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Understanding the Science Pathways for Secondary Three

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Goals of Science Education in JSS

Science for Life and Society

- Enthuse and nurture all students to be scientifically literate, so that they are able to make informed decisions and take responsible actions in their daily lives; and
- Provide strong science fundamentals for students to innovate and pursue science related areas (STEM) for future learning and work
- Preparing individuals to navigate an increasingly complex , technologically advanced world.

Developing the 21st Century Learner

- **Adaptive thinker** : Cognitively flexible, responds nimbly to new contexts
- **Confident Person**: Courageous in exchanging ideas responsibly and respectfully based on logical evidence.
- **Persevering Learner**: Takes calculated risks and persists through failure
- **Concerned Citizen**: Empathic, caring and rooted in Singapore when engaging with global issues.

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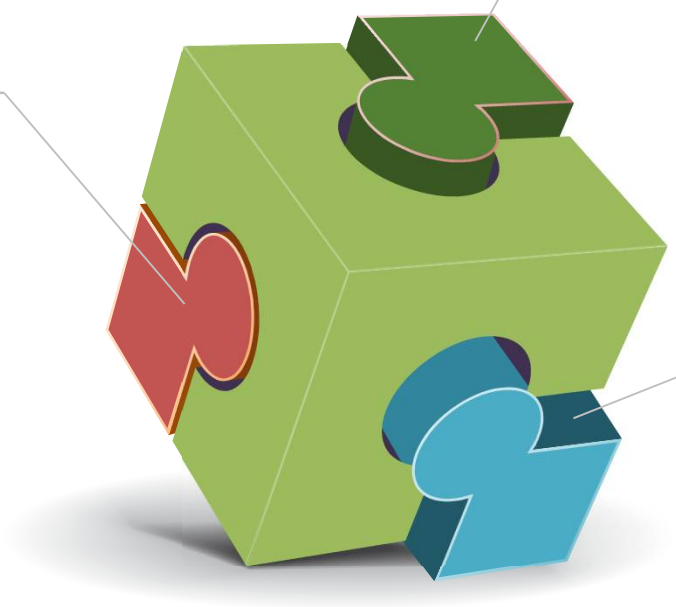
Understanding the three disciplines of Science

Goals of Science Education in JSS

Chemistry

The study of the composition, structure, properties and change of matter known as the 'central science' that bridges physics and biology



Biology

The study of life and living organisms including their physical structure, function, growth and evolution

Physics

The study of matter & its motion through space & time, the concepts of energy & forces, how the universe behaves

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Choosing your Science Subject Combination

G3 Science		G2 Science	G1 Science
Choice of two G3 Pure Sciences*	**G3 Combined Sciences**		
Chemistry (K324) *(compulsory)* Physics (K323) **OR** Biology (K325) ***Subject Pre-requisite:** A strong foundation in S2 G3 Science **and** S2 G3 Mathematics*	G3 Science (Physics, Chemistry) (K326) **OR** G3 Science (Chemistry, Biology) (K328)	G2 Science (Physics, Chemistry) (K223) **OR** G2 Science (Chemistry, Biology) (K225)	Science (K123)

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Understanding the content and assessment demands for each science syllabus

G3 Science

G2 Science

G1 Science

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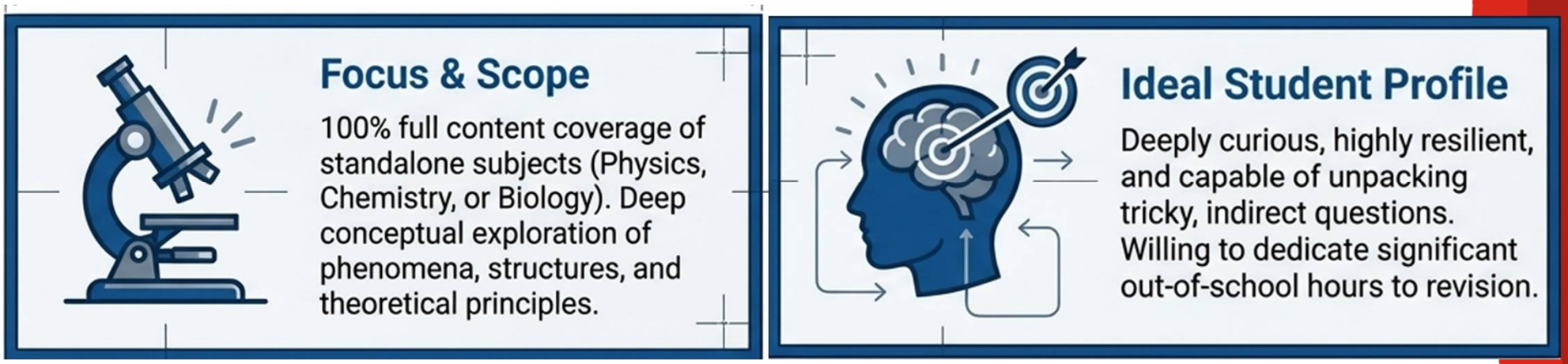
G3 Pure Science (K323/K324/K325) : Syllabus Overview

G3 Pure Sciences demand a strong foundation, deeper conceptual understanding, and full coverage of subject content, with greater emphasis on application, analysis and problem-solving.



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G3 Pure Science Assessment Structure

(For one pure science subject)

Paper	*G3 Pure Science	Time	Marks	Weighting
1	Multiple Choice	1h	40	30%
2	Structured & Free Response	1h 45m	80	50%
3	Practical Test	1h 50m	40	20%

***Subject Pre-requisite:** A strong foundation in S2 Science G3 and S2 Mathematics G3*

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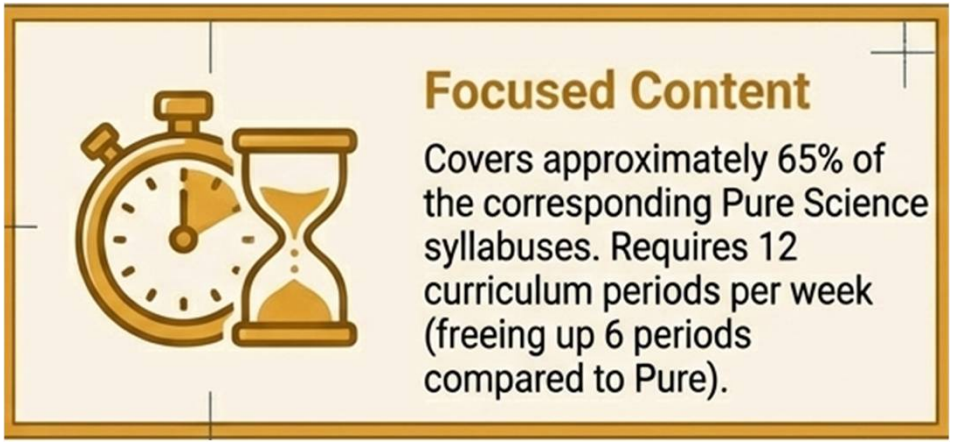
G3 Science (K326/K328): Syllabus Overview

G3 Combined Science integrates two science disciplines with focused content coverage, emphasising core concepts, practical understanding and application at a manageable academic demand



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G3 Combined Science Assessment Structure

Type of Paper	Time	Marks	Weighting
Paper 1: Multiple Choice	1h	40	30%
Paper 2: Structured & Free Response (*Physics) OR Paper 4: Structured & Free Response (*Biology)	1h 15m	65	32.5%
Paper 3: Structured & Free Response (Chemistry)	1h 15m	65	32.5%
Paper 5: Practical Test	1h 30m	30	15%

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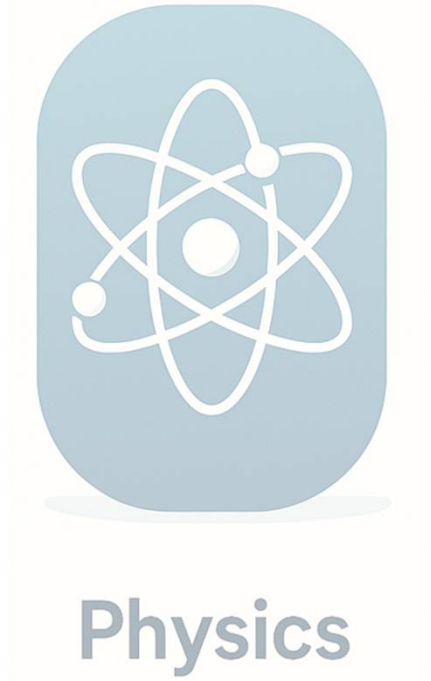
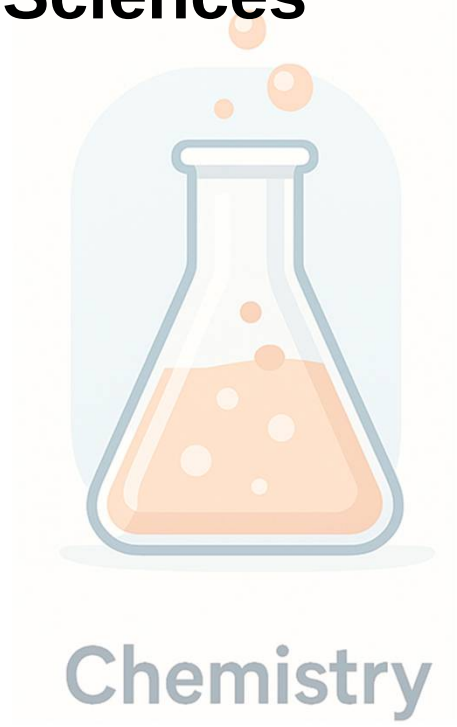
Comparing the rigour in Pure Science and G3 Combined Sciences





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G3 Pure vs G3 Combined Science (Overview)

Aspect	Pure Sciences	G3 Combined Sciences
Subject structure	Standalone science subjects	Two science disciplines combined into one subject
Content coverage	Full (100%) syllabus coverage	Approximately 65% of each corresponding Pure Science
Curriculum time (per week)	9 periods per subject Double Pure: 18 periods	6 periods per subject Combined Sciences: 12 periods

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Scheme of Assessment: Comparison

Component	Pure Sciences (per subject)	G3 Combined Sciences (for 1 component)
Multiple-choice questions (MCQ)	30% 40 marks 1 h	10% 20 marks 30 min
Structured & free-response questions	50% 80 marks 1 h 45 min	32.5% 65 marks 1 h 15 min
Practical assessment	20% 40 marks 1 h 50 min	7.5% 15 marks, 45 min

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Assessment Weightings by Learning Objectives

Assessment Objective	Pure Sciences	G3 Combined Sciences
Knowledge	15%	20%
Conceptual understanding	30%	30%
Handling information & problem-solving	55%	50%

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Assessment Demands at O-Level

Aspect	Pure Sciences	G3 Combined Sciences
No. of assessment papers	Double Pure: 6 papers	4 papers
Nature of questions	More demanding and less direct; students must interpret and unpack questions	Generally more straightforward and direct
Typical question emphasis	Data-based questions (10–12 marks) Greater emphasis on scientific explanations	Data-based questions (8 marks) Fewer explanation-based responses

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G2 Science (K223/K225): Syllabus Overview

G2 Combined Science integrates two science disciplines with focused content coverage, emphasising core concepts, and application at a manageable academic demand. No practical examination for this syllabus.

Learning Focus:

Emphasizes practical understanding and core- concepts. Focuses on straight forward application rather than complex multi-step problem solving.

Content scope:

Integrates two science disciplines into a single manageable subject. Practical understanding is assessed through written papers.

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G2 Combined Science Assessment Structure

Type of Paper		Time	Marks	Weighting
K223 Science (Physics, Chemistry)	**K225 Science (Biology, Chemistry)**			
Paper 1: Multiple Choice (Physics)	Paper 5: Multiple Choice (Biology)	1h 15m	20	20%
Paper 2: Structured (Physics)	Paper 6: Structured (Biology)		30	30%
Paper 3: Multiple Choice (Chemistry)		1h 15m	20	20%
Paper 4: Structured (Chemistry)			30	30%

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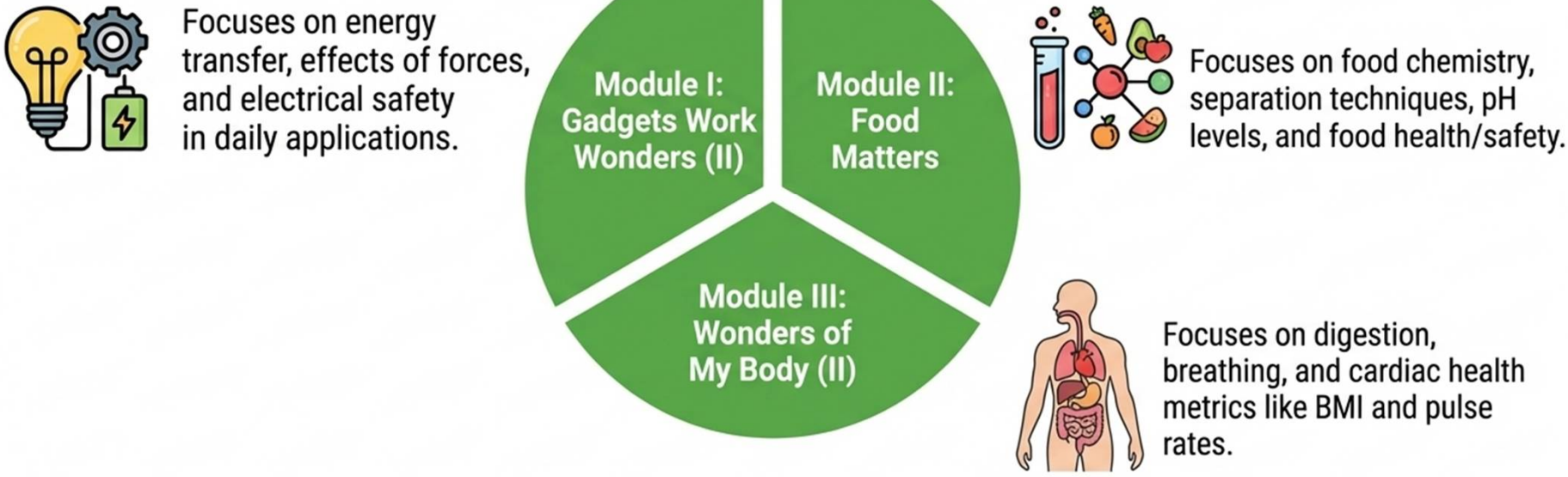
G1 Science (K123) : Syllabus Overview

The G1 syllabus is organised around contexts that students can relate to their everyday experiences and the commonly observed phenomena in nature.



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G1 Science Assessment Structure

Paper	Combined Sciences	Time	Marks	Weighting
1	E-Examination Multiple choice, selected response, short-answer and structured questions	1h 15 min	50	50%
2	Short-answer and structured questions	1h	50	50%

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Reframing the 'Pure Science is the default' Myth

The Myth	The strategic reality
"My child must take Triple or Double Pure Science to maximize the post-secondary options and prove their academic capability"	1. Pure Science is a specialised tool, not a mandatory foundation. Taking a subject load that exceeds a student's optimal capacity leads to burnout and depressed aggregate scores across all subjects. 2. Junior Colleges and Polytechnics evaluate students based on overall academic merit using their net aggregate scores. A student who obtained an A1 for Combined Science will have more post-secondary options due to lower net aggregate than a student who scored a C5 for Pure Science.

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Science Subject Choice

- **Junior college**
- **Polytechnic**
- **Institute of Technical Education (ITE)**

Note:

1. Junior colleges do not offer Triple Science.

2. Eligibility to take H2 Science at A-level is based on student's overall academic merit and performance in the corresponding subject, with a strong foundation – whether through G3 Pure or G3 Combined Science – supporting readiness for H2 Science.

Requirement: Medicine and Dentistry (NUS/NTU) require a H2 pass in Chemistry and either H2 Biology or H2 Physics

Requirement: Courses like Biomedical Science, Pharmaceutical Science, and Chemical Biomolecular Engineering typically require a pass in any 1 Science.

Requirement: Courses like Electronics, Applied Sciences, and Engineering generally require a pass in Maths or Science.

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Partnering for 2026: Making an Informed Decision

Aspirations

What are my child's future goals? Are they aiming for a specific polytechnic diploma or a university degree in medical/ engineering fields?

Eligibility

Does my child meet the academic criteria to take up the desired subject combination (e.g., Pure Sciences vs Combined Science)

Strengths

Does my child excel in mathematical calculations (favouring Physics/ Pure Sciences) or in expressive explanations (favouring Biology)?

Rigour

Will my child be able to cope with the demands of 18 periods of Pure Science versus 12 periods of Combined Science?

We encourage you and your child to speak with Form Teachers, Subject Teachers, ECG counsellor and foster open dialogue with your child to build positive routines for the year ahead.

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For more details on syllabus examined at G3 level

Level	Subject Title	Subject Code	SEAB website links
G3	Physics	K323	https://www.seab.gov.sg/files/G3%20Lvl%20Syllabus%20School%20Cddts/2027/K323_y27_sy.pdf
	Chemistry	K324	https://www.seab.gov.sg/files/G3%20Lvl%20Syllabus%20School%20Cddts/2027/K324_y27_sy.pdf
	Biology	K325	https://www.seab.gov.sg/files/G3%20Lvl%20Syllabus%20School%20Cddts/2027/k325_y27_sy.pdf
	Science (Phy, Chem)	K326	https://www.seab.gov.sg/files/G3%20Lvl%20Syllabus%20School%20Cddts/2027/k326_y27_sy.pdf
	Science (Chem, Bio)	K328	https://www.seab.gov.sg/files/G3%20Lvl%20Syllabus%20School%20Cddts/2027/k328_y27_sy.pdf

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For more details on syllabus examined at G2 and G1 levels

Level	Subject Title	Subject Code	SEAB website links
G2	Science (Phy, Chem)	K223	https://www.seab.gov.sg/files/G2%20Lvl%20Syllabus%20School%20Cddts/2027/K223_y27_sy.pdf
	Science (Chem, Bio)	K225	https://www.seab.gov.sg/files/G2%20Lvl%20Syllabus%20School%20Cddts/2027/K225_y27_sy.pdf
G1	Science	K123	https://www.seab.gov.sg/files/G1%20Lvl%20Syllabus%20School%20Cddts/2027/K123_y27_sy.pdf

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THANK YOU