



Sec 2E

Subject Options Exercise

Briefing

Welcome

09 Mar 2018





What is Subject Option Exercise (SOE)?



What is SOE?

1. Students (**with guidance from parents**) select subjects that they will pursue at the Upper Secondary level.
2. School assesses if students are suitable for their course of choice based on performance in Sec 2.



Presentation Outline

1. Details of SOE

- SOE Process
- Subject combinations & Criteria

2. Subject Briefing

- Humanities / Art
- Sciences
- Computing
- Design Elective

3. Career Guidance

4. Interaction Time





SOE Process



Placement Criteria

Subject allocation is based on

- students' overall score (All subjects have equal weighting)
- students' performance of relevant subjects*
- students' preference
- availability of resources/ demand



Overall Score for each subject

CA 1 Continual assessment in Semester 1	10%	assignments, quizzes, tests
SA 1	25%	mid-year exam
CA 2 Continual assessment in Semester 2	20%	assignments, quizzes, tests
SA 2	45%	End-of-year exam

Placement criteria

- Students must demonstrate their ability to cope with the rigour and demand of the subject/ combination as stated in the previous slides
- Note:
 - The recommended grade is meant as a reference
 - meeting the minimum grade does not mean that an automatic offer especially for popular subject/ combinations.
 - The actual cut-off mark will depend on the cohort's performance and demand for the vacancies.

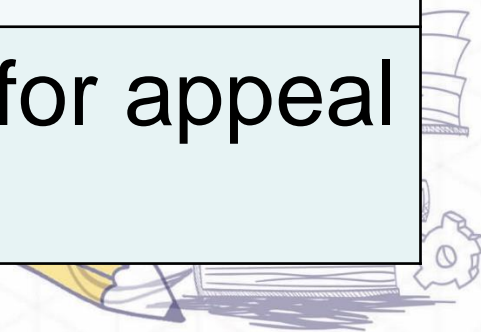
Additional Requirement

8-subject students who do not achieve an **overall percentage of 50%** in Sec 3 will be asked to drop 1 subject at the end of Sec 3.



SOE Timeline

Period	Activity
Term 3	Sec 3 Class Immersion
Term 3	Sharing by Seniors
After End-of Yr Exam	SOE
Early Nov	Release of Results + Appeal
Mid Nov	Release of Results for appeal cases





Subject Combination



Basis for drawing up subject combinations

- Matching students' interests and ability
- Optimising students' chances/ options for further education



Standard Subjects (Express)

- English
 - Higher Mother Tongue / Mother Tongue
 - Mathematics
 - Additional Mathematics
-
- Humanities (Social Studies + History/ Geography elective*)



4 Types of Combination

- Balanced
- 3 Science / 2 Science+Computing
- Humanities / Art
- Design Elective



Balanced Combination

BAL01

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Physics, Geography**
- **Recommended Criteria:**
 - B4 Geography
 - Pass Math



Balanced Combination

BAL02

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Biology, Geography**
- **Recommended Criteria:**
 - Pass Math



Balanced Combination

BAL03

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Physics, Eng Literature**
- **Recommended Criteria:**
 - Pass Math
 - B4 English
 - B4 Literature



Balanced Combination

BAL04

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Biology, Eng Literature**
- **Recommended Criteria:**
 - B4 English
 - B4 Literature



Balanced Combination

BAL05

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Physics, Computing, Geography**
- **Recommended Criteria:**
 - B4 Geography
 - Pass Math



Balanced Combination

BAL06

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Physics, Chemistry, Art**
- **Recommended Criteria:**
 - Art Interview
 - Pass Math



Balanced Combination

BAL07

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Biology, Chemistry, Art**
- **Recommended Criteria:**
 - Art Interview



3 Science / 2 Science+Computing Combination

SC01

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Biology, Chemistry, Physics**
- **Recommended Criteria:**
 - A2 Science
 - A2 Maths
 - B4 History



3 Science / 2 Science+Computing Combination

SC02

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + Geog Elective)
- **Biology, Chemistry, Physics**
- **Recommended Criteria:**
 - A2 Science
 - A2 Maths
 - B3 Geography



3 Science / 2 Science+Computing Combination

SC03

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Physics, Computing**
- **Recommended Criteria:**
 - Pass Maths
 - B4 History



Humanities / Art Combination

HUM01

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Geography, Art**
- **Recommended Criteria:**
 - B4 Geography
 - B4 History



Humanities / Art Combination

HUM02

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Geography, Literature**
- **Recommended Criteria:**
 - B4 Geography
 - B4 English
 - B4 Literature



Design Elective Combination

DE01

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Physics, Design Elective**
- **Recommended Criteria:**
 - Design Elective Interview
 - Pass Maths



Design Elective Combination

DE02

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Chemistry, Biology, Design Elective**
- **Recommended Criteria:**
 - Design Elective Interview



Design Elective Combination

DE03

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Physics, Computing, Design Elective**
- **Recommended Criteria:**
 - Design Elective Interview
 - Pass Maths



Design Elective Combination

DE04

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Physics, Geography, Design Elective**
- **Recommended Criteria:**
 - Design Elective Interview
 - Pass Maths
 - B4 Geography



Design Elective Combination

DE05

- English, Mother Tongue, E.Maths, A.Maths
- Humanities (Social Studies + History Elective)
- **Physics, Art, Design Elective**
- **Recommended Criteria:**
 - Design Elective Interview
 - Art Interview
 - B4 Geography





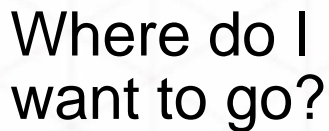
Career Guidance for the Sec 2s



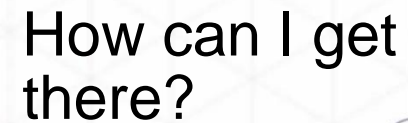
once upon a time



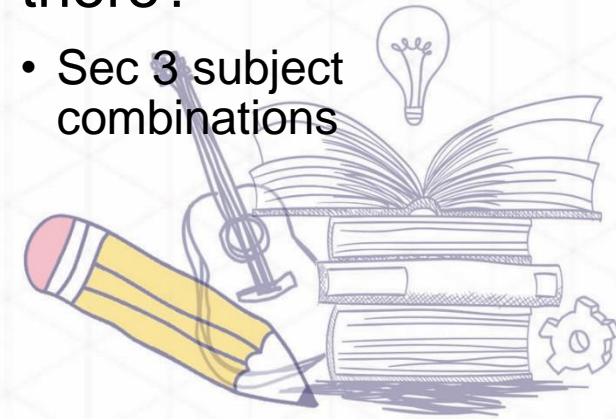
- Subject interests
- Career interests



- Post-secondary pathways



- Sec 3 subject combinations



Unsure where to go for information on educational pathways?

myskillsfuture.sg/secondary

National portal for education and career guidance

Explore

(no login needed for these areas)

- World of Work (industries and careers)
- Education Guide (pathways, institutions, courses)

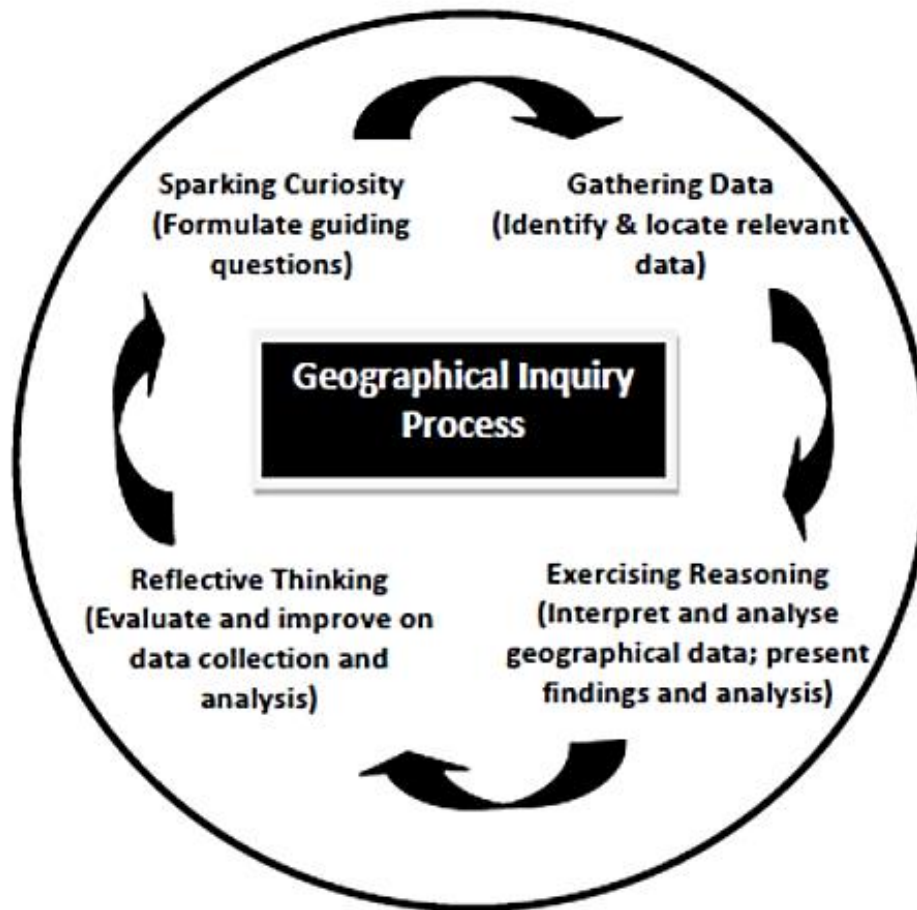




Geography



Geographical Inquiry Process



Geography Curriculum (Upper Secondary)

Figure 5: Overview of O and N(A) Level Geography Syllabuses

	O Level	N(A) Level
Theme 1: Our Dynamic Planet (Physical Geography)		
1. Coasts – Should coastal environments matter?	✓	✓
2. Living with Tectonic Hazards – Risk or opportunity?	✓	✓
3. Variable Weather and Changing Climate – A continuing challenge?	✓	
Theme 2: Our Changing World (Human Geography)		
4. Global Tourism – Is tourism the way to go?	✓	✓
5. Food Resources – Is technology a panacea for food shortage?	✓	✓
6. Health and Diseases – Are we more vulnerable than before?	✓	
Theme 3: Geographical Skills and Investigations		
7. Topographical map reading skills	✓	✓
8. Geographical data and techniques	✓	✓
9. Geographical Investigations	✓	✓

Geography -2236

Assessment Mode & Format

- 2 papers
- 1 hour 40 minutes and 1 hour 30 minutes
- Structured Questions
 - Descriptive analysis of statistical data (spotting trends and patterns)
 - Photograph interpretation
 - Graphic construction
 - Data interpretation
- Essay questions



Why is this subject important?

- Develop an appreciation for the complexities of Geographical issues
- Cultivation of skills such as **exercising reasoning, data analysis and critical thinking**
- Teacher, urban planner, climatologist, civil engineer





Literature

**2E SOE Briefing
8 March 2018**

Why Study Literature

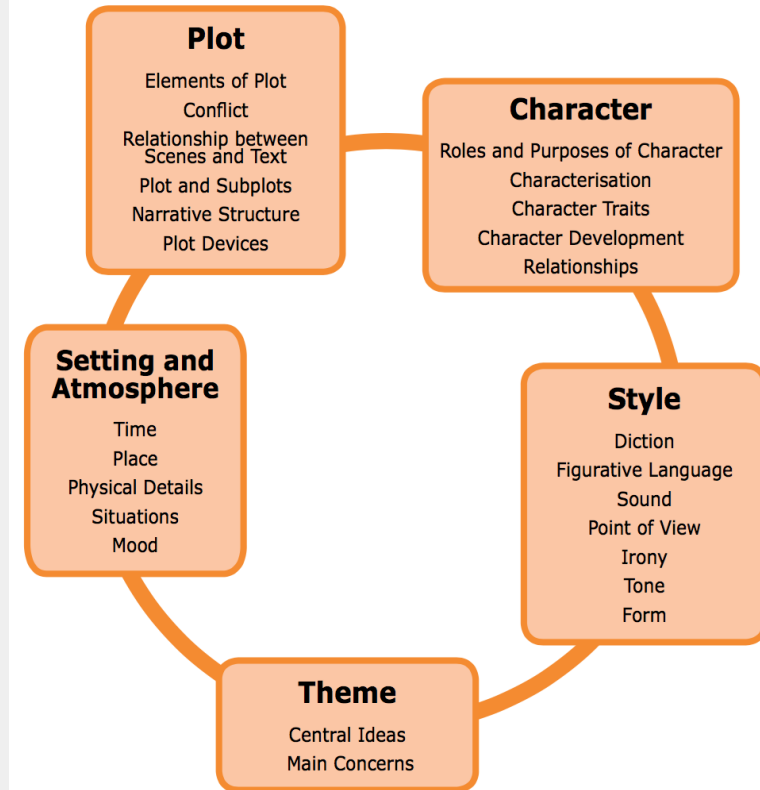
- Broadens and deepens our appreciation of life through exposure to various issues
- Helps us understand and appreciate different aspects of human nature, values and perspectives
- Helps us develop empathy



What the Study of Literature is

Focus:

- Viewpoint
- Setting and Atmosphere
- Plot and Structure
- Character
- Theme
- Author's Style



What You Should Possess as a LIT student

If you wish to be a literature student:

- Good **command** of the English Language
- An ability to express yourself well **in written and spoken forms**
- An ability to **form an opinion**

Possible Career Options

- You learn important **critical thinking** and **analysis skills** which are vital in most jobs
- More obvious careers:
 - Journalism
 - Law
 - Teaching
 - Publishing
 - Banking



Art



ART

Broad Overview (Content + Skills)

Sec 3 Syllabus (Semester 1):

Technical Skills (Drawing and Painting)

- **Dry Medium:** Pencil, Pen, Graphite, Colour Pencil, Charcoal & Soft Pastel.
- **Wet Medium:** Acrylic & Water Colour
- **Understanding on various aspect of Arts such as:** ART History, Human Anatomy, Perspective Drawing, Realistic drawing, Copy Painting, Famous Artists, etc.
- **Preparation for Mid-Year Exam** (preparation and 3Hrs sit in exam)



ART

Broad Overview (Content + Skills)

Sec 3 Syllabus (Semester 2):

Project Based and EXAM (Paper 2)

- Students will be exposed to **Mini Projects** of various form of Art Making such as: Photoshop (Digital), Photography (Digital), Fashion Design (Tactile), Print-Making (2D), Window Display (3D – Clay Modelling, Plaster Casting, wood works), etc.
- **EXAMS**: Students will end the year with **Art Paper 2 Examination** to prepare them for Sec 4 Paper 1 - Coursework and Paper 2 – Drawing & Painting.



ART – NORMAL ACADEMIC Assessment Format

ONE SCHOOL. ENDLESS POSSIBILITIES

Paper 1 – Coursework (60%) – Jan to Sept 2019

- Finished artwork
- EIGHT A2 sheets of preparatory work
- Question paper issued in Jan 2019

Paper 2 – Drawing and Painting (40%) – Nov 2019

- 3 hours to complete A3/A2 sized work
- 7 to 10 Pages of A3 sheets of preparatory work
- Question paper issued 3 weeks before examination



Art -

How Can I do well for this Subject?

- 4 hours per week – studio practice & study of visual arts
- Lots of independent homework required weekly
- Determination. Passion. Good Attitude. Good Time Management.
- Willingness to consult with teachers at your own time
- Will be good to have good technical drawing and painting skills (That means realistic drawing and painting skills rather than Manga or abstract painting skills).



Why is this subject important? **(Career / Higher Education Options, 21CC Skills, etc.)**

If you are interested in a career prospect in the area of Arts

For example: Designer, Architect, Multi-media related, etc.

Through the Arts curriculum which ties in with some Design Thinking and Creativity Framework, it provides you with some of the 21CC skills such as:

- Critical thinking skills
- Problem solving skills
- Presentation Skills





Science

(Chemistry, Physics, Biology)



Common Skills & Attitudes in learning Science

- Inquisitive
- Critical thinker
- Open-mindedness
- Accuracy and precision
- Observation skills
- Scientific Communication skills
- Practical skills



Where do you see Chemistry?



Chemistry-related careers

Analytical chemist

Chemical engineer

Healthcare scientist, clinical biochemistry

Forensic scientist

Nanotechnologist

Pharmacologist

Research scientist (physical sciences)

Doctor

Dentist

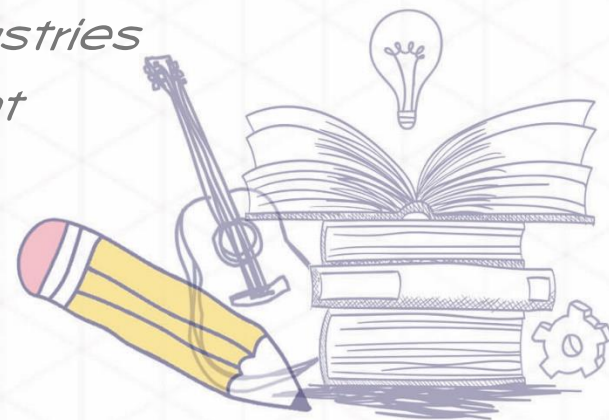
Petroleum industries

Quality control specialist

Food Science and safety industries

Wastewater management

Perfume industries



Chemistry pathways

Faculty / Department	Courses
Medicine / Pharmacy / Dentistry	
Science (research & development)	<ul style="list-style-type: none">- Chemistry- Biotechnology- Life science- Health science- Biomedical science- Forensic science
Engineering	<ul style="list-style-type: none">- Chemical engineering- Environmental engineering- Material science- Bioengineering

Where do you see Physics?



Physics related careers

Accelerator Operator

Applications Engineer

Data Analyst

Design Engineer

Physics Teacher

IT Consultant

Laser Engineer

Optical Engineer

Research Associate

Software Developer

Systems Analyst

Technical Specialist

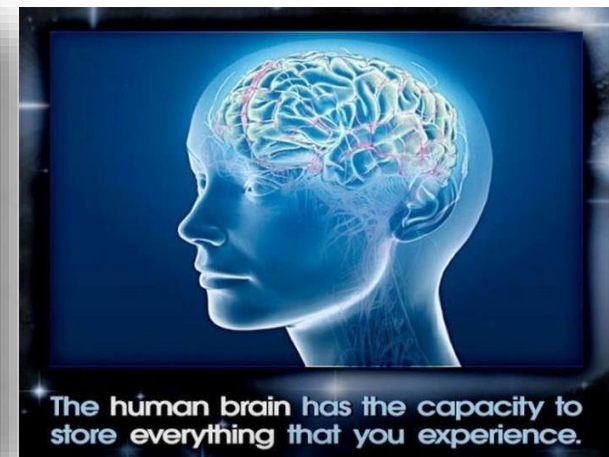
Web Developer



B.Eng. Programme	Duration (Yrs)	Requirements for Admission
1. Chemical Engineering 2. Environmental Engineering	4	- H2 Mathematics, and - H2 Chemistry, and - H2 Physics*
3. Biomedical Engineering** 4. Civil Engineering 5. Computer Engineering 6. Electrical Engineering 7. Industrial & Systems Engineering 8. Materials Science & Engineering 9. Mechanical Engineering	4	- H2 Mathematics, and - H2 Physics* or H2 Chemistry
10. Engineering Science	4	- H2 Mathematics, and - H2 Physics

Extracted from: <http://www.eng.nus.edu.sg/ero/admission.php?option=2>

Where do you see Biology?



5 Odd Foods that **KILL** Your Abdominal Fat?

See some odd fat-fighters...

For Men:

[MEN Click HERE](#)

TO SEE A SHORT BUT WEIRD VIDEO SHOWING SURPRISING FOODS AND TIPS TO LOSE ABDOMINAL FAT

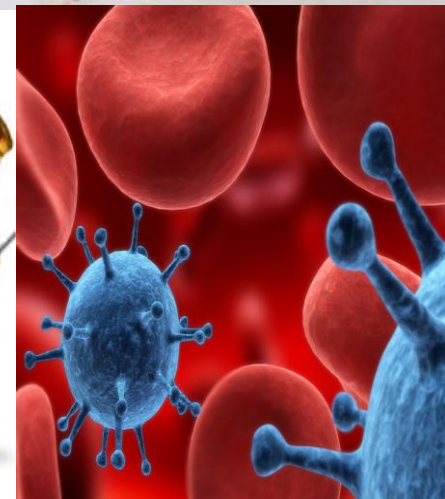
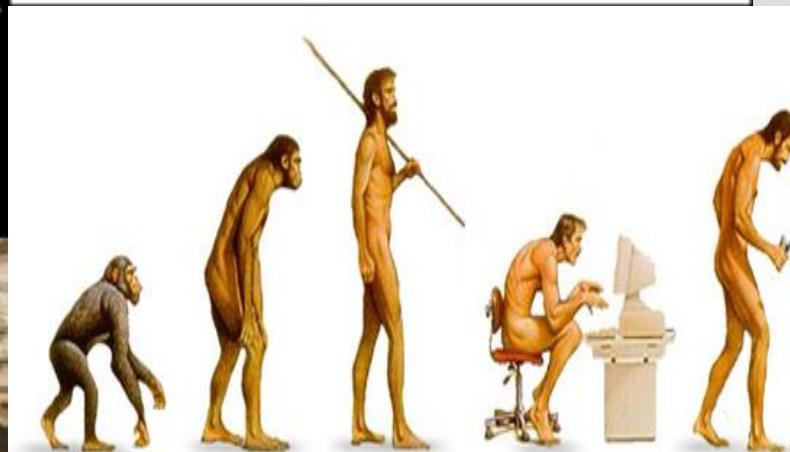
For Women:

[WOMEN Click HERE](#)

FOR YOUR SHORT BUT UNUSUAL VIDEO SHOWING ODD FOODS AND TIPS TO GET A FLAT STOMACH



VS



Biology related careers

Engineers in commercial sectors (e.g pharmaceutical, biotechnology, food, water & agriculture)

Medical staff

Scientist (Research, Clinical)

Science Educator

Scientific writer/journalist

Biologists

Consultants in Environmental Studies

Optometrists

Sports Science related fields



Admission Requirements for Life Sciences Major

To read Life Sciences as the primary Major, candidates should apply for admissions to Faculty of Science (which requires passes in two Science subjects at H2, GCE 'A' Level, or IB Higher Level) and fulfill the following criteria:

- Two H2 or GCE 'A' Level passes (or equivalents) in Biology, Chemistry, Mathematics or Physics.
- For IB qualification, two HL passes in Biology, Chemistry, Mathematics or Physics.

To apply for Life Sciences Major, please select '**Science**' as your choice of course.

The Bachelor of Environmental Studies Programme encourages applications from students with an aptitude and passion for environmental issues.

The minimum criteria for admission include:

- Good H1 pass or equivalent in Mathematics
- Good H2 pass or equivalent in either Biology or Chemistry





Computing



Computing (Overview)

- 2-year course
- Only school in Singapore to offer to both Express and Normal Academic
- Helps to lay a foundation for students interested in taking H2 Computing in JCs or IT-related courses in Polytechnics



Computing (Aims of Syllabus)

To enable students to

- Apply logical reasoning and algorithmic thinking in problem situations
- Develop program through the use of programming language(s)
- Understand how and where information communications technology (ICT) is used in daily life
- Understand and explain the ethical, social and economic issues associated with ICT



Computing (Syllabus Content)

- Data and Information
 - Data Management
 - Data Representation
 - Ethics, Social and Economic Issues
- Systems and Communications
 - Computer Architecture
 - Data Communications
- Abstraction and Algorithms
 - Problem Analysis
 - Algorithm Design
- Programming
 - Program Development
 - Program Testing



Computing (Assessment)

ONE SCHOOL, ENDLESS POSSIBILITIES

Paper	Type	Marks	Weightage	Duration
1	Written	80	70%	2h
2	Lab-based practical	50	30%	2h 30m



Why Computing?

- VUCA world
 - Volatile
 - Uncertain
 - Complex
 - Ambiguous
- High technological environment
- Skills needed in 2020
 - Complex problem solving
 - Critical thinking
 - Creativity
 - Cognitive flexibility





Design Elective

Commonly heard in class...

“Can you tell us what to do and how we just follow?”

“ I am not used to this kind of thinking, it's confusing”

“Can you tell us the CORRECT answer and we just copy? it will save us more time”

Our Deeply Entrenched “Afraid to fail” Mind-Set

ST

SINGAPORE

POLITICS

ASIA

WORLD

VIDEOS

MULTIMEDIA

LIFESTYLE

FOOD

FORUM

OPINION

BUSINESS

SPORT

TECH

SINGAPORE

>

Courts & Crime

Education

Housing

Transport

Health

Manpower

Environment

Singapore must be place where innovation can thrive: Minister



The main obstacle is ourselves - our organisation and all our entrenched processes, bureaucracy, and a culture of being afraid to fail because all these years we have succeeded.

MINISTER FOR EDUCATION (HIGHER EDUCATION AND SKILLS) ONG YE KUNG, on how Singapore needs to create an environment that encourages innovation.

”

Top 10 skills you need to thrive in the Fourth Industrial Revolution

in 2020

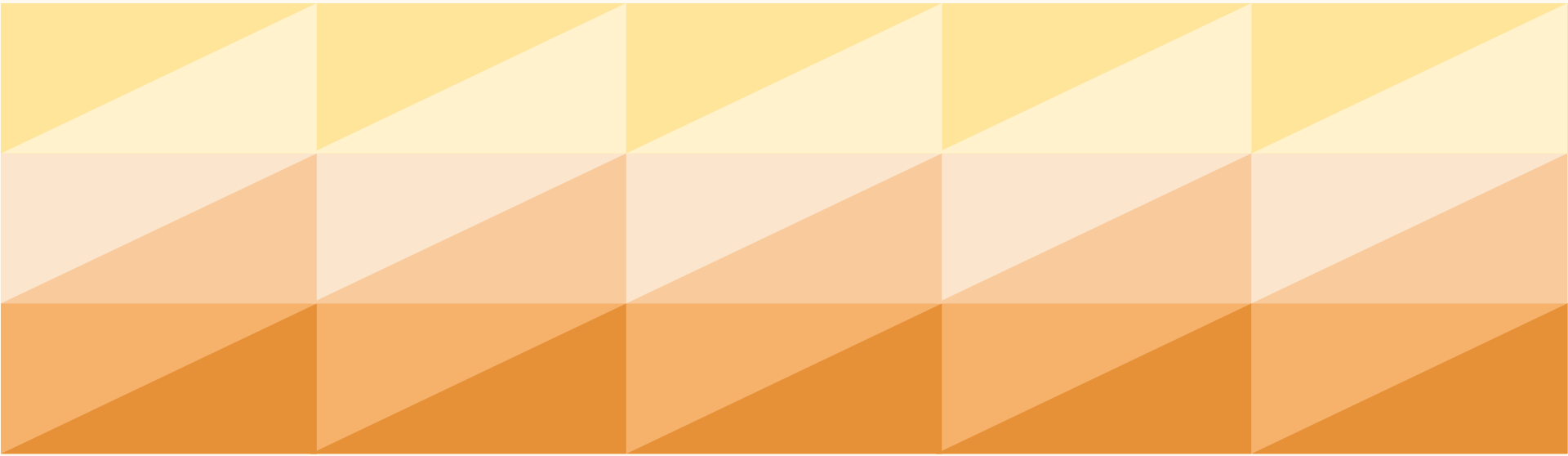
1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

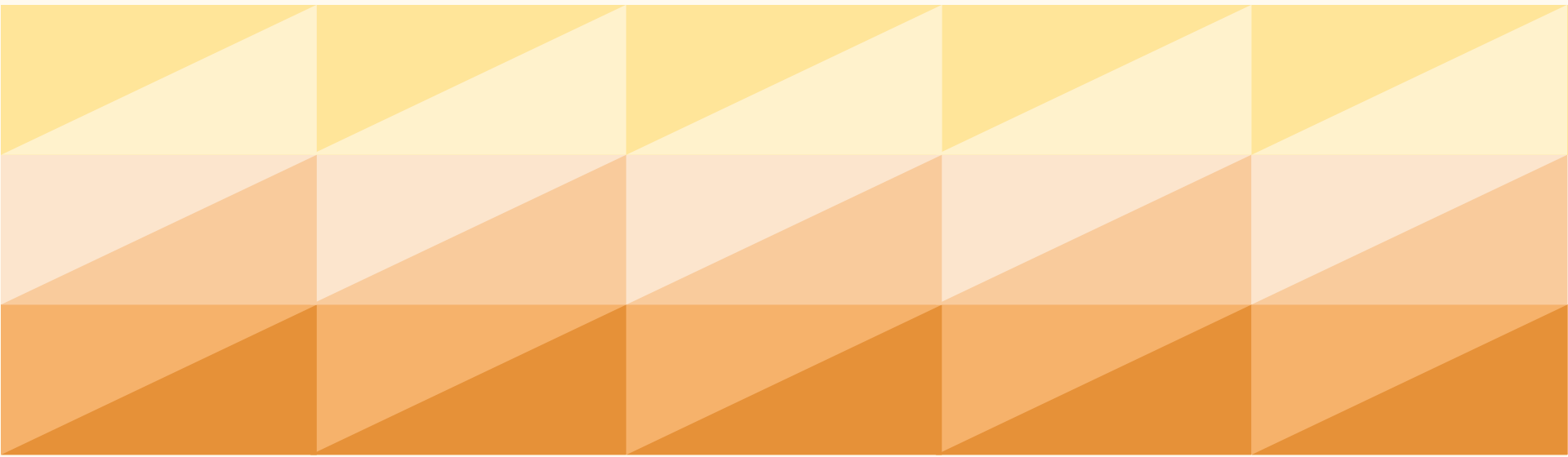
Which Skills will change the most?

How do we Prepare Students for an Uncertain World?



“The future is always fundamentally uncertain.” But “**Navigating ambiguity** is something that **Design does really well.**”

-Sarah Stein Greenberg, executive director,
Stanford University d.school



life

D **WANNA ONE**
New K-pop
boyband
delight fans

**AUDI'S RS3
SEDAN**
Impressive,
with effortless

**Design Thinking :
"A Useful Mindset useful for
Creative Problem Solving"**

Think like a designer



Design thinking is the buzzword these days, with after-school activities, holiday camps and studios set up here and around the world to develop the skill in children. Experts say this mindset is critical for problem-solving.

Natasha Ann Zachariah reports. D4&5

Children experiment with building a product they imagined at Design Lab S in Stockholm. The design studio is one of a growing number of enterprises around the world which fosters design thinking in children.

23 Sep 2017, The Straits Times



**Design Thinking :
“A Useful Mindset useful for
Creative Problem Solving”**

Design for kids

Organisations in Singapore and around the world are increasingly offering workshops to nurture design thinking in children and encourage creative solutions to global problems



**Natasha Ann
Zachariah**

At a workshop last year, 30 children were asked how they would get people to exercise more.

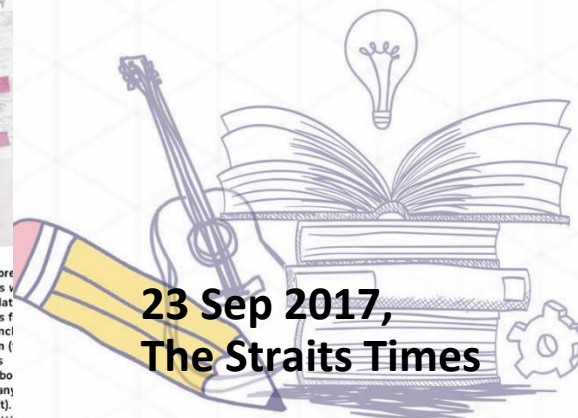
Make home owners run on treadmills to power up the television. Build narrower lift doors so those with wider girths are forced to slim down to get in.

These suggestions, wacky or politically incorrect as they are, came from participants aged eight to 14, who had brainstormed in smaller groups and interviewed people to find out what stopped them from exercising.

The session was run by Thinkroom, a Singapore company that hopes to inculcate design thinking in children. Its process follows these



In Singapore companies v design-relat workshops f children incl Thinkroom (Happiness Makers (abo and As Many Minds (left). PHOTOS: AS MA MINDS, HAPPIN



**23 Sep 2017,
The Straits Times**

Companies that use Design Thinking for Innovation



TOYOTA

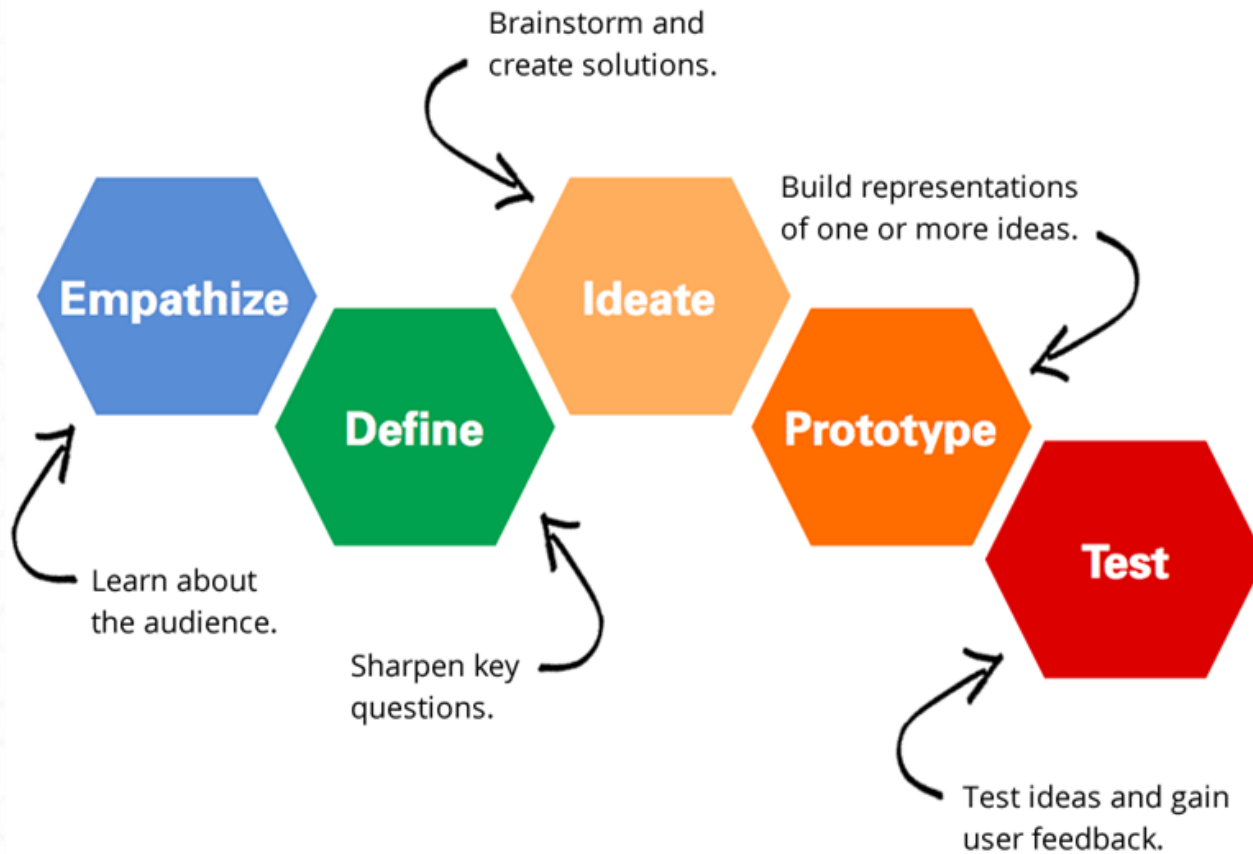


Local companies/institutions that use Design Thinking for Innovation



Why Design Thinking?

ONE SCHOOL, ENDLESS POSSIBILITIES



Innovation

Empathy

Perspective

Interdisciplinary

Design Thinking Programme - Sec 1

- Developing Design Thinking Mindsets



Learn Mindsets (Intro)

Design Thinking Programme - Sec 2

- Learn Design Thinking Methodology
- Tackle a Design Thinking Challenge



Whole Process

Design Thinking Programme - Sec 3

- Apply Design Thinking to VIA implementation



Apply DT to VIA

Design Elective

Deep Dive into various stages of Design Thinking

Deep Dive into DT

Why Design Elective ?

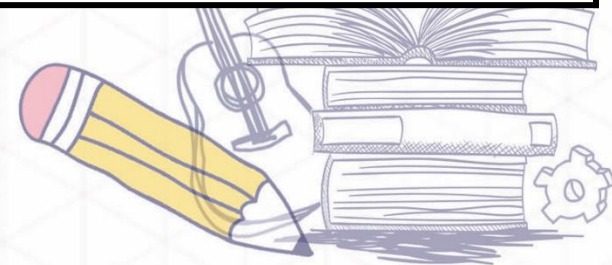
- Providing a longer runway to develop such skills early
- Work on authentic challenges & Problem spaces, build concrete solutions
- Engage with industry professionals, authentic users
- Site visits and Learning Journey
- Portfolio to document and showcase learning



By the end of this apprenticeship, you should be comfortable with doing the following:

working with ambiguity	learning from others
synthesise information	rapidly experiment
move between concrete and abstract ideas	build and craft intentionally
communicate deliberately	design your design work

The Design Elective MINDSETS



The Design Elective

OPPORTUNITIES

In each module, you will have the opportunity to:

- work independently or with your peers
- have the freedom to work on projects you care about
- go on learning journeys and meet real designers
- build up a personal portfolio for your further education



How Design Elective can help your child...

- Portfolio and unique Learning experience to **supplement** Poly EAE (Early admission exercise) and other Higher Educational institutes.
- Sharpen and enhance **Collaborative, Presentation** and **Analytical skill** for Project Work in JC/Poly

Design Elective

Assessment Mode & Format

No	Components	Assessment Modes	Weightage (Estimated)	Grade
1	Design Challenge 1 Portfolio	Mindsets Rubrics	30%	Distinction Merit Pass Ungraded
2	Design Challenge 2 Portfolio	Mindsets Rubrics		
3	Design Challenge 3 Portfolio	Mindsets Rubrics		
4	Peer evaluation by team members	Mindsets Rubrics (Peer)	15%	
5	Review by Mentor/ class participation		10%	
6	Capstone Project	Mindsets Rubrics Portfolio Assessment	45%	

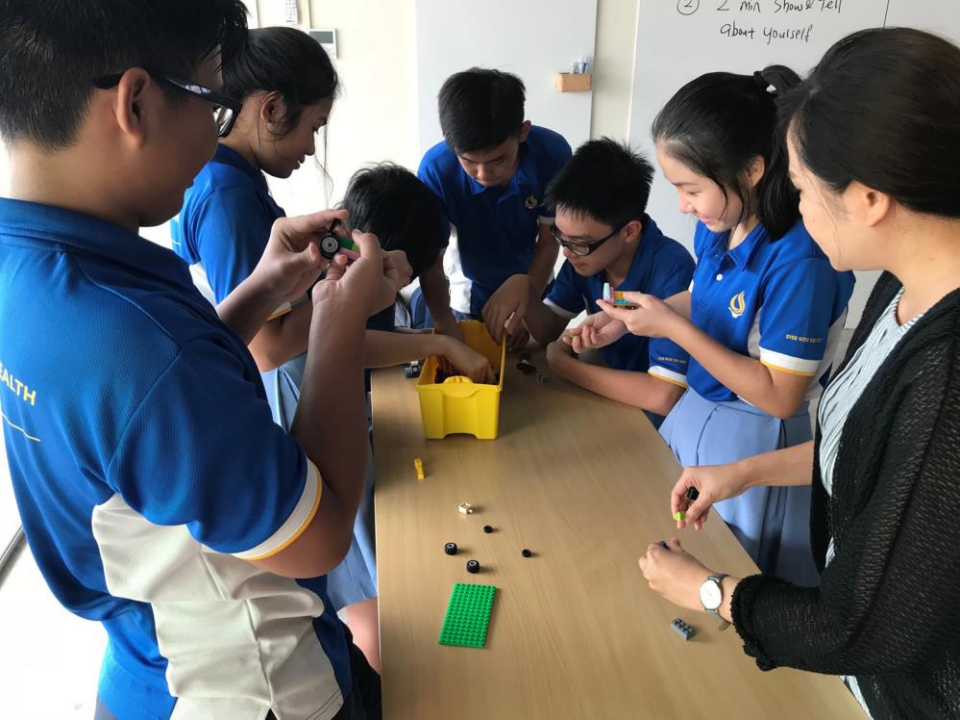


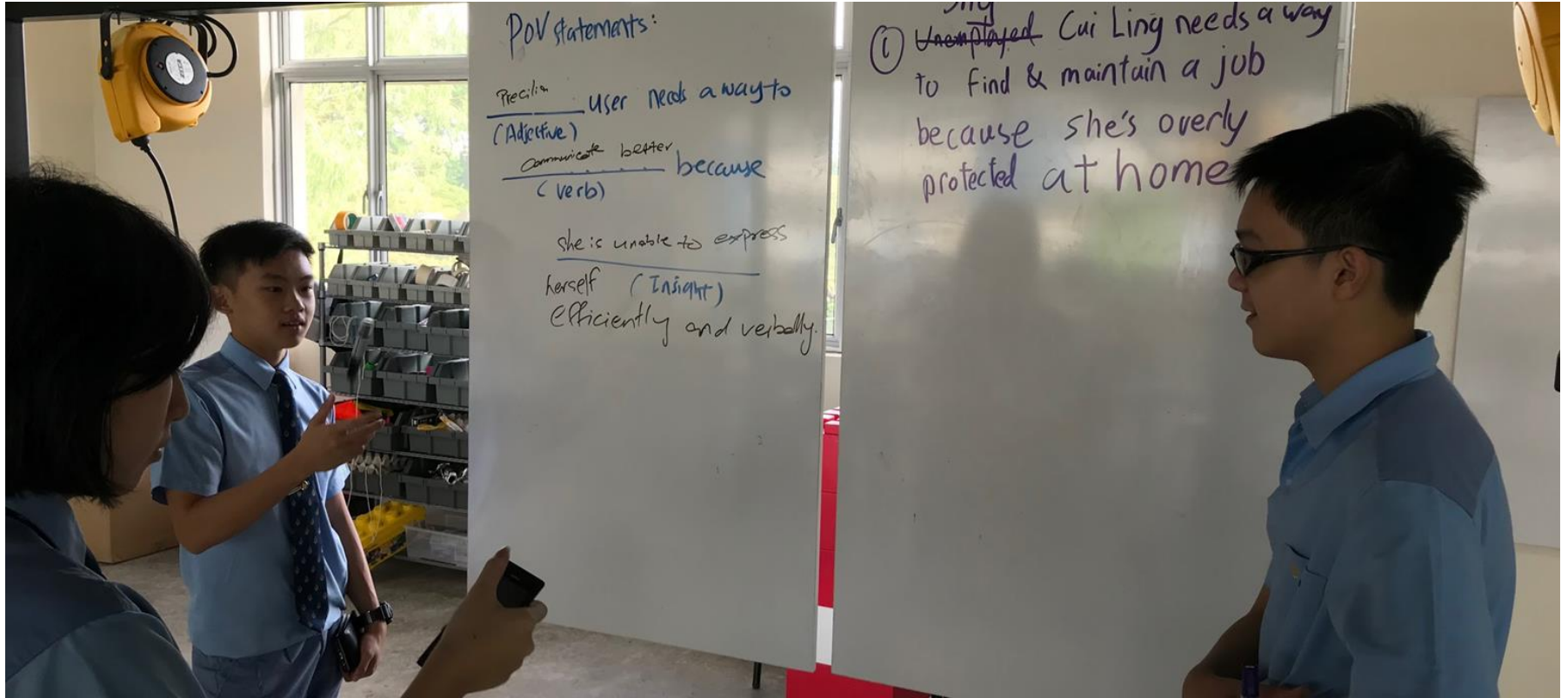
Features of Design Elective

- It is **not** a Design & Technology (D&T) subject
- **Not** an after school lesson / programme
- **Time-Tabled Lesson** period-Students will not miss their other lessons
- Equivalent of an 'O' Level Subject (3 hours per week)
- Small Group (4-5 per group) & Small Class Size









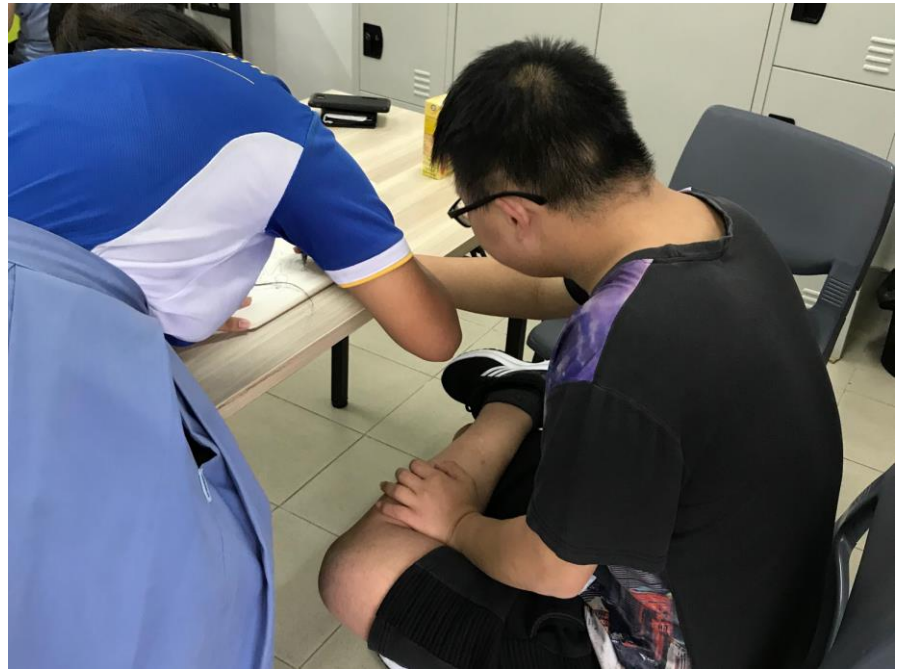




DIALOGUE IN THE DARK

SINGAPORE | ngee ann polytechnic

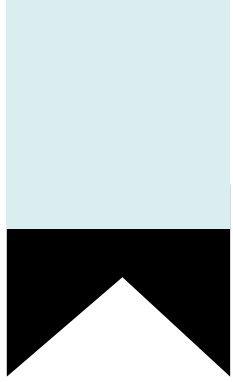




The background of the slide is composed of several colored rectangular blocks. At the top left is a cyan block. To its right is a dark blue block. The main body of the slide is a solid dark blue. At the bottom, there is a row of five blocks: dark blue, cyan, light blue, yellow, and light blue.

Sharing from Design Elective Students

“Embrace ambiguity. It’s in those moments of productive struggle, that’s when the breakthroughs happen.”



Thank you!

Check out our Design Elective Booth.

We will be glad to share more info with you!

Important Information

- **All Slides and relevant information will be emailed to your child/ward's email account.**
- **Relevant information with regards to SOE will also be made available on the CWSS School Website.**



Interaction Time

- **Different Booths for parents and students to find interact with teachers. (In the hall)**
 - Subject Booths
 - ECG Booth
 - SOE Booth





ONE SCHOOL, ENDLESS POSSIBILITIES

Feedback Form Further Questions



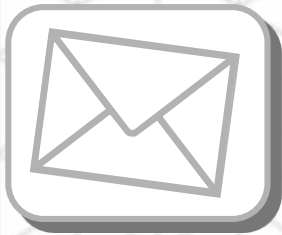
<https://goo.gl/JaEnFH>

soe@commonwealthsec.moe.edu.sg

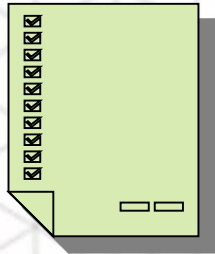




Thank You



soe@commonwealthsec.moe.edu.sg



Feedback form, Q&A

