Seminar on CLIL For Vocational Training Council

Implementing **Content** and **Language** Integrated Learning at local educational institutions
25th November 2016
VTC Tower
14:30 to 16:30

Prof. Angel LIN  
*Professor  
Faculty of Education  
University of Hong Kong  
Contact: angellin@hku.hk*

Dr. Tracy Cheung  
*Lecturer  
Faculty of Education  
University of Hong Kong  
Contact: tracyclcheung@yahoo.com*
In this seminar

1. Different kinds of English/Chinese – everyday, academic & technical
2. Introduction to CLIL and LAC
3. Different models of CLIL
4. Possible challenges in CLIL implementation
5. Possible solutions in CLIL implementation
6. Factors that facilitate CLIL implementation
7. Q & A
Let’s play a warm-up game before we start ...
Think of one 4-word phrase to describe this picture.

e.g. 兩文三語
Think of another 4-word phrase to describe these pictures.

- e.g. 中英並重
- 中英對照
Let’s get to know more about you...
“I think ...”

- Let’s play a game.
- Please go to this website:
  - [https://kahoot.it/#/](https://kahoot.it/#/)
- Then enter the game pin shown on the screen for the game.
“I believe ...”

• Let’s play another game.
• Please go to this website:
  – [https://kahoot.it/#/](https://kahoot.it/#/)
• Then enter the **game pin** shown on the screen for the game.
Thanks for letting us know your ideas.
**Ingredients**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>apples</td>
<td>2</td>
</tr>
<tr>
<td>Ya-fu pears</td>
<td>2</td>
</tr>
<tr>
<td>dried figs</td>
<td>3</td>
</tr>
<tr>
<td>sweet almonds</td>
<td>38 g</td>
</tr>
<tr>
<td>bitter almonds</td>
<td>38 g</td>
</tr>
<tr>
<td>lean pork</td>
<td>300 g</td>
</tr>
<tr>
<td>water</td>
<td>15 bowls</td>
</tr>
<tr>
<td>salt</td>
<td></td>
</tr>
</tbody>
</table>

**Method**

1. Rinse all ingredients.
2. Core and cut apples into quarters. Core and cut the pears into halves.
3. Cut lean pork into four pieces. Rinse and scald.

This soup nourishes the Lungs and strengthens internal organs. Its nourishing quality makes it the perfect soup for all seasons.
It seems that there are actually different kinds of English / Chinese.
Activity 1: Discuss in pairs/groups:

Core question: What are the differences between texts in Type A and Type B? e.g. Compare and contrast:
- Lexical features (word patterns)?
- Grammatical features (sentence patterns)?
- Structure & organisation
- Overall purposes

Extended question: What can you infer about some of the features of academic texts?
Example 1
Angel: Hello, Adrian?
Adrian: Good morning Angel! How’re you today?
Angel: I’m fine! I’ve been up for a couple of hours working on my computer—
Adrian: Oh, that’s good!
Angel: Are there lessons for me to see today?
Adrian: Um..., Miss Bussie hasn’t replied to my email yet—don’t know if she’s got something arranged...
Angel: I see, in that case, I’d like to stay home to work this morning, and if she’s got back to you, just give me a call, and I’ll come back to school.
Adrian: No problem! Have a productive day!
Angel: Thanks Adrian! You have a good day too! Bye bye!
Adrian: Bye bye!

Example 2
佢: 喂！係咪冇開冷氣呀？
我: 唔好意思，冷氣壞咗...
佢: 咁點呀？
我: 係呀，壞咗嘛...
佢: 咁你唔整？
我: 已經約嘅師傅整嘅啦～

Example 3
電話響，飛身撲去聽電話～
我: 喂~乜乜診所
對方電話背景極嘈雜: 喂？喂？喂？診所呀！我要配藥呀))))))
我: 你俾你覆診號碼我呀～
佢: 喂？你講乜呀？我聽唔到你講嘢呀)))
我親吻電話: 我話你俾你覆診號碼我))
佢: 好嘈呀！聽唔到呀！我要配藥呀)))
我: 你不如去個靜啲嘅地方先打嚟呀～
佢: 我聽唔到你講乜呀大聲啲呀))我配返上次啲藥呀！
我: 你俾你個number我先啦…
佢: 喂？喂？喂？
我細細聲: 我哋再講落去都有意思啦，分手啦，有緣嘅你搵個清幽啲嘅地方先再聯絡我啦…
CHAPTER 3

SMART TEXTILES

SECTION 1 WHAT ARE SMART TEXTILES

Smart textiles can be, in a broad sense, defined as fibres, fabrics and clothing that exhibit some novel performances including sensitivity, actuation and adaptive response to external stimuli such as temperature, moisture, lighting, stress, electrical and magnetic field.

According to their reaction mode, smart textiles can be classified into three categories, namely “Passive Smart Textiles”, “Active Smart Textiles” and “Very Smart Textiles”.

Passive Smart Textiles can only perceive and feel the external stimuli. For example, no matter whether the weather is hot or cold, the “keep warm” function of a heat-insulating jacket will not be altered.

Active Smart Textiles not only can perceive and feel but can also be responsive to the external stimuli. Temperature adaptable textiles--and shape memory textiles are good examples of such textiles.

Very Smart Textiles are high level intelligence textiles, which can sense, react and adopt themselves to the external stimuli. They work like the human brain – with perceptive, analyzing and activating performance.

There have already been a number of smart textiles available in the market, and below are some typical examples.

Example 1

Example 2
Texts in Type A: **Everyday English** (Basic Interpersonal Communicative Skills--BICS):

→ Communicative/ conversational, context-rich, concrete concepts, less cognitively demanding

Texts in Type B: **Academic / Technical English** (Cognitive Academic Language Proficiency--CALP):

→ Context-reduced, abstract concepts, cognitively demanding

(Cummins, 2000; Johnson & Swain, 1994)
Introduction to CLIL & LAC

Similar concepts with different terms ...

- Content-based instruction
- Language Across the Curriculum
- Content-based language teaching

- English for Specific/Academic Purposes
- Immersion programmes
- English-medium schools (EMI)

- Content and Language Integrated Learning
A continuum of different programmes

More content driven

Immersion programmes

Content and Language Integrated Learning

More language driven

Content-based language teaching

English for Specific/Academic Purposes

Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.
What is Content and Language Integrated Learning (CLIL)?

‘CLIL is an approach in which a foreign language is used as a tool in the learning of a non-language subject in which both language and the subject have a joint role.’ (Marsh, 2002).

- Under the umbrella term Content-based Instruction (CBI)
- A bit similar to immersion programmes
  - However, CLIL puts extra emphasis on the integration of BOTH content learning & language learning, often in the same lesson
Language Across the Curriculum

• Definition
  - the practice through which the study and use of languages take place throughout the curriculum
  - A whole-school/institute approach: formulate a language policy applied to all subjects at all levels
  → An academic language infused content curriculum

• Advantages:
  - bridges existing curricular and disciplinary boundaries
    → more integrated learning environment
    → in CLIL: better integration of language and content learning
  - raises awareness of the role played by language in mediating content
  - enhances the language proficiency of both students and teachers

(Hoare et al., 1997; http://www.language.brown.edu/LAC/)
Key conditions for successful English learning in EFL (English as Foreign Language) learning contexts (e.g., HK, Thailand)

Video (info; around 6 minutes)

Extract 1 – from a HR person’s point of view
Extract 2 – from a local bilingual reporter’s point of view
Extract 3 – from a Chinese Doctor’s point of view

Activity 2

From these video extracts, can you identify of some key conditions for successful English learning in Hong Kong?
Four key conditions for successful English learning in EFL (English as Foreign Language) learning contexts (e.g., HK, Thailand)

• **Exposure**
• **Use**
• **Motivating Contexts**
• **Explicit Instruction (Guidance)**

How can we strengthen these 4 conditions in local educational institutions?
CLIL can help provide these 4 conditions...

- Successful CLIL implementation in our local educational institutions can provide ample...
  - Exposure to English
  - Opportunities to Use English
  - Motivating Contexts to use English
  - Explicit Instruction (guidance) to enhance students’ Academic Language Skills
Success in CLIL / LAC depends on **TWO** elements:

- CLIL teachers should have both **academic language awareness** and **academic content awareness** so that (i) **content (-led CLIL) teachers** can provide language support to students in content lessons, while (ii) **language (-led CLIL) teachers** can help students improve their academic language skills for content learning.

**CLIL Teachers have:**

**Academic Language Awareness** + **Academic Content Awareness**

Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.
Different modes of LAC in the tertiary setting:

1. **ESP/EAP classes**: Language teacher, with the help of content subject teacher, develops a special language class which uses the concepts and texts from the content subject to teach academic language (skills).

2. **Sheltered instruction/classes**: Content subject teacher, with the help of language teacher, adapts their teaching to suit the levels of L2 learners (e.g. using simplified texts and materials).

3. **Paired/ Adjunct courses**: Content subject teacher teaches the concepts and language teacher teaches the corresponding academic language (skills).

4. **Team teaching**: Content subject teacher and language teacher design the content and language integrated curriculum and co-teach

   (Crandall & Tucker, 1990)
CLIL/ LAC requires **collaboration of content and language teachers**

- CLIL requires content teachers to become **language-aware**, and language teachers to become **content-aware**
- CLIL thus requires collaboration of content and language teachers

**How to enhance collaboration between Content Teachers & Language Teachers?**
Developing a Common Framework

The Genre Framework: A powerful tool for CLIL / LAC

Language Teachers & Content Teachers

A Common Language: The Genre Framework

Raising Academic Language Awareness

Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.
“Genre Egg” – Language Awareness
A Functional View of Language in Context
(adapted from Rose, 2005)

Curriculum context

Academic / Technical text-types (genres)

Academic functions

Sentence patterns

Academic vocabulary

LAC / CLIL can be done at any level.

Top down

For planning
For awareness raising
For communication
For needs analysis
For text analysis

Bottom-up
Hobby Week
Bella So – photographer
For Bella So, photography is more than just a hobby – it’s a passion. She never goes anywhere without one of her three cameras. At just fifteen years of age, Bella is already a prize-winning photographer. ‘I started taking photos when I was six,’ says Bella. ‘My dad got a new camera and asked me if I wanted his old one. He gave me some rolls of films and I was taking pictures from then on.’ When her dad was looking at her first set of pictures, he realised that they were already better than his.
(from Longman Elect JS3A, p. 5)

Human digestive system
Digestion and absorption of food take place in a long tubing called the alimentary canal in our body. It starts from the mouth to the anus. The alimentary canal together with associated glands (which secrete digestive juice) make up our digestive system.

The process of taking food into the alimentary canal through our mouth is called ingestion. Inside our mouth cavity, food is broken down by our teeth physically into small pieces for easy swallowing. This also increases the surface area of food for digestive juices to work on.
(from Interactive Science 3A (2nd ed.), Pearson Longman, p. 54-55)
Simple text analysis of “Human digestive system”: vocabulary level

• 3 types of vocabulary:
  – (1) **Subject-specific vocabulary** (i.e. technical terms)
    
    e.g. digestive system, digestion, absorption, alimentary canal, anus, glands, ingestion, mouth cavity ……
  
  – (2) **General academic vocabulary** (semi-technical terms)
    → used across academic subjects (Coxhead, 2000)
    
    e.g. human, take place, associated, process, physically, increases, surface area
  
  – (3) **Signalling words** (e.g. connectives to logical connection)
    
    e.g. also
Simple text analysis of “Human digestive system”: academic function level

• A variety of academic functions, for example:
• Defining
• Example: “The process of taking food into the alimentary canal through our mouth is called ingestion.”
• What term is being defined in this example?

Example: “ingestion”
Sentence patterns of “definitions”

<table>
<thead>
<tr>
<th>Term</th>
<th>general class word</th>
<th>specific characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduction</td>
<td>a process</td>
<td>that heat is transferred.</td>
</tr>
<tr>
<td>The water cycle</td>
<td>a pattern</td>
<td>by which how water moves around the Earth.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>general class word</th>
<th>specific characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>the</td>
<td>of matter</td>
</tr>
<tr>
<td>Energy</td>
<td>the ability</td>
<td>to do work.</td>
</tr>
<tr>
<td>Light energy</td>
<td>the energy</td>
<td>carried by light waves.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>specific characteristics</th>
<th>general class word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>a non-renewable</td>
<td>resource.</td>
</tr>
<tr>
<td>Litmus paper</td>
<td>a pH</td>
<td>indicator.</td>
</tr>
</tbody>
</table>

Term = General class word + Specific characteristics

Subject (S) + Verb (V) + Clause structure

Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.
Simple text analysis of “Human digestive system”: academic function level

• Analysis of the example
  – Example: “The process of taking food into the alimentary canal through our mouth is called ingestion.”
    • Term = “ingestion”
    • General class word = “process”
    • Specific characteristics = “taking food into the alimentary canal through our mouth”

  – “The process of taking food into the alimentary canal through our mouth is called ingestion.”
• different subjects have different genres/linguistic features
  → difficult for native speakers, not to mention L2 learners
  → mastery of subject-specific genres is essential for academic success (Gibbons, 2009)

• for students who start CLIL in secondary education (e.g. S.1 in Hong Kong)
  → discrepancy between L2 and cognitive development (Johnson & Swain, 1994; Coyle et al., 2010)

How can CLIL teachers help students to access content knowledge through L2 and master subject-specific genres?
Collaboration Model 1: LAC at ‘vocabulary level’

Issues to highlight:
• Easy to arrange (common in bridging programmes)
• Good for teaching syllabication and spelling
• Learning English through glossaries
• Limited impact
Collaboration Model 2: LAC at ‘demo-teaching level’

Issues to highlight:
• Language teachers can understand the difficulties of using EMI in content subject classrooms
• Content subject teachers can understand how language teachers teach
• Need adjustment in timetabling; English teachers have difficulties teaching content subjects
**Collaboration Model 3:**

**LAC at 'curriculum-material-support level'**

<table>
<thead>
<tr>
<th>Language</th>
<th>Content subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Science</td>
</tr>
<tr>
<td>Maths</td>
<td>History</td>
</tr>
<tr>
<td></td>
<td>Geography</td>
</tr>
<tr>
<td></td>
<td>Liberal Studies</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
</tr>
</tbody>
</table>

Subject content teachers prepare teaching/assignment/assessment materials for content subjects.

Issues to highlight:
- Easy to arrange, but
- Heavy workload laid on language teachers

---

*Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.*
Collaboration Model 4: LAC at ‘project level’

Issues to highlight:
• Easy to arrange
• Moderate level of collaboration

Identify common issue between English & Content Subjects: e.g. Green Living
Collaboration Model 5: A ‘full LAC course’

Issues to highlight:
• A coherent, continuous, sustainable and transferable LAC practice/course
• Cater for professional development
• More time and human resource investment involved
• Need to build leadership, consensus and teamwork
Some **possible challenges** of CLIL implementation in general

• **(1) Demands on teachers** (Content & Language)
  - language-aware & content-aware teachers

• **(2) Time consuming**
  - Planning
  - Material development
  - Collaboration & implementation

• **(3) Resource consuming**
  - Teaching and learning materials
  - Manpower
  - Time
  - Teaching ideas
  - Reference materials
  - Technology (e.g. “real-time collaboration”)
  - Experience and expertise

• **(4) Lack of consensus among different stakeholders**
  - Administrative management’s, teachers’ and students’ view on learning and using English in learning
Some possible solutions & success factors of CLIL implementation in general

• Adopt PIE approach – planning, implementation, evaluation
  • **Planning**
    – Needs analysis
      • Students’ learning needs
      • Curriculum: objectives, assessment, teaching and learning activities
    – Practical and achievable LAC / CLIL aims, goals and objectives
    – SWOT analysis
    – Reaching a consensus among different stakeholders
    – “Think **BIG** but start **SMALL**”
      • Set phrases and stages
      • Piloting
      • Bottom-up & top-down approaches
  • **Implementation**
    – Support from management (time / manpower / resources)
    – Support to front-line staff: professional development
    – Extra funding and expertise needed
    – Deployment of resources
    – Appointment of manpower
  • **Evaluation**
    – Be creative yet practical
E.g., The Bilingual Notes Approach (tried out by a school)
### How can an atom of these elements become stable?

<table>
<thead>
<tr>
<th>Element</th>
<th>Action</th>
<th>Number of Electrons</th>
</tr>
</thead>
<tbody>
<tr>
<td>lithium</td>
<td>lose</td>
<td>1</td>
</tr>
<tr>
<td>fluorine</td>
<td>gain</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Chinese translation

<table>
<thead>
<tr>
<th>Element</th>
<th>Action</th>
<th>Number of Electrons</th>
</tr>
</thead>
<tbody>
<tr>
<td>鋰</td>
<td>失去</td>
<td>一粒電子。</td>
</tr>
<tr>
<td>氟</td>
<td>獲得</td>
<td>一粒電子。</td>
</tr>
</tbody>
</table>
E.g., Bilingual quiz (I.S.)

Part B: Short Questions

23. The following process show the changes of states of matter. Write your answer in the space provided.

<table>
<thead>
<tr>
<th>Process A</th>
<th>Process B</th>
<th>Process C</th>
<th>Process D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>Liquid</td>
<td>Gas</td>
<td>Solid</td>
</tr>
</tbody>
</table>

(a) Which process(es) indicate(s) the absorption of energy?

(b) Which processes are involved in the following changes?

(i) Ice-cream melts.

(ii) Water boils.

(iii) Making of ice cubes in the freezer.

(iv) A pot of boiling soup.

(c) Name the following processes:

(i) Process A/melting

(ii) Process B/boiling

(iii) Process C/freezing

(iv) Process D/condensation

(d) The temperature at which ice changes into water is called the melting point of ice. Write in the missing word.

(e) The process in which a dry ice turns into a gas is called sublimation.
School Examples for transitional bilingual approach
Example 1: IS (S1) – Revision notes as input
### 1.2 Working in the laboratory 在實驗室工作

#### 1. Equipment in the laboratory

<table>
<thead>
<tr>
<th>Item</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>water tap and sink</td>
<td><img src="image1.jpg" alt="Image" /></td>
</tr>
<tr>
<td>gas tap</td>
<td><img src="image2.jpg" alt="Image" /></td>
</tr>
<tr>
<td>electric socket</td>
<td><img src="image3.jpg" alt="Image" /></td>
</tr>
<tr>
<td>fume cupboard</td>
<td><img src="image4.jpg" alt="Image" /></td>
</tr>
<tr>
<td>first aid box</td>
<td><img src="image5.jpg" alt="Image" /></td>
</tr>
<tr>
<td>eye wash bottle</td>
<td><img src="image6.jpg" alt="Image" /></td>
</tr>
<tr>
<td>fire extinguisher</td>
<td><img src="image7.jpg" alt="Image" /></td>
</tr>
<tr>
<td>fire blanket</td>
<td><img src="image8.jpg" alt="Image" /></td>
</tr>
<tr>
<td>sand pack</td>
<td><img src="image9.jpg" alt="Image" /></td>
</tr>
<tr>
<td>conical flask</td>
<td><img src="image10.jpg" alt="Image" /></td>
</tr>
<tr>
<td>spatula</td>
<td><img src="image11.jpg" alt="Image" /></td>
</tr>
<tr>
<td>tongs</td>
<td><img src="image12.jpg" alt="Image" /></td>
</tr>
<tr>
<td>tripod</td>
<td><img src="image13.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>

#### 2. Laboratory apparatus

<table>
<thead>
<tr>
<th>Item</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>test tube</td>
<td><img src="image14.jpg" alt="Image" /></td>
</tr>
<tr>
<td>reagent bottle</td>
<td><img src="image15.jpg" alt="Image" /></td>
</tr>
<tr>
<td>boiling tube</td>
<td><img src="image16.jpg" alt="Image" /></td>
</tr>
<tr>
<td>dropping bottle</td>
<td><img src="image17.jpg" alt="Image" /></td>
</tr>
<tr>
<td>test tube rack</td>
<td><img src="image18.jpg" alt="Image" /></td>
</tr>
<tr>
<td>measuring cylinder</td>
<td><img src="image19.jpg" alt="Image" /></td>
</tr>
<tr>
<td>test tube holder</td>
<td><img src="image20.jpg" alt="Image" /></td>
</tr>
<tr>
<td>watch glass</td>
<td><img src="image21.jpg" alt="Image" /></td>
</tr>
<tr>
<td>test tube baster</td>
<td><img src="image22.jpg" alt="Image" /></td>
</tr>
<tr>
<td>evaporating dish</td>
<td><img src="image23.jpg" alt="Image" /></td>
</tr>
<tr>
<td>beaker</td>
<td><img src="image24.jpg" alt="Image" /></td>
</tr>
<tr>
<td>dropper</td>
<td><img src="image25.jpg" alt="Image" /></td>
</tr>
</tbody>
</table>

---

**Academic Language**

- Academic functions
- Sentence patterns
- Academic vocabulary

---

**Curriculum context**

**Academic text-types:**
### 1.3 Basic skills in doing experiments 基本實驗技巧

1. We can use a **dropper** to transfer a few drops of solution from one container to another.

   我們可以用滴管，把小量溶液從一個容器轉移到另一個容器。

2. We can use a **Bunsen burner** to heat substances in a laboratory.

   在實驗室內，我們可以使用本生燈把物質加熱。

---

### Some laboratory rules: 一些實驗室規則：

<table>
<thead>
<tr>
<th>We should … 我們應該 ……</th>
<th>We should NOT … 我們不應該 ……</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ keep all exits and passages clear. 保持所有通路暢通無阻。</td>
<td></td>
</tr>
<tr>
<td>✓ keep the laboratory clean and tidy. 保持實驗室整潔。</td>
<td></td>
</tr>
<tr>
<td>✓ strictly follow the instructions given by the teacher. 嚴格遵守老師的指示。</td>
<td></td>
</tr>
<tr>
<td>✓ report all accidents to the teacher at once. 發生意外時，立即向老師報告。</td>
<td></td>
</tr>
<tr>
<td>✓ wear safety goggles when heating or mixing substances. 把試管加熱或混和的時候，戴上安全眼鏡。</td>
<td></td>
</tr>
<tr>
<td>✓ tie back long hair and fasten school ties when doing experiments. 作實驗時，束起長髮，繫緊領帶。</td>
<td></td>
</tr>
<tr>
<td>✓ enter the laboratory without teacher’s permission. 沒有老師在場，擅自進入實驗室。</td>
<td></td>
</tr>
<tr>
<td>✓ do experiments without teacher’s permission. 未得老師批准，擅自動手做實驗。</td>
<td></td>
</tr>
<tr>
<td>✓ eat, drink, play or run about in the laboratory. 在實驗室內飲食或嬉戲奔跑。</td>
<td></td>
</tr>
<tr>
<td>✓ point the mouth of a test tube towards anyone when heating. 把試管加熱時，把試管口指向自己或別人。</td>
<td></td>
</tr>
<tr>
<td>✓ leave a lit Bunsen burner unattended. 把燃燒的本生燈撫順不理。</td>
<td></td>
</tr>
<tr>
<td>✓ smell or taste any chemicals unless we are allowed to do so. 未得老師批准，聞香或試毒化學品。</td>
<td></td>
</tr>
<tr>
<td>✓ break or use the rubber tubing that you are covering with chemicals or gauze. 在實驗室內不拆扭頭或撕破，因爲手指或試管可能會鬆開了化學品或繃帶。</td>
<td></td>
</tr>
<tr>
<td>✓ sack fingers or pencils because they may be covered with chemicals or gauze. 因為試管或試管蓋可能被化學品或繃帶。</td>
<td></td>
</tr>
</tbody>
</table>

---

### The proper steps of using the Bunsen burner:

使用本生燈的正確步驟：

1. Make sure the rubber tubing of the Bunsen burner is connected to the gas tap.

   確保橡膠管連接連接到機氣閥。

2. Make sure the air hole before lighting the Bunsen burner.

   確保開口後，關上氣孔。

3. Bring a lit match over the chimney, then turn on the gas tap.

   帶上點燃的火柴，移近本生燈的燈管口，然後開啓燃氣掣。

4. Place the air hole until the flame turns blue.

   直至火焰變成藍色。

5. When the flame is blue, close the air hole and turn off the gas tap.

   閃焰圖定藍色時，關閉開孔，然後關掉燃氣掣。
2.5 Endangered species 瀕危物種

1 Living things that are in danger of extinction are called endangered species. 面臨絕種危機的生物稱為瀕危物種。

2 Examples of endangered species: rhinoceros, pitcher plants, Chinese sturgeons, giant pandas, tigers and orchids. 瀕危物種的例子：犀牛、捕霧草、大頭魚、大熊貓、老虎和蘭花。

3 The extinction of wildlife has been happening about 1000 times faster than the rate of natural means. The main reasons are: 野生生物種的消失速度比自然過程的數倍約 1000 倍。主要原因包括：

   - Some human activities produce harmful substances that pollute the environment. 人類的一些活動產生有害物質，污染環境。
   - The polluted environment becomes not suitable for living things to live in. 受污染的環境不再適合生物生存。

Academic Language

Example of living things affected 受影響的生物例子

- Humans destroy their natural habitats to obtain raw materials or new land. 人類破壞自然生態系統以獲取原材料或新土地。
- Some living things are being excessively hunted or over-exploited to make commercial or medicinal products or for gardening purposes. 某些生物過度獵殺或過度採收，用來製造商貿、藥物或作園藝用途。
- Foreign species compete with the native species for food or even feed on the native species. The native species become endangered. 外來物種與當地的原生物種競爭食物，甚至捕食生物，使原生物種瀕臨絕種。

Curriculum context

Academic text-types:

Academic functions

Sentence patterns

Academic vocabulary
Example 2: IS (S1) – Classroom instruction as input
B) During a lesson

1. Raise your hands if you have any questions.
2. Say it after me.
3. It's ________'s turn.
4. Can you give me another example?
5. Please say it in a complete sentence.
6. Is that clear? Do you have any questions?

A 請用完整的句子說這句話。
B 你可舉出另一個例子嗎?
C 準備好嗎？有任何問題嗎？
D 跟我讀一遍。
E 有問題請舉手。
F 現在輪到________。

1 _______ 2 _______ 3 _______
4 _______ 5 _______ 6 _______

C) At the end of a lesson

1. That's the end of class.
2. We'll finish this exercise in the next lesson.
3. Prepare the next section for Monday.
4. Do the exercise on page 42 for your homework.
5. Don't forget to bring Book 1B tomorrow.
6. Clean the board, please.

A 請擦黑板。
B 今天的家課做第 42 頁的課後。
C 我們下堂課完成這課習。
D 明天記得帶課本。
E 現在下課。
F 星期一會放下課習。

1 _______ 2 _______ 3 _______
4 _______ 5 _______ 6 _______

D) During experiments and group activities

1. Queue up and go to the laboratory quietly.
2. Let's carry out Laboratory activity 1.1.
3. Come and collect the apparatus and materials.
4. Form groups of four. Discuss with your classmates and then ask one of you to give me the answer.
5. Tidy up. Clean all the apparatus carefully.
6. Wash your hands before you leave the laboratory.

A 離開實驗室前要洗手。
B 四人一組，與組員討論問題，然後由其中一人說出答案。
C 排好隊，然後安靜地進入實驗室。
D 出來拿取所需的儀器和材料。
E 我們現在進行實驗室活動 1.1。
F 清理桌面，把儀器清洗乾淨。

1 _______ 2 _______ 3 _______
4 _______ 5 _______ 6 _______

Everyday Language

E) During tests or examinations

1. Line up your desks.
2. Put your belongings under your chair.
3. Don't forget to finish the paper carefully.
4. Now, turn your desks and turn over your paper.
5. Keep your hands in front of you.

A 時間到了，請停筆。
B 請整理桌面。
C 你有 30 分鐘的答題時間。
D 小心閱讀題目的指引。
E 把所有物件放在椅子下。

1 _______ 2 _______ 3 _______
4 _______ 5 _______ 6 _______
2 Speaking in English

When you study in English, you should practice speaking as much as possible. Here are some common English expressions.

A) Apologizing
1. I'm sorry, I don't understand.
2. I'm sorry, I don't know the answer.
3. I'm sorry, I haven't finished the homework.
4. I'm sorry, I've forgotten to bring the book.
5. I'm sorry, I got into trouble.

B) Asking for permission
1. I feel sick. May I go to the medical room/go to the toilet/volunteer for the experiment?
2. Excuse me. May I use the toilet/washroom, please?

C) Interrupting
1. May I turn on/off the fan, please?
2. May I open/close the window, please?
3. May I raise/lower the blinds, please?
4. I can't see the blackboard clearly. Can I move to the back?
5. May I sit near the front, please?

D) Not catching
1. I'm sorry, I can't hear clearly.
2. Could you speak more loudly?
3. It's hard for me to understand.

Everyday Language

What should you say in the following situations? Practice with your classmates.

F) Giving the right responses
Student A: Thank you.
Student B: You're welcome. No problem. It's all right. It doesn't matter.

D) Asking a question
1. How do you say this word?
2. How do you spell it?
3. Could you tell me the meaning of this word/sentence?

Curriculum context

Academic text-types:

Academic functions

Sentence patterns

Academic vocabulary
Part II Studying science in English

1 How to read instructions in English

You will come across many instructions when doing exercises and during tests and examinations. Make sure you know what they mean so that you can answer in the correct way.

<table>
<thead>
<tr>
<th>Academic text-types:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic functions</td>
</tr>
<tr>
<td>Sentence patterns</td>
</tr>
<tr>
<td>Academic vocabulary</td>
</tr>
</tbody>
</table>

2 Answering questions in English

There are some skills in answering questions. Mastering these skills can help you perform better in examinations! Let us look at them one by one.

A) Look for the question verb

First of all, look for the question verb (問題動詞) in the question. It tells you what kind of answers you should give.

<table>
<thead>
<tr>
<th>Question verb</th>
<th>What to do?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name / Label</td>
<td>Give the name in full form. No explanation is needed. (Make sure you spell correctly!)</td>
</tr>
<tr>
<td>Using the letters in the diagram</td>
<td>Just give the letters in the diagram. No need to write the name of the structure.</td>
</tr>
<tr>
<td>Describe</td>
<td>Give the details of something. No need to give the reason.</td>
</tr>
<tr>
<td>Suggest</td>
<td>Put forward ideas, hypothesis or thoughts.</td>
</tr>
<tr>
<td></td>
<td>Give reasons. A logical (邏輯的) answer is needed.</td>
</tr>
<tr>
<td></td>
<td>Give both similarities (相似點) and differences. Try to use comparative (比較的) words like larger, smaller, etc.</td>
</tr>
<tr>
<td></td>
<td>Use numbers to work out the answer. Show the workings and give the right unit.</td>
</tr>
</tbody>
</table>
Authentic Examples from different trade areas for transitional bilingual approach
Example 3: Footwear Industry
1.1 Classification by Styles

There are numerous styles of shoes available in shoe shops all over the world. A similar number of different styles of shoes are also under production in shoe factories. New styles of shoes are created by shoe designers everyday in every product development department of shoe companies in every corner of the world.

No matter how many styles have appeared or will appear in the market, all of them can be classified into 7 basic shoe categories.

In Hong Kong, it is suggested that infant’s shoes, children’s shoes and sports shoes should be added to the list.

1. Oxford
2. Pumps
3. Boot
4. Sandal
5. Mule
6. Loafer
7. Infant’s shoe (Hong Kong)
8. Children’s shoe (Hong Kong)
9. Moccasin
10. Sports shoe (Hong Kong)
Academic Language

Curriculum context

Academic text-types:

Academic functions

Sentence patterns

Academic vocabulary
Curriculum context
Academic text-types:
Academic functions
Sentence patterns
Academic vocabulary

1.2.3 Direct Injection

In this construction, soles of TPR (Thermoplastic Rubber), PVC (Polyvinyl Chloride) or PU (Polyurethane) are directly heat-sealed to the upper by machine.

1.2.4 Voetschoen (Stitchdown)

This is one of the simplest and oldest construction methods. It can be found on less expensive children's shoes or some men's casual shoes.

This construction is the only one where the upper is flanged outwards during the lasting process and attached by adhesive and nailing to the insole (commonly known as the means or midsole). Then the out sole is cemented to the bottom of the lasted shoe.
Example 3: Food & Beverage / Food Safety

The Quick Reference Guide to Safe Food Handling for Premises Handling MEAT PRODUCTS
Curriculum context

Academic text-types:

Academic functions:

Sentence patterns

Academic vocabulary

## 2. 貯存食物守則

### FOOD STORAGE PRACTICES

### 2.1 貯存指引

#### Storage Guidelines

- **Academic text-types:**
  - Academic functions
  - Sentence patterns
  - Academic vocabulary

### 1.3 食品處理

#### Transporting Meat

- **Academic text-types:**
  - Academic functions
  - Sentence patterns
  - Academic vocabulary

### 表格 1

#### Types of Meat

<table>
<thead>
<tr>
<th>Meat Type</th>
<th>Recommended Storage Period</th>
<th>Recommended Temperature</th>
<th>Recommended Package Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh (Beef, Pork &amp; Poultry)</td>
<td>2 to 4 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
<tr>
<td>Fresh (Fish, Shellfish)</td>
<td>2 to 4 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
<tr>
<td>Frozen (Meat, Poultry)</td>
<td>1 to 2 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
</tbody>
</table>

- **Academic text-types:**
  - Academic functions
  - Sentence patterns
  - Academic vocabulary

### 表格 2

#### Recommended Storage Period for Different Types of Fresh Meat

<table>
<thead>
<tr>
<th>Meat Type</th>
<th>Recommended Storage Period</th>
<th>Recommended Temperature</th>
<th>Recommended Package Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh (Beef, Pork &amp; Poultry)</td>
<td>2 to 4 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
<tr>
<td>Fresh (Fish, Shellfish)</td>
<td>2 to 4 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
<tr>
<td>Frozen (Meat, Poultry)</td>
<td>1 to 2 days</td>
<td>Refrigerator (0°C - 4°C)</td>
<td>Plastic, Foil, Vacuum-Sealed</td>
</tr>
</tbody>
</table>

- **Academic text-types:**
  - Academic functions
  - Sentence patterns
  - Academic vocabulary

### 參考資料

- FRESH / CHILLED MEAT (e.g., Beef, Pork & Poultry)
- Store fresh meat in refrigerators, below ready-to-eat food.
- Wash fresh meat before storage to remove visible contamination.
- Try not to store fresh meat at ambient temperature. If refrigeration during selling of meat is not possible, try to keep the meat out of refrigeration shorter than 4 hours.
- Maximum recommended storage period for different types of fresh meat.

- FRESH MEAT (e.g., Beef, Pork & Poultry)
- At retail outlets, do not allow frozen meat to remain at ambient temperatures for longer than 1.5 minutes.
- Recommended maximum storage period for frozen foods.

### 參考資料

- FRESH / CHILLED MEAT (e.g., Beef, Pork & Poultry)
- Store fresh meat in refrigerators, below ready-to-eat food.
- Wash fresh meat before storage to remove visible contamination.
- Try not to store fresh meat at ambient temperature. If refrigeration during selling of meat is not possible, try to keep the meat out of refrigeration shorter than 4 hours.
- Maximum recommended storage period for different types of fresh meat.

- FRESH MEAT (e.g., Beef, Pork & Poultry)
- At retail outlets, do not allow frozen meat to remain at ambient temperatures for longer than 1.5 minutes.
- Recommended maximum storage period for frozen foods.
2.3 箱號和新舊倉存貨替
   Labeling and Stock Rotation
   - Label or observe the label on all packages to maintain inventory and security.

   - As such, products like cooked meat must be handled with care.

   - Display and sell meat according to the labeled date for meat storage.

2.4 包裝程序
   Packaging Procedures
   - When packing cooked meat and dishes at retail stores, check the packaging materials for foreign matters, or other contamination before use.

   - Expired and soon to be expired meat should be removed from display and separated. To avoid wastage of food, report to management for prompt action.

   - When packing cooked meat, use wrapping materials for foreign matters, or other contamination before use.

   - Temperatures for storing fresh and cooked meat should be around 2-4°C, frozen meat should be stored below -18°C, as shown in the table above.

   - Label or observe the label on all packages to maintain inventory and security.

   - Display and sell meat according to the labeled date for meat storage.

   - Do not use newspapers to wrap meat. Use styrofoam containers or wrapping papers.
SAFE FOOD HANDLING PRACTICES SELF-INSPECTION CHECKLIST for PREMISES HANDLING MEAT PRODUCTS

1. Fresh meat is purchased only from licensed slaughterhouses.
2. Incoming fresh meat has firm texture and natural color.
3. Meat packages are intact with no excessive water dripping or ice on containers or wrappers.
4. Refrigerated and frozen food are delivered at below 4°C and -18°C, respectively.
5. No abnormal odor or color is present in incoming cooked meat.

1. Non-food items, e.g., cleaning chemicals, are not stored near food handling area.
2. Meat is stored under refrigeration and below-cooked food.
3. Chilled and frozen meat are stored at appropriate temperatures.
4. Cooked meat is stored away from uncooked food.
5. Meat is stored in containers or covered to prevent from contamination.
6. Cooked meat is labeled with "sell by" date and disposed after this date.
7. Meat in refrigerators and freezers are rotated periodically.

1. Raw meat and cooked meat are transported separately and unwrapped.
2. Raw and cooked meat are prepared in different sections by different staffs.
3. Hands are washed before and while handling meat.
4. Meat is handled with gloves.
5. Cooked meat is handled with tongs or washed hands.
6. Meat is only stored in designated areas.
7. Separate sets of utensils are used for raw and cooked food.
8. When cleaning, small equipment, such as grinders, slicers, are taken apart into small pieces.
9. Wiping cloths are thoroughly washed, sanitized if necessary, throughout the day.
10. Utensils like knives, chopping boards for meat handling are washed and sanitized with hot water everyday.
11. Small equipment and utensils are air dried.

Academic Language

1. Freshly handled meat is washed before additional handling.
2. Meat is stored at appropriate temperatures.
3. Meat is harvested from licensed slaughterhouses.
4. Meat is stored in containers or covered to prevent contamination.
5. Meat is labeled with "sell by" date and disposed after this date.
6. Meat in refrigerators and freezers are rotated periodically.

Academic text-types:
Academic functions:
Sentence patterns
Academic vocabulary
Example 4: Business / Commerce/ Trade
As for parts and components, many manufacturers produce on a customized basis for famous US, European and Japanese companies, e.g., parts and accessories of computers, recorders, and radio receivers, as well as components like PCBs and LCDs. Meanwhile, standard components are usually exported directly to distributors in overseas markets, although some Hong Kong companies also have their own sales offices and/or representative offices abroad. Companies like Johnson Electric and Variconix also enjoy renowned reputation for their micro-meter products and high resolution LCDs, respectively.

In the meantime, Hong Kong is an important trading centre for electronic parts and components in Asia-Pacific. Apart from Chinese products, many items from the US, Europe, Japan, Taiwan and South Korea are relevant to Hong Kong. Some multinational manufacturers of parts and have set up their offices in Hong Kong, engaging in sales, sales or sourcing activities. Major examples include Motorola, i-connector, Texas Instrument, Siemens, Philips, Toshiba, Sanyo, NEC and Samsung.
### Academic Language

#### 2.2 Export Markets

China is the largest market for consumer electronics, accounting for over 30% of exports. The export value of consumer electronics to China increased by 10% in 1998 compared to 1997.

#### Academic Functions

- **Academic Vocabulary**
  - spend on consumer electronics with quality and design matching their living standards. Meanwhile, exports of parts and components have also boomed well, in line with the steady expansion of overseas processing trade.
  - Exports to the US surged by 12% in 1997, and by 9% in the first half of 1998. Exports of electronic toys and games to the market were facilitated by increasing consumer spending on toys, while sales of computer and telecommunications products have been spurred by the popularity of Internet and multimedia application. Likewise, sales to the EU increased by 7% in 1997, and by a further 13% in the first half of 1998, notwithstanding an intensified competition from other Asian suppliers, who have begun to catch up with Hong Kong in meeting the stringent EU requirements.

#### Academic Text-types:

- **Sentence patterns**
  - Despite a positive growth registered in 1997, however, exports of both finished items and parts and components to Taiwan, which is less affected by the Asian financial crisis, have remained robust.

#### Academic Context

2.3 Exports by Product

Hong Kong's exports of AV equipment were stagnant in 1997, but recovered by 2% in the first half of 1998. Sales of parts and accessories (sharing nearly one-third of the total) and radios (25%) grew by 5% during January-June 1998. Meanwhile, exports of video recorders/players (8%) were lukewarm. But sales of TV sets (7%) rebounded by 10% in the same period.

Regarding computer products, exports have performed well in last couple of years. Total exports grew remarkably by 17% in 1997, and by a further 8% in the first half of 1998. The businesses have been spurred by robust demand for computer equipment and the growing popularity of Internet world-wide. Exports have further been facilitated by the implementation of the Information Technology Agreement (ITA) since July 1997, as customs duties on IT products have been reduced among the WTO members and ITA participants. Product-wise, sales of computer parts and accessories (sharing over two-thirds of the total) grew robustly by 14% in the first half of 1998. Exports of data storage units (5%) and computer sets (9%) also surged by 18% and 34% respectively. But exports of computer peripherals (14%) decreased by 5%, due partly to the lower export prices.

As for electronic toys and games, exports have performed fairly well. Sales increased by 22% in 1997, and by a further 9% in the first half of 1998. Exports of electronic toys, sharing three-quarters of the total, grew steadily by 7% during January-June 1998, and the robust demand from western markets.
School C: Excerpt from interview data from parents I (Original in Cantonese)

Luke’s mother

我覺得個仔如果用全英，一定係跟唔到嘅，但純母語教學又不足以同國際接觸，所以我覺得微調好，可以有中英雙語的筆記，同埋一D科目或者課時用英文教。

I think my son cannot follow for sure if English is used as the only medium of instruction, but mother tongue education only cannot lay a sufficient basis to communicate with the international world, so the fine-tuning is good; it is good that there are bilingual notes and that sometimes some lessons of some subjects will be taught in English.
Joseph’s Mother

傳統家長心態嘅第一志願梗係“英中”嘅，但係係微調政策下，
其實發覺多左選擇，英中未必好，有D“中中”都幾好嘅，唔
使逼得咁辛苦，發揮細路嘅潛能，佢自信、開心，又有機會接
觸英文

Our mindset as parents would traditionally consider EMI school as
the first choice, but under the fine-tuning, we find there are
actually more choices. EMI schools may not necessarily be the best
for our children, some CMI schools are also good: Our children
may fully develop their potential under a less pressured
environment and feel confident and happy, while having increasing
exposure to English.
Researcher: Do you think teaching in the mother tongue (i.e. Cantonese) is important? Why?

Thomas: Of course we need to know our own language first so that we can know other things. Learning in the mother tongue is easier to understand... When I don’t know the things (in English), my parents cannot teach me either.

Researcher: If the government asks for your suggestions about language policy in education, what suggestions would you like to make?

Thomas: Students have always been labeled that EMI school must be a good school and CMI school must be bad. I think it should be decided according to the different student levels of the school.
e.g., School C: Excerpt from interview data from a history teacher

宜家咁嘅模式我覺得唔錯，學校俾不少支援，有人幫我地整好曬D材料，我花多少少時間準備，教就係

I think this way of work is fine. The school has provided a lot of support and there are other staff helping to design the materials for us. I only need to spend a little more time to prepare and then just teach accordingly.

學生識多D英文，有利於佢地嘅歷史學習，因為宜家好多網上嘅資料、原材料都係英文，特別係世界史，用英文教方便佢地查資料，提升學習興趣

English is beneficial for history learning, as students can use it as key words to search for information on the web, particularly for World History in which most of the sources are originally in English, and their interests in history learning can thus be enhanced.
「知...唔知」

彼知己 (百戰不殆)

識

知

易行難
難行易

人善任

難而退

天時 地利 人和

Developed by Prof. Angel Lin & Dr. Tracy Cheung © 2016. All rights reserved.
LAC Motto

Looking forward with small steps

Common vision

Affirmative

Communicate

Collaborate
Working together in the future

• Please feel free to contact us:
  – Prof. Angel Lin (angellin@hku.hk)
  – Dr. Tracy Cheung (tracyclcheung@yahoo.com)
最新的調查顯示，香港人普遍覺得自己的英文水平只是中等，香港人的英文水平有下滑的趨勢？圖像外國人在香港生活遇到什麼困難？

大學教授聽到公共地方的指示牌時出現英語文法錯誤；而人力資源公司近年收得不少港式英語的履歷表，指香港人的英文口語雖有改善，但書寫能力則有待提高。

為了改進種植能力，在職人士進修英語，中學生善用科技軟件與外國人溝通。政府該怎樣透過語言政策提高香港人的英語水平？
Disclaimer

• The material developers and facilitators do not own the copyrights of the text and video excerpts shown. The respective copyrights are owned by the respective publishers/authors credited in the materials.
Warm-up Activity:

- Picture 1 -
  https://www.google.com.hk/imgres?imgurl=http://s12.sinaimg.cn/bmiddle/48670cb2ga133044a769b%2525262690&imgrefurl=http://blog.sina.com.cn/s/blog_48670cb2ga133044a769b%2525262690.html\&h=320&w=457&tpnid=yfOUDPBN1xM\&docid=M83hVt7fMoO2mAWXjoT4Dg&ved=0ahUKEwjet6m9x7XLAhUDG6YKHCe8QMwgbIAAwAA

- Picture 2a -

- Picture 2b -

Different kinds of English


Activity 1: Discuss in pairs/groups

- Type A Examples 2 and 3 are from the FaceBook page診所低能奇觀 https://www.facebook.com/funnyclinic/?fref=ts

School examples for bilingual transitional approach

- Mastering Science: Short notes for revisions 1. Hong Kong: Oxford University Press, 2010
- Mastering Science: Science in English 1. Hong Kong: Oxford University Press, 2010

Authentic Examples from different trade areas for transitional bilingual approach

- 肉類食品安全操作手冊 The quick reference guide to safe food handling for premises handling meat products / 香港食品委員會; 香港生產力促進局.香港: 香港食品委員會; 香港生產力促進局, [199-]
- A Practical guide to exporting electronics for Hong Kong traders. Hong Kong: Hong Kong Trade Development Council, [1998].