Sec 2 Parents' Seminar

Sharing on Science Subjects

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 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 Biomedical and health science courses in the polytechnics, or H2/H1 Biology in JC
- ✓ Exposure to Physics will be advantageous for H2/H1 Physics in JC and Engineering related courses in polytechnics, or H2/H1 Physics in JC

Courses with Biology

University	Course(s)	Typical prerequisite requirement
National University of Singapore (NUS)	Life Sciences (e.g. Biomedical Science, Ecology)	Good H2 Biology **and** Chemistry (NUS College of Humanities and Sciences)
	Environmental Studies	Biology often required/recommended (NUS)
	Food Science & Technology	Any 2 sciences (Bio/Chem/Physics/Math) (NUS)
Nanyang Technological University (NTU)	Biological Sciences	H2 Chemistry required + Biology/Physics acceptable (Corporate NTU)
	Biological Sciences + second majors	Same pattern (Chem essential) (Corporate NTU)
	Chinese Medicine	Science subject (Bio/Chem/Physics) required (Corporate NTU)
Singapore Institute of Technology (SIT)	Allied Health (e.g. Diagnostic Radiography, Dietetics, Physiotherapy)	Typically, **Biology + Chemistry preferred/required** (varies by course; health focus)

Courses with Biology

University	Course(s)	Typical prerequisite requirement
Singapore University of Social Sciences (SUSS)	Early Childhood / Psychology (bio-related pathways)	No strict Biology and Chemistry requirement, but relevant background helpful
Singapore University of Technology and Design (SUTD)	—	No direct Biology and Chemistry specific requirement (focus is engineering/design)
Singapore Management University (SMU)	—	No science-specific prerequisites (business/social science focus)

Courses with Physics

University	Course(s)	Typical prerequisite requirement
National University of Singapore (NUS)	Engineering (Chemical, Mechanical, Electrical, etc.)	H2 Math + Physics or Chemistry (both helpful)
	Chemistry	Chemistry required + Math/Physics (NUS)
	Medicine	A good H2 pass in Chemistry and H2 pass in either Biology or Physics
Nanyang Technological University (NTU)	Engineering (Aerospace, Civil, Mechanical, etc.)	Math + **Physics/Chemistry/Biology** accepted (Corporate NTU)
	Chemistry & Biological Chemistry	Chemistry + Math/Physics (Corporate NTU)
	Process Engineering & Synthetic Chemistry	Chemistry + Math (Corporate NTU)
Singapore University of Technology and Design (SUTD)	Engineering Systems & Design, Architecture & Sustainable Design	Strong preference for **Physics and/or Chemistry + Math** (almost all students have them) (ECL Institute)
Singapore Institute of Technology (SIT)	Engineering (e.g. Mechanical, Electrical, Chemical Engineering)	Physics and/or Chemistry typically required

Considerations

- ✓ Interest and passion
- ✓ Aptitude
- ✓ Post-secondary pathways and career aspirations
- X Peer influence and choices

Sources from Singapore

careerscompass
by MyCareersFuture

10th March 2022

What is Singapore's New Economy 2030 Plan, and What Industries and Jobs Could Arise?

Singapore's Trade and Industry Minister Gan Kim Yong unveiled a new "collective vision" for the country's economy at the recent Committee of Supply 2022. Learn more about what it means for employees, jobseekers and industries locally.

askST: Which jobs and skills will be in demand in a greener economy?

2nd March 2026

A recent green skills report noted that existing roles across industries increasingly require sustainability knowledge, as Singapore works towards net zero by 2050

Singapore 2030: The Future of Jobs and Skills

HIGH-GROWTH SECTORS & ROLES

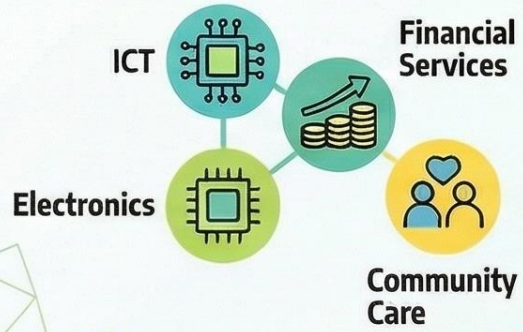
100%

GROWTH IN SUSTAINABILITY REPORTING

6,000+

NEW MANUFACTURING JOBS

Driven by the Manufacturing 2030 initiative and 5$8.5 billion in fixed asset investments.



PRIORITY SECTORS FOR GROWTH

Key opportunities are emerging in ICT, Financial Services, Electronics, and Community Care.

MOST IN-DEMAND SKILLS FOR 2030

THE 'GREEN' SKILL SET

- Greenhouse Gas (GHG) Accounting
- Carbon Footprint Management

Critical expertise includes Greenhouse Gas (GHG) accounting and carbon footprint management.

INDUSTRY 4.0 & DIGITAL TECH

- Robotics
- AI-Driven Automation
- Semiconductor Manufacturing Processes

High demand for skills in Robotics, AI-driven automation, and semiconductor manufacturing processes.

CORE 'ADAPTIVE' COMPETENCIES

- Problem-Solving
- Sustainability Communication
- Leadership in Changing Regulatory Landscapes

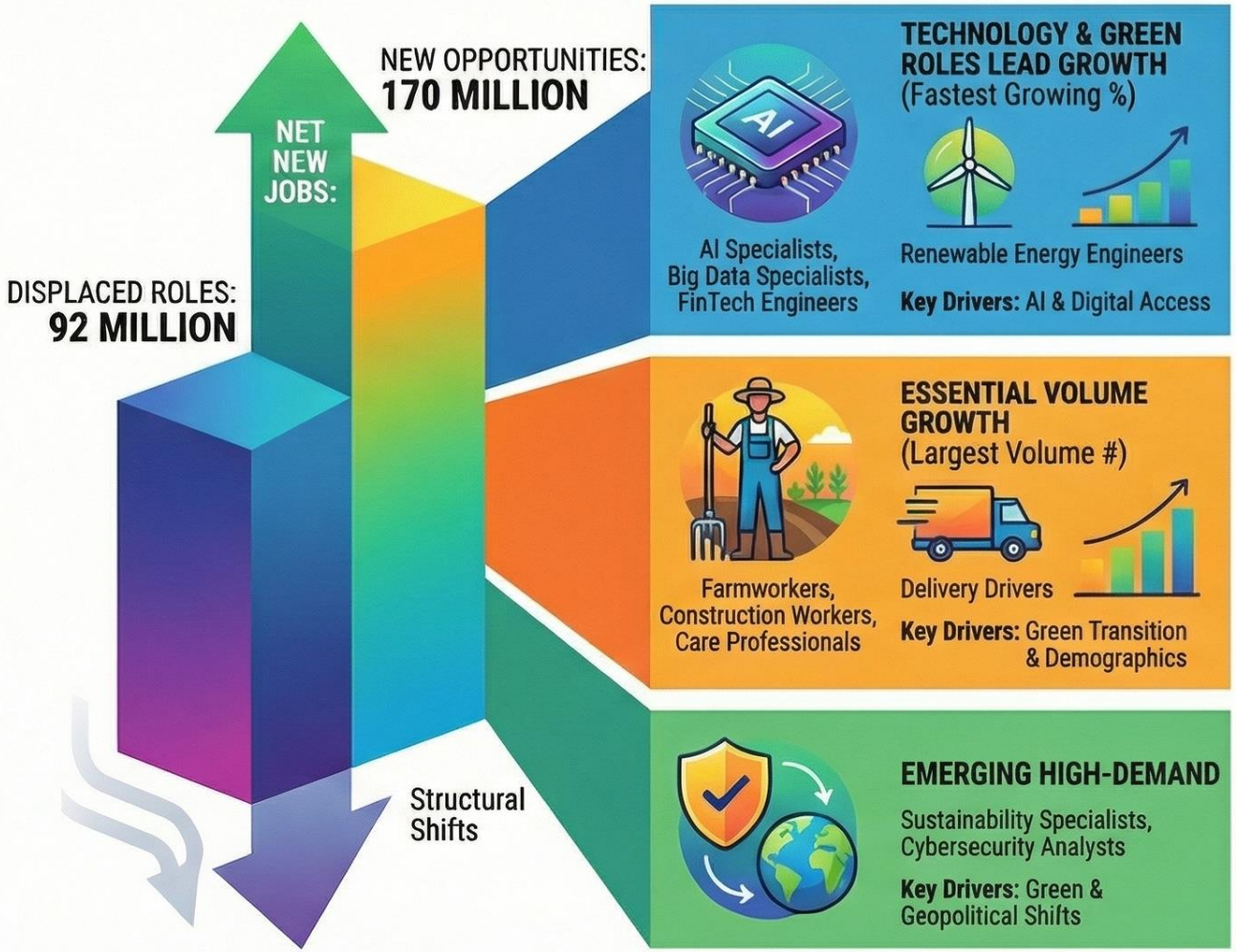
Employers prioritize problem-solving, sustainability communication, and leadership in changing regulatory landscapes.

Addition source

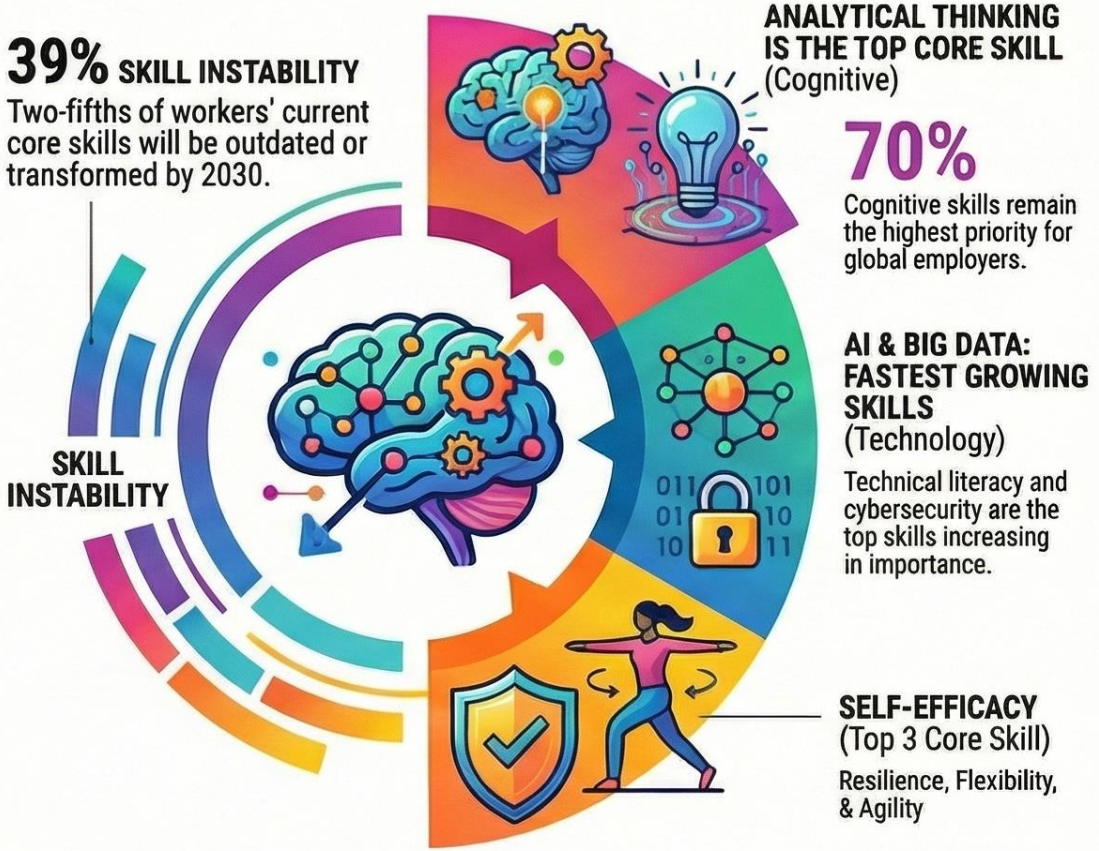
WORKFORCE 2030: THE NEW FRONTIER OF JOBS AND SKILLS

By 2030, a structural transformation will affect 22% of all global jobs. Driven by digital access and the green transition, this shift is expected to create 170 million new roles, resulting in a **NET EMPLOYMENT INCREASE OF 78 MILLION JOBS WORLDWIDE.**

THE JOB LANDSCAPE OF 2030



THE 2030 SKILLS REVOLUTION



Core Skills Trend: Analytical & Creative Thinking (Increasing Importance): AI, Big Data, & Networks/Cybersecurity (Fastest Growing); Resilience, Flexibility, & Agility (Top 3 Core Skill)

CRESCENT GIRLS' SCHOOL

Thank You