Sec 2 Parents' Seminar

Sharing on Science Subjects

Relevance of Science

- Science, technology, engineering, math skills crucial to Singapore for next 50 years: PM Lee (2015)

- In a world driven by new technologies and science, we will need to strengthen science, technology, engineering and mathematics or STEM learning (Minister for Education - Mr Chan Chun Sing, 2021)

Relevance of Science

- STEM Education for a Sustainable Singapore (CNA, 2023)
- Science and Engineering are among the key enablers for the five key pillars of the Singapore Green Plan 2030.

Trends and opportunities

- Opening of new tertiary institutions such as SUTD and SIT

- James Dyson Foundation invests $3m to inspire more young engineers in Singapore (2022)

THE JAMES DYSON FOUNDATION

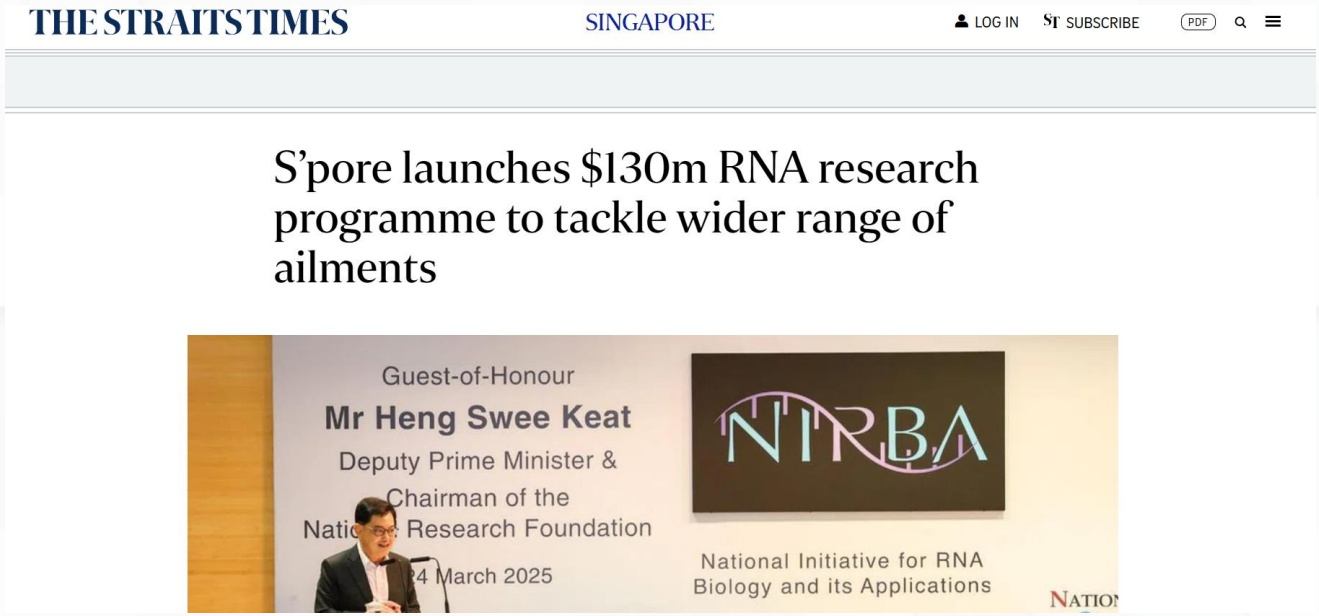
- Pharma giant AstraZeneca will be building a $2 billion manufacturing facility in Singapore (2025)

AstraZeneca

Trends and opportunities

- New Life Science Park at Singapore Science Park in 2025

- S'pore launches $130m RNA research programme to tackle wider range of ailments (March 24, 2025)



THE STRAITS TIMES SINGAPORE LOG IN ST SUBSCRIBE PDF

S'pore launches $130m RNA research programme to tackle wider range of ailments

Science subjects offered

- ✓ Biology
- ✓ Chemistry*
- ✓ Physics
- ✓ Science (Chemistry*/Biology)

**** Chemistry is offered as a compulsory subject/component.***

Biology

- ✓ the study of life (what life is and how life is sustained)
- ✓ provides a foundational understanding about the organisation and interactions at organismal, physiological and molecular levels
- ✓ allows us to tackle real-world challenges relating to climate change, energy, food, health and disease.

***Disciplinary ideas**: The Cell, Structure and Function, Systems, Energy, Homeostasis, Co-ordination and Response, Heredity, Evolution*

Chemistry (compulsory)

- ✓ study of matter and its changes
- ✓ relating the study of energy and particles such as atoms and molecules in physical systems to chemical systems, while also providing a basis for studying and understanding molecules and processes in biological systems.
- ✓ allow us to better understand the world we live in and to suggest solutions for global challenges (e.g. related to energy and the environment)

Disciplinary ideas: Composition of matter, Structure, Bonding and Properties of Materials, Rearrangement of particles, Rate, Energy Changes, Conservation of matter and energy

Physics

- ✓ concerned with understanding the natural world
- ✓ extensive use of models (including those expressed in mathematical language) to explain observations and make predictions
- ✓ transferable to other disciplines, such as modelling of biological processes, weather patterns, earthquakes, and even the movement of people or financial markets

Disciplinary ideas: Matter and Energy, Interactions through Forces and Fields, Motion, Waves, Conservation Laws, Models

Assessment Objectives & Requirements

Assessment Objectives

A Knowledge with Understanding

B Handling Information and Solving Problems

C Experimental Skills and Investigations

Paper	Type of paper	Duration	Marks	Weighting
1	Multiple Choice	1h	40	30%
2	Structured / Free Response	1h 45min	80	50%
3	End-of-course (EOC) practical	1h 50min	40	20%

Combined Science (Chem/Bio)

- ✓ one subject with two science components, Chemistry and Biology
- ✓ as a guide, the content of each of the component subjects of Combined Science is about 70% of each individual pure science subject
- ✓ important to be able to cope with both components in order to do well

Assessment Objectives & Requirements

Assessment Objectives

A Knowledge with Understanding

B Handling Information and Solving Problems

C Experimental Skills and Investigations

Paper	Type of paper	Duration	Marks	Weighting
1	Multiple Choice	1h	40	20%
2	Structured / Free Response (Physics)	1h 15mins	65	32.5%
3	Structured / Free Response (Chemistry)	1h 15mins	65	32.5%
4	Structured / Free Response (Biology)	1h 15mins	65	32.5%
5	Practical	1h 30mins	30	15%

Post-secondary options

- ✓ Exposure to Biology will be advantageous for Life Science courses in the polytechnics, or H2/H1 Biology in JC *(note that Chemistry, and not Biology, is the compulsory subject for university studies in Life Sciences degree programmes)*.
- ✓ Exposure to Physics will be advantageous for H2/H1 Physics in JC and Engineering related courses in polytechnics and University.

Considerations

✓ Interest and passion

✓ Aptitude

✓ Post-secondary pathways and career aspirations

X Peer influence and choices

CRESCENT GIRLS' SCHOOL

Thank You