SEC 2 ACADEMIC TALK
(CRAFT & TECHNOLOGY)

Kuo Chuan Presbyterian Secondary School
Craft & Technology Department
27 March 2015
CRAFT & TECHNOLOGY SUBJECT OPTIONS (2016)

Art

Craft & Technology subject options (2016)

Design & Technology (D&T)
SO WHAT IS ART AND D&T?

Similarities: The 2 subjects...

- Involve a common element of DESIGN
  - A design process is involved

- Require students to exercise CRITICAL THINKING
  - Think ‘Designerly’
  - Think Problem-Solving

- Project work subjects
  - Require students to do much independent and consistent research / work with academic self-discipline
Art and D&T may be offered at GCE ‘O’ Level to Sec 4 Normal (A) students in their Sec 4 year if they meet the requirement (>65%) in their respective overall subject performance.
Design is Everywhere
DESIGN & TECHNOLOGY AS A SUBJECT

- **Problem-solving design activities** *(product design)*
  - Critical & Inventive Thinking
  - Graphic communication skills: Sketch or using ICT
- **Application of technology** in product design
  - 3 aspects of Technology
    - Electronics
    - Mechanisms
    - Structures
- **Awareness of materials and basic processes**
  - Product realisation skills through practical projects
D&T National Examination

<table>
<thead>
<tr>
<th>Design and Technology (N - 7054 or O - 7051)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paper 1 (70%):</strong> Design Coursework Exam</td>
</tr>
<tr>
<td>Jan – Aug (abt 7 Months)</td>
</tr>
<tr>
<td>• Design Journal</td>
</tr>
<tr>
<td>• Artefact</td>
</tr>
<tr>
<td>• Presentation Boards</td>
</tr>
</tbody>
</table>
PARTNERSHIPS WITH POLYTECHNICS

- Partnership with Polytechnics to engage students to enhance/extend their learning outside the curriculum
  - **Advanced Elective Modules**
    - Electronics Design & Development @ SP

- **Young Engineers’ Award with SP**
  - YEA (Gold Award) achievers are offered Direct Polytechnic Admission (DPA) to SP EEE Courses
Post-Secondary Education (D&T)

- **JC / MI**
  - D&T grade can be used towards computation of aggregate (L1R5/ L1R4).

- **Polytechnic**
  - Science, Technology or Design Schools
D&T Career Opportunities

- **Design/Engineering /Manufacturing /Sales Industries**
  - Product Designer/Engineer
  - R&D/Application/Process/Quality Engineer
  - Technical Specialist
  - Sales Engineer/Executive
  - Marketing Engineer/Executive
The expression of human creative skill and imagination
ART AS A SUBJECT

Every KCPIan will be visually literate and able to appreciate art.

**Visually Literate**
Being visually literate, you are able to observe, understand and make meaning of what you see. You are also able to communicate your ideas by using and creating visuals.

**Appreciate Art**
You will be able to see the value and recognise the relevance of art in your life.
UPPER SEC ART PROGRAMME

- Materials and Medium (Dry and Wet Media)
- Development of Ideas & Techniques
  - Visual Inquiry Skills
  - Observational Skills and ability to identify and define problems, issues and themes in visual expressions
  - Communicating with the relevant working vocabulary
  - Applying art essentials skills to art creation
Art National Examination

<table>
<thead>
<tr>
<th>Art (N - 6125 or O - 6123)</th>
</tr>
</thead>
</table>
| **Paper 1 (60%):**  
  Art Coursework Exam | **Paper 2 (40%):**  
  Drawing and Painting |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan – Aug (abt 7 Months)</td>
<td>Oct (N) or Nov (O)</td>
</tr>
</tbody>
</table>
| • Preparatory Artworks (<9)  
  • Finished Artwork | • Preparatory Artworks (3-5)  
  • Given 3 weeks before  
  • Final Artwork  
  • 3 hrs |
PARTNERSHIPS WITH POLYTECHNICS

- Partnership with Polytechnics to engage students to enhance/extend their learning outside the curriculum
  - Advanced Elective Module
  - Digital Animation @ NYP
Post-Secondary Education (Art)

- **JC / MI**
  - Art grade can be used towards computation of aggregate (L1R5/ L1R4).

- **Polytechnic**
  - Design or Business Schools
Art Career Opportunities
MISCONCEPTIONS ON THE SUBJECT

- Subject A is easier than subject B
- I can make/draw well = I can score well in D&T/Art (not totally!)
- D&T requires difficult hands work/machinery work
- Art has no Theory Examination therefore it is easier
THANK YOU

Mr Ken Teo Kok Siong
HOD (Craft and Technology)
teo_kok_siong@moe.edu.sg
Secondary Two Course Option Talk 2015

27 March 2015
Tonight’s programme

- Subject and Course Eligibility
- Subject specific sharing
  - Humanities
  - Mathematics
  - Craft and Technology
- Changes in the education landscape
- Q and A session
Subject/Course Eligibility

(Sec 3 Normal Academic)
# Subject/Course Eligibility (Sec 3 Normal Academic)

<table>
<thead>
<tr>
<th>Combination</th>
<th>Subjects</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>6 subjects</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) English</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Mother Tongue</td>
<td></td>
</tr>
</tbody>
</table>
|             | 3) Combined Humanities  
  (SS & Geo/Hist) |
|             | 4) Mathematics |
|             | 5) Science  
  (Chem & Bio/Chem & Phy) |
<p>|             | 6) D&amp;T / Art | • Pass Sec 2 D&amp;T/Art |</p>
<table>
<thead>
<tr>
<th>Combination</th>
<th>Subjects</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7 subjects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) English</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Mother Tongue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Combined Humanities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SS &amp; Geo/Hist)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) Mathematics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5) Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Chem &amp; Bio/Chem &amp; Phy)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6) D&amp;T / Art</td>
<td>• Pass Sec 2 D&amp;T/Art</td>
</tr>
<tr>
<td></td>
<td>7) Principles of Accounting /</td>
<td>• Sec 2 Overall % ≥ 65%</td>
</tr>
<tr>
<td></td>
<td>Additional Mathematics (as 7th</td>
<td>• Pass Sec 2 Mathematics (For POA)</td>
</tr>
<tr>
<td></td>
<td>subject)</td>
<td>• Sec 2 Mathematics ≥65% (For A Maths)</td>
</tr>
</tbody>
</table>
# Subject/Course Eligibility (Sec 3 Normal Academic)

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘O’ Level Mother Tongue</td>
<td>• Sec 2 Mother Tongue ≥ 80%</td>
</tr>
<tr>
<td>‘O’ Level Design and Technology / Art</td>
<td>• To be considered at the end of Secondary 3</td>
</tr>
</tbody>
</table>


Students will be allocated based on merit (i.e. Sec 2 results meeting the selection criteria)

Allocation is subjected to the availability of the vacancies in the relevant classes
Q and A

Course Combination
Your feedback is important to us...

http://goo.gl/forms/drhOJqhTYM
SEC 2 MEET-THE-PARENTS-SESSION

EDUCATION PATHWAYS IN N(A)

27 March 2015

Mdm Teo Joo Keng

Subject Head – Student Wellbeing / ECG Co-ordinator
LOOK BEYOND N LEVEL

- Different education pathways
- Options and criteria for the different pathways
- What are the considerations?
Normal (Academic) Options

After the release of the Sec 4 N-Level results students can:

"Enrol in a 2-year Higher Nitec course at ITE which leads me to the Polytechnic" (DPP)

"Choose to take the O-level exam one year later."

"Enrol in a 1-year Poly Foundation Program." (PFP)

"Enter ITE to take Nitec courses, which lead to Higher Nitec."

Normal (Academic) Journey

S4 NA

S5 NA
Polytechnics

Courses are market driven and career oriented

Students graduate with a Diploma

Ready to enter the workforce
Institute of Technical Education (ITE)

National ITE Certification (NITEC)

Higher National ITE Certification (Higher NITEC)

For students with an aptitude for hands-on learning
Institute of Technical Education & Polytechnics

Courses that meet economic and global demands

Numerous partnerships with key industry players

Preparing you for a promising career
DIRECT POLYTECHNIC PROGRAM

• Aims to prepare Sec 4NA students for progression into selected polytechnic diploma course
• 2 year Higher Nitec programme at ITE
• Guaranteed a place in polytechnic if students successfully completed and attain the required qualifying GPA
DIRECT POLYTECHNIC PROGRAM

Obtained an ELMAB3 aggregate of 19 points or better
(excluding CCA bonus points)

ELMAB3 stands for:

EL  –  English Language
MA  –  Mathematics
B3  –  Best 3 subjects
### COURSE REQUIREMENTS

For *Higher Nitec* in Applied Sciences, Engineering and Info-Communications Technology courses:

<table>
<thead>
<tr>
<th>GCE N Level Subjects</th>
<th>Minimum Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Syllabus A</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Any three other subjects (excluding CCA)</td>
<td>5</td>
</tr>
</tbody>
</table>
COURSE REQUIREMENTS

For *Higher Nitec* Course in Business & Services:

<table>
<thead>
<tr>
<th>GCE N Level Subjects Grades</th>
<th>Minimum Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Syllabus A</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Any three other subjects (excluding CCA)</td>
<td>5</td>
</tr>
</tbody>
</table>
## Conversion Table for Computation of Their ELMAB3 Aggregates

<table>
<thead>
<tr>
<th>GCE O Level Grade</th>
<th>Converted Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 – B3</td>
<td>1</td>
</tr>
<tr>
<td>B4 – C6</td>
<td>2</td>
</tr>
<tr>
<td>D7 – E8</td>
<td>3</td>
</tr>
</tbody>
</table>
POLYTECHNIC FOUNDATION PROGRAMME (PFP)

- One-year programme that offers a practice-oriented curriculum taught by polytechnic lecturers
- Alternative to the Sec 5 NA
- Given a provisional places in diploma programmes
ELIGIBILITY - PFP

ELMAB3 raw aggregate score of 11 points or better

(excluding CCA bonus points) at the GCE ‘N’-Level examination
## COURSE REQUIREMENTS

<table>
<thead>
<tr>
<th>For Courses featured in <strong>Group 1</strong></th>
<th>Minimum Required Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Syllabus A</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (Syllabus A / Additional)</td>
<td>3</td>
</tr>
</tbody>
</table>

One of the following relevant subjects:

Science (Physics, Chemistry)
- Science (Physics, Biology)
- Science (Chemistry, Biology)
- Food and Nutrition
- Design and Technology

Any two other subjects excluding CCA | 3
# Group 1 courses

<table>
<thead>
<tr>
<th>Applied Sciences</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Sciences</td>
<td>Information &amp; Digital Technologies</td>
</tr>
<tr>
<td>Media &amp; Design</td>
<td>Built Environment</td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td>Maritime Studies</td>
</tr>
</tbody>
</table>
## ELIGIBILITY - DPP

<table>
<thead>
<tr>
<th>For Courses featured in <strong>Group 2</strong></th>
<th>Minimum Required Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Syllabus A</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics (Syllabus A / Additional)</td>
<td>3</td>
</tr>
<tr>
<td>One of the following relevant subjects:</td>
<td></td>
</tr>
<tr>
<td>Principles of Accounts</td>
<td>3</td>
</tr>
<tr>
<td>• Literature in English</td>
<td></td>
</tr>
<tr>
<td>• History</td>
<td></td>
</tr>
<tr>
<td>• Combined Humanities</td>
<td>3</td>
</tr>
<tr>
<td>• Geography</td>
<td></td>
</tr>
<tr>
<td>• Art</td>
<td></td>
</tr>
<tr>
<td>Any two other subjects excluding CCA</td>
<td>3</td>
</tr>
<tr>
<td>Group 2 courses</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>Business &amp; Management</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td></td>
</tr>
<tr>
<td>Media &amp; Design</td>
<td></td>
</tr>
</tbody>
</table>
Some factors for consideration...

When selecting Nitec courses, remind your students to check to see if there are relevant Higher Nitec courses for them to progress to.
Sec 5 vs ITE/Poly
Questions for students to consider when making a decision
Sec 5 or ITE/Poly – Which one should I choose?

Suggested questions for students to consider

1. Are you eligible for the Polytechnic Foundation Programme (PFP) or the Direct Polytechnics Program (DPP) into Polytechnic?

2. How quickly do you hope to enter the workforce?
Everyone has his/her own **learning style, strengths, needs and interests.** Find an educational pathway which helps bring out the best in you.
USEFUL WEBSITES FOR PARENTS

1. MOE Education Landscape (Interactive):
   http://www.moe.edu.sg/education/

2. MOE website www.moe.gov.sg for information on Sec Education, SIS (School Information Service)

3. Direct School Admission (JC)
   http://www.moe.gov.sg/education/admissions/dsa-jc/

4. Parents In Education website:

5. ECG portal www.ecareers.sg

6. MOE website on ECG
Humanities Briefing for Parents 2015 (Sec 2 NA)
Objectives of Humanities Briefing

- Why study Humanities
- Humanities@ Sec 2
- Humanities@ Upper-Sec
Why study Humanities?

- Taken as a N’ Level subject
- To hone critical and inventive thinking skills
- To raise global awareness
- To acquire cross-cultural skills
- To hone communication skills
- To imbue a sense of empathy

*To prepare our students for the 21st Century*
History & Geography
Modular system
- Semester 1- History (LJ@ Ford Factory)
- Semester 2- Geography (LJ@ Bishan Neighbourhood)
Humanities@Secondary 2

Assessment for Sec 2 History
• Class tests/Common tests- 20%
• HI project- 40%
• Mid-Year Exam- 40%

Assessment for Sec 2 Geography
• Class tests/Common tests- 20%
• GI project- 40%
• End-of-Year Exam- 40%
Humanities@Upper-Secondary

Social Studies (Compulsory)
+ Electives (Choice of 2 subjects)
Combined Humanities

Social Studies + History

Or

Social Studies + Geography
Social Studies

Issues covered in Social Studies:

Issue 1: Exploring Citizenship and Governance
- How can we decide on what is good for society? (CPF issue)

Issue 2: Living in a Diverse Society
- How can we respond in a diverse society? (Responsible use of social media)

Issue 3: Being part of a Globalized World
- How do we respond to tensions arising from some cultural impacts of globalization? (Pervasiveness of world trends and cultures)
Social Studies

Assessment for Social Studies

National Exam:
Source-Based Case Study - 35 marks
Structured-Response Questions - 15 marks

School based Exam:
Issue investigation - Component of CA in Sec 3 (20-30%)
Source-Based Case Study

Is it likely that any increase in the birth rate in Singapore will occur?

Study Source A. Are you surprised by this source? Explain your answer. [6]
Structured-Response Questions:

Explain how “Leadership is Key” ensures the economic stability of Singapore. (5 marks)

Explain two other principles of governance which ensures the economic stability of Singapore. Which is a more important principle in ensuring economic stability? Explain your answer. (10 marks)
School-Based Issue Investigation

Issue 1: Exploring Citizenship and Governance
- Perceptions of Singaporean identity
- Provisions to the people by the government
- Aged-care in Singapore
- Volunteerism in Singapore

OR

Issue 2: Living in a Diverse Society
- Integrating new citizens into society
- Building racial harmony in a diverse society
- Bridging the income inequality gap
Requirements for History Elective

Themes covered

• Effects of World War 1
• Rise of Stalin
• Rise of Hitler
• World War 2 (Europe and Asia-Pacific)
• Cold War (Korean War)

Assessment for History

• Source-Based Case Study- 30 marks
• Structured-Essay Questions- 20 marks
Requirements for Geography Elective

Themes covered

• Plate tectonics
• Weather and climate
• Global Tourism
• Geographical Investigations (Fieldwork)
Requirements for Geography Elective:

Assessment for Geography

- Geographical Investigation (Map work, fieldwork techniques) [13m]
- Short Answer Questions and Structured Essay [37m]

Learning Journeys

- Climate (Sec 3)- School and its surroundings
- Tourism (Sec 4)- Tourists’ attractions in Singapore
Choice of elective:

1. Grades achieved in Sec 2 for the different subjects (History, Geography and Literature)

2. Inclination- analysis of sources or hands-on especially in terms of conducting field based studies?

3. Passion and love for the subject

4. Practicality- what is your child’s interest/ambition?

5. Combination of all these factors.
Other subjects categorized under the Humanities department:

- Principles of Accounts (considered as ‘others’ in the computation of points)
THANK YOU
Parents’ Meeting

27th Mar 2015

Sec 2 NA
### ‘N’ Level Math

#### % Distinction

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School</strong></td>
<td>41.3</td>
<td>27.4</td>
<td>19.1</td>
</tr>
<tr>
<td><strong>National</strong></td>
<td>34.8</td>
<td>33.8</td>
<td>32.9</td>
</tr>
</tbody>
</table>
### ‘N’ Level Math % Passes

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>90.7</td>
<td>97.3</td>
<td>97.3</td>
</tr>
<tr>
<td>National</td>
<td>94.3</td>
<td>94.5</td>
<td>94.1</td>
</tr>
</tbody>
</table>
AGENDA

1. Singapore Mathematics Framework
2. New Syllabus starting 2013
3. Additional Mathematics in Sec 3/4
Singapore Mathematics Framework

- **Beliefs**
  - Interest
  - Appreciation
  - Confidence
  - Perseverance

- **Metacognition**
  - Monitoring of one's own thinking
  - Self-regulation of learning

- **Mathematical Problem Solving**
  - Numerical calculation
  - Algebraic manipulation
  - Spatial visualisation
  - Data analysis
  - Measurement
  - Use of mathematical tools
  - Estimation
  - Reasoning, communication and connections
  - Thinking skills and heuristics
  - Applications and modelling

- **Concepts**
  - Numerical
  - Algebraic
  - Geometrical
  - Statistical
  - Probabilistic
  - Analytical
New Syllabus Starting in 2013

- No change in examination format
- Few changes in topics
- Strengthening Math Thinking Processes
- Influencing Teaching and Learning in the classroom
New Syllabus Starting in 2013

Processes
- Reasoning
- Communication
- Connection
- Thinking skills and Heuristics
- Application and Modelling

Increasing emphasis on
- Learning Experiences
- Problems in real-world contexts
- Mathematical Modelling
1. Learning Experiences

- Discuss examples of foreign exchange rates, interest rates, bills etc
- Using AlgeDisc and AlgeTools and other manipulatives
- Construct tables, bar graphs, pictograms etc
- Work collaboratively on a task to collect and classify data etc
Objectives of Learning Experiences

- Enhanced conceptual understanding through use of various mathematical tools (including ICT tools)
- Apply concepts and skills learnt in real world context
- Communicate their reasoning and connections through various mathematical tasks and activities
- Build confidence and foster interest in mathematics
Traditionally in our classroom, we focus on

- Only one approach to get the correct answer

- Memorised facts (formulae) and procedures to solve problems quickly

- Maths learnt is unrelated to students’ lives and the real world
In a Mathematics classroom…

“Experiences may begin the journey of…”

• Knowledge construction
• Consolidation of sense making
• Stimulation of thinking
2. Problems in real-world contexts

3. Mathematical Modelling
The Punggol Waterway is a 4.2 km man-made waterway connecting Punggol and Serangoon reservoirs featuring landscaped promenade and exercise water-play areas. In the map above, the waterway runs from the Sunrise Bridge in the east to the Sunset Bridge in the west.

1a) Estimate the length of the waterway on the map.
b) Describe the method you have used to obtain the estimation in (a).
c) Using your estimation in (a) and the given information state the scale of the map in the form $1: r$. 
Online Math Portal – Ace-Learning

- E-Learning
- Fun Learning through Games and ICT Based Lessons
- Self-Revision (Interactive Tools)
- Practice
- Technical Support
New Syllabus started in 2013
- Some minor shift in topics
- Increase emphasis on process of learning

Aims for students to
- Go for higher studies in Math and to support learning particularly in Science
- Appreciate abstract nature and power of Mathematics
- Qualify for H2 Math in JC/MI
  → tertiary Math, Sciences and Engineering
Preparing your child for Additional Mathematics

- Strong foundation in lower Secondary Algebra
- Consistent effort (Not Last Minute Work!!)
- Criteria to take A Math as the 7th Optional Subject

Sec 2 Math results ≥ 65%

Overall Results ≥ 65 %
To do well in Math

- Attentive in class
- Consistent practice
- Take initiative to clarify doubts with teachers or peers
- Deep thinking
THANK YOU