3	Percentage	G3	Properties of circles
N4	Rate and speed	G4	Pythagoras' theorem and trigonometry
N5	Algebraic expressions and formulae	G5	Mensuration
N6	Functions and graphs	G6	Coordinate geometry
N7	Equations and inequalities	G7	Vectors in two dimensions
N8	Set language and notation	<b>Statistics &amp; Probability</b>	
N9	Matrices	S1	Data handling analysis
		S2	Probability
		<b>Real-World Contexts</b>	
		R1	Problems derived from real-world contexts

### **Additional Information**

Mathematics is a compulsory subject to be offered at GCE O-Level Examination with the following requisite grades for admission to post-secondary institutions:

- Junior Colleges (JC) / Millennia Institute (MI) Admission – At least a D7 in Mathematics
- Polytechnic Admission – At least a C6 for most courses
- ITE Admission for *Higher Nitec* Courses – At least a D7 for most courses

A student who excels in Mathematics will have a good foundation to offer Mathematics in JC / MI at the H1 level. H1 Mathematics provides a foundation in Mathematics for students who intend to enrol in university courses such as Business, Economics and Social Sciences. Students will develop Mathematical thinking and problem-solving skills. The course covers 'Functions & Graphs', 'Calculus' and 'Probability & Statistics'. A major focus of the syllabus will be the understanding and application of basic concepts and techniques of statistics to equip students with the skills to analyse and interpret data, and make informed decisions.

### **Advice to students who are weak in Mathematics**

It is a requisite to obtain a minimum grade of D7 in Mathematics for admission to JC / MI. Otherwise, a student will only be granted conditional admission to JC / MI and is required to re-sit for the Mathematics Papers in the GCE O-Level Examination in the following year. Should a student fail to obtain the requisite grade, she will be transferred from the JC to MI. Should a student fail to obtain the requisite grade by the 2<sup>nd</sup> year in MI, she will be asked to leave the MI course.

Hence, it is advisable to focus one's efforts to excel in Mathematics and obtain a distinction for computation towards L1R5 than to struggle with the offer of Mathematics and Additional Mathematics with each subject getting a failing or mediocre grade.

## 2.3.2 ADDITIONAL MATHEMATICS (O-LEVEL) [Syllabus 4049]

### SCHEME OF ASSESSMENT

Paper	Description	Duration	Marks	Weighting
1	There will be 12 to 14 questions of varying marks and lengths. Students are required to answer all questions.	2 hours 15 minutes	90	50%
2	There will be 9 to 11 questions of varying marks and lengths. Students are required to answer all questions.	2 hours 15 minutes	90	50%

### SUBJECT CONTENT

Algebra	Geometry & Trigonometry
A1 Quadratic functions	G1 Trigonometric functions, identities and equations
A2 Equations and inequalities	G2 Coordinate geometry in two dimensions
A3 Surds	G3 Proofs in plane geometry
A4 Polynomials and partial fractions	<b>Calculus</b>
A5 Binomial expansions	C1 Differentiation and integration
A6 Exponential, logarithmic functions	

### Additional Information

To offer Additional Mathematics, a student should obtain an overall mark of 65% for Mathematics in Sec 2. A **strong foundation** in lower secondary Mathematics, **especially in algebra**, will help a student to experience a higher chance of excelling in Additional Mathematics.

*For admission to JC / MI*

- Additional Mathematics is a **not** a compulsory subject to be included in the computation of L1R5.
- As mentioned in 'MATHEMATICS (O-LEVEL)' in the previous section, a student does **not** need to offer Additional Mathematics to take up Mathematics at the **H1 level**.
- A student who wishes to offer Mathematics at the H2 level should have taken Additional Mathematics. H2 Mathematics prepares students adequately for university courses including Mathematics, Physics and Engineering where more Mathematics content is required. The course covers 'Functions & Graphs', 'Sequences & Series', 'Vectors', 'Complex Numbers', 'Calculus', 'Permutations & Combinations' and 'Probability & Statistics'. Students will learn to analyse, formulate and solve different types of problems. Students will also learn to work with data and perform statistical analyses.



*For admission to Polytechnic*

- The offer of Additional Mathematics is **not** compulsory as the offer of Mathematics **OR** Additional Mathematics will provide a foundation in Mathematics-related courses, such as Engineering, Applied Sciences, Health Sciences, Business & Management, Information & Digital Technologies and Media & Design.

## 2.4 COMBINED HUMANITIES

### INTRODUCTION

The Combined Humanities subject is a compulsory subject for the GCE O-Level Examinations. The subject comprises two components: a compulsory Social Studies component and an elective component of Geography or History or Literature.

### SUBJECT COMBINATIONS

Students will have to take Paper 1 (Social Studies) with ONE of the elective components.

First Humanities Subject (compulsory)		Second Humanities Subject
Paper 1: Social Studies (compulsory)	Paper 2: Humanities (Geography)	Literature
	Paper 3: Humanities (History)	Literature
	Paper 4: Humanities (Literature)	Geography
	Paper 4: Humanities (Literature)	History

**2.4.1 HUMANITIES PAPER 1  
(SOCIAL STUDIES) 2260/1, 2261/1, 2262/1**

**SCHEME OF ASSESSMENT**

<b>Paper</b>	<b>Type of Paper</b>	<b>Section A</b>	<b>Section B</b>	<b>Duration</b>	<b>Marks</b>	<b>Weighting</b>
1	Social Studies	1 Source Based Question with 5 parts	Structured Response Question with 2 parts.	1h 45 min	Section A (35m) Section B (15m)	50%

**SUBJECT CONTENT**

The Singapore Social Studies Curriculum seeks to prepare our students to be citizens of tomorrow by helping them to better understand the interconnectedness of Singapore and the world they live in. Drawing on aspects of society that are of meaning and interest to students, Social Studies seeks to ignite students' curiosity to inquire into real-world issues that concern our lives, and envisions students as informed, concerned and participative citizens, competent in decision making and impassioned to contribute responsibly to the society and world they live in.

<b>Issue</b>	<b>Topic Overview</b>
Issue 1 Exploring Citizenship and Governance	This Issue invites students to begin exploring what it means to be an informed, concerned and participative citizen. Students will deepen their understanding of their roles as citizens and that of the government. This will serve to develop a stronger sense of civic consciousness, enhancing the roles they play as citizens who are rooted in Singapore with a global outlook.
Issue 2 Living in a Diverse Society	This Issue helps students appreciate diversity and the importance of harmony. Students will develop an understanding of who they are as individuals and accept, respect and celebrate diversity as well as common practices and values in a diverse society. This will heighten students' awareness of the need to develop personal and collective responsibility in promoting and maintaining harmony in a diverse society.
Issue 3 Being Part of a Globalised World	This Issue helps students understand and make meaning of their lives in a globalised world where countries, companies and individuals are interconnected and interdependent. Students will explore the impacts of globalisation in three areas: economy, culture and security. Students will therefore appreciate the complex decision-making process behind responses towards the impacts of globalisation. This understanding will lead them in making well-reasoned and responsible decisions as informed, concerned and participative citizens in a globalised world.

## 2.4.2 HUMANITIES PAPER 2

**Combined Humanities syllabus** comprises two components: **Social Studies (50%)** which is compulsory **and an elective (50%)**.

### **ELECTIVE GEOGRAPHY (Subject Code: 2260/2)**

Geography emphasises the integrative study of physical and human environments to enable students to gain a better understanding of their own space and other parts of the world. It also focuses on the interconnectedness among groups of people, and between people and their environment. The Geography student can expect to acquire a wide range of knowledge and skills to understand and explain physical and human phenomena, and other contemporary environmental and social issues that occur in different places and cultures.

### **SYLLABUS FRAMEWORK AND OUTLINE**

The Express-Level Geography syllabus is structured around the main theme of **Sustainable Development**. The theme comprises of four clusters as shown below:

#### **Cluster 1: Geography in Everyday Life**

- Topic 1.1 – Thinking Geographically
- Topic 1.2 – Sustainable Development
- Topic 1.3 – Geographical Methods

#### **Cluster 2: Tourism**

- Topic 2.1 – Tourism Activity
- Topic 2.2 – Tourism Development
- Topic 2.3 – Sustainable Tourism Development

<b>Cluster 3 – Climate</b>		<b>Cluster 4 – Tectonics</b>
Topic 3.1 – Weather and Climate Topic 3.2 – Climate Change Topic 3.3 – Climate Action	<b>OR</b>	Topic 4.1 – Plate Tectonics Topic 4.2 – Earthquakes and Volcanoes Topic 4.3 – Disaster Risk Management

## **SCHEME OF ASSESSMENT (50% of total paper)**

### **O-Level Humanities (Elective Geography)**

#### **One Paper**

Candidates answer Questions 1 and 2, and either Question 3 or 4 **based on the Cluster studied.**

- Question 1 Cluster 1 Geography in Everyday Life (14m)
- Question 2 Cluster 2 Tourism (18m)

Either

- Question 3 Cluster 3 Climate (18m)

OR

- Question 4 Cluster 4 Tectonics (18m)

Each structured question will consist **no more than 8 sub-parts**. Candidates will be required to answer one 9 marks question testing on Assessment Objective 3 on evaluating the costs and benefits by considering constraints and opportunities in the environment, people's varying needs, attitudes and beliefs and the importance of sustainable development.

### 2.4.3 HUMANITIES

#### **ELECTIVE HISTORY (Subject Code: 2261/2)**

The History syllabus aims to provide students with more exposure to key forces in the past that shaped Asia, especially the ASEAN region. And also gain the historical awareness of the interconnections between global and regional developments.

Some of the qualities which will be developed would be to equip them with the necessary historical knowledge, understanding, dispositions and skills to understand the present and contribute actively and responsibly as local and global citizens to further study and the pursuit of personal interest in the past.

#### **SYLLABUS OUTLINE**

<b>Unit 1 Challenges to European Dominance after World War I 1910s – 1942</b>	<b>Unit 2 Developments in the post-World War II World: The Cold War, 1940s – 1991</b>
Rise of Authoritarian Regimes • Case Study of Nazi Germany • Case Study of Militarist Japan  Outbreak of War in Europe and Asia War in Europe and Asia Key developments leading to the outbreak of World War II in Europe Key developments leading to the outbreak of World War II in the Asia-Pacific	Start and End of The Cold War • End of WWII in Europe & Asia-Pacific • Origins and development of the Cold War in Europe • Extension of the Cold War outside Europe • Overview of different phases of thawing and rising tensions between the USA and the USSR in the 1960s and 1970s • Decline of the USSR and the end of Cold War

#### **SCHEME OF ASSESSMENT (50% of total paper)**

The assessment modes comprise source-based case study and structured-essay questions.

<b>Section A: Source-Based Case Study</b>	<b>30m</b>
<b>Section B: Structured-Essay Questions</b>	<b>20m</b>
<b>Total marks for Paper</b>	<b>50m</b>

**2.4.4 HUMANITIES PAPER 4  
(LITERATURE) 2262/2**

**SCHEME OF ASSESSMENT**

Paper	Type of Paper	Section A	Section B	Duration	Marks	Weighting
4	Humanities (Literature)	Set Text (Novel / Short Stories Collection)	Poetry	1h 40m	50 m	50 %

**SUBJECT CONTENT**

The Literature Syllabus aims to enable students to discover the joy of reading Literature, appreciate the aesthetic value of language and to explore how the elements of different genres function in literary works to achieve specific effects. Candidates of this paper will be assessed on their ability to demonstrate understanding of the ways in which writers' choices of form, structure and language shape meanings and express their responses clearly and coherently.

Section A: Set Text (25%)	Students will read one set text (novel / short stories collection) and answer one passage-based or one essay question. There will be a choice of one passage-based question and two essay questions given.
Section B: Poetry (25%)	There are no prescribed texts. There will be two questions on unseen poetry. Students will answer one question. There are two parts to each question.

**ADDITIONAL INFORMATION**

Sec 3	Sec 4
<ul style="list-style-type: none"> <li>Set Text (70% completed)</li> <li>Components of Poetry</li> </ul>	<ul style="list-style-type: none"> <li>Set Text (100% completed)</li> <li>Components of Poetry</li> </ul>

- Both the G3~Exp and G2~N(A) students may do the same texts.
- However, assessment is in the form of scaffolded questions for the G2~N(A) Students.
- Over 3 years, G2~N(A) Students will be prepared for one set text (novel) and the Unseen component.

## PURE HUMANITIES

### 2.5.1 GEOGRAPHY (Subject Code: 2279)

#### SUBJECT CONTENT

The O-Level Upper Secondary Geography syllabus comprises **Physical Geography, Human Geography and Geographical Skills and Techniques, including Geographical Investigation**. The aims of the syllabus are similar to that of the Humanities Paper 2 (Geography) component.

O-Level Geography
<b>Paper 1</b> Candidates answer <b>three</b> compulsory structured questions. <ul style="list-style-type: none"><li>• Question 1 Fieldwork</li><li>• Question 2 Cluster 2 Tourism</li><li>• Question 3 Cluster 3 Climate</li></ul>
<b>Paper 2</b> Candidates answer <b>three</b> compulsory structured questions <ul style="list-style-type: none"><li>• Question 1 Cluster 1 Geography in Everyday Life</li><li>• Question 2 Cluster 4 Tectonics</li><li>• Question 3 Cluster 5 Singapore</li></ul>

#### **Cluster 1: Geography in Everyday Life**

Topic 1.1 – Thinking Geographically  
Topic 1.2 – Sustainable Development  
Topic 1.3 – Geographical Methods

#### **Cluster 2: Tourism**

Topic 2.1 – Tourism Activity  
Topic 2.2 – Tourism Development  
Topic 2.3 – Sustainable Tourism Development

#### **Cluster 3 – Climate**

Topic 3.1 – Weather and Climate  
Topic 3.2 – Climate Change  
Topic 3.3 – Climate Action

#### **Cluster 4 – Tectonics**

Topic 4.1 – Plate Tectonics  
Topic 4.2 – Earthquakes and Volcanoes  
Topic 4.3 – Disaster Risk Management

#### **Cluster 5 - Singapore**

Topic 5.1 – Small-Island-City-State  
Topic 5.2 – Opportunities and Challenges  
Topic 5.3 – Sustainable and Resilient Singapore

## PURE HUMANITIES

### 2.5.2 HISTORY (Subject Code: 2174)

#### SUBJECT CONTENT

History allows students to draw connections between the past and present by understanding how the nature and impact of past developments explain today's world. History does so by helping learners to become balanced, discerning, empathetic, enquiring, knowledgeable and methodical individuals able to make well-reasoned arguments and decisions.

<b>Unit 1 Challenges to European Dominance after World War I 1910s – 1942</b>	<b>Unit 2 Developments in the post-World War II World: The Cold War, 1940s – 1991</b>
<p>Extension of European control in Southeast Asia and challenges to European Dominance 1870s – 1942</p> <p><u>Countries of study</u></p> <ul style="list-style-type: none"><li>• British Malaya</li><li>• EITHER Dutch Indonesia OR French Vietnam</li></ul> <p>Rise of Authoritarian Regimes</p> <ul style="list-style-type: none"><li>• Case Study of Nazi Germany</li><li>• Case Study of Militarist Japan</li></ul> <p>Outbreak of War in Europe and Asia</p>	<p><u>Start and End of The Cold War</u></p> <ul style="list-style-type: none"><li>• End of WWII in Europe &amp; Asia-Pacific</li><li>• Origins and development of the Cold War in Europe</li><li>• Decline of the USSR and the end of Cold War</li></ul> <p>Decolonisation and establishment of newly independent nations in Southeast Asia</p> <p><u>Countries of study</u></p> <ul style="list-style-type: none"><li>• British Malaya, 1945-1957</li><li>• EITHER Dutch Indonesia, 1945-1948 OR French Vietnam, 1945-1954</li></ul>

<b>Paper 1</b>	
Unit 1 – European Dominance and Expansion in the late 19 <sup>th</sup> century	
<b>Section A: Source-Based Case Study</b>	<b>30m</b>
<b>Section B: Structured-Essay Questions</b>	<b>20m</b>
<b>Total marks for Paper</b>	<b>50m</b>

<b>Paper 2</b>	
Unit 2 - Developments in the post World War II World: Decolonisation and the Cold War, 1940s – 1991	
<b>Section A: Source-Based Case Study</b>	<b>30m</b>
<b>Section B: Structured-Essay Questions</b>	<b>20m</b>
<b>Total marks for Paper</b>	<b>50m</b>



### 2.5.3 LITERATURE-IN-ENGLISH 2065

#### SCHEME OF ASSESSMENT

Paper	Type of Paper	Section A	Section B	Duration	Marks	Weighting
1	Set Text (Novel) & Unseen Poetry	Set Text (Novel / Short Stories Collection)	Unseen Poetry	1h 40m	50 m	50 %
2	Drama	Set Text		1h 30m	50 m	50%

#### SUBJECT CONTENT

The Literature Syllabus aims to enable students to discover the joy of reading Literature, appreciate the aesthetic value of language and to explore how the elements of different genres function in literary works to achieve specific effects. Candidates of this paper will be assessed on their ability to demonstrate understanding of the ways in which writers' choices of form, structure and language shape meanings and express their responses clearly and coherently.

Paper 1 Section A (25%) Set Text (Novel)	Students will read one set text (novel / short stories collection) and answer one passage-based or one essay question. There will be a choice of one passage-based question and two essay questions.
Paper 1 Section B: Unseen Prose (25%)	There are no prescribed texts. There will be two questions on unseen poetry. Students will answer one question. There are two parts to each question.
Paper 2 Drama (50%)	Students will read one set text (Drama). They will answer one compulsory passage-based question and one essay question. One passage-based and two essay questions will be set.

#### ADDITIONAL INFORMATION

Sec 3	Sec 4
<ul style="list-style-type: none"> <li>Set Text (Novel / Short Stories Collection)</li> </ul>	<ul style="list-style-type: none"> <li>Set Text (Drama)</li> </ul>
<ul style="list-style-type: none"> <li>Components of Unseen Poetry</li> </ul>	<ul style="list-style-type: none"> <li>Components of Unseen Poetry</li> </ul>

## 2.6 PURE SCIENCES

### 2.6.1 PHYSICS 6091

#### SCHEME OF ASSESSMENT

Paper	Type of Paper	Duration	Marks	Weighting
1	<b>Multiple Choice</b> <i>This paper consists of 40 compulsory multiple choice items.</i>	1h	40	30%
2	<b>Structured and Free Response questions</b> <i>This paper consists of two sections. Section A will carry 70 marks and will consist of a variable number of compulsory structured questions. The last two questions will carry 20 marks, one of which is a data-based question requiring candidates to interpret, evaluate or solve problems using a stem of information. The data-based question will carry 8–12 marks. Section B will carry 10 marks and will consist of two questions. Candidates must answer only one out of these two questions.</i>	1h 45min	80	50%
3	<b>Practical</b> <i>This paper consists of a variable number of compulsory practical questions. One, or more, of the questions may incorporate assessment of Planning and require candidates to apply and integrate knowledge and understanding from different sections of the syllabus. The assessment of Presentation of Data and Observations and Analysis, Conclusions and Evaluation may include questions on data-analysis which do not require practical equipment and apparatus.</i>	1h 50min	40	20%

#### CONTENT STRUCTURE

Section	Topics	Content
<b>I. Measurement</b>	1. Physical Qualities, Units and Measurement	<ul style="list-style-type: none"><li>• Physical quantities and SI units</li><li>• Measurement</li><li>• Scalars and vectors</li></ul>
<b>II. Newtonian Mechanics</b>	2. Kinematics	<ul style="list-style-type: none"><li>• Speed, velocity and acceleration</li><li>• Graphical analysis of motion</li><li>• Free-fall</li></ul>
	3. Dynamics	<ul style="list-style-type: none"><li>• Types of forces</li><li>• Mass, weight and gravitational field</li><li>• Newton's laws of motion</li><li>• Effects of resistive forces on motion</li></ul>
	4. Turning Effect of Forces	<ul style="list-style-type: none"><li>• Moments</li><li>• Equilibrium</li><li>• Centre of gravity and stability</li></ul>
	5. Pressure	<ul style="list-style-type: none"><li>• Pressure</li><li>• Density and fluid pressure</li></ul>
	6. Energy	<ul style="list-style-type: none"><li>• Energy stores and transfers</li><li>• Work, power and efficiency</li><li>• Energy resources</li></ul>
<b>III. Thermal Physics</b>	7. Kinetic Particle Model of Matter	<ul style="list-style-type: none"><li>• States of matter</li><li>• Kinetic Particle Model</li></ul>

	8. Thermal Processes	<ul style="list-style-type: none"> <li>• Thermal equilibrium</li> <li>• Conduction</li> <li>• Convection</li> <li>• Radiation</li> </ul>
	9. Thermal Properties of Matter	<ul style="list-style-type: none"> <li>• Internal energy</li> <li>• Specific heat capacity</li> <li>• Melting, boiling and evaporation</li> <li>• Specific latent heat</li> </ul>
<b>IV. Waves</b>	10. General Properties of Waves	<ul style="list-style-type: none"> <li>• Describing wave motion</li> <li>• Wave properties</li> <li>• Sound</li> </ul>
	11. Electromagnetic Spectrum	<ul style="list-style-type: none"> <li>• Properties of electromagnetic waves</li> <li>• Applications of electromagnetic waves</li> <li>• Effects of electromagnetic waves on cells and tissues</li> </ul>
	12. Light	<ul style="list-style-type: none"> <li>• Reflection of light</li> <li>• Refraction of light</li> <li>• Thin converging lenses</li> </ul>
<b>V. Electricity and Magnetism</b>	13. Static Electricity	<ul style="list-style-type: none"> <li>• Electric charge</li> <li>• Electric field</li> <li>• Dangers and applications of electrostatic charging</li> </ul>
	14. Current of Electricity	<ul style="list-style-type: none"> <li>• Conventional current and electron flow</li> <li>• Electromotive force and potential difference</li> <li>• Resistance</li> </ul>
	15. D.C. Circuits	<ul style="list-style-type: none"> <li>• Circuit diagrams</li> <li>• Series and parallel circuits</li> <li>• Action and use of circuit components</li> </ul>
	16. Practical Electricity	<ul style="list-style-type: none"> <li>• Electrical working, power and energy</li> <li>• Dangers of electricity</li> <li>• Safe use of electricity in the home</li> </ul>
	17. Magnetism	<ul style="list-style-type: none"> <li>• Laws of magnetism</li> <li>• Magnetic properties of matter</li> <li>• Magnetic field</li> </ul>
	18. Electromagnetism	<ul style="list-style-type: none"> <li>• Magnetic effect of a current</li> <li>• Force on a current-carrying conductor</li> <li>• The d.c. motor</li> </ul>
	19. Electromagnetic Induction	<ul style="list-style-type: none"> <li>• Principles of electromagnetic induction</li> <li>• The a.c. generator</li> <li>• The transformer</li> </ul>
<b>VI. Radioactivity</b>	20. Radioactivity	<ul style="list-style-type: none"> <li>• The composition of the atom</li> <li>• Radioactive decay</li> <li>• Dangers and uses of radioactivity</li> </ul>

## 2.6.2 CHEMISTRY 6092

### SCHEME OF ASSESSMENT

Paper	Type of Paper	Duration	Marks	Weighting
1	<b>Multiple Choice</b> <i>This paper consists of 40 compulsory multiple choice items.</i>	1h	40	30%
2	<b>Structured and Free Response questions</b> <i>This paper consists of two sections. Section A will carry 70 marks and will consist of a variable number of compulsory structured questions. The last two questions will carry 20 marks, one of which is a data-based question requiring candidates to interpret, evaluate or solve problems using a stem of information. The data-based question will carry 8–12 marks. Section B will carry 10 marks and will consist of two questions. Candidates must answer only one out of these two questions.</i>	1h 45min	80	50%
3	<b>Practical</b> <i>This paper consists of a variable number of compulsory practical questions. One, or more, of the questions may incorporate assessment of Planning and require candidates to apply and integrate knowledge and understanding from different sections of the syllabus. The assessment of Presentation of Data and Observations and Analysis, Conclusions and Evaluation may include questions on data-analysis which do not require practical equipment and apparatus.</i>	1h 50min	40	20%

### CONTENT STRUCTURE

Section	Topics	Content
<b>I. Matter – Structures and Properties</b>	1. Experimental Chemistry	1.1 Experimental Design 1.2 Methods of Purification and Analysis
	2. The Particulate Nature of Matter	2.1 Kinetic Particle Theory 2.2 Atomic Structure
	3. Chemical Bonding and Structure	3.1 Ionic Bonding 3.2 Covalent Bonding 3.3 Metallic Bonding 3.4 Structure and Properties of Materials
<b>II. Chemical Reactions</b>	4. Chemical Calculations	4.1 Formulae and Equation Writing 4.2 The Mole Concept and Stoichiometry
	5. Acid-Base Chemistry	5.1 Acids and Bases 5.2 Salts 5.3 Ammonia
	6. Qualitative Analysis	
	7. Redox Chemistry	7.1 Oxidation and Reduction 7.2 Electrochemistry
	8. Patterns in the Periodic Table	8.1 Periodic Trends 8.2 Group Properties 8.3 Transition Elements 8.4 Reactivity Series
	9. Chemical Energetics	
	10. Rate of Reactions	
<b>III. Chemistry in a Sustainable World</b>	11. Organic Chemistry	11.1 Fuels and Crude Oil 11.2 Hydrocarbons 11.3 Alcohols, Carboxylic Acids and Esters 11.4 Polymers
	12. Maintaining Air Quality	

### 2.6.3 BIOLOGY 6093 SCHEME OF ASSESSMENT

Paper	Type of Paper	Duration	Marks	Weighting
1	<b>Multiple Choice</b> <i>This paper consists of 40 compulsory multiple choice items.</i>	1h	40	30%
2	<b>Structured and Free Response questions</b> <i>This paper consists of two sections. Section A will carry 70 marks and will consist of a variable number of compulsory structured questions. The last two questions will carry 20 marks, one of which is a data-based question requiring candidates to interpret, evaluate or solve problems using a stem of information. The data-based question will carry 8–12 marks. Section B will carry 10 marks and will consist of two questions. Candidates must answer only one out of these two questions.</i>	1h 45min	80	50%
3	<b>Practical</b> <i>This paper consists of a variable number of compulsory practical questions. One, or more, of the questions may incorporate assessment of Planning and require candidates to apply and integrate knowledge and understanding from different sections of the syllabus. The assessment of Presentation of Data and Observations and Analysis, Conclusions and Evaluation may include questions on data-analysis which do not require practical equipment and apparatus.</i>	1h 50min	40	20%

### CONTENT STRUCTURE

Themes	Topics	Content
<b>I. Cells and The Chemistry of Life</b>	1.Cell Structure and Organisation	<ul style="list-style-type: none"> <li>• Plant and Animal Cells</li> <li>• Cell Specialisation</li> </ul>
	2.Movement of Substances	<ul style="list-style-type: none"> <li>• Diffusion</li> <li>• Osmosis</li> <li>• Active Transport</li> </ul>
	3.Biological Molecules	<ul style="list-style-type: none"> <li>• Carbohydrates, Fats and Proteins</li> <li>• Enzymes</li> </ul>
<b>II. The Human Body – Maintaining Life</b>	4.Nutrition in Humans	<ul style="list-style-type: none"> <li>• Human Digestive System</li> <li>• Physical and Chemical Digestion</li> <li>• Absorption and Assimilation</li> </ul>
	5.Transport in Humans	<ul style="list-style-type: none"> <li>• Parts and Functions of the Circulatory System</li> <li>• Blood</li> <li>• Heart and Cardiac Cycle</li> <li>• Coronary Heart Disease</li> </ul>
	6.Respiration in Humans	<ul style="list-style-type: none"> <li>• Human Gas Exchange</li> <li>• Cellular Respiration</li> </ul>
	7.Excretion in Humans	<ul style="list-style-type: none"> <li>• Structure and Function of Kidneys</li> <li>• Kidney Dialysis</li> </ul>
	8.Homeostasis, Co-ordination and Response in Humans	<ul style="list-style-type: none"> <li>• Principles of Homeostasis</li> <li>• Hormonal Control</li> <li>• Nervous Control</li> </ul>
	9.Infectious Diseases in Humans	<ul style="list-style-type: none"> <li>• Organisms affecting Human Health</li> <li>• Influenza and Pneumococcal Disease</li> <li>• Prevention and Treatment of Infectious Diseases</li> </ul>

<b>III. Living Together – Plants, Animals and Ecosystems</b>	10. Nutrition and Transport in Flowering Plants	<ul style="list-style-type: none"> <li>• Plant Structure</li> <li>• Photosynthesis</li> <li>• Transpiration</li> <li>• Translocation</li> </ul>
	11. Organisms and their Environment	<ul style="list-style-type: none"> <li>• Energy Flow</li> <li>• Food Chains and Food Webs</li> <li>• Carbon Cycle and Global Warming</li> <li>• Effects of Man on the Ecosystem</li> <li>• Conservation</li> </ul>
<b>IV. Continuity of Life</b>	12. Molecular Genetics	<ul style="list-style-type: none"> <li>• The Structure of DNA</li> <li>• From DNA to Proteins</li> <li>• Genetic Engineering</li> </ul>
	13. Reproduction	<ul style="list-style-type: none"> <li>• Asexual Reproduction</li> <li>• Cell Division</li> <li>• Sexual Reproduction in Flowering Plants</li> <li>• Sexual Reproduction in Humans</li> <li>• Sexually Transmitted Diseases</li> </ul>
	14. Inheritance	<ul style="list-style-type: none"> <li>• The Passage of Genetic Information from Parent to Offspring</li> <li>• Monohybrid Crosses</li> <li>• Variation</li> <li>• Natural Selection</li> </ul>

## 2.7 COMBINED SCIENCES

### 2.7.1 SCIENCE (PHYSICS/CHEMISTRY) 5086

#### SCHEME OF ASSESSMENT

Paper	Type of Paper	Duration	Marks	Weighting
1	<b>Multiple Choice</b> <i>This paper consists of 40 compulsory multiple choice questions providing approximately equal coverage of the Physics and Chemistry sections of the syllabus.</i>	1 h	40	20.0%
2 Sc (Physics)	<b>Structured and Free Response questions</b> <i>Section A will carry 55 marks and will contain a number of compulsory structured questions. The last question will carry 10 marks.</i> <i>Section B will carry 10 marks and will contain two questions. Candidates must answer only one out of these two questions. The questions will be based on the Physics section of the syllabus.</i>	1h 15min	65	32.5%
3 Sc (Chemistry)	<b>Structured and Free Response questions</b> <i>This paper consists of two sections. Section A will carry 55 marks and will contain a number of compulsory structured questions. The last question will carry 10 marks.</i> <i>Section B will carry 10 marks and will contain two questions. Candidates must answer only one out of these two questions. The questions will be based on the Chemistry section of the syllabus.</i>	1h 15min	65	32.5%
5	<b>Practical Test</b> <i>Consisting of one or two compulsory questions on each of the two Sciences.</i> <i>In one or both questions, candidates will be expected to suggest a modification or extension, which does not need to be executed.</i>	1h 30min	30	15.0%

## CONTENT STRUCTURE

### Sc (PHYSICS)

Section	Topics	Content
<b>I. Measurement</b>	1. Physical Quantities, Units and Measurement	<ul style="list-style-type: none"> <li>Physical quantities and SI units</li> <li>Measurement</li> <li>Scalars and vectors</li> </ul>
<b>II. Newtonian Mechanics</b>	2. Kinematics	<ul style="list-style-type: none"> <li>Speed, velocity and acceleration</li> <li>Graphical analysis of motion</li> <li>Free-fall</li> </ul>
	3. Force and Pressure	<ul style="list-style-type: none"> <li>Types of forces</li> <li>Mass, weight and gravitational field</li> <li>Density</li> <li>Pressure</li> </ul>
	4. Dynamics	<ul style="list-style-type: none"> <li>Newton's laws of motion</li> <li>Effects of resistive forces on motion</li> </ul>
	5. Turning Effect of Forces	<ul style="list-style-type: none"> <li>Moments</li> <li>Equilibrium</li> <li>Centre of gravity</li> </ul>
	6. Energy	<ul style="list-style-type: none"> <li>Energy stores and transfers</li> <li>Work</li> <li>Power</li> </ul>
<b>III. Thermal Physics</b>	7. Kinetic Particle Model of Matter	<ul style="list-style-type: none"> <li>States of matter</li> <li>Kinetic Particle Model</li> <li>Internal energy</li> </ul>
	8. Thermal Processes	<ul style="list-style-type: none"> <li>Thermal equilibrium</li> <li>Conduction</li> <li>Convection</li> <li>Radiation</li> </ul>
<b>IV. Waves</b>	9. General Wave Properties	<ul style="list-style-type: none"> <li>Describing wave motion</li> <li>Wave properties</li> <li>Sound</li> </ul>
	10. Electromagnetic Spectrum	<ul style="list-style-type: none"> <li>Properties of electromagnetic waves</li> <li>Applications of electromagnetic waves</li> <li>Effects of electromagnetic waves on cells and tissues</li> </ul>
	11. Light	<ul style="list-style-type: none"> <li>Reflection of light</li> <li>Refraction of light</li> <li>Thin converging lenses</li> </ul>
<b>V. Electricity and Magnetism</b>	12. Electric Charge and Current of Electricity	<ul style="list-style-type: none"> <li>Electric charge</li> <li>Conventional current and electron flow</li> <li>Electromotive force and potential difference</li> <li>Resistance</li> </ul>
	13. D.C. Circuits	<ul style="list-style-type: none"> <li>Circuit diagrams</li> <li>Series and parallel circuits</li> </ul>
	14. Practical Electricity	<ul style="list-style-type: none"> <li>Electrical working, power and energy</li> <li>Dangers of electricity</li> <li>Safe use of electricity in the home</li> </ul>
	15. Magnetism and Electromagnetism	<ul style="list-style-type: none"> <li>Laws of magnetism</li> <li>Magnetic properties of matter</li> <li>Magnetic field</li> <li>Magnetic effect of a current</li> <li>Force on a current-carrying conductor</li> </ul>
<b>VI. Radioactivity</b>	16. Radioactivity	<ul style="list-style-type: none"> <li>The composition of the atom</li> <li>Radioactive decay</li> <li>Dangers and uses of radioactivity</li> </ul>



## Sc (CHEMISTRY)

Section	Topics	Content
<b>I. Matter – Structures and Properties</b>	1. Experimental Chemistry	1.1 Experimental Design 1.2 Methods of Purification and Analysis
	2. The Particulate Nature of Matter	2.1 Kinetic Particle Theory 2.2 Atomic Structure
	3. Chemical Bonding and Structure	3.1 Ionic Bonding 3.2 Covalent Bonding 3.3 Structure and Properties of Materials
<b>II. Chemical Reactions</b>	4. Chemical Calculations	4.1 Formulae and Equation Writing 4.2 The Mole Concept and Stoichiometry
	5. Acid-Base Chemistry	
	6. Qualitative Analysis	
	7. Redox Chemistry	
	8. Patterns in the Periodic Table	8.1 Periodic Trends 8.2 Group Properties 8.3 Reactivity Series
	9. Chemical Energetics	
10. Rate of Reactions		
<b>III. Chemistry in a Sustainable World</b>	11. Organic Chemistry	11.1 Fuels and Crude Oil 11.2 Hydrocarbons 11.3 Alcohols and Carboxylic Acids 11.4 Polymers
	12. Maintaining Air Quality	

## 2.7.2 SCIENCE (CHEMISTRY/BIOLOGY) 5088

### SCHEME OF ASSESSMENT

Paper	Type of Paper	Duration	Marks	Weighting
1	<b>Multiple Choice</b> <i>This paper consists of 40 compulsory multiple choice questions providing approximately equal coverage of the Biology and Chemistry sections of the syllabus.</i>	1 h	40	20.0%
3 Sc (Chemistry)	<b>Structured and Free Response questions</b> <i>Section A will carry 55 marks and will contain a number of compulsory structured questions. The last question will carry 10 marks.</i> <i>Section B will carry 10 marks and will contain two questions. Candidates must answer only one out of these two questions. The questions will be based on the Chemistry section of the syllabus.</i>	1h 15min	65	32.5%
4 Sc (Biology)	<b>Structured and Free Response questions</b> <i>This paper consists of two sections. Section A will carry 55 marks and will contain a number of compulsory structured questions. The last question will carry 10 marks.</i> <i>Section B will carry 10 marks and will contain two questions. Candidates must answer only one out of these two questions. The questions will be based on the Biology section of the syllabus.</i>	1h 15min	65	32.5%
5	<b>Practical Test</b> <i>Consisting of one or two compulsory questions on each of the two Sciences.</i> <i>In one or both questions, candidates will be expected to suggest a modification or extension, which does not need to be executed.</i>	1h 30min	30	15.0%

### CONTENT STRUCTURE

#### Sc (BIOLOGY)

Section	Topics	Content
<b>I. Cells and The Chemistry of Life</b>	1. Cell Structure and Organisation	<ul style="list-style-type: none"> <li>• Plant and Animal Cells</li> <li>• Cell Specialisation</li> </ul>
	2. Movement of Substances	<ul style="list-style-type: none"> <li>• Diffusion</li> <li>• Osmosis</li> </ul>
	3. Biological Molecules	<ul style="list-style-type: none"> <li>• Carbohydrates, Fats and Proteins</li> <li>• Enzymes</li> </ul>
<b>II. The Human Body – Maintaining Life</b>	4. Nutrition in Humans	<ul style="list-style-type: none"> <li>• Human Digestive System</li> <li>• Physical and Chemical Digestion</li> <li>• Absorption and Assimilation</li> </ul>
	5. Transport in Humans	<ul style="list-style-type: none"> <li>• Parts and Functions of the Circulatory System</li> <li>• Blood</li> <li>• Coronary Heart Disease</li> </ul>
	6. Respiration in Humans	<ul style="list-style-type: none"> <li>• Human Gas Exchange</li> <li>• Cellular Respiration</li> </ul>
	7. Infectious Diseases in Humans	<ul style="list-style-type: none"> <li>• Organisms affecting Human Health</li> <li>• Influenza and Pneumococcal Disease</li> <li>• Prevention and Treatment of Infectious Diseases</li> </ul>
<b>III. Living Together – Plants, Animals and Ecosystems</b>	8. Nutrition and Transport in Flowering Plants	<ul style="list-style-type: none"> <li>• Plant Structure</li> <li>• Photosynthesis</li> <li>• Transpiration</li> <li>• Translocation</li> </ul>

	9. Organisms and their Environment	<ul style="list-style-type: none"> <li>• Energy Flow</li> <li>• Food Chains and Food Webs</li> <li>• Carbon Cycle and Global Warming</li> <li>• Effects of Man on the Ecosystem</li> </ul>
<b>IV. Continuity of Life</b>	10. Molecular Genetics	<ul style="list-style-type: none"> <li>• The Structure of DNA</li> <li>• From DNA to Proteins</li> </ul>
	11. Reproduction in Humans	<ul style="list-style-type: none"> <li>• Sexual Reproduction in Humans</li> <li>• Sexually Transmitted Diseases</li> </ul>
	12. Inheritance	<ul style="list-style-type: none"> <li>• The Passage of Genetic Information from Parent to Offspring</li> <li>• Monohybrid Crosses</li> <li>• Variation</li> </ul>

### Sc (CHEMISTRY)

Section	Topics	Content
<b>I. Matter – Structures and Properties</b>	1. Experimental Chemistry	1.1 Experimental Design 1.2 Methods of Purification and Analysis
	2. The Particulate Nature of Matter	2.1 Kinetic Particle Theory 2.2 Atomic Structure
	3. Chemical Bonding and Structure	3.1 Ionic Bonding 3.2 Covalent Bonding 3.3 Structure and Properties of Materials
<b>II. Chemical Reactions</b>	4. Chemical Calculations	4.1 Formulae and Equation Writing 4.2 The Mole Concept and Stoichiometry
	5. Acid-Base Chemistry	
	6. Qualitative Analysis	
	7. Redox Chemistry	
	8. Patterns in the Periodic Table	8.1 Periodic Trends 8.2 Group Properties 8.3 Reactivity Series
	9. Chemical Energetics	
<b>III. Chemistry in a Sustainable World</b>	10. Rate of Reactions	
	11. Organic Chemistry	11.1 Fuels and Crude Oil 11.2 Hydrocarbons 11.3 Alcohols and Carboxylic Acids 11.4 Polymers
	12. Maintaining Air Quality	

## 2.8 NUTRITION & FOOD SCIENCE

### G3 NUTRITION AND FOOD SCIENCE / GCE O-LEVEL NUTRITION & FOOD SCIENCE

The Nutrition & Food Science students are developed to:

- Lead a healthier lifestyle proactively through proper diet and nutrition
- Advocate sustainable food consumption by planning and making appropriate food choices
- Apply principles of culinary science creatively in food preparation and cooking

#### SCHEME OF ASSESSMENT

##### **G3 Food & Nutrition / GCE O-Level Food & Nutrition**

Paper 1: 40% (100m)

Paper 2: 60% (80m)

##### Paper 1 (2 h)

Written paper. Answer all questions.

Section A: Multiple Choice Questions (15m)

Section B: Short Answer Questions & Data Response Questions (55m)

Section C: Open Ended Questions (30m)

##### Paper 2: Coursework (60%)

Research	10m
Decision Making	8m
Investigation	
▪ Plan	6m
▪ Conduct	8m
▪ Apply	8m
Planning:	8m
Execution:	
▪ Organisation & Management	6m
▪ Manipulation	10m
▪ Product & Presentation	8m
Evaluation:	8m
<b>Sub-total:</b>	<b>80m</b>

#### Entry Requirements

- At least a pass in Food and Consumer Education in Secondary 2

#### Demands of the Syllabus

**The Nutrition and Food Science Syllabus requires students to:**

- Possess good work ethics and good time management skill
- Be able to use computer and internet to do coursework

## 2.9 MUSIC

### G3 MUSIC / GCE O-LEVEL MUSIC

Students will develop in the following areas during their weekly lessons:

- Critical thinking and musical creativity
- Communicative and interpretative skills in music
- Perception and awareness of musical cultures and traditions, both local and global
- An informed and lifelong appreciation of music

### SCHEME OF ASSESSMENT

Candidates taking **G3 Music / GCE O-Level Music** will be required to offer the following papers:

#### **Paper 1: Music Studies (40%)**

- 1 ½ hour written paper (Unprepared Listening Analysis)
- Aural perception skills, knowledge and understanding of Western, Jazz, Popular Music and Asian Music genres
- Use accurate technical vocabulary in all their answers

#### **Paper 2: Creating (30%)**

- Part 1: Create one composition in response to one of the six stimuli
- Part 2: Submit Reflection Notes of 400 to 500 words

#### **Paper 3: Performing (30%)**

- Part 1: Plan and perform a 10-minute recital consisting of two contrasting pieces
- Part 2: Submit Reflection Notes of 400 to 500 words

### **G3 Higher Music / CE O-Level Higher Music**

Candidates who offer G3 Higher Music / GCE O-Level Higher Music will need to do 1 out of 3 options as follows on top of the G3 Higher Music / GCE O-Level Music components:

- Research Essay: 1500 – 2000 words of individual inquiry into a subject of candidate's own choice
- Higher Creating: 6 minutes of music composition portfolio and programme notes
- Higher Performing: 2 additional musical pieces between 8 and 12 mins followed by 3 mins of viva voce to assess candidates' understanding of the music they have performed

### **Entry Requirements**

- All applicants must sit for a Selection Test to assess their aptitude
- All applicants must undergo an Interview to evaluate their suitability

### **Demands of the Syllabus**

**The Music Syllabus requires students to:**

- Study music in greater depth – students must listen to a wide range of music
- Continue with private instrumental/vocal tuition with an external tutor outside of school hours (in preparation for the Performing Component)
- Participate in musical activities (e.g. lunchtime concerts, performing arts CCA etc.)

## 2.10 ART

### G3 ART / GCE O-LEVEL ART

Students are equipped to apply the following 5 domains during their weekly lessons:

- Gathering and Investigation of Information
- Exploration and Development of Ideas/Concepts
- Aesthetic Qualities
- Selection and Control of Materials and Technical Processes
- Personal Response

### SCHEME OF ASSESSMENT

Candidates taking **G3 ART / GCE O-Level Art** will be required to offer the following papers:

Paper	Description	Examination Duration	Weighting
Paper 1	Coursework	Not Applicable	60%
Paper 2	Drawing and Painting	3 hours	40%

#### Paper 1: Coursework

For the Coursework component, candidates must submit **8 A2 size** preparatory boards (single-sided) together with the final Artwork.

#### Paper 2: Drawing and Painting

The topics for the Drawing and Painting exam are released **3 weeks** prior to the Drawing and Painting 3-hour exam. Candidates must submit 5 A3 size preparatory boards (double-sided) together with the drawing and painting artwork they will sit for. The A3 size preparatory boards are to be prepared and ready **before** the day of the drawing and painting exam.

#### Entry Requirements

- At least 65 marks (overall) for Sec 2 Art and pass a Selection Test
- Right aptitude and attitude for Art
- An inquiring mind, a spirit of experimentation and a passion for the visual arts

#### Demands of the Syllabus

The Art Syllabus requires students to:

- Spend a minimum of three hours each week outside of curriculum to hone their sensitivity to materials and processes to develop a firm grounding in both the practical and theoretical aspects of Art and Design
- Attend enrichment activities such as workshops, artists' talks and learning journeys to art galleries and museums organised by the school or MOE
- Participate in art-related competitions to sharpen their skills and participate in school or national exhibitions
- Commit to the rigour and demands of the art curriculum and art development process

## 2.11 PRINCIPLES OF ACCOUNTS (O-LEVEL)

### SCHEME OF ASSESSMENT

Paper	Description	Duration	Marks	Weighting
1	Answer 3 to 4 compulsory structured questions.	1 hour	40	40%
2	Answer 4 compulsory structured questions. <ul style="list-style-type: none"> <li>• One question requires the preparation of financial statement for a business, which carries 20 marks.</li> <li>• A scenario-based question will be part of one of the remaining 3 questions, which carries 7 marks.</li> </ul>	2 hours	60	60%

### SUBJECT CONTENT

<b>(1) Accounting and non-accounting information are used to support and facilitate decision-making</b>	<b>(2) Accounting is a language used to represent business activities</b>
1.1 Roles of accounting and accountants	2.1 Types of businesses
1.2 Stakeholders and their decision-making needs	2.2 Forms of business ownerships
1.3 Financial statements analysis	2.3 Elements of financial statements
<b>(3) Accounting is an information system to measure business activities</b>	2.4 Accounting equation
3.1 Accounting theories	2.5 Financial statements
3.2 Accounting information system and accounting cycle	2.6 Income and expenses
3.3 Understanding the double-entry recording system	2.7 Assets
3.4 Internal controls	2.8 Liabilities
	2.9 Equities
	2.10 Correction of Errors

#### Additional Information

Accounting is an information system based on generally accepted accounting principles. It involves the recording and processing of business transactions, and communicating the information to stakeholders. The accounting information is used to evaluate business performance and facilitate decision-making. What sets the accountancy profession apart is the responsibility to act in the public's interest.

POA is designed to teach age-appropriate and relevant accounting knowledge, skills and values. In addition, students will understand how businesses use accounting and non-accounting information to make decisions. Through the subject, they will acquire transferrable skills that they can apply in their daily lives.

POA forms part of a broad-based education to equip students with strong fundamentals for future learning.

## PART 3: INFORMATION ON ADMISSIONS EXERCISES FOR 'O' LEVEL STUDENTS

### 3.1 Junior College (JC), Millennia Institute (MI), Polytechnic Education & Institute of Education (ITE)

<b>Joint Admission Exercise</b> The Joint Admissions Exercise (JAE) enables GCE O-level holders to apply for admissions to courses offered by JCs, MI, Polytechnics and ITE.	<a href="https://www.moe.gov.sg/post-secondary/admissions/jae">https://www.moe.gov.sg/post-secondary/admissions/jae</a>
<b>JAE 2024 Information</b> Information Booklet for GCE O-Level holders seeking admission to JCs, MI, Polytechnics and ITE.	<a href="https://www.moe.gov.sg/-/media/files/post-secondary/2024-jae/2024-jae-courses.pdf">https://www.moe.gov.sg/-/media/files/post-secondary/2024-jae/2024-jae-courses.pdf</a>
<b>JC and Polytechnic / ITE Courses</b> Explore courses based on aggregate type, score, type of institute and area of interest.	<a href="https://www.moe.gov.sg/coursefinder">moe.gov.sg/coursefinder</a>



### 3.2 Contact Us

School General Office Tel: 62816606

Our School Website: [www.plmgss.moe.edu.sg](http://www.plmgss.moe.edu.sg)

#### Dean IP

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#### Year Head (Lower Secondary)

<i>Mrs Koh Si Ping</i>	<i>chan_si_ping@moe.edu.sg</i>
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#### Sec 2 Form Teachers

<b>Class</b>	<b>Teachers</b>	<b>Email</b>
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<b>2.3</b>	Mrs Neoh Terh Ling	<i>lim_terh_ling@moe.edu.sg</i>
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<b>2.8</b>	Mdm Durka Kuppa Balakrishnan	<i>durka_kuppa_balakrishnan@moe.edu.sg</i>