香港真光書院

50周年校慶教學薈萃

校本經驗實錄

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目錄

校長的話

　　在教育的沃土上，老師是引領學生成長的園丁，更是推動教育創新的核心力量，本人樂見本校教師團隊將多年的教學成果匯集成專輯，出版《50周年校慶教學薈萃：校本經驗實錄》。本人深感榮幸能為此專輯撰文，正如《聖經》所言：「教養孩童，使他走當行的道，就是到老他也不偏離。」（箴言22:6），這句話提醒我們教育是「以生命影響生命」的志業，要讓每位同學懂得追求真理，建立正確價值觀。

　　翻閱本專輯，字裡行間反映老師們的教育專業與熱忱，從跨領域的課程設計、具啟發性的思維策略，到結合科技的創新課堂模式，每一篇作品皆凝聚了老師們的心血，這些成果不僅展現了教育的多元性，為本校課程發展提供了堅實的基礎，還具體呈現真光的教育理念。

　　展望未來，本校將持續深耕：
1. 優化教學系統：建立老師專業社群，推動跨校、跨領域合作。
2. 促進教育實踐：鼓勵老師發展校本特色課程，緊貼教育趨勢。
3. 加強專業發展：鼓勵老師分享教學成果及作出回饋，建立「教學實踐，研究反思，優化提升」的良性循環。

　　在瞬息萬變的社會，教育旅程充滿了挑戰與機遇。作為校長，我深知老師承擔著「傳道、受業、解惑」的重責，教師不僅是知識的傳遞者，而且是學生成長路上的引領者和支持者。教育是點燃心靈的火焰，讓我們繼續攜手並進，培養更多優秀人才，繪製更美好的教育藍圖。

　　最後，感謝所有投稿老師的無私分享，以及編輯組的辛勤付出。期待本專輯能激發教育同仁的思考與討論，促進各位於教學法、課堂管理和學生輔導等方面的交流與合作。

<div align="right">吳嘉文博士</div>

Principal's Message

In the fertile ground of education, teachers are the gardeners who guide students' growth and are also the core force driving educational innovation. I am delighted to see our school's teaching team compile years of teaching achievements into a collection, entitled "Essence of the 50th Anniversary of True Light Teaching: A Record of School-Based Experiences." It is a great honour for me to write for this compilation. As the Bible says, "Train up a child in the way he should go: and when he is old, he will not depart from it." (Proverbs 22:6). This reminds us that education is a vocation of "Life influences life," aiming to help every student pursue truth and establish a proper set of values.

As I read through this compilation, the words reflect the professionalism and passion of our teachers. From interdisciplinary curriculum design and thought-provoking strategies to pioneering classroom models integrating technology, each piece embodies the dedication of our teachers. These achievements not only demonstrate the diversity of education but also lay a solid foundation for our school's curriculum development, distinctly presenting the educational philosophy of True Light.

Looking ahead, our school will continue to deepen our efforts in:
1. Optimizing the teaching system: Establishing professional communities for teachers and promoting inter-school and interdisciplinary collaboration.
2. Promoting educational practice: Encouraging teachers to develop school-based courses that align with educational trends.
3. Strengthening professional development: Encouraging teachers to share teaching achievements and offer constructive feedback, nurturing a constructive cycle of "teaching practice, research reflection, optimization and enhancement."

In our fast-changing world, the journey through education comes with challenges and opportunities. Being the principal, I am acutely aware that teachers bear the important responsibility of "teaching, educating, and resolving doubts". Teachers serve not only as sources of knowledge but also as mentors and supporters on students' progress. Education is like a flame that lights up the spirit, so let us keep working together to help nurture more talented individuals and build a better educational path.

Lastly, I wish to extend my heartfelt thanks to all the teachers who generously contributed their writings, and to the dedicated editorial team for their hard work. It is my hope that this compilation will spark reflection and meaningful discussions among fellow educators, fostering collaboration and exchange of ideas in teaching methods, classroom management, and student counseling. Thank you!

Dr Ng Ka Man

辦學特色

辦學宗旨

我們本著基督博愛犧牲的精神從事女子教育工作，教導學生為世發光，榮神益人。

本校透過理想的學習環境，豐富的校園生活，均衡全面的教育，教導學生認識自我、尊重別人、守法自律、負責認真、充滿愛心、體諒他人、樂於助人；培養學生有獨立思考、明辨是非、反省批判、欣賞創造的能力；教導學生認識福音真理，認識中國文化，關心社會、關心國家、關心世界；培養強壯體魄，建立積極的人生觀，注意身心均衡健康發展；與人和洽相處，發展良好品格，服務人群，成為社會良好的公民。

本校注重德、智、體、群、美、靈六育均衡的教育，更重視真光傳統的創造建設、愛群服務、克己犧牲、及力求完善的精神，培養有品格有知識有能力有責任感的人，為社會國家的進步作出貢獻。本校同人盡心竭力，和衷合作，發揮共同參與的精神，提供優質的教育，攜手實現全人教育的理想。

教育目標

培育學生達至以下目標：

1. 有強健的體魄。
2. 有刻苦耐勞、堅毅不屈的精神。
3. 謙謹有禮，誠實守法。
4. 專心致志，能夠好學、慎思、明辨、篤行。
5. 多才多藝，不斷地改造環境。
6. 具備專門知識與技能。
7. 認識時代的現狀和需要。
8. 能與人合作，積極為社會作出貢獻。
9. 有大公無私、犧牲服務的精神。
10. 使人獲得豐富的生命。

真光教育原則

1. 積極創建，以身作則

　　作為處於指導地位的老師，其本身的學養、品德及言行，對學生影響至大，本校老師秉承積極創建的精神，公正不阿，謹慎言行，並常反省檢討改進，以期樹立榜樣，產生良好的引導作用。

2. 培養學生自尊尊人的精神

　　老師從一己做起，並對學生多予關懷及指導，循循善誘，凡事從情與理出發，勿苛責，以培養學生自尊尊人的精神。

3. 鼓勵學生自治及認真做事的作風

　　老師以身作則，引導學生正確地議事、處事，指導如何適當地提出意見、交流意見，鼓勵反省檢討及認真做事的精神。老師盡量給予學生發展及自治的機會，適當地予以指導，並多予鼓勵。

4. 訓導輔導並行不悖，相輔相成

　　於訓導之同時，在指導方面多想一想，多做一點功夫，多從情與理方面設想，則成效更大。訓輔尤重身教，老師必須以身作則，律己律人，立己立人。此教育之極致。

5. 重視學業品德之指導

　　老師宜於教學及活動中實施品德之教育。品德教育是教育中最重要的一環，老師應多關懷學生並作個別的指導。學業的指導上可多督促鼓勵，然不宜施加太大之壓力，俾使得以平衡發展。學生資質各有不同，應多諒解，並以啟導為主。

各學習領域教學成果

中國語文教育

淺析初中中國語文科與生活教育課的品德情意教育——以中華經典名句為例

老師：高曉君老師、馮君朗老師、嚴穎衡老師
年級：中一至中三

簡介

　　本校校風純樸，學生規行矩步，然而中二、中三級學生近年受疫情影響，較缺乏與同儕溝通相處的機會，也較易出現一些磨擦。有見及此，學校早在2021年教育局推出價值觀教育課程架構（試行版）課程文件後，在生活教育課中加強由班主任施教的課題，透過班主任課培養學生正面價值觀，特別是「以禮待人」、「尊重欣賞」這類的課題。在設計中國語文科和生活教育課課程時，我們特別融入中華經典名句，藉以提升學生的品德情意，例如「尊重與欣賞」的教學計劃，並配合感謝卡、班際漫畫比賽等延伸活動，鞏固和深化學生在課堂所學，並能應用於日常生活中。

教學計劃

1. 課程統整及施教情況

　　自2020開始，科組致力於各課堂糅合中華經典名句，以提升學生的品德情意。具體的施教情況如下：

年度	中國語文科	生活教育課	延伸活動
2020-2021	老師於課堂解說中華經典名句的涵義。 於測驗中設計情境故事，以考核學生對名句的理解程度，讓學生運用所學的知識進行分析和回答。	中二級以ZOOM形式，由中文科老師預錄影片，再由班主任協助課堂討論。	感謝卡 （生活教育課）
2021-2022		由中文老師施教中二級相關課題，帶領課堂討論。	感謝卡 （生活教育課）
2022-2023	除了課堂解說及測驗，增設班際漫畫比賽，讓學生以不同形式鞏固和深化所學。		感謝卡 （生活教育課） 初中班際漫畫比賽 （中國語文科）
2023-2024	參與由南聯教育基金舉辦的「品德教育漫畫設計比賽」，讓學生發揮所長，展示品德教育成果。		初中班際漫畫比賽 （中國語文科）

2. 中國語文科施教情況

　　基於「價值觀和態度的培育應避免以說教的方式處理，而應重視感知和思辨的過程」（《中國語文教育學習領域課程指引（小一至中六）》（2017））的理念，我們按照學生程度及成長情況，結合單元所學，以不同的藝術形式展示文化內涵，並透過班際「品德教育漫畫」設計比賽，激發學生思維，發揮所長。學生初步認識句意後，可任選其中一句中華經典名句，並以海報或四格漫畫的方式，呈現名句意義和個人體會，最後以文字解釋畫作的創作理念。

中二級（主題：仁民愛物）

　　學生理解中華經典名句的意義後，把中華文化融入藝術之中，透過班際漫畫設計比賽分享創作理念，體會深厚的內涵。所選的名句以「仁民愛物」為主，教材包括：

> **老吾老，以及人之老；幼吾幼，以及人之幼。《孟子・梁惠王上》**

> **愛人者，人恆愛之。敬人者，人恆敬之。《孟子・離婁下》**

> **民吾同胞，物吾與也。《西銘》張載**

> **親親而仁民，仁民而愛物。《孟子・盡心上》**

中三級（主題：孝親思報）

　　本級結合了「孔孟思想」單元所學，老師先闡釋四則與「孝親思報」有關的中華經典名句，讓學生在班際「品德教育漫畫」設計比賽中準確呈現句意。所選的教材包括：

> **父母之年，不可不知也。一則以喜，一則以懼。《論語・里仁》**

> **誰言寸草心，報得三春暉。《遊子吟》孟郊**
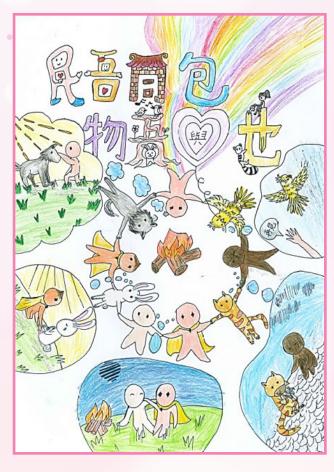
> **子曰：「今之孝者，是謂能養。至於犬馬，皆能有養；不敬，何以別乎！」《論語・為政》**

> **子曰：「事父母幾諫，見志不從，又敬不違，勞而不怨。」《論語・里仁》**
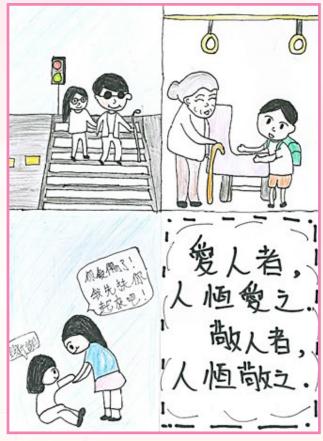
學生學習成果

　　這次班際「品德教育漫畫」設計比賽有效讓學生以多元方式，呈現對中華經典名句的理解，從中反思中華文化在日常生活的實際意義。

　　從中二級學生的作品可見，漫畫構思源於生活事件，例如：有禮讓座、扶老攜幼、尊重長輩、愛護動物等貼近日常的場景。作品配以適切的經典名句，靈活運用知識，牽連情感體會，繼而將這些價值觀具體呈現於作品之中。作品選材層面廣泛，不只限於家庭，還遍及社會人士和自然萬物，反映學生懂得推己及人之道，貫徹仁民愛物、民胞物與的傳統文化精神。

中三級學生也能融會貫通，將中文課程中「孝道文化」的課題來印證中華名句。學生設計了一幅「報答父母」的四格漫畫，當中運用了中一所學《燕詩》中「青蟲不易捕，黃口無飽期」兩句，藉此表達兒女如雛燕、如小草，區區的孝心實在不能報答母愛的養育深恩。可見學生能加入個人體會，深刻地呈現對孟郊《遊子吟》中「誰言寸草心，報得三春暉」的理解。

題目：
誰言寸草心，報得三春暉

創作理念：

在日常中，子女受父母的照顧和關愛，而這份的關懷總被認為是理所當然。當我們明白，並想報答父母時，才發現自己的行為與父母付出的愛比較之下，根本是微不足道。於是想借漫畫中的故事，令人們明白父母的付出是無限的。

學生們不僅掌握經典名句的含義，還具備思辨能力，假設日常生活中發現不當行為，能以正確價值觀勸告別人改過遷善，正體現課程設計的目的：能夠在生活中應用所學，並能夠對周圍的人產生積極的影響。

題目：民吾同胞，物吾與也

創作理念：

作品記述女孩阻止弟弟傷害青蛙，從而帶出「民吾同胞，物吾與也。」的道理。圖中描繪青蛙因貪玩的弟弟差點受傷，令人深刻記得萬物都是人類的朋友，對牠們的態度應與對人一樣有愛。第四幅圖分別繪畫了「民吾同胞」和「物吾與也」的意思。

最後，亦有學生反思到個人在日常生活會面對的實際矛盾。正如《價值觀教育課程架構》（試行版）（2021）指出「結合認知、情感、實踐，逐步培育學生正面價值觀」。中三學生初步理解《論語・里仁》「事父母幾諫，見志不從，又敬不違，勞而不怨」的句意後，便設想到在假日難免會與父母產生意見分歧的情境。學生在玩遊戲和完成功課的兩難中，想到「勞而不怨」一句，便轉而決定順從母親意思，希望減輕媽媽憂慮。由此可見，這次班際設計比賽也令學生體會到中華經典名句對現今生活的實際意義。

題目：事父母幾諫，見志不從，又敬不違，勞而不怨

創作理念：

　　每逢假日，難免會與父母在安排閒暇活動時產生意見的分歧。看到題目後，靈感乍現，創作了這幅四格漫畫。畫中，「我」想到今天是假日，便拿出了心心念念的遊戲機，詢問媽媽能否讓我玩一會。但媽媽卻要求我先做好功課再玩，令我的心情瞬間跌入谷底。正思考解決方法時，想到了《論語・里仁》中的「子曰：『事父母幾諫，見志不從，又敬不違，勞而不怨。』」這句話，便把「大吵一架」的念頭掐滅，轉而決定順從媽媽的意思，先做功課。

總結

　　品德情意是中國語文科課程的九個學習範疇之一，「情」更是中國語文科課程不可或缺的重要元素。本校旨在將中華經典名句有機結合在多元的學習情境，讓學生課堂內外都能感受到中華文化的精粹。是次課程設計成效顯著，學生能掌握了經典名句的文化內涵，將價值觀融入作品中，反映日常實踐的方法，希望學生今後能將品德情意內化為個人的行為標準。

賣炭翁——在日常生活中實踐同理心

老師：黃潔華老師
年級：中三級

教學目標

1. 學生能通過想像、情境誦讀《賣炭翁》，了解賣炭翁生活的艱苦，體會詩人對勞動人民的憐憫及揭露唐代「宮市」制度對老百姓造成的禍害。

2. 認識「以小見大」寫作手法，學會遷移知識。

3. 拓展延伸，昇華情感，培養同理心。

學生已有知識

1. 學生已掌握賣炭翁課文的字詞句解，以及內容大要。

2. 學生已理解賣炭翁課文的中心思想。

教學計劃（50分鐘）

時間	教學目的	學習活動	教學內容	教學工具
引入5分鐘	1.引起學習動機，喚起學生記憶，為進入課堂作準備。 2.鞏固已有知識，引導學生代入賣炭翁的處境，觸動同理心。	提問	老師提問： 1.詩中哪一個字最能概述賣炭翁的遭遇？（苦） 2.賣炭翁形象如何？從文中得知賣炭翁是個怎樣的人？（可憐） 3.請學生分別從賣炭翁的工作、外貌、衣著、心理四方面分析他的人物形象。 　(i)　工作：伐薪、製炭；工作辛勞、工作需要大量的體力 　(ii)　外貌：臉，塵灰灰色；鬢，灰白色；指甲，烏黑色，突出生活艱辛、年歲已高。 　(iii)衣著：在寒冬中，他的衣服很單薄。 　　　　「可憐」二字，寫出了賣炭翁艱難的處境。 　(iv)心理：賣炭翁本該希望回暖，然而他卻「願天寒」，因為他把解決衣食的全部希望都寄托在「賣炭得錢」上。 4.綜合以上的特點，你覺得作者在賣炭翁身上投注了怎樣的感情？（同情）	簡報圖片

時間	教學目的	學習活動	教學內容	教學工具
	聲入心通，加深學生對課文內容的記憶。	誦讀	老師提示學生誦讀時代入情感，留意不同畫面、詩句節奏。	簡報
5分鐘	1. 重溫唐代社會宮市制度 2. 激發學生思考	提問	老師提問： 1. 在你們的印象中，唐代的社會是怎樣的？ （繁榮） 2. 請學生略作解釋宮市制度。 （宮市是唐朝皇帝派宦官到民間市場以低價強買貨物的現象。） 3. 你們有沒有想過唐代社會中有一群人每天都吃不飽飯呢？如香港一樣，也有一群這樣的人。 4. 當你看完這些片段後，有甚麼感想？你身邊有沒有這樣的例子？	簡報
發展一 7分鐘	派發工作紙，播放影片，引發學生思考，培養學生思辨能力和同理心。	完成工作紙	觀看影片，請學生比較賣炭翁和裝修工人的相異之處。 影片： 酒店翻新工程疑拖糧數百萬元　工人上門討薪遭諷：去勞工處告我哋 (hk01.com) （相同：他們靠勞力維生；他們被壓榨，最終得不到合理的回報。 不同：賣炭翁無奈接受、無力反抗；裝修工人高聲抗議、據理力爭。） 反思：如果你是賣炭翁或裝修工人，你會如何面對？理由是甚麼？	工作紙 網上影片
發展二 3分鐘	認識「以小見大」寫作手法	工作紙「宮市下的無奈」	整合文章的中心思想 核對答案 （由小故事諷刺社會上的問題。作者通過賣炭翁淒涼的身世，辛勞的工作，不幸的遭遇，悲慘的命運，深刻地反映出「宮市」是不合理的制度，令人對賣炭翁寄予無限的同情，對「宮市」為害百姓感到深惡痛絕。）	工作紙 簡報

時間	教學目的	學習活動	教學內容	教學工具
10分鐘	1. 提升遷移能力 2. 深化「以小見大」寫作手法	1. 分組互動 2. 上載「以小見大」工作紙至 Padlet 3. 培養學生同理心	1. 全班分3組，細心觀察圖片的信息，運用以小見大的手法進行討論、匯報。 2. 講解作答步驟： 　(1) 細心觀察，理清圖片表面意思 　(2) 引發想像：思考圖片背後深層意思 　(3) 以小見大：聯繫生活立意 參考： 　圖片一 小　：滿佈皺紋的雙手 大　：低下階層人士 聯繫：貧者愈貧的社會問題 反思：背後鮮為人知的故事？勞動人士付出的代價？父母辛勞的印記？ 　圖片二 小：影子 大：烈日當空下的勞動人士 聯繫：大我的犧牲精神／默默付出的人 反思：你現在身處一個怎樣的環境？有工作在身的父母現在身處一個怎樣的環境？思考幸福不是理所當然的道理。	

時間	教學目的	學習活動	教學內容	教學工具
			圖片三 小　：台灣花蓮地震後在瓦礫中獲救的小貓 大　：捨己救貓的康老師 聯繫：為了救愛貓返回天王星大樓的康老師，卻被倒塌樑柱壓住不幸喪生。從她身上彰顯人性光輝的一頁，亦具備志士仁人的高尚情操。 反思：命運的安排？人是自私的動物嗎？ 　　　人有失去本心嗎？人有惻隱之心嗎？	
發展三 12分鐘	1.提升遷移能力 2.深化「以小見大」寫作手法	匯報	學生互相評價，然後由老師點撥，展示參考示例。 以圖片一為例 作答步驟： 1. 細心觀察，理清圖片表面意思 　　這雙手佈滿污垢，掌紋清晰可見。對旁人而言，這是一雙髒兮兮的手，似是向別人乞討甚麼；但對我而言，那是我有生以來見過最粗糙的手。這雙手呈烏黑狀，手心的裂縫像一條條乾涸的河流縱橫交錯；手掌上佈滿的老繭像一個個寸草不生的小山包，頂端還發出慘白的光亮。 2. 引發想像：思考圖片背後深層意思 　　無可否認，這雙手的每一道裂縫反映了她工作上鮮為人知的辛酸，然而，她並不是在乞求甚麼，而是赤裸裸地顯示她歲月的印記、默默耕耘的付出。這一雙手極具份量，厚實而有力，她即使從事厭惡性的行業，但為了子女不惜犧牲一切，她切切實實地用這有力的一雙手支撐著整個家。	

時間	教學目的	學習活動	教學內容	教學工具
			3. 以小見大：聯繫生活立意 　眼前所看到的決不僅僅是父母的一雙手，透過這一雙粗糙的手，還能看到社會上有許許多多從事體力勞動、默默為家庭、為社會付出的人。他們雖然不是「蒼蒼十指黑」，但也各自帶著勞苦生活的標記；他們雖然身份卑微，但各自在不同的崗位下流著辛酸的淚水，同樣是偉大的，同樣是值得被肯定的。	
發展四 5分鐘	延伸學習	拓展延伸 鞏固所學	學生回家完成工作紙（隨筆） 佈置作業： 自選新聞一則，並運用以小見大的手法，寫出你由此新聞而體會的人生道理。 1. 新聞的內容簡介（50字） 2. 我的體會（100-150字） 3. 請將報章內容張貼於下表內，請將新聞中帶給你最深刻體會的內容用熒光筆顯示。	隨筆 工作紙
			時間許可下，播放朗讀課文影片 https://www.youtube.com/watch?v=saKFc0gxNis https://www.youtube.com/watch?v=aoD3brpo1nc	動畫 影片
總結 3分鐘	擴充	昇華情感	老師作出總結，引用英國詩人布萊克：「一沙一天地，一花一天堂」，生活中簡單的小事透過你的慧眼、巧思及「以小見大」的方法，也可以寫出深刻又獨特的好文章。	簡報

教學反思

在整個教學設計中，任教老師認為有兩大得著：

第一，課堂上，學生能活學活用，通過想像，用心代入賣炭翁生活的艱辛，又能活學活用以小見大的寫作方法，最重要的是能透過課堂活動，在知、情、行三方面培養學生的同理心。最欣喜的是，學生能夠在延伸活動中仔細觀察一雙佈滿灰塵的手背後隱含的辛酸，做到「以小見大」，深深明白勞動人士或父母在外工作的艱辛，默默付出的精神；學生亦能仔細觀察圖片的建築工人在烈日當空處理高危工作的犧牲、大愛的精神。更難能可貴的是，有個別學生能連繫生活，反思社會應關注或對這些默默貢獻的服務者予以肯定或關懷。這無疑是在功利的社會氣氛下難得的思考課。課堂設計目的是希望提升學生的遷移能力，在日常生活中實踐同理心，對社會上低下階層或默默付出的勞動者多一份理解、體諒。

第二，學生能自信地匯報及對於學生的表現加以回應。整個課堂氣氛不俗，老師先給學生充分的指引、事例，然後給予空間學生思考、仿寫及分析。老師讓學生分配不同角色，進行分工，有匯報者、有給予意見者、有撰寫者，老師特別強調在立意方面須花心思，避免立意流於俗套或欠缺創意。四人小組中，學生互相交流下，使強弱之間有足夠的交流，弱者能夠從中吸取養分，也建立了自信心，某程度上提升組員的要求，期望做到「突圍而出」，因此有不錯的成效。

然而，課堂上亦有不足之處，其中的不足如下：

首先是課時限制，學生匯報時間可再延長，老師可以有更多的時間給予指導及回饋，最理想的是給予其他組的學生深入互評、發掘不同立意的可能性，期望可再提升生活立意的深度及廣度。

最後知易行難，學生在過去三年受疫情影響，多困在家中，一方面少了參與課外活動的經驗，識見不足，未必有太多生活聯繫，彷彿有一種與社會隔絕的感覺，要他們每人做到在生活中以小見大，深入了解事物背後的深層意思，並非易事，更遑論他們有敏感的觸覺、易地而處，從他人角度出發？個人認為，要培養同理心並非一朝一夕，單靠一節的課堂活動未必立竿見影，必須在課堂潛移默化、鼓勵學生身體力行、由心出發以行動去累積生活經驗，才能真正提升個人同理心，繼而做到「推己及人」。

街道人情——利用文學散步
提升寫作技巧及建立社區關懷

老師：陳昭穎老師、翟彥君老師、李淑兒老師
年級：中四級

教學目標

1. 通過實地考察，完成寫作練習。

- 寫作時可運用描寫、抒情等寫作手法表達考察心得。
- 指導學生運用細描、感官描寫、間接抒情等手法，提升文章的感染力。

2. 加強學生運用不同的描寫手法行文，進一步掌握試卷二寫作部分要求。

- 指導學生如何根據題目要求選擇合適的寫作體裁和立意。
- 講解如何在有限的篇幅內組織好文章結構、層次分明。

3. 學生完成考察後進行分組匯報，訓練說話技巧。

- 在小組環節，指導學生清晰地表達自己的觀點和見解。
- 培養學生的表達能力，包括清晰的組織、恰當的措辭、生動的語言等。

4. 品德情意：培養同理心。

- 學生提升人文關懷，培養同理心和社區歸屬感。
- 讓學生感受到社區中的人情味，學生在體驗中反思自己的價值觀。

學生已有知識

學生閱讀名家作品如《街道小店的懷念》、《店舖》，掌握不同描寫手法、文章立意方式。

教學計劃

學習階段	教學目標	教學活動	學生活動	時間	教學材料
	1 2	老師講解作文大綱，讓學生明白文學散步的目標。	通過老師講解，連繫已有知識，讓學生明白文學散步的目標。	10分鐘	作文大綱
	1 2	老師着學生分組（3-4人一組，分組方式不限，可視乎情況由學生自行分組，原則是「強中中弱」），議定考察地點，並提醒學生考察後須作口頭匯報，並製作不多於4頁的簡報。每組填一份google form，以及每人一份寫作大綱。	學生聆聽，作出回應，並完成分組及討論。	5分鐘	google form
第一節	3	1. 老師着學生分組，並講解分組任務。老師於學生分組討論時，加以協助。 2. 老師以提問方式與學生重溫篇章內容：《街道小店的懷念》、《店舖》。 3. 派發校外學生的文學散步佳作以作參考。 4.老師可向組別提出觀察方向，並把要點寫在黑板上： a.「街坊的情態」是怎樣的？ b.「街道上的小店」看到甚麼景象？ c.「同行組員、居民、路人與遊客」會有何感受？ d.「香港今昔對比」，所選的地點與過去有何不同。	學生選定散步地點，地點自選，共三個觀察角度、預計可見的景象，定立分工。 然後用2分鐘講述討論結果。 提醒學生預先規劃路綫，留意所選的地點的人、事、物，留待後期成為寫作題材。 給予適當的指導和反饋，幫助學生提高匯報技巧。	20分鐘	校外佳作
	1 2	參考賽馬會「觸境生情」虛擬實境語文教學計劃的中西區閱讀教材，選讀篇章如下：小思《難得如此閒》、黃秀蓮《海味街》（節錄）、胡燕青《高街》、梁秉鈞《樓梯街》。 老師作總結，進一步讓學生明白任務，交代文學散步活動流程，提醒於匯報前須交上4頁簡報。	翻轉教室(Flipped classroom)，讓學生明白任務，回家自習文章，並從實踐中學習，實地考察後的匯報成為寫作單元中的「促進學習的評估」(Assessment for learning)。	5分鐘	簡報

學習階段	教學目標	教學活動	學生活動	時間	教學材料
第二節		老師收到學生簡報後作簡短引入和介紹。	學生聆聽，並作出回應。	5分鐘	
	3 4	老師聆聽匯報後評分並作回饋。 以學生分享的觀察作例，分組共同構思主題立意。	學生分組匯報文學散步內容。 鼓勵學生在匯報時互相提出問題和意見，相互學習，形成教學相長。	30分鐘	評分紙
	1 2 4	老師總結，並着學生完成「我新發現的香港風景」作文。	學生聆聽，並作出作出提問。 引導學生提問，能連結學生本身已有知識，並深化學習動機；把匯報的得著轉移到創作上。		
		提醒學生文學散步中遇到的人、事、物，留待後期成為寫作題材。	學生回家寫作。		原稿紙
結束	1 2 3 4	老師仔細閱讀了學生的作文，並根據內容立意、表達能力、文章結構等方面進行評分。			
		老師完成批作，最後派發表現優秀的佳作進行展示及課堂對讀，供其他學生參考及借鑒	學生聆聽，作出評鑑。		學生佳作

教學反思

在整個教學設計中，學生認為有兩大得著：

第一，學生寫作技巧提升，增加學習自信。通過實地考察和寫作練習，學生掌握了多種描寫手法，如細節描寫、感官描寫、情感描寫等。學生能夠更生動地表達自己的觀察和體驗。學生還了解了試卷二寫作的要求，學會根據題目選擇合適的體裁和立意，組織好文章結構。整個教學過程使學生的寫作能力得到了全面的提高，文章表達更加清晰生動、感染力也更強。

第二，品德情意的培養。實地考察培養了學生的同理心，讓他們感受到社區中人與人之間的情意交流和關愛。學生對所在社區產生了更深厚的歸屬感，體會到社區是不斷變化的。整個教學過程營造了良好的教學氛圍，促進了學生品德情意上的發展。

附件一

題目：試以「我新發現的香港風景」為題，寫作一篇文章。

亮點最多能加3分

中四級文學散步活動流程

1. **文章輸入**

   閱讀作家散文

2. **選定散步地點**

   文學散步 (地點自選，共三個觀察角度)

3. **散步須知**

   每組填一份google form、每人填一張寫作大綱

   小組匯報(照攝組員合照)

4. **閱讀學生作文**

5. **寫作**

附件二

本文亮點

運用著色詞

做法：用顏色原子筆或螢光筆（標示作文中的亮點）

✎ **第一步：審題**

   1. 這次考察計劃到以下地點：＿＿＿＿＿＿＿＿（地區／街道）

   2. 該地點中令我印象最深刻的

   (i)　　建築：＿＿＿＿＿＿＿＿＿

   (ii)　　人物：＿＿＿＿＿＿＿＿＿

   (iii)　　店舖：＿＿＿＿＿＿＿＿＿

✎ **第二步：寫作構思**

3. 總寫：以不同的詞語形容此刻你所看到的建築物。

觀察重點 1	沿途所見的景物
1. 建築物的外觀如何？ （提示：可從不同視角觀察）	
2. 建築物的歷史和用途是？	
*3.你還觀察到甚麼特別之處嗎？	

4. 總寫：以不同的詞語形容此刻你所看到的人。

觀察重點 2	沿途所見的景物
1. 這些人在做甚麼？	
2. 他們的神態是怎樣的？	
*3. 你還觀察到甚麼特別之處嗎？	

5. 總寫：以不同的詞語形容此刻你所看到的店舖。

觀察重點 3	沿途所見的景物
1. 這所店鋪的裝潢如何？	
2. 貨品是如何擺放？ （提示：可從不同視角觀察呢！）	
3. 有甚麼特別的氣味嗎？	
*4. 你還觀察到甚麼特別之處嗎？	

中國語文校本課程
——從經典文學小說中探討社會女性地位

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年級：中五級

簡介

　　本校中文科着重發展學生的讀寫聽說能力，提升學生對文學的興趣，加強文化學習，培養學生對中國文化的認識與認同。此外，老師亦期望藉不同的文學作品培養學生的深層思維能力，以及將價值觀教育滲透於課程中，期望學生可在日常生活中實踐所學。

　　根據教育局《中國語文課程及評估指引（中四至中六）》(2021)指出：「文學是語文學習的重要組成部分。透過文學的學習，可以引導學生感受語言文字和思想內容之美，培養善感的心靈，陶冶性情，發展個性，促進全人發展。」

　　因此，本校中文科設計了「文學與文化」的校本單元，期望學生透過認識「三從四德」、「男主外，女主內」等中國傳統觀念及閱讀魯迅的《祝福》，精讀蘊含豐富文學、文化內涵的經典作品，亦借此了解傳統中國女性地位，明白現在的幸福並非必然，學會珍惜自己所擁有的一切。

學習策略及目的

1. 優化深層思維，活出正向態度

　　根據羅燕琴於《閱讀評估與學習》[1]一文中提出的閱讀評估框架，閱讀教學的設計應包括三個層次。第一層次為理解表層文意的意思，即培養學生提取篇章信息的能力。第二層次為理解篇章深層意義，學生應能引申篇章之含義並拓展內容。第三層次為讀者層，學生應能基於所學篇章，建構新想法、獨有感悟，甚至能在生活中應用文學作品所學的主題，建立個人價值觀。

　　本單元的設計正正參考了以上的閱讀框架，學生先認識中國文化，再閱讀魯迅的《祝福》；然後，老師透過共同協作及小組討論的方式進行文本細讀，明白舊時代女性在該環境、年代所遭受的不公和痛苦；最後，在限時內著學生閱讀沈從文的《蕭蕭》，並就所學續寫《蕭蕭》的結局。學生在評估中，能代入蕭蕭這個角色，反思傳統文化對女性的壓迫和束縛，明白女性的不易，借此培養「同理心」、「感恩珍惜」等正向價值觀，學會體諒他人，並珍惜得來不易的學習自由及婚姻自由等權利。此外，亦可培養深層思維能力，使學生能夠獨立分析問題，並發揮想像和創意，創作屬於自己的作品。

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[1]羅燕琴(2011)。〈閱讀評估與學習〉。見岑紹基、羅燕琴、林偉業、鍾嶺崇　（編輯），《中國語文評估理論與實踐》。香港：香港大學出版社。

2. 培養學生語文學習的興趣，陶冶性情

  語文素養重視積累、感悟和薰陶，學生能透過此校本單元，閱讀魯迅、沈從文等作家的文學作品，含英咀華，涵泳細味，藉以增進語文學習的廣度和深度，提升語文能力。在閱讀的過程中，亦讓學生連繫自己的生活經驗，誘發感悟，讓學生樂於閱讀、勤於閱讀。

學習成果

學生作品1

> 家人想着蕭蕭肚子裏的孩兒，若是女孩，家中的雜事也可以多一人幫忙，若是男孩，那不是家中的後人，也只好把二人打發走，生死聽天由命。到二月，蕭蕭的孩兒出生了，婆婆冷冷的看着眼前的嬰兒，彷彿只是在看着報紙，祖父笑了笑說：「女學生生了個未來的女學生，正好多一人做事。」

學生作品2

> 日出時分，那些女學生走在平常的路上，蕭蕭跟着她們，只覺得格格不入。蕭蕭只有十三歲，和大多女學同歲，卻比她們的手皺上許多，臉上黃黃的。女學生手上

  從以上學生續寫結局看到，學生想像鄉村中的主角蕭蕭對自由的嚮往，也從人物「手皺上許多，臉上黃黃的」的手部及臉部描寫中可見學生了解到勞動及粗活與知識分子人物形象的對比。

  另外，小說「城中的女學生」正是自由、平等的象徵，女學生手中的書，也暗示女性最終也應發掘自己，釋放自己潛能，做一個新時代的智慧型女性。

  學生透過自擬結局，看到中國傳統對女性觀念的改變與看法，而且加入新元素，明白到女性隨著年代，地位也有所改變。

English Language Education

The Promotion of Reading Culture at Hong Kong True Light College

Teachers: Ms Cheung Kit Ling Christine, Ms Kwok Hoi Ying Erica, Mr Siu Wai Fat Ralph
Levels: S.1-S.6

Introduction

Reading is of paramount significance not only in one's language acquisition, but also their personal growth. To help students adapt to the ever-changing world, nurturing in them a lifelong reading habit has been one of the priorities in the English Department. The school-wide reading scheme offers a diversified reading experience to cater for students' different needs.

Reading Programmes within the Curriculum

The elements of intensive reading and extensive reading have been embedded in both junior form and senior form curriculum, with different schoolwork, activities or projects designed as students' learning outcomes. A library of readers at the English corner is an invaluable resource that enables teachers to find those that complement their regular lessons. On the other hand, library visits are scheduled once a week for junior forms so that students can browse through the collection and read more extensively. A book presentation is part of the compulsory assessment for all students each term.

For junior forms, emphasis is placed on engendering and stimulating students' interest in reading. In view of this, a visit to Hong Kong Central Library is arranged for all Secondary One students. They will be introduced to numerous library services and facilities they cannot access in the school library. Students will also be given time to explore every corner in search for the genre and title they enjoy reading in the ocean of books. The eye-opening experience lays a solid foundation to form a reading habit at the beginning of their secondary school life.

The language arts activity in Secondary Two is an inter-class drama competition, in which each class is required to perform a Shakespearean play in front of the whole form and also Form One students at the school's newly renovated theatre. English teachers start analysing the text to students and introducing different elements in a play in lessons. Students should understand not only the events, but also the emotions of different characters. The activity-based exposure allows students of all abilities to enjoy the fun of reading.

The author's talk in Secondary Three serves as a platform for students to reach out to some good authors they are unfamiliar with. The intriguing stories shared connect the writer and the students directly, giving students new insights to what the book is about. The creative writing session helps improve students' literacy, by engaging with the system of how the words are used and sentences constructed. The knowledge in fact opens the door to a whole new world.

The aforementioned pave a way to establish a reading habit for students at younger ages. When students are promoted to senior forms, the reading-related schoolwork does not stop in spite of the urgency to prepare for DSE. A video-making project based on a class reader is arranged in Secondary Four. Students work in groups to create a news report about a crime in the reader. The work involved provides an opportunity for students to think creatively and present the scene to the audience. The inspiring and fun project is well received among students.

Reading Culture on Campus

A wide selection of reading materials ranging from the library books, publications in the Virtual Library, newspapers and magazines are available, coupled with a series of learning activities to make the best use of them.

Book report and bookmark design is one common but indispensable work junior form students engage in. The outstanding works are published in a school publication, Library Flash, which is issued two times a year. The recognition students receive, especially those who do not read regularly, gives them confidence and motivation to do more reading at their leisure time, with the flexibility to exercise their autonomy and immerse themselves in titles they find captivating.

English Activity and Reading Award Scheme is another strategy that rewards active readers. They can collect stamps, which can be used to redeem gifts at the end of the school year. To further increase the competition among students, a leaderboard is set up in each classroom, and the top three in the form will go onto the leaderboard at the English Corner. The scheme targets not only the best readers, but also those who have just started their habit, as their progress on the board is proved to be an effective incentive.

The morning assembly every Wednesday is designated for English reading sharing. Students are invited to share a book they have read through either the school's public announcement system or a video. The former can help enhance student's intonation, while the latter can train their body language and also the use of visual aids. Students are found to pay more attention to the book shared by their classmates compared to the one done by teachers.

The top readers in school are nominated to enter various inter-school competitions, such as Battle of the Books and News Commentary Competition, to challenge themselves further. The opportunity to work against the high-achievers in the territory helps develop crucial skills including high-order thinking and attributes such as calmness and resilience. More importantly, their desire for success cultivated in the process is particularly pivotal in their pursuit of various life goals.

Way Forward

A tentative class library was set up in a Secondary Six class to assess its possibility. A wide range of books, including English novels, comics, tool books and study guide, had been selected to suit different students' needs. It was found students would take initiative and flip through the books they were interested in as they were more accessible. However, it was impossible to replace the books with new ones and the students' passion cooled off as the exam days edged closer. It was believed a pilot scheme should be considered for a few more classes, or in a form, and various subsequent measures in place to sustain students' interest. Books placed at where students can see are strongly advised to increase the success rate.

Junior form students writing book reports in class
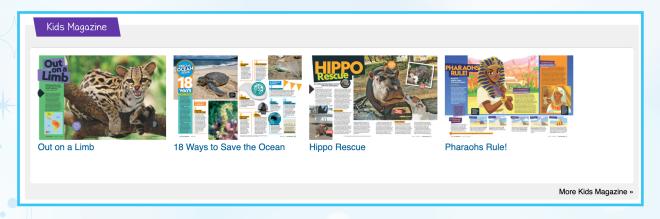
Using Virtual Library to Support E-Learning

Teachers: Ms Lam Wai Man and Ms Lam Ying Tung
Levels: S.1-S.3

Introduction

In online learning, encouraging students to read and get involved in their education can be difficult. Many students are not motivated to read, which is a problem for schools in Hong Kong. To solve this issue and make the most of online learning, our school has started using "Gale," an online library platform. With "Gale," students can explore a wide range of National Geographic magazines and books. This interactive platform aims to make reading interesting for students and help them learn more about different subjects.

Kids Magazine

Out on a Limb

18 Ways to Save the Ocean

Hippo Rescue

Pharaohs Rule!

More Kids Magazine »

Books

Beginner's World Atlas

Weird but True! Sports: 300 Wacky Facts about Awesom…

Encyclopedia of American Indian…

Luna: The Science and Stories of Our Moon

Dog Breed Guide: The Complete Reference …

More Books »

National Geographic Magazine available on "Gale"

Description of the Design
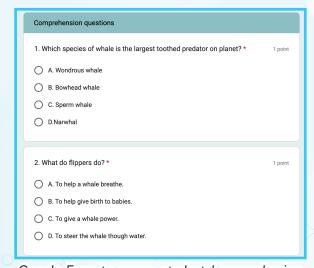
A Virtual Library has been specifically created for students in S1-3 with the purpose of encouraging them to read magazines and books related to subjects like Science and Geography. The Virtual Library is accessible through a Google Site that has been conveniently designed for teachers and students to access.

https://sites.google.com/app.hktlc.edu.hk/hktlc-eng-vl/home

During the launch of the Virtual Library in the academic year 2021-2022, teachers carefully selected magazines that were appropriate for each grade level and aligned with the corresponding learning content. To assess students' comprehension of the materials, Google Forms were created for each selected magazine, allowing teachers to evaluate their understanding.

Content related to the questions on the Google Form

Google Form to assess students' comprehesion

Following the completion of reading the magazines and the assigned Google Forms, students were given the opportunity to create a Google Quiz based on a magazine of their choice. This practice aimed to stimulate their interest in reading while also helping them develop the skill of formulating questions. As a result, a database of Google Quizzes was established.

The implementation of the English Activity and Reading Award Scheme further enhances the benefits of the Virtual Library. Students can redeem stamps by completing a Virtual Library quiz available on the site. Additionally, they have the option to complete a book review or create a book presentation video if they wish, adding variety to their learning experiences.

One significant advantage of the Virtual Library is its accessibility. Students can access the library's resources anytime and anywhere as long as they have an internet connection. This eliminates the limitations imposed by physical libraries, such as restricted operating hours. With the Virtual Library, students have the freedom to learn independently, take control of their education, and explore topics of interest at their own pace.

Moreover, the Virtual Library provides a wide range of resources that cater for different learning needs. It offers a variety of books, magazines, and other educational materials in a digital format. Students can choose from a diverse collection, finding materials that align with their interests and learning preferences.

Homepage of the Virtual Library

The Virtual Library's selection of books also allows subject teachers to encourage students to read books related to the specific subject matter. This promotes language acquisition across the curriculum, enabling students to enhance their language skills while exploring topics in various disciplines.

Reflection

During the implementation of the Virtual Library, students and teachers initially encountered technical difficulties as Google Site might have been a new platform for them. Additionally, students faced challenges in using Google Forms to create their own quizzes. However, with the assistance of the IT department, the link to access the site was added to the intranet, making it more accessible for students.

Moreover, motivating students to read books proved to be a challenge, despite the easy accessibility of the Virtual Library. To address this, students were encouraged to read a minimum of six magazines per term to develop a reading habit and explore the world around them. Presentations and sharing of books during morning broadcasts were also used to promote the use of the Virtual Library. In the academic year 2023-2024, library lessons were introduced, providing dedicated time for students to read and write, further cultivating their reading habits and allowing them to explore content that they were interested in.

Nevertheless, promoting a reading habit is a long and challenging journey, requiring time for students to develop their own reading routines. However, with continuous encouragement and guidance, students will be able to effectively utilize the platform for reading and expand their learning horizons, not only in language learning but also in other subject areas.

Conclusion

In conclusion, the integration of Virtual Libraries, such as "Gale," offers an innovative and effective approach to promote e-learning and inspire students to engage with reading materials. Through the utilization of technology, Virtual Libraries provide accessibility, interactivity, and personalization, revolutionizing the way students explore knowledge and fostering a culture of continuous learning at school.

Fostering an English Campus to Promote Language Learning

Teachers: Ms Li Hoo Ting Miranda and Mr Hedley Robin H
Levels: S.1-S.6

Introduction

Fostering an English campus has been at the forefront of the school's mission to encourage language acquisition. In Hong Kong, students need opportunities to communicate in English in an authentic manner, but more importantly, they need to be enthusiastically engaged in order to effectively learn the language. An English-rich environment on campus, especially in a predominantly Chinese-medium school, can maximise students' exposure to English to develop their proficiency and ultimately set them up for academic success. At Hong Kong True Light College, English is cultivated on campus, in the classroom and outside the classroom through extra-curricular activities.

On Campus

The school campus and its surroundings represent a place to impart knowledge. To promote an English-rich environment, display boards, notices, and posters often feature English text to activate student learning. They are simple reminders of how English is used while promoting useful information relevant to students' school life. Aside from physical reminders, announcements are made in English once a week to stimulate students' listening skills. They are compelled to listen attentively because announcements serve to inform students in various school-related matters. As well, prayers are made bilingually for the same purpose. Bilingualism is also featured in assemblies and major school events such as Sports Day and the Swimming Gala. The use of both Chinese and English improves linguistic proficiency. It allows students of varying abilities to listen attentively to the information presented in their native and second language to deepen comprehension. As a whole, the school embraces the use of languages to further benefit students.

1. Promoting Speaking through English Assemblies by Subject Teachers

Inviting subject teachers to hold assemblies on various topics in English is particularly effective at encouraging engagement and effort from students. On a weekly basis, teachers of subjects other than English language give assemblies to all students. Topics range from Friction and the Beauty of Diamonds to Climate Change and Money. By seeing subject teachers speaking in English, students are shown the breadth of the language and that all of their teachers are able to communicate effectively using it. Furthermore, hearing the occasional grammatical or pronunciation mistake enables students to fear their own mistakes less and gives them confidence to try. Although this scheme is simple, it is effective at breaking down students' misconceptions that English is only used in English lessons. As a result, students are more willing to speak in English and more confident to do so.

In the Classroom

The classroom is often associated with academic learning, but it is another setting to enrich the English learning experience. Verbally, the teacher expounds explicit expectations to engage students in learning. With clear objectives, students can achieve goals when it comes to acquiring knowledge inside the comforts of a classroom. It is important to set clear and realistic expectations to assist students' understanding of the material. At the same time, the classroom should be a safe space for students to share their thoughts without judgement. Through presentations, speeches and even allowing a longer wait time for students to respond can generate an inclusive atmosphere where ideas are respected. Feeling physically and emotionally comfortable in the classroom can foster an environment where students are unafraid to express their ideas in a second language. Therefore, the classroom is beyond just a venue to focus on academics, but also serves as a safe learning environment to encourage English usage.

As a subject focused on learning a skill, as opposed to content matter, English language can be taught through a variety of interesting topics. Acquisition of the English language naturally requires an understanding of grammatical structures and vocabulary. However, effective acquisition demands the student to internalise these devices and attempt to implement them in their own communication. Therefore, English teachers must focus on how to engage and motivate students so that they choose this effective learning path. Any content may be used to teach English, so selecting content that is exciting to students should not be a luxury, but a necessity for an English teacher who genuinely wishes to see improvement. A sole focus on grammar, or a lack of effort to find engaging content results in disengaged students and poor language uptake. Interesting approaches include using recent movies or music trends, and projects that allow students to research a topic they choose themselves. By shifting a curricular focus towards this style of learning, students cover the foundations of the language while enjoying it and trying harder in the meantime.

Outside the Classroom

One of the main goals of cultivating a healthy learning environment in English is to advocate exciting and exploratory activities throughout the year, especially in reading and drama.

1. Promoting Reading through Battle of the Books

One activity that fosters an English campus and promotes healthy reading habits is the Battle of the Books competition that the school has participated in for the past two years. It is an inter-school reading program where students read novels, work together and test their knowledge in what they have read. Students are able to gain knowledge and enjoyment from reading age-appropriate books from the organiser. In addition, they work collaboratively to compete when answering questions in a trivia-format.

Battle of the Books nourishes an English learning environment because students are exposed to a variety of books, and it promotes teamwork where students have to communicate in English. First, students are required to read selected titles for the competition. On the book list are novels that students may not have discovered yet, and the list guides them to read purposefully in order to succeed in the competition. Instead of aimlessly roaming the library to choose an interesting book

to read based on a cover, students are directed to focus on 12 titles. From the list, they are exposed to diverse genres and stories from different perspectives that may develop their empathy for others. The books also feature a range of settings and cultural backgrounds to showcase multiculturalism. This teaches students the value of diversity and respect for others. Therefore, this particular activity develops English learning by introducing students to read a host of suitable books.

Besides the exposure to numerous text types, students also strengthen their teamwork skills. During the competition, a group of six students representing our school are on stage taking turns answering questions. Each participant is given the opportunity to respond, and if the speaker has not read a particular book, teammates can pitch in to provide the correct answer during a brief period of discussion among themselves. This year, each student was tasked to read at least two books, but in the end, they exceeded expectations and read more in order to better prepare for the competition. They were aware that their teammates relied on them to remember details of their assigned texts to collectively answer questions from the emcee. Students realised the value in each team member contributing by reading more books to be successful, and their hard work and trust in one another paid off as they were crowned the champions. While the overall competition fosters a strong reading culture (in English), it also highlights the importance of teamwork.

2. Implementing Drama-related Activities

Aside from reading, performing and integrating more drama activities boost the level of English proficiency among the student body. The first activity that brought success to the school was an inter-school radio drama competition. The first year we participated, students were awarded with the Bronze Award, and the following year, students won Gold. The competition itself enriches an English learning environment because it promotes creativity, collaboration and ownership. Students were responsible for penning an original script accompanied with audio clips to create a five-minute radio drama. As students advanced to the next round, they were invited to perform their radio drama live. Overall, students were able to take pride in their work and their achievements.

Internally, the Secondary Two English curriculum also promotes English learning through reading Shakespeare and performing their own versions of a Shakespearean play. It is another collaborative effort where Secondary Two English classes learn more in-depth about their assigned play, rewrite a version, and then share their creativity on stage at the school's theatre. It is an admirable achievement for students from varying abilities to work together and learn English through drama. Similar to the radio drama, students have accountability for the work they share with their peers. As a result, activities revolving around drama have a positive impact on students learning English.

Conclusion

Establishing an English environment in school elevates students' language capabilities. The consistent use of the language around campus will create opportunities for students to read, write, listen and speak in English. Learning in the classroom has its merits and can be made highly engaging, but it should also extend to outside the classroom where students can utilise the language in often more engaging manners that allow them to explore and discover different interests.

Life-wide Learning Activities at HKTLC - To extend and enrich the English Learning Experience

Teachers: Mr Hedley Robin H and Ms Yeung Ka Wai
Levels : S.1-S.6

Introduction: Life-wide Learning and our curriculum

Life-wide Learning (LWL) has been a well-known concept to local schools since the EDB's introduction of the "Learning to Learn" concept in 2001 (CDC, 2001). According to Yip (2002), since the concept was introduced, together with the generous support of Life-wide Learning Grant (LWLG), local primary and secondary schools have started to design various modes of life-wide learning activities tailored for their own needs. While LWLG is commonly known as "a recurrent grant provided to public sector schools since the 2019/20 to support schools in taking forward… life-wide learning with enhanced efforts and foster students' whole-person development (EDB, 2022)", the LWL concept should not be reduced to a policy priority to only utilise the resources. Rather, how exactly the school-based initiatives can achieve its set purposes of "infusing life-wide learning into different KLAs" and "enhancing learning motivation and interest" should drive and steer the curriculum design. This paper aims to share our experience of the English Department when incorporating LWL into English learning, in particular through the organisation of "out-of-classroom experiential learning activities" as outlined by the EDB guidelines, based on Yip's (2002) framework on extending and enriching learning experiences by the "learning-focused strategy". It will also utilise the Gold Standard for project-based learning as posed by the Buck Institute of Education (2019) to explain the activity design. This paper should shed light on the effective use of the LWLG to promote English learning and whole-person development.

The English Department has been actively incorporating LWL in our curriculum since 2018. A range of form-based activities has been conducted over the years (Table 1). From our rich experience in incorporating LWL in the English curriculum, the varied value in teaching and learning of different activities has been drawn to our concern. It is of vital significance to make LWL an effective education pedagogy, as one of the early difficulties we had faced would be that the proposal of LWL activities could be easily dismissed. Traditionally, activities have been marginalised and trivialised in China

by pragmatic educators who consider them as "dispensable" and "outside examination syllabuses", especially when activities get too "activity-focused". So caution should be taken to ensure a "learning-focused strategy" when designing the LWL activities (Yip, 2002). In fact, especially in experiential learning activities, the contextualised, first-hand experiences can offer excellent complementary learning to formal, in-class learning. In this article, two examples will be given, one from junior and the other from senior form, to illustrate how the "learning-focused" strategy can appeal to both students and teachers through effective learning means.

S1	Drama appreciation and post-show poetry workshop
S1	Hong Kong Public Library guided tour and visit
S1	Jurassic Garage event with animal encounter
S1	HKSMSA Speech Festival Choral Speaking
S2	Movie appreciation and following project
S2	Drama appreciation and post-show workshop
S3	Beach clean-up voluntary work experience and article writing
S3	Hong Kong Wetland Park visit and project on land use for public housing
S4	Learning English through drama training workshops
S4	AFTEC theatrical experience and drama review
S4	Movie appreciation and following project
S4	Feeding HK visit and food bank voluntary work
S5	Refugee Union visit and interviews with refugees
S5	AFTEC theatrical experience and drama review
S6	Inter-school oral practice

Table 1: List of form-wide English activities supported by the Life-wide Learning Grant (2018-24)

S4 Food bank visits

Yip (2002) proposes that one important feature of LWL should be its close link to the curriculum, namely (1) to extend, (2) to enrich, and (3) to enable. The following illustrates how our LWL experiential activities extend and enrich the learning.

In 2023-24 Term 1, all S4 students were arranged to visit a local food bank, Feeding HK, in Yau Tong after school as volunteers and to learn about food waste problems. The visits were fully funded by the LWLG, and the experiential learning experience received positive feedback from students, who found the trip enjoyable and successful in consolidating their understanding on the food waste problem. In the evaluation survey, all students (100%) agreed that the activity helped to broaden their horizons and nearly 90% of respondents would recommend the same activity for the other students. There was obvious evidence that the activity "enhanced learning motivation and interest".

S4 Mooncake Drive being the example of adopting a learning-focused strategy behind LWL.

On top of boosting interest, it is important to evaluate the pedagogical value in learning. The activity itself was designed based on the framework proposed by Yip (2002). First, it extended the curriculum because it bore a close link with the individual KLA, which is a curriculum extension. It further extended the understanding of the reading and writing skills of infographics in the English curriculum to the authentic context of the food waste problem faced in Hong Kong experienced by a local food bank. This was not done only by assigning reading texts. Rather, students were engaged in a mooncake drive project in which they were asked to research the food waste problem, present their findings through infographics and presentations in classes of other year levels, and collect surplus mooncakes from the whole school that were then donated to the food bank. The visit presented itself not only as a one-off, activity-focused learning experience, but the entire project was "learning focused", incorporating elements of independent research, reading, self-motivated design, and writing and speaking for communicative purposes. The effectiveness in the curriculum extension by the activity has been echoed by the positive teachers' observation and the students' responses showing nearly 95% of them expressed that the LWL activity had helped to improve their English.

Experiential learning through volunteering

Curriculum extension of creating infographics for communicative purposes by S4 students

Besides curriculum extension, the activity linked with other knowledge and domains beyond the English KLA, i.e. "enriching" by nature (Yip, 2002). The first-hand experience in volunteering at the food bank was a curriculum enrichment as the experiential learning instilled positive values through community service. Other knowledge, including the science and technology KLAs in waste management and environmental impacts, and value education, like eco-consciousness and waste reduction, were reinforced by the activity. In the evaluation survey, students reflected that the experiential learning activity had successfully helped them to learn about positive values including commitment, responsibility and respect and care for others.

S3 HK Wetland Park Project

The Buck Institute of Education posits seven essential design elements to project-based learning (2019). This section will focus on the project design when extending and enriching the curriculum through attempting project-based learning (PBL).

Task of the S3 Project

Gold Standard PBL

Seven Essential Project Design Elements

Seven Design Elements from Buck Institute of Education (2019)
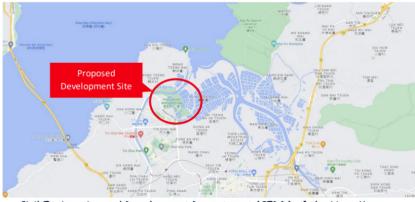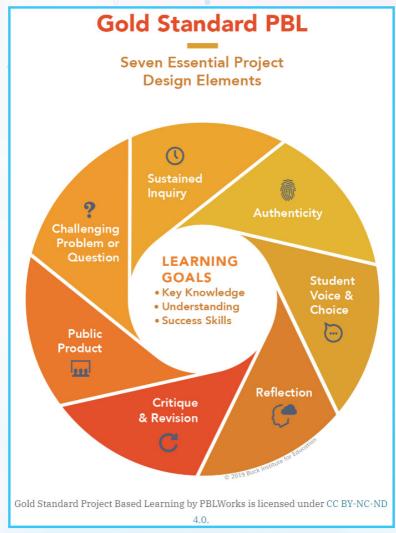
The design of the S3 project on land use for public housing engaged all aspects of the above standards. To begin with, students were provided with a project book that included an extended problem. A fictitious scenario was created in which the Hong Kong government was considering building public housing on the Hong Kong Wetland Park. Students were asked to create a video to persuade the government not to build there and to offer an alternative location for the housing instead. The first element of a challenging problem was thus achieved. To create authenticity, all S3 students were taken to the Hong Kong Wetland Park on a trip funded by the LWLG. By gaining first-hand experience of the Wetland Park, students were more engaged in the project and could give their opinions more naturally and genuinely. Students had to reflect on their experience and research the public housing issue and potential geographic options in Hong Kong. Thus, students' choice and reflection were integrated into the project. Sustained inquiry, critique and revision were accomplished by providing students with extended, in-class lesson time to research and create their work. The teachers could guide students and support their ideas, enabling them to refine their videos. In the end, the persuasive videos were showcased and students were able to witness their own work being shown and that of others.

Screenshot of a video outcome from one group of students

Utilising the Gold Standard for project-based learning ensured an effective learning situation for the English language. Although land use, wildlife and public housing are not content areas required for the English language curriculum, they extend the curriculum and enrich that of other subjects, particularly Geography. Alongside having a diversity of topics, the project required students to research several areas and read articles or watch videos to inform themselves en route to creating their project output, a persuasive video. Thus, without realising it, students were exposing themselves to great quantities of written and spoken English, surreptitiously teaching them the language. When applying project-based learning to English language learning, it should be remembered that projects are an engaging way to encourage students to increase their volume of consumed language. Thus, additional goals, such as fostering a reading habit or encouraging an English campus can be achieved.

Conclusion

To sum up, LWLG has provided great opportunities to extend and to enrich our curriculum, and our experiences with various activities over the past six years in the English Department have been evident to us that the objective of infusing LWL into English learning can be better achieved by arranging out-of-classroom experiential learning with a "learning-focused strategy". It is hoped that through the demonstration of the above successful exemplars, the pedagogical value of LWL can be made transparent and recognized by all stakeholders, so that the implementation of the LWL curriculum does not rely heavily on the enthusiasm and efforts of individual teachers or departments, but can be continued and upheld by the strengthened cohesive forces from all stakeholders and the entire school community with better resources and knowledge garnered (Yip, 2002).

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How to set a reliable reading test?

Teachers: Ms Yip Cheuk Wai Theodora, Ms Li Ka Yin Maggie, and Mr Au Chi Kei Jackie
Levels: S.1-S.6

Introduction

Assessing students' reading abilities is a crucial aspect of education, allowing teachers to gauge their comprehension, vocabulary skills, critical thinking, and overall reading proficiency. To ensure accurate and reliable assessment, it is essential for teachers to create well-designed reading tests. These tests serve as valuable tools for evaluating students' progress and identifying areas where additional support may be needed. After studying the assessment course organized by HKEAA, we would like to share a few strategies for setting a reliable reading test.

Choice of the reading text

According to Louise Rosenblatt (1978), the suitability of a text for comprehension depends on the reader's background knowledge, interests, and experiences. The reader-text relationship, a key component of his transactional theory of literary work, shapes the meaning of a text by interacting with the reader's prior experiences, emotions, and beliefs, as well as the words and symbols presented in the text. Therefore, when we are trying to choose suitable comprehension materials for our students, we always choose texts that are more related to them. Take one of our reading tests as an example. We chose a travel article on the National Geographic website that discussed the journey to discover the origins of sushi, as people in Hong Kong, an international city known as 'food paradise', can easily sample various cuisines from around the world. Japanese cuisine is particularly popular among Hongkongers, so most students have prior experience eating sushi. Therefore, the article we chose can provide a meaningful context for assessment.

Context Validity

To set a reliable test, it is important to consider the context validity which involves the linguistic and content demands. Shaw and Weir (2006) define context validity as the relationship between the linguistic and content requirements necessary for successful task completion, as well as the features of the task setting that describe the expected performance. The task setting encompasses various criterial parameters, including the task purpose, rubric, response method, weighting, order of items, text length, and time constraints. On the other hand, linguistic demands involve elements such as the text purpose, grammatical and lexical resources, nature of information, and content knowledge.

When considering the task setting, it is crucial to clarify the purpose of the reading test, whether it requires global or local understanding. The rubric should provide students with clear and precise instructions regarding the purpose of the assessment. The response method should be chosen carefully, whether it involves forced-choice question types (such as multiple-choice, true/false, or matching) or constructed response question types (such as one-word answers, cloze exercises, or sentence completion). The weighting of each item should be transparent and consistent, ensuring equal or graduated weighting per item. The order of items should reflect the chronological order of the reading input. Additionally, the text length should be appropriate in terms of the number of words, and time constraints should allow sufficient time for students to read the rubrics, comprehend the tasks, check their responses, and write their answers.

Regarding linguistic demands, the text purpose should be considered, whether it is referential, conative, emotive, poetic, or phatic. The grammatical resources within the text should be representative of the genre, while the lexical resources should align with the specific genre as well. Content knowledge requirements should be assessed, including whether students need to rely on background knowledge or possess subject-specific knowledge, while also avoiding cultural bias. The nature of information within the text should be taken into account, whether it is abstract or concrete, and whether the subject matter is technical or non-technical.

By carefully considering the context validity, a test can be designed to be reliable, providing meaningful and accurate assessments of the students' reading abilities.

Construct Validity

Besides context validity, it is also important to consider construct validity, which refers to how closely the test aligns with the underlying model of reading (Moore, Morton & Price, 2012). In the context of reading tests, construct validity can be illustrated through the cognitive processing approach to reading (Khalifa & Weir, 2009). This approach encompasses the metacognitive activity of a goal setter and various elements of the level of processing.

To ensure construct validity, the test should reflect the different types of reading that readers are expected to possess. This includes careful reading and expeditious reading. Careful reading involves comprehensive processing of a text with the intention of extracting complete meanings from the material, while expeditious reading focuses on quick, selective, and efficient reading to access specific information, using techniques like scanning, skimming, and searching.

Both types of reading require a balance of local and global comprehension. Local comprehension involves understanding individual phrases, clauses, and sentences within the text, while global comprehension entails grasping main ideas, making connections between ideas, and understanding how these ideas are developed and elaborated.

To accurately assess the different levels of processing, the test should include tasks that cover various elements, such as bottom-up processing of linguistic knowledge, including word recognition, lexical access, and syntactic parsing. It should also assess higher-level processes, such as establishing propositional meaning, making inferences, and constructing a mental model of the text. Furthermore, the test should evaluate the ability to create a coherent text-level structure.

By incorporating these considerations into the design of the test, emphasizing different types of reading and assessing the various elements of the level of processing, one can enhance the construct validity and reliability of the reading assessment. (Weir et al., 2006).

Task Setting

Setting a reliable test is crucial to ensure accurate and consistent measurement of the skills or abilities being assessed. To achieve this, several key factors need to be considered.

First and foremost, setters have to clearly define the test objective and determine the specific skills or abilities that the test aims to measure. This will provide a clear direction for task development and ensure alignment with the intended learning outcomes. With a range of questions and assessment tasks, such as multiple-choice, short-answer, and open-ended questions, different aspects of the target skills can be assessed. This helps capture a comprehensive understanding of the test-takers abilities and reduces the impact of task-specific factors on the overall test performance.

To balance the difficulty of the reading test and to cater to learner diversity, it is pivotal to conduct an 'Item analysis' and 'Reliability check' to ensure the test's reliability. Based on the test result, setters and markers will gain a thorough understanding of items' difficulty and the discrimination on students' performance, and ultimately the test's reliability. This analysis helps identify items that may need revision or removal and ensures the overall reliability of the test. Lastly, pilot testing the test items with a representative sample of the target population is crucial. This helps identify and address any issues related to task difficulty, clarity, or ambiguity. Pilot testing also allows for the refinement of the test items and ensures their appropriateness and effectiveness.

Conclusion

In conclusion, creating a reliable reading test requires careful consideration and thoughtful design. By selecting appropriate reading texts, ensuring context validity, focusing on construct validity, and conducting pilot testing, teachers can develop assessments that not only support students' learning and growth but also enable teachers to tailor their instruction to meet individual needs. By implementing these strategies, teachers can foster a comprehensive and accurate assessment of students' reading skills, ultimately enhancing their overall educational experience.

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Enhancing HKTLC Students' Feedback Literacy

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Levels: S.1-S.6

Abstract: This essay explores the feedback literacy of our students. From a research study conducted by our English department and the Education University of Hong Kong, it has been found that our students have a moderate level of feedback literacy, with weaknesses lying in not being well-prepared to make judgments about their own work and that of others and being particularly weak in translating the feedback into appropriate and concrete actions. In view of this, a number of ways are suggested to enhance students' feedback literacy.

Introduction

Feedback is an indispensable part of our teaching process and it also plays a vital role in enhancing students' learning effectiveness. Every day, teachers spend a lot of time marking students' assignments and giving them valuable feedback, either verbal or written. If students do not possess the abilities of making sense of the feedback given by the teachers or simply disregard it, it is not only a complete waste of teachers' precious time and effort, but it also means that students lose a crucial learning opportunity. In this regard, feedback literacy, which is defined as one's capability to make productive use of feedback to maximize his/ her learning, is therefore considered an essential ability that students nowadays need to possess.

Major findings from feedback literacy research

To better understand our students' feedback literacy, the English Department of our school worked in collaboration with the Education University of Hong Kong (EdUHK) in conducting a relevant research study among our students. The research study was carried out in the format of a survey at the end of the 2022-2023 school term. Questionnaires were distributed to all our S.1-S.5 students, and they had to indicate the extent with which they agree with the statements related to their feedback literacy on a 6-point scale. The questions set in the survey are based on the quadripartite model of students' feedback literacy proposed by Carless and Boud (2018). In their model, feedback literacy is comprised of four important areas:

Areas	Details
Appreciating feedback process	It is about students' attitude and orientation towards feedback and whether they value the role feedback plays in improving their learning.
Making judgements	It is about students' abilities to differentiate their work from the others'.
Managing effect	It is about students' abilities to manage their emotions when they receive critical feedback.
Taking actions	It is about students' abilities to act on feedback by developing a repertoire of strategies to keep improving.

It has been found from the survey that our students demonstrate a moderate level of feedback literacy. They appreciate the feedback administered by both the teachers and other sources and are able to regulate and control their emotions when they face criticism. However, it is found that our students are not that ready to make judgments about their own work and that of others and they are also particularly weak in translating the feedback into appropriate actions.

The survey findings have provided us with a more comprehensive understanding of our students' overall feedback literacy so that appropriate actions can be meted out to help our students capitalize on the feedback. Given the fact that our students only show a moderate level of feedback literacy, the following strategies can be used to better equip students with this important skill.

Ways to enhance students' feedback literacy

As feedback is extremely helpful in guiding students to stay on the right path while writing, the process of providing feedback should not start after a work is produced. Instead, it must start before a work is even drafted. Teachers are advised to give feedback in three steps: pre-writing feedback, during-writing feedback and post-writing feedback with each stage adopting different methods to enhance students' feedback literacy.

1. Pre-writing feedback

One of the effective feedback-giving approaches that is derived from the research is that teachers can consider at the early stage of writing providing multiple writing samples of a particular genre that students will work on. Whatever genre of text students are studying, it is essential that they are exposed to multiple examples. For second language learners in particular, students need to be able to immerse themselves in the sampled pieces of writing to grasp the language usage. They also need to visualize what to include when putting together their own writing pieces.

To make this process more interactive and promote peer-to-peer learning, students can be engaged in this process in groups. Students in groups can be assigned to read different samples of writing in the targeted genres. They can come up with a checklist for both language and content requirements for students to refer to later when they start working on their own work.

After creating their own checklist, students take turns to present their list as a group. Teachers can give feedback and compile a final checklist using ideas from various student groups and give verbal feedback based on students' understanding of that particular text genre. In terms of language, teachers at this stage can highlight the key language features of a certain text type by introducing related and commonly used sentence stems and vocabulary.

Later, the checklist is also useful for students to refer to while drafting and actually writing their pieces. The list-creating activity not only allows students to learn the linguistic characteristics of a certain text type, but also facilitates students' self-learning and assessment in the latter part of their writing process.

Alternatively, teachers can skip the checklist-making activity at the pre-writing stage and simply ask students to identify and present the language and content characteristics of a specific text type. Following student presentations, teachers can pull out the marking rubrics and teach students how to use them to evaluate their peers or themselves upon finishing their writing.

2. During-writing feedback

While pre-writing feedback kickstarts students' learning, students receiving feedback during writing is equally significant. As students are still working on their essays, they may have more motivation to take teachers' and peers' feedback and apply it immediately than to use the feedback the next time they write. Below are two writing feedback approaches that teachers can incorporate when teaching students to write.

Giving teacher-led feedback on students' drafts based on their content is one of the ways teachers can adopt in the during-writing stage. As students often submit drafts to teachers, it is suggested that they can do so by writing in short phrases and even point form to facilitate the process. Teachers can then choose one to two body paragraphs to give written feedback on based on their ideas and logical flow of thoughts. This intervention can ensure students are on the right track and are able to continue moving forward. When students receive written feedback from teachers, they should adjust their content and ideas accordingly. At this point, the draft should be heavily based on ideas. Students should make modifications in short phrases and resubmit them to teachers. That way, students are encouraged to use and apply teachers' feedback promptly and teachers can identify students who struggle with their content or applying feedback at this phase and give extra help such as face-to-face mini meetings.

Self-evaluation or peer evaluation using checklists/ marking rubrics is another effective way. Before submitting their work to teachers, students should use the previous checklist compiled by the class or the marking rubric taught by the teacher. They should also do self-evaluation or peer evaluation. Students should then be given some time to work on their final draft before submission.

3. Post-writing feedback

As shown in the results of student questionnaires, students' understanding of the feedback given on their writing is an area that requires improvement, especially among younger students in junior form classes. Younger students may not yet be fully aware of their teachers' expectations and the established marking criteria. While providing post-writing feedback is the norm for all language teachers, what is most crucial is ensuring that students genuinely understand and can apply the feedback to improve their strengths and address their weaknesses.

In order to help students enhance their writing skills, teachers will need to break down and simplify the feedback for them. The most straightforward approach is to clearly classify the feedback into two key domains: strengths and weaknesses.

(i) Celebrating and Reinforcing Strengths

When providing written feedback, teachers should begin by highlighting and affirming students' strengths. It is paramount for teachers to recognize the effort and progress their students have demonstrated in their writing, as this positive reinforcement can provide valuable encouragement and motivation for continued improvement. This can be done both individually, with personalized comments, as well as collectively, by pointing out effective techniques or impressive ideas shared by multiple students.

(ii) Simplifying and Addressing Weaknesses

While students' weaknesses often lie in areas such as grammar usage and sentence structure, teachers can take proactive steps to support skill development. One strategy is to provide students with an advanced vocabulary and phrases list after their works have been completed. This list can incorporate both the vocabulary and phrases taught in pre-writing, as well as those that students used spontaneously in their compositions. This approach not only caters to students' learning needs but also demonstrates that their peers are capable of achieving a higher level of literacy, which can inspire them to emulate such skills.

By striking a balance between celebrating strengths and simplifying the path to address weaknesses, teachers can empower students to comprehend the feedback more effectively and take ownership of their writing improvement. This holistic approach, grounded in clear communication and targeted skill-building, can help students develop into more confident and capable writers.

Conclusion

The role feedback plays in enhancing students' learning cannot be overstated. From the research study conducted by our school and EduHK, we have identified students' major weaknesses in their feedback literacy. It is hoped that through the aforementioned suggestions, students will have more confidence in making the best use of the feedback given by the teachers to formulate appropriate and effective actions to improve their learning.

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Teaching Students with Dyslexia: A Case Study and a Plan of Interventions

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Levels: S.1-S.6

Chris with dyslexia: A case study

Chris is a Form 1 student in our school. Before the commencement of school, our SEN team reminded us of her challenges in writing and spelling due to her dyslexia. After teaching her for several months, we have noticed that she faced severe difficulties in writing and spelling, particularly when it came to similar-looking letters (e.g., b/p/d/q) and words (e.g., blue/bule). She would miss out one of the letters when spelling a word (e.g., "thermomter" instead of thermometer). She would also request for additional time for writing tasks during class as she struggled to complete them within the given time limit. Despite these difficulties, she illustrated commendable comprehension skills and confidence in speaking, even if she occasionally mispronounced certain words.

Features of dyslexia
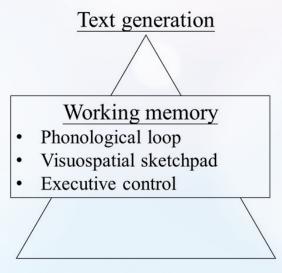
Since the identification of dyslexia two centuries ago, there has been a long-lasting debate on the nature and definition of dyslexia (Kirby & Snowling, 2022). This paper defines dyslexia as a "learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling" (Rose, 2009). Characteristic features of dyslexia include difficulties in phonological awareness, verbal memory and verbal process speed (Rose, 2009). In addition, dyslexic students struggle with decoding information (Lyon et al., 2003). Students may also face secondary consequences such as poor reading comprehension and reduced reading experiences, impeding their growth of vocabulary and background knowledge (Lyon et al., 2003). Nevertheless, dyslexia and writing difficulties often co-occur (Hebert et al., 2018) because both reading and writing require skills in decoding and encoding phonological information (Graham & Hebert, 2010, 2011), while reading is a necessary subskill throughout the writing process (Hayes, 1996). These characteristics have contributed to her difficulty in learning English, particularly writing and spelling.

Teaching and learning strategies to support learning of Chris

In this section, the writing and spelling difficulties of Chris will be preliminarily analysed using a simplistic view of writing (Berninger & Amtmann, 2003; Hebert et al., 2018), followed by a systematic discussion of strategies to address her specific difficulties in spelling and writing.

1. Analysing learning difficulties of Chris: A comprehensive framework

Berninger and Amtmann (2003) proposed a model for understanding the essential skills involved in writing, while Hebert and colleagues (2018) utilized the model for reviewing writing difficulties of students. In this model (see Figure 1), transcription skills and executive function skills have been placed at the base of the triangle, and each of the skills supports text generation by the student. As suggested by the information processing model (Simon, 1979), working memory constrains the use of all skills and is placed at the centre of the triangle.

Text generation

Working memory
- Phonological loop
- Visuospatial sketchpad
- Executive control

Transcription skills
- Handwriting
- Spelling

Executive function
- Organization
- Planning
- Self-regulation

Figure 1: The simple view of writing - a theoretical model (adapted from Hebert et al., 2018)

Chris encountered difficulty with transcription skills. Her handwriting is difficult for readers to comprehend due to her unconventional ways of letter formation. For example, her letter 'n' is similar to 'r' and 'h'. She also misspelt some words by dropping a letter, such as 'thermometer' and 'condenser', suggesting incomplete understanding of the connections between letters and sounds. Furthermore, Chris spells temperature in two different ways in the same sentence, one of which is correct. This could be due to the fact that she struggled to retain information in the phonological loop or her visual representations of the letters. Nevertheless, her written content seems to be incomprehensible (e.g., make high temperature bigger than lower temperature), suggesting that she probably wrote her ideas without organising it (i.e., difficulty in executive function). To address her difficulties in transcription and executive function, three strategies are suggested in the following paragraphs.

Skill area		
Transcription		Executive function
Spelling	Handwriting	Organising ideas
Learning difficulty • Missing out a letter in a single word	• Illegible handwriting for similar-looking letters • Slow handwriting	• Unorganised ideas with illogical flow
Suggested strategy Raising phonological awareness, such as • learning letter-sound relationships and rules • learning about phonics	• Scaffolding the formation of letters and words	• Structuring writing to improve organisation. • Promoting the development of self-regulated learning strategies

Figure2: Learning difficulties of Chris and corresponding strategies to help

2. Raising phonological awareness

Dyslexic students often face spelling difficulty (Scarborough, 1998), and the root of this problem is in phonological processing (Ramus & Szenkovits, 2009). Studies have revealed the strong linkage between spelling and phonological skills (e.g., Furnes & Samuelsson, 2010). Similar to Chris, dyslexic students tend to make spelling errors that indicate inadequately processed sounds of the word (Bruck, 1993, Cassar et al., 2005). To address this issue, phonics instruction has been one of the most frequently used strategies (Hebert et al., 2018), and is highly effective in improving both the reading and spelling achievement of children with dyslexia (National Institute of Child Health and Human Development, 2000). To raise her phonological awareness, a vast variety of strategies including but not limited to syllabification (e.g., va/ri/a/ble), alliteration (e.g., beginning consonant sounds of can / come / cone) and segmentation (e.g., i-t, s-it, f-it, etc.) can be used.

After reviewing studies that examine the effectiveness of spelling interventions for students with dyslexia, Hebert and colleagues (2018) suggested several essential elements in phonics intervention, namely recognizing and pronouncing grapheme-phoneme correspondences and phonograms, decoding words using sound-spellings and phonograms, practicing pronouncing and spelling high-frequency words, and practicing encoding using sound-spellings and phonograms. Take the word 'thermometer' as an example. This word can first be divided into two parts: 'thermo' and 'meter'. Regarding her difficulty in spelling the word 'meter', we focus on the pronunciation of 'meter' so that she can identify the sound /iː/ in the word, reinforcing the connection between /iː/ and e. With extensive pronunciation practice, she will be less likely to make the thermometer/thermomter* error in the future. By the same token, for similar-looking words like true/ture* and blue/bule*, she can be invited to spell the words instead of just pronouncing the words, which can be more beneficial for spelling (Conrad, 2008). Nevertheless, tasks can be designed to let students select spellings of similar-looking words, letting students acquire proofreading skills and be able to notice spelling patterns that support spelling accuracy.

3. Scaffolding the formation of letters and writing

As revealed in Figure 2, Chris encounters difficulties in letter formation, which in turn impedes her text generation. In addition, the meta-analysis by Santangelo and Graham (2014) suggested that teaching handwriting instruction promotes legibility and fluency of writing, resulting in enhancements in the quality and length of students' writing. The use of individualised approaches involving multiple components is one of the most promising ways for teaching handwriting (e.g., Christensen, 2005; Denton et al., 2006; Zwicker & Hadwin, 2009). In this approach, letters with similar shapes, such as a/o/e, i/j/l and n/r/h, are usually grouped together (e.g., Christensen, 2005) and introduced to students with some visual cues (e.g., colours, paintings, arrows; see Figure 3 for an example), followed by practices and repetitions (e.g., Peterson & Nelson, 2003). This approach aims to help Chris with her letter formation and recognition of letters, and similar ways can be used for improving her spacing between letters within a word.
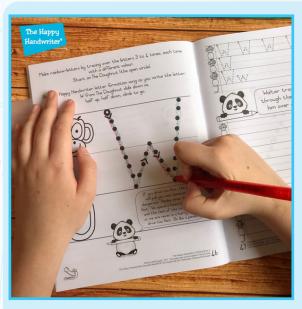
Figure3: Examples of visual cues for practices (extracted from The Happy Handwriter, 2023)

In addition to letter formation, scaffolds can be prepared to support the organisation of ideas at the sentence level by breaking down complex skills into manageable components. Sentence combining is an effective strategy for enhancing writing and reading fluency skills (Graham et al., 2012; Graham & Hebert, 2011; Graham & Perin, 2007). This strategy requires students to combine two or more simple sentences into a single, complex sentence while retaining the original ideas. The following example reveals how sentence combining exercise helps Chris to construct her ideas.

> *Sentence 1:*   *The temperature of the ball becomes higher. (when)*
> *Sentence 2:*   *The ball becomes bigger.*
> *Combined sentence:*   *When the temperature of the ball becomes higher, the ball becomes bigger.*
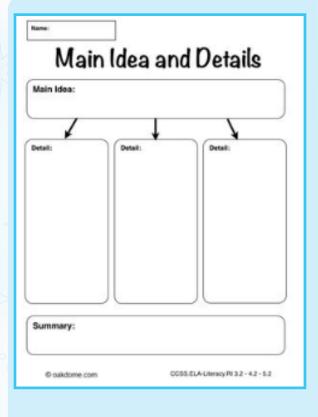
As shown in the example, the scaffolds reduce the cognitive load for Chris during sentence construction as she does not need to think of new ideas and vocabulary. This helps her to focus on the organisation of ideas, which improves her executive function skills, thus text generation and writing quality (Hebert et al., 2018).

4. Supporting self-regulated learning

Despite the effectiveness of the aforementioned strategies in text generation, Chris still needs to learn how to regulate her learning, such as goal setting, self-speech, and self-monitoring. As early as 1983, Davey proposed the "Think Aloud" strategy that teachers model the strategies and questions used to help monitor one's understanding of text. Studies in the past two decades (e.g., Graham et al., 2012; Graham & Harris, 2003; Graham & Perin, 2007) have also suggested that self-regulated strategy has been effective for students across all grade levels, particularly for dyslexic students who have fewer opportunities to learn how to use executive functions, such as error correction. Hebert et al. (2018) described six stages for teaching self-regulation strategies, including the development of background knowledge, discussion, modelling, memorization, supporting, and independent performance. For example, to support Chris in writing a story, the 4W1H framework (i.e., who-, when-, where-, what- and how-questions) serves as a way to let Chris structure her ideas. Graphic organisers can also be used to support her in building up her paragraphs. These strategies enable Chris to continue her learning after class.
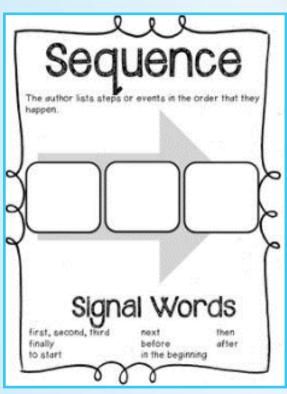
Figure4: Graphic organisers supporting self-regulated learning (Chan, 2024)

Plans of intervention and support relevant to the holistic development of Chris

Based on the aforementioned strategies, the following short-term plan of interventions is devised for Chris to support her whole-person development.

Learning difficulty	Intervention	After 2-3 months, Chris shall be able to
Spelling due to the lack of phonological awareness	Instructions that raise phonological awareness.	Spell and pronounce at least 80% of the selected set of commonly used vocabulary at appropriate grade level correctly (e.g., true, blue, temperature).
Illegible handwriting for similar-looking letters Slow handwriting	Multi-component instruction for handwriting. Flexibility in teaching, e.g., modify notes to minimise copying in class.	Write different sets of letters with similar shapes correctly and neatly (e.g., a/e/o, b/d/p/q, and n/h/r) for at least 90% of the written content. Include proper spacing between letters within a word for at least 90% of the written content. *The writing speed is not the major focus at this stage of learning.*
Unorganised ideas with illogical flow	Providing scaffolds at the sentence level (e.g., sentence combining, graphic organisers). Development of self-regulated strategies.	Reorganise given ideas into a single complex sentence for at least 90% of the time. Construct logical sentences based on her own ideas for at least 50% of the written content (Advanced). Use self-speech to monitor own progress in writing stories for at least 50% of the time (Advanced).

In this plan, a total of 4 basic objectives and 2 advanced objectives have been set for assessing the effectiveness of the interventions in addressing the learning needs of Chris. The learning difficulties addressed by the interventions would affect her academic performances in not only English but also other subjects using English as the medium of instruction (e.g., Science and Life and Society). These interventions are highly relevant to her daily life and essential for developing fundamental skills. Furthermore, the strategies adopted and objectives are crafted with reference to her strengths (i.e., confidence in pronouncing words). The objectives are deemed attainable and transferable so that Chris will be motivated in achieving the goals. For example, after raising her phonological awareness, she may be able to achieve better in other subjects by spelling the words correctly. She could also begin to monitor her own learning progress using those self-regulated strategies. The objectives have also been differentiated into two levels so that teachers can make informed decisions when allocating time and resources for her learning. According to the Operation Guide on the Whole School Approach to Integrated Education (Education Bureau, 2010), schools are recommended to adopt the Whole School Approach to cater for students with diverse needs using the 3-tier intervention model. Tiered instruction is also given to Chris to support her successful learning in classrooms.

With this plan of interventions and efforts, as well as an empathetic mindset, it is hoped that Chris can unleash her potential and enjoy learning in school.

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Language Across Curriculum (LAC): Every teacher is a language teacher

Teachers: Ms Ma Chi Yiu Ying Anna and Ms Yeung Ka Wai

Levels: S.1-S.6

Abstract: Language Across the Curriculum (LAC), or Content and Language Integrated Learning (CLIL), has gained intense attention among schools and educators in many parts of the world where English is used as the medium of instruction (MOI). This article will focus on practice-oriented research from the LAC implementation at our school. In particular, it focuses on the strategic target of the school to foster an English campus by getting all teachers on board to make "every teacher a language teacher" (Gottlieb, 2013).

"Don't forget that school is a unique place where every teacher is a language teacher and every student a language learner".

-   Margo Gottlieb

English is always known as the global language, and thus often regarded as an important capital in education. In the face of the rise of the knowledge-based society in the 21st century, Lin (2016) has highlighted that "enabling students from different social sectors to access this kind of important linguistic capital has become important issues in research on language-in-education policy and practice". Language Across the Curriculum (LAC), a term developed in Britain, which is also known as Content and Language Integrated Learning (CLIL) in Europe, has gained intense attention among schools and educators in many parts of the world where English is used as the medium of instruction (MOI), like Hong Kong, Mainland China and Europe. This article will focus on practice-oriented research from the LAC implementation at our school. In particular, it focuses on the strategic target of the school to promote an English campus by making "every teacher a language teacher" (Gottlieb, 2013).

Overview

With a view to coordinating and overseeing all strategies and pedagogies in promoting English language learning across the junior form curriculum, the school has commissioned a dedicated group to review the language education practices across the curriculum. Led by the Head of English Department and Assistant Prefect of Studies, the LAC group comprises members from all subject panel heads and English teachers who are involved in using English as medium of instruction (MOI) in S1 to S3. The commission of the group has been the strategic initiative to enhance professional development on language education among teachers so as to provide subject-specific language support to all students.

The objectives of the LAC group include:

1. To oversee and coordinate the strategies in promoting English language learning across the junior form curriculum;

2. To provide subject-specific support, guidance and advice to different subjects on language teaching;

3. To review the language education practices across the curriculum and evaluate their effectiveness; and

4. To enhance professional development on language education among teachers.

A strategic goal since 2019 has been on enhancing professional development, which has received full support from the school administration in actively engaging teachers from various KLAs in school-based support PD programmes and courses.

LAC implementation in students' learning

In terms of curriculum design, a number of initiatives have been in practice to promote language education under the current LAC implementation. At present, two subjects in different KLAs are entirely taught in English as MOI in all S1-S2 classes. To provide the best language support to these two subjects, English teachers have been deployed to the curriculum planning and teaching of the LAC lessons, together with other subject teachers. The LAC lessons form an integral part of the LAC curriculum that focuses on the academic English use across different KLAs.

Besides, pre-S1 bridging and summer bridging programmes have been designed and conducted to cater for learners' diversity with a specific focus on providing academic language support, covering individual language needs in various subjects from Mathematics, IS to L&S.

To improve students' confidence and proficiency in English, emphasis on writing in complete sentences has been placed across all subjects in their daily assignments and/or assessments, with subject teachers providing continuous language feedback on students' use of English, followed up by English teachers for further consolidation.

In addition to daily classroom learning, various cross-curricular initiatives are conducted with a view to enhancing students' use of English as a communicative tool for developing their self-directed learning and life-long learning skills, such as the Jurassic Garage animal encounter for S1 IS, customer education investigative reports in S2 L&S, and instant ice experiment laboratory reports in S3. Excursions and outings for inquiry-based project learning are featured in English lessons when S1-S3 students are taken to learn and apply English in the community, from the Hong Kong Central Library, cinema theater to the Hong Kong Wetland Park.

Reading is essential for developing English literacy. To promote Reading across Curriculum (RaC), the English Department has developed a customized online reading website, Virtual Library, to incorporate appropriate reading materials in various subjects in the S1-S3 curriculum from IS, L&S, History to Geography.

Fostering an English campus: Getting subject teachers on board

Apart from the formal curriculum, assignment and assessment design, fostering an English campus by getting the entire school community to embrace LAC is important to truly make language learning happen across all subjects. Enhancing teachers' professional development in language education improves the effectiveness of LAC implementation. A number of ways that have been adopted will be illustrated below.

First, there have been regular co-prep meetings conducted for IS, LAC and L&S curriculum, lesson and assessment planning to establish communication channels between subject and English teachers. Through such collaboration, cross-curricular language support in curriculum planning and development of teaching materials, such as worksheets with specific academic English patterns, can be provided. Regular LAC updates are made among the corresponding English level meetings to get more English teachers on board to promote LAC in their design of curriculum activities, thanks to the effective sharing platform of teaching materials established.

Besides, lesson observation and post-lesson feedback by external experts and the English Consultant on classroom language were done for IS teachers, which were found effective in improving their classroom teaching practice. In-house professional development workshops and seminars have also been conducted for Science, Technology and PSHE teachers using EMI in classes. With these, an overall raised awareness on LAC practice has been observed among teachers. However, sustainability has been a concern. It is suggested that new subject teachers joining the school should also be informed of students' LAC needs to keep all staff on board.

On top of professional exchange among colleagues, it is essential to promote professional dialogue with the wider teaching community. In 21-23, teachers involving 8 different areas have participated in a school-based LAC-related PD training, including the participation in an intensive programme by HKU (30-hour). Other 9 teachers (Science, Mathematics and English) have received LAC training through different PD courses at HKU. Lesson observation and follow-up by HKU has been effective for teachers who participated in the 4-day course in 2022 to better strengthen classroom language delivery. Overall, 100% teachers acquired professional qualifications to meet the "teacher capability" criterion for EMI teaching.

To keep abreast of the latest development in LAC, the LAC group has been working closely together with other schools and tertiary institutions. In 20-21, a school-based LAC support programme by PolyU provided professional subject-specific LAC consultancy and advice on PSHE. In 20-23, for IS, two focused school-based LAC support programmes were conducted in collaboration with the Faculty of Education, HKU. In 24-25, the school will collaborate with HKU INSTEP to develop school-based materials for LAC in the Science KLAs by a team of Science and English teachers. Since 2020, our LAC group has been sharing their experience as invited speakers on the practical implementation of language promotion across curriculum on different occasions at universities to stay connected with other education practitioners.

LAC in Religious Education: Gospeling

The book is called Shoe Dog and it is about
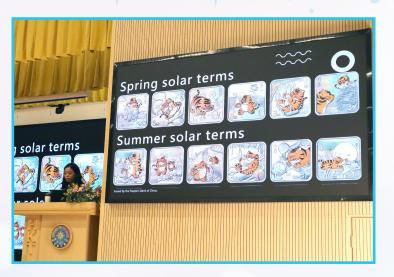
LAC in Moral and Civic Education: Book sharing

In fact, getting teachers on board can also be done organically. For example, a wide range of school-wide English learning activities and regular English assemblies for gospel, bulletins, morning prayers and book sharing sessions have been conducted regularly through videos and live broadcast.

The English-speaking environment has also been maintained and leveraged to promote English use in the campus by weekly English assemblies delivered by non-English teachers of different subjects. In 23-24, a total of 31 English assemblies were held by speakers from 15 different departments, including the Principal and the Vice-Principals, covering topics from Chinese clans and dialects (History), fast fashion (Chemistry), computer algorithm (ICT), successful entrepreneurs (BAFS) to laundry care (Home Economics) or Chinese music (Music). Inviting subject teachers to hold weekly assemblies on various topics in English is a very simple scheme, but extremely effective at encouraging engagement and effort from students. This also intrinsically reinforces the idea of being "a language teacher" for all teachers in the school. It has been proven effective at breaking down students' misconceptions that English is only used in English lessons. As a result, students are more willing to speak in English and more confident to do so.

Sharing in English in whole-school assembly by the History, Mathematics, and Physics teachers

Conclusion

Overall, besides LAC cross-curricular support in curriculum planning and developing teaching materials, teachers' professional development in language education has been equally important. It is believed that by gaining better understanding of student's needs and getting involved, teachers in all departments can better embrace the idea of LAC implementation and become 'language teachers'. In this way, a whole-school approach to promoting English can be adopted to benefit students' holistic growth by means of mastering English as a language for effective communication.

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數學教育

Concept of Loci - Gamification in Education

Teachers: Ms Kwan Wing Nam and Mr Li Sek Kwai

Level: S.5

Introduction

1. Description of the design

The concept of loci is abstract and challenging for many students. Engaging students in various activities during lessons helps to promote students' learning motivation as well as their understanding of the topic. Additionally gaming and game design are introduced in the lesson to facilitate teaching and learning.

2. Teaching focus

(i) Sketching simple loci of points under different conditions

(ii) Describing the loci of points in words

3. Prerequisites knowledge

(i) Basic concepts of straight lines, perpendicular bisectors and circles

Teaching strategies

Pre-test and post-test are given to students before and after the lesson to check if students have better understanding of the topic. Through experiential learning, students try to act as one of the moving points under different given conditions. This helps them gain a better experience and understanding of what a moving point is. Students then form groups to design a treasure hunt game for their classmates. By describing the locus in words, this helps students to precisely describe a distinguishable locus.
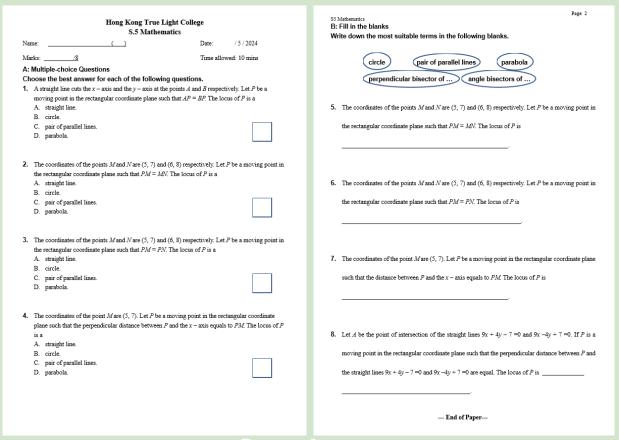
Lesson Plan (for a 70-minute lesson)

Time (mins)	Steps	Activities
10	Pre-Test	Students are given a test with 4 multiple choice questions and 4 short questions. The test lasts for 10 minutes. The results will be recorded.
10	Activity 1 "Being a moving point"	Teacher introduces the game and the rules. 4 scenarios are given to the students. Students are required to act as moving points and find out some appropriate positions according to the instructions given. After each scenario, some students are required to describe the locus and its property. Time is recorded in the game.
5	Explanation	Teacher highlights the key phrases of the scenarios given and explains the formation of the loci. Teacher also gives some similar examples listed in the book.
10	Activity 2 "Treasure Hunt" and discussion	Each student is given a question paper. Students have to follow 3 instructions and draw a path from the starting point to the end point (treasure). After 5 minutes, students discuss their ideas and finish the task together.
5	Explanation	Teacher highlights the key phrases in the instructions and explains how to transform the information from the phrases to the formation of the path.
20	Activity 3 "Designing a Treasure Hunt" and discussion	Students in a group are required to design a path with 3 instructions and let the other groups of students finish the designed game. Meanwhile, teacher checks if the instructions are geometrically correct and suggests some alternatives if necessary.
10	Post-Test	Students are provided the same test as the previous one with different question orders. The test also lasts for 10 minutes. The results will be recorded.

Samples of teaching materials

Hong Kong True Light College
S.5 Mathematics

Name: _____ ( )

Marks: _____ /8

Date: ___ / 5 / 2024

Time allowed: 10 mins

A: Multiple-choice Questions
Choose the best answer for each of the following questions.

1. A straight line cuts the x – axis and the y – axis at the points A and B respectively. Let P be a moving point in the rectangular coordinate plane such that $AP = BP$. The locus of P is a
   A. straight line.
   B. circle.
   C. pair of parallel lines.
   D. parabola.

2. The coordinates of the points M and N are (5, 7) and (6, 8) respectively. Let P be a moving point in the rectangular coordinate plane such that $PM = MN$. The locus of P is a
   A. straight line.
   B. circle.
   C. pair of parallel lines.
   D. parabola.

3. The coordinates of the points M and N are (5, 7) and (6, 8) respectively. Let P be a moving point in the rectangular coordinate plane such that $PM = PN$. The locus of P is a
   A. straight line.
   B. circle.
   C. pair of parallel lines.
   D. parabola.

4. The coordinates of the point M are (5, 7). Let P be a moving point in the rectangular coordinate plane such that the perpendicular distance between P and the x – axis is equals to PM. The locus of P is a
   A. straight line.
   B. circle.
   C. pair of parallel lines.
   D. parabola.

Page 2

S5 Mathematics
B: Fill in the blanks
Write down the most suitable terms in the following blanks.

(circle) (pair of parallel lines) (parabola)
(perpendicular bisector of …) (angle bisectors of …)

5. The coordinates of the points M and N are (5, 7) and (6, 8) respectively. Let P be a moving point in the rectangular coordinate plane such that $PM = MN$. The locus of P is

   _____.

6. The coordinates of the points M and N are (5, 7) and (6, 8) respectively. Let P be a moving point in the rectangular coordinate plane such that $PM = PN$. The locus of P is

   _____.

7. The coordinates of the point M are (5, 7). Let P be a moving point in the rectangular coordinate plane such that the distance between P and the x – axis equals to PM. The locus of P is

   _____.

8. Let A be the point of intersection of the straight lines $9x + 4y – 7 = 0$ and $9x – 4y + 7 = 0$. If P is a moving point in the rectangular coordinate plane such that the perpendicular distance between P and the straight lines $9x + 4y – 7 = 0$ and $9x – 4y + 7 = 0$ are equal. The locus of P is _____

   _____.

---- End of Paper----

Pre-test and post-test

Activities during lesson

按下 Esc 即可結束全螢幕模式

TASK 1

Maintain a one-arm-distance from the chair A.

Being a moving point

Hong Kong True Light College

S5 Mathematics

Chapter 8 – Treasure Hunt

Name : _____

Class : _____ ( )

Date : _____

Background: Figure 1 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.

Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: There are so many obstacles along the paths $y=0$ and $y=2$ respectively. The team is supposed to move in the coordinate system such that **the team is equidistant from the line $y=0$ and the line $y=2$.**

2nd instruction: After the first instruction, the team moved to the other end of the path. It is found that there is a snake **2 units due north of** the current position. To not wake up the snake, the team has to move in the coordinate system such that **the team maintains a fixed distance of 2 from the snake.**

3rd instruction: After the second instruction, the team moved to the end of the path. 2 plumes of smoke are found **3 units due north** and **3 units due east of** the current position respectively. The team has to move in the coordinate system such that **the team maintains a fixed distance between the 2 plumes.** After moving to the end of the path, the team can get the treasure. The treasure is at (,   )

Figure 1

Treasure Hunt

Background: Figure 2 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.

Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: There are two lions found 2 units due north and 1 unit due west of the starting point respectively. To not wake up the lions the team has to move in the coordinate system that the route of the team is perpendicular to the path between the two lions.

2nd instruction: After the first instruction, the team moved to the other end of the path. It is found that there is 1 plume of smoke 1 unit due north of the current position. The team has to move in the coordinate system such that the team maintains a fixed distance of 1 unit from the plume of smoke.

3rd instruction: After the second instruction, a kangaroo is at 2 units due north of the current position. The team has to move in the coordinate system such that the team maintains a fixed distance of 2 units from the kangaroo. After moving to the end of the path, the team can get the treasure. *The treasure is at (2 , 3).*

Figure 2

Hong Kong True Light College

S5 Mathematics

Chapter 8 – Treasure Hunt

Name : Irene, Wendy 1971/1944
Class : 5A 48 (16), 5
Date : 03 May 2024

Background: Figure 1 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.

Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: The team is supposed to move in the coordinate system such that it maintains an equal distance from a rubbish bin (4, 1) and a wall $y = 3$ until its y-coordinate is 1 again.

2nd instruction: Then the team now is standing in between two rivers with slope $= \frac{3}{2}$. It is known that the river 1 passes through (5, 4) and the river 2 passes through (3, 4). As the team moves forward, they maintain equidistant from both rivers. They then stop at the point (4, 4).

3rd instruction: After the second instruction, they saw a dinosaur at point (4, 6). To not wake up the dinosaur, the team has to move in the coordinate system such that the team maintains a fixed distance of $\sqrt{3}$ from the dinosaur. The treasure is located at the west of the dinosaur. *The treasure is at (2 , 6).*

Figure 1

Students' designs
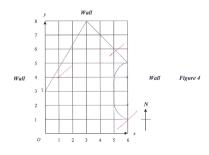
Background: Figure 4 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.

Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.
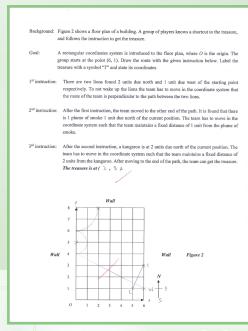
1st instruction: It is found that there are so many obstacles between $A(6, 2)$ and $B(6, 4)$. The team has to move in the coordinate system such that the team maintains a fixed distance of 1 unit.
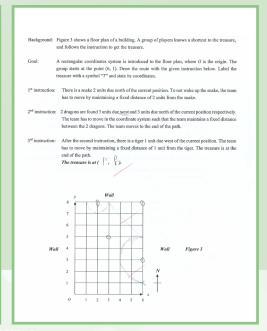
2nd instruction: After the first instruction, the team moved to the end of the path. 2 plumes of smoke are found 3 units due north and 3 units due west of the current position. The team has to move in the coordinate system such that the team maintains a fixed distance between the 2 plumes of smoke.

3rd instruction: After the second instruction, the team moved to the end of the path. There is a yellow line $y = \frac{-3}{5}x + 8$ in the coordinate system. The team then moves in a path perpendicular to the yellow line. After moving to the end of the path, the team can get the treasure. *The treasure is at (0 , 3).*

Figure 4

Hong Kong True Light College

S5 Mathematics

Chapter 8 – Treasure Hunt

Name : Yuki , Yoyo

Class : 5A ( )

Date : 28/5/2024

A+

Background: Figure 1 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.

Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: The team is supposed to move in the coordinate system such that it maintains an equal distance from a rubbish bin (4, 1) and a wall $y = 3$ until its y-coordinate is 1 again.

2nd instruction: Then the team now is standing in between two rivers with slope $= \frac{3}{2}$. It is known that the river 1 passes through (5, 4) and the river 2 passes through (3, 4). As the team moves forward, they maintain equidistant from both rivers. They then stop at the point (4, 4).

3rd instruction: After the second instruction, they saw a dinosaur at point (4, 6). To not wake up the dinosaur, the team has to move in the coordinate system such that the team maintains a fixed distance of 9 from the dinosaur. The treasure is located at the west of the dinosaur.
The treasure is at (2 , 6).
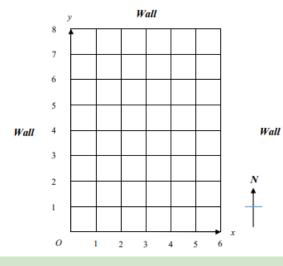
Figure 1

Background: Figure 2 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.
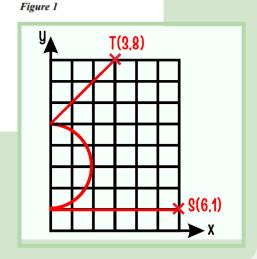
Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: There are two lions found 2 units due north and 1 unit due west of the starting point respectively. To not wake up the lions the team has to move in the coordinate system such that the route of the team is perpendicular to the path between the two lions.

2nd instruction: After the first instruction, the team moved to the other end of the path. It is found that there is 1 plume of smoke 1 unit due north of the current position. The team has to move in the coordinate system such that the team maintains a fixed distance of 1 unit from the plume of smoke.

3rd instruction: After the second instruction, a kangaroo is at 2 units due north of the current position. The team has to move in the coordinate system such that the team maintains a fixed distance of 2 units from the kangaroo. After moving to the end of the path, the team can get the treasure.
The treasure is at (2 , 8).

Figure 2

Background: Figure 3 shows a floor plan of a building. A group of players knows a shortcut to the treasure, and follows the instruction to get the treasure.
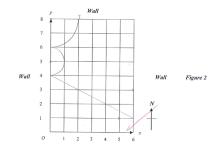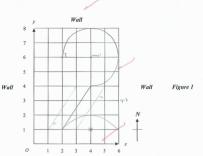
Goal: A rectangular coordinates system is introduced to the floor plan, where O is the origin. The group starts at the point (6, 1). Draw the route with the given instruction below. Label the treasure with a symbol "T" and state its coordinates.

1st instruction: There is a snake 2 units due north of the current position. To not wake up the snake, the team has to move by maintaining a fixed distance of 2 units from the snake.

2nd instruction: 2 dragons are found 3 units due west and 3 units due north of the current position respectively. The team has to move in the coordinate system such that the team maintains a fixed distance between the 2 dragons. The team moves to the end of the path.

3rd instruction: After the second instruction, there is a tiger 1 unit due west of the current position. The team has to move by maintaining a fixed distance of 1 unit from the tiger. The treasure is at the end of the path.
The treasure is at (1 , 8).

Figure 3

Students' Work

Reflection

The lesson design allows students to engage in experiential learning and students can find out the positions of the moving point by hands-on experience. The game can raise students' interest in learning and encourage them to explore further in Mathematics.

During activity 3, students designed some complicated paths to challenge other teams. It reflected that students were motivated to investigate the topic more deeply.

After three activities, students were given a test. 17 out of 26 (65.4%) showed an improvement in the test results. More than half of the students could get higher marks.

Experiential learning in Randomized Response

Teachers: Ms Chen Ying Yi, Mr Wong Tak Hin, and Ms Chan Pui Yi
Levels: S.4 - S.5

Introduction

In the 2017 Key Learning Area Curriculum Guidelines for Mathematics education from Primary 1 to Secondary 6, a brand-new learning unit called " Inquiry and investigation" was added for primary and junior secondary levels. The purpose of this unit is to discover and construct knowledge through various learning activities, further enhancing the abilities to explore, communicate, think, and form mathematical concepts.

The topic of randomized response is beyond the Mathematics curriculum. It is a survey technique used to obtain truthful responses to sensitive questions while protecting the privacy of respondents. This method helps to reduce bias and improve the accuracy of data collected, especially in situations where individuals may be reluctant to disclose information due to fear of judgment or repercussions. The idea of this lesson comes from Hong Kong Diploma Secondary Education (HKDSE) Module (Calculus and Statistics) (MI) HKDSE M1 2015 Q3, which is a survey about the question whether you are a smoker.

Teaching strategies

In this lesson, students are learning by engaging in hands-on activities. They are active learners as they design the interview questions, create drawing tools, interview students and teachers, In each interview, they have to explain the process clearly to the interviewees, record the answers for further analysis, and analyze and interpret data collected.

Teaching Objectives

By the end of the lesson, students will be able to:

1. understand the concept of the randomized response technique.
2. explain how this technique helps reduce bias in sensitive surveys.
3. design a simple randomized response survey.
4. analyze and interpret data collected through hands-on activities.
5. discuss the implications of using the randomized response technique in real-world scenarios.

Lesson Outline

1. Introduction

(i) Begin with a discussion about why people might hesitate to answer sensitive questions honestly (e.g., fear of judgment, and privacy concerns).

(ii) Introduce the randomized response technique as a method to collect more reliable data on sensitive topics.

(iii) Briefly explain how the technique works.

2. Hands-On Activity: Conducting the Survey

(i) Each student comes up with 1 sensitive or embarrassing question, and 2 questions are selected for further investigation.

	Q1	Q2
A	我試過上課時放屁 I have farted in class.	我試過在測考時作弊 I have cheated during a test or exam.
B	我沒有試過上課時放屁 I have never farted in class.	我沒有試過在測考時作弊 I have never cheated during a test or exam.

(ii) Divide the class into small groups of 4-5 students.

(iii) 2 groups of students will design and make the tools for drawing lots for the survey within one week.

(iv) Another 2 groups of students will conduct the survey at lunchtime or after class.

    (a) Randomly interview as many teachers and students as possible. Before the interview they will explain the process clearly to the interviewees. For each question, the interviewees draw lots. If it is marked with A, they will answer "yes" or "no" based on Question A. If marked with B, they will answer "yes" or "no" based on Question B.

    (b) Students should record their answers on the data collection sheets.

3. Data Analysis and Discussion

(i) Present a simple example and explain how to calculate the proportion of respondents that lied to teacher based on the date given below.

Question	Number of "Yes"	Number of "No"
A: 我試過向老師講大話 I have lied to my teacher. B: 我沒有試過向老師講大話 I have never lied to my teacher.	74	26

(ii) Based on the data collected in the survey, students calculate the true proportion of respondents that have farted in class(Q1) or have cheated during a test or exam (Q2) on their own.

4. Extensions

(i) Explore real-life applications of the randomized response technique in various fields (e.g., public health about drug or alcohol abuse, social science about racial and gender discrimination, political voting behavior and employee satisfaction and etc.).

Teachers' Reflection

The lesson allowed students to experience the entire process of conducting a randomized response survey. It was both enlightening and engaging, offering valuable insights into collecting sensitive data while ensuring the privacy and honesty of respondents. The hands-on component, where students designed and conducted their own randomized response surveys, was particularly successful. Students became more active participants when working in small groups. This collaborative environment encouraged them to share ideas and learn from one another. It was evident that the students grasped the core principles of the randomized response technique. Nearly all of them got full marks in their work, and their ability to explain the mechanics of the method and its real-world application demonstrated that they had a solid grasp of the concept.

Hong Kong True Light College

Name: _____ Class: _____ ( ) Date: _____

Randomized Response

	Q1	Q2
A	我試過上課時放屁	我試過在測考時作弊
B	我沒有試過上課時放屁	我沒有試過在測考時作弊

Let

p be the true proportion of those interviewed bearing the embarrassing property (we wish to find out),

P_A be the proportion of answering question A,

P_Y be the proportion of giving "Yes" as the answer.

According to the Law of Total Probability:

$$P_Y = P_A \times p + (1 - P_A) \times (1 - p)$$

- A — p 有放屁(答 Y)
- A — $1-p$ 沒有放屁(答 N)
- B — p 有放屁(答 N)
- B — $1-p$ 沒有放屁(答 Y)

Example:

Question	Number of "Yes"	Number of "No"
A: 我試過向老師講大話 B: 我沒有試過向老師講大話	74	26

It is given that $P_A = 0.8$, find p.

$$P_Y = \frac{74}{74+26} = \frac{37}{50}$$

$$\frac{37}{50} = 0.8p + (1-0.8)(1-p)$$

$$\frac{37}{50} = 0.8p + 0.2 - 0.2p$$

$$\frac{37}{50} - 0.2 = 0.6p$$

$$p = \frac{\frac{37}{50} - 0.2}{0.6}$$

$$p = 0.9$$

Teaching Material

The survey results of Q1 are as follows.

	Question	Number of "Yes"	Number of "No"
Q1	A: 我試過上課時放屁 B: 我沒有試過上課時放屁	50	36

It is given that $P_A = 0.3$, find p.

$$P_Y = \frac{50}{50+36} = \frac{25}{43} \checkmark$$

$$\frac{25}{43} = 0.3p + (1-0.3)(1-p) \checkmark$$

$$\frac{25}{43} = 0.3p + 0.7 - 0.7p$$

$$-\frac{51}{430} = -0.4p \checkmark$$

$$p = \frac{51}{172} \checkmark$$

The survey results of Q2 are as follows.

	Question	Number of "Yes"	Number of "No"
Q2	A: 我試過在測考時作弊 B: 我沒有試過在測考時作弊	54	36

It is given that $P_A = 0.3$, find p.

$$P_Y = \frac{54}{90} = \frac{3}{5} \checkmark$$

$$\frac{3}{5} = 0.3p + 0.7(1-p) \checkmark$$

$$\frac{3}{5} = 0.3p + 0.7 - 0.7p \checkmark$$

$$p = \frac{1}{4} \checkmark$$

Students' work

Student's reflection

The school provided us with an opportunity to develop new calculation methods in the M1 subject. We began by interviewing our classmates and teachers with two unconventional questions that people typically hesitate to answer honestly: one about cheating and the other about farting. Surprisingly, this interviewing technique encouraged our interviewees to engage enthusiastically with our questions. We also learned how to analyze the results effectively. The entire experience was incredibly enjoyable, allowing us to apply everything we learned in a practical context.

「比」的認識

老師：梁惠嫦老師
年級：中一級

簡介

　　對於中一學生來說，「比」是一個較陌生的課題。課堂中使用日常生活的例子來介紹「比」，並用實際的數字作例子說明，以及利用簡報作視覺教學，學生就會容易接受「比」和理解教學內容，也能增加學習興趣。

教學目標

學生能夠
1. 理解「比」的概念。
2. 認識「比」的性質。
3. 懂得化簡二項「比」。

教學計劃

教學目標	教學內容	教學活動	教學時間及材料	照顧學習差異之調適
引起動機	以日常生活例子介紹「比」	透過1份漂白水要用99份水來稀釋作為家居清潔劑，引入「比」的概念。	2分鐘簡報	選取與學生日常生活密切相關的例子以增加學習興趣。
理解「比」的概念和認識二項「比」a:b的記法	以水稀釋漂白水的例子認識「比」的概念	為了讓學生掌握1份漂白水和99份水的意思，利用實際漂白水的體積(1mL)及水的體積(99mL)作比較，帶出「把兩個同類的量以除法的形式作比較，所得的商便是一個『比』」，然後引入a:b或$\frac{a}{b}$的記法。	3分鐘簡報	以實際數字表示漂白水和水的體積使學生更易理解。

教學目標	教學內容	教學活動	教學時間及材料	照顧學習差異之調適
強化「比」的概念和認識二項「比」a:b的注意事項	以另一例子溫習「比」的概念和說明二項「比」a:b的注意事項	1. 利用藍點和綠點的數目重溫「比」的概念，並指出「比」是沒有單位的和a:b與b:a並不相同。 2. 完成工作紙A部。	5分鐘 簡報	以藍點和綠點的數目作例子來溫習「比」的概念，這能加深學生對「比」的認識，而在簡報中利用相關顏色作解釋也能令學生更容易明白。
	分層工作紙		3分鐘 分層工作紙 A部	在部分的題目加入提示以幫助能力較弱的學生。
認識「比」的性質	引入等「比」的概念和介紹二項「比」的性質	1. 先提問學生「有沒有其他『比』等於4:5」，再逐步以計算方式帶出4:5=8:10，從而說明a:b=a×m: b×m，然後反過來以計算方式把8:10還原至4:5，說明$a:b = \dfrac{a}{m}:\dfrac{b}{m}$。	3分鐘 簡報	先以提問方式引導學生思考等「比」，再以計算方式幫助學生理解等「比」的概念。
化簡二項「比」	透過例題，讓學生懂得化簡二項「比」的技巧 分層工作紙	1. 化簡a和b為整數的「比」 以例題說明需把a和b除以它們的H.C.F.。 2. 完成工作紙B部第2題。 3. 化簡a和b為小數的比 以例題說明需先把a和b乘以一個相同的數，以把它們轉化為整數，然後再化簡。 4. 完成工作紙B部第3題。 5. 化簡a和b為分數的「比」 以例題說明需先把a和b乘以分母的L.C.M.，以把它們轉化為整數，然後再化簡。 6. 完成工作紙B部第4題。 7. 化簡a和b為不同單位的「比」 以例題說明需先以相同單位表示a和b，然後再化簡。 8. 完成工作紙B部第5題。	15分鐘 簡報 分層工作紙 B部 第2至5題	工作紙B部第2至5題有(a)和(b)兩部分，(a)部較淺易，而且加入提示以幫助能力較弱的學生掌握計算的方法。 學生兩人為一組，在計算過程中可互相討論。

教學目標	教學內容	教學活動	教學時間及材料	照顧學習差異之調適
總結	利用提問作總結	1. 利用一個二項「比」例子來提問作總結：把兩個同類的量以除法的形式作比較，所得的商便是一個「比」。 2. 「比」是沒有單位。 3. a:b與b:a並不相同。 4. 若a、b和m都是非零的數，則 a:b=a×m:b×m及$a:b = \dfrac{a}{m} : \dfrac{b}{m}$。	4分鐘	學生可按自己的能力回家嘗試程度二的題目和挑戰題。

教學反思

　　這組學生的數學能力稍遜，很多基本知識仍未拿捏穩當。在單位轉換方面，學生已學習了求H.C.F.及L.C.M的方法，但部分學生仍未能掌握。在做工作紙前，老師需和他們重溫單位轉換的內容和求H.C.F.及L.C.M的方法。在分數的運算方面，學生都表現較弱，老師亦需要再解釋分數約簡的原理。

　　學生是根據座位，兩人為一組來分組。雖然他們在學習過程中可互相討論，但由於在分組前沒有特別考慮他們的能力，所以有些組別未必能夠做到由強帶弱的效果。在分組時，老師應多考慮學生的數學能力。

　　由於課堂的時間關係，程度二的題目和挑戰題需讓學生回家嘗試完成。收回工作紙後，發現部分學生不明白程度二的題目的題意，所以老師宜在課堂上先交代這部分是與等比有關的。關於挑戰題，部分學生未能把化簡二項比的知識應用於三項「比」上。

　　整體來說，學生在課堂表現主動和投入，老師可與她們重溫一些數學基本知識，令他們在學習新知識時，能更有自信及容易掌握。

把漂白水與水以 1：99 之「比」混和，得出的溶液可作一般清潔用途。

1份漂白水要用99份水來稀釋

把 1 份漂白水和 99 份水混合成一般家居清潔劑，例如，把 1 mL 漂白水和 99 mL 水混合。

$$\frac{漂白水的體積}{水的體積} = \frac{1}{99}$$

以上述的形式比較「漂白水的體積」及「水的體積」，所得的數值是一個「比」，並可用 $\frac{1}{99}$ 或 1：99 來表示。

當我們把兩個同類的量以除法的形式作比較，所得的商便是一個「比」。

同類的量
圖中有 5 個藍點 和 3 個綠點。

我們可以利用除法比較藍點數目和綠點數目：

$$\frac{藍點數目}{綠點數目} = \frac{5}{3}$$

以上比較也可用「比」來表示。

藍點數目與綠點數目之「比」是

$$\frac{5}{3} \text{ 或 } 5：3$$

◀ 它的意思也指 $5：3 = \frac{5}{3}$。

藍點數目與綠點數目之「比」是

$$\frac{5}{3} \text{ 或 } 5：3$$

注意：

(i) 比是沒有單位的。

(ii) 對於 5：3 這個比，5 和 3 稱為該比的項。

(iii) 5：3 與 3：5 並不相同。

$3：5 = \frac{3}{5}$，但 $5：3 = \frac{5}{3}$。

考慮 4：5 這個「比」。有沒有其他「比」等於 4：5？

「比」	分數

4：5　——以分數形式表示——→　$\frac{4}{5}$

把分子和分母乘以同一個數，例如：2。

$4 × 2：5 × 2$　←——以比形式表示——　$\frac{4 × 2}{5 × 2}$

$\therefore 4：5 = 4 × 2：5 × 2 = 8：10$

事實上，若 a、b 和 m 都是非零的數，則

$a：b = a × m：b × m$

◀ 若 $a：b = 4：5$，則 a 和 b 可能是 4 和 5、8 和 10、12 和 15、或其他組的數。

「勾股定理」與中華文化

老師：鍾瑞麟老師、張旭源老師
年級：中二級

簡介

　　本課堂旨在透過介紹「勾股定理」在中國的發展歷史，讓學生進一步了解當中的人物故事，以及比較中西方「勾股定理」的發現時間線，讓學生可以了解到古代中國數學發展的先進情況。從而希望學生可以學習到堅毅，勤勞等美德，以及身為中國人的身份認同。

教學目標

1. 了解「畢氏定理」在古代中國的應用；
2. 欣賞「勾股定理」當中的中華文化；
3. 比較中西方「畢氏定理」的歷史；
4. 讓學生因中國的數學發展而感到自豪，同時欣賞不同地方的數學發展進程。

教學計劃

學習階段及時間	教學活動	教學內容
引起動機（5分鐘）	與學生訂正預習工作紙，強調中國古代已經十分重視數學的教育。 老師提問「畢氏定理」在中國古代的稱呼。 介紹「勾股定理」，以及「勾」和「股」分別的意思。	「勾」：短邊 「股」：長邊 「弦」：斜邊 點出課堂目標，認識「勾股定理」（畢氏定理）及其在中國的應用。

課堂發展 第一部份： 講解中國的 「勾股定理」的出現 （20分鐘）	老師提問：簡報上面的3個數，請學生試加入數字／符號使之成為合理算式，結合今天的主題，學生想到甚麼?	簡報上顯示： 由老師寫在白板上： $$3^2+4^2=5^2$$
	老師解釋345這一組數字由有一位叫商高的中國古代數學家在公元前1000年發現「勾股定理」。	
	老師展示「勾股定理」的時間線，並讓學生記著，之後會再提及。	
	老師進一步帶出《周髀算經（卷上）》有關「勾股定理」的一段內容。	老師強調：這是中國最早有關「畢氏定理」出現的文獻證明。
	商高曰：「數之法，出於圓方。圓出於方，方出於矩。矩出於九九八十一。故折矩，以為句廣三，股脩四，徑隅五……。故禹之所以治天下者，此數之所生也。」	
	老師提問：學生是否認識禹，如認識，學生曾聽說與他的甚麼事跡？	預期學生回應：「大禹治水」。
	老師講解更多有關大禹的事跡以讓學生學習古人的責任感，堅毅，勤勞的特質。	
	古文數學題：村中有一方畝，勾五，弦十三，村內有畝幾何？	由學生試用「勾股定理」求面積。 解釋：村內有一個方形（長方／正方形）的田，短邊是5，斜邊是13，求田地的面積。 長邊＝12 面積＝5*12=60
課堂發展 第二部份： 講解西方的「畢氏定理」的出現 （5分鐘）	解釋西方「畢氏定理」的命名原因，展示兩個不同的發現：「勾股」／「畢氏」定理發現的時間線。	

鞏固 （5分鐘）	詢問學生黑板上展示的「勾股定理」發現時間線的觀察。 「畢氏定理」的概念，比起西方更加早出現。 不同時代的中國古代數學家，都有記述「畢氏定理」的相關事情。 老師詢問學生為何數學界普遍稱「畢氏定理」，而不是「勾股定理」？ 老師小總結：中國發現「畢氏定理」／「勾股定理」的時間不比西方遲，中國在數學領域上有領先的地方，讓學生為自己身為中國人而感到自豪。	答案： 「勾股定理」雖是較早在古文中出現，但只是作為一個特例345出現，其後並沒有更多的證明去驗證其「勾股弦」關係合理性，而「畢氏定理」雖是較後出現，但卻有更多證明方法去驗證，因而在學術界更普遍使用「畢氏定理」去稱呼這個定理。 當然，古時可能由於文字記錄比較困難，因此中國的「勾股定理」可能有證明，但卻因當時條件有限而未被記錄。但我們由此至少可以得知中國發現「勾股定理」的時間不比西方遲。
總結 （5分鐘）	老師總結：希望學生由大禹這一人物及事跡學習到責任感，堅毅，勤勞，承擔精神，並學習到他的精神，成為更好的人。 另外，可以了解到和中國古代一樣，西方其他國家，亦有類似「勾股定理」和「畢氏定理」的證明，比較時間線的時候，發現古今中外都有不同的類似「畢氏定理」的出現，明顯地，中國對於「畢氏定理」的應用比起西方國家還要早，中國數學家其實亦為世界數學發展作出了重要貢獻，我們可以為身為中國人而感到自豪。	

上課情況

教學反思

在講解「勾股定理」時，我們特意引用了《周髀算經》中商高一段話：「勾廣三，股脩四，徑隅五」，而在這個基礎之上，我們抓住了中國古代對數學的認知，體現了東方智慧。這段話引發了學生們的強烈共鳴，她們紛紛表示：「原來古代數學在中華文明發展中扮演了如此重要的角色。」

隨後，我們以「勾股」為切入點，讓學生思考中國傳統文化中的「科學」理念與「勾股定理」的內在聯繫。通過分析古人運用「勾股定理」進行工程計算，制定天文曆法的歷程，學生們深刻認識到數學不僅是一門邏輯嚴密的學科，更承載著中華民族的文化智慧。

在價值觀教育方面，我們鼓勵學生聯繫身邊的事例，思考如何在日常生活中踐行堅毅勤奮的態度。有的學生分享了自己堅持做人誠實守信的故事，引發了全班熱烈的討論。我們由此引導學生思考「作為中華兒女，我們都應該繼承和發揚中國傳統美德，為實現中華民族偉大復興貢獻自己的力量」。

通過這堂生動活潑的數學課，我們感受到價值觀教育的重要性。作為老師，我們不能僅局限於知識的傳授，更要注重挖掘知識背後的文化內涵，用中華文化的瑰寶滋養學生的心靈，讓他們成長為堅定的中華兒女。這是我們的未來教學工作的目標所在，也是我們始終堅持不懈的追求。

學生回饋

以下是學生的問卷，學生普遍認同該課堂有效提升國民身份認同的價值觀。

教材

中國古代數學的聯立方程

老師：黃玉芝老師
年級：中二級

簡介

　　聯立方程在中國數學發展中歷史悠久，在不同的數學古籍亦會找到聯立方程的例子，例如《九章算術》、《孫子算經》、《算法統宗》、《四元玉鑑》等等。此課堂旨在探討中國古代的聯立方程題目與人民生活的關聯，在沒有未知數概念時古人是如何解聯立方程，以及欣賞中國古代用字的精妙。

教學目標

1. 認識一些中國古代數學專著。
2. 理解以文言文寫成的數學題目。

教學計劃

時間（分鐘）	內容	學習重點
4	1. 介紹中國古代的數學著作。	1. 包括《九章算術》、《孫子算經》、《算法統宗》、《四元玉鑑》
8	1. 介紹《九章算術》包含的內容。 2. 由《九章算術》中選出一題與聯立方程有關的題目與學生分享。	1. 提醒學生上學期的課程內容有提及中國古代數學著作《周髀算經》的「勾股定理」。 2. 先讓學生閱讀題目，如有需要可解釋文言文中「半」與「太半」的意思，著學生嘗試建立聯立方程。
8	1. 介紹《孫子算經》包含的內容。 2. 由《孫子算經》中選出一題與聯立方程有關的題目與學生分享。	1. 先讓學生閱讀題目，如有需要可解釋文言文中「盈」與「不足」的意思，著學生嘗試建立聯立方程。

時間（分鐘）	內容	學習重點
8	1. 介紹《算法統宗》包含的內容。 2. 由《孫子算經》中選出一題與聯立方程有關的題目與學生分享。	1. 提醒學生可留意著作中的題目的韻律，從而欣賞作者除了關心數學題目的內容與日常生活的關聯外，還花的心思於心字的雕琢。 2. 先讓學生閱讀題目，如有需要可提醒學生「1斤=16兩」，著學生嘗試建立聯立方程。
8	1. 介紹《四元玉鑑》包含的內容。 2. 由《孫子算經》中選出一題與聯立方程有關的題目與學生分享。	1. 引入中國古時未知數概念，指出古中國並非以x、y、z等代表未知數，而是以地元、人元、物元等代表未知數。 2. 先讓學生閱讀題目，提醒學生需用分數處理，著學生嘗試建立聯立方程。
4	總結： 1. 通過解答以上古算書裏的問題，我們知道二元一次方程是歷史悠久的題目。 2. 而且中國古算書的題目多是實用性較高的題目，幫助人們日常生活解決難題。	

中國古代的數學著作

- 九章算術
- 孫子算經
- 算法統宗
- 四元玉鑑
- ....
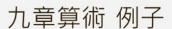
九章算術 例子

今有甲乙二人持錢不知其數
甲得乙半而錢五十　乙得甲太半而錢亦五十
問甲乙持錢各幾何
詞解：半➜的一半
　　　太半➜的三分之二

九章算術 例子

設甲有錢 x，乙有錢 y。

$$\begin{cases} \dfrac{x}{2} + y = 50 \cdots\cdots (1) \\ x + \dfrac{2y}{3} = 50 \cdots\cdots (2) \end{cases}$$

四元玉鑑 例子

用 999 文錢買得梨和果共 1000 個，梨 11 文買 9 個，果 4 文買 7 個，問：梨買了多少個，共多少文錢？果買了多少個，共多少文錢？

試建立一組聯立方程解決以上的問題

四元玉鑑 例子

設梨 x 個，果 y 個。

$$\begin{cases} x + y = 1000 \qquad\cdots\cdots(1) \\ 11 \cdot \dfrac{x}{9} + 4 \cdot \dfrac{y}{7} = 999 \cdots\cdots(2) \end{cases}$$

教學反思

1. 時間不足，要能力較弱的學生理解及解題會有難度。
2. 下次可製作工作紙，讓課堂較流暢及學生可保留相關內容作參考。

個人、社會及人文教育

Cooperative learning: Understanding fiscal policy and its effects on the Hong Kong economy

Subject : Economics

Teacher : Ms Wong Man Yan

Level: S.5

Introduction

Cooperative learning promotes active learning as students actively engage in different parts of learning activities. Through group presentations, students are encouraged to critically evaluate Hong Kong's fiscal policy and its impact on the economy. It allows them to develop a deeper understanding of the fiscal policies in Hong Kong. They also need to analyze data, draw conclusions, and support their arguments with evidence. This promotes higher-order thinking skills and enhances their ability to think critically and analytically.

1. Expected learning outcomes

Students should be able to:

(i) analyze the fiscal policy implemented in Hong Kong

(ii) evaluate the effects of fiscal policy on the Hong Kong economy

(iii) develop effective group presentation and communication skills

Strategies

Students were divided into four groups. Each group conducted research on a specific fiscal policy in Hong Kong. They had to create a structured presentation using different tools such as PowerPoint and Canva, and present their findings.
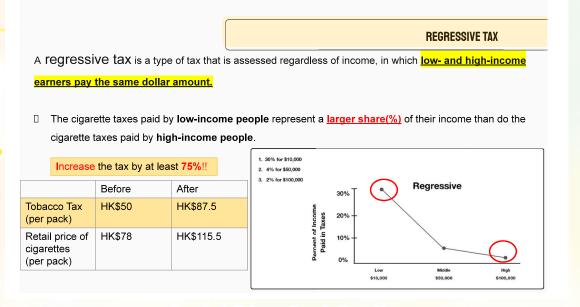
1. Requirements of the presentation:

Part A: Introduction of a fiscal policy implemented in Hong Kong

Part B: Discussion of how the policy affects at least three economic variables

After the presentation, the presenting group needed to answer one to two follow-up questions to encourage further exploration of the selected policy.

Sample of student's work

<div>

REGRESSIVE TAX

A **regressive tax** is a type of tax that is assessed regardless of income, in which <mark>low- and high-income earners pay the same dollar amount.</mark>

☐ The cigarette taxes paid by **low-income people** represent a <u>**larger share(%)**</u> of their income than do the cigarette taxes paid by **high-income people**.

Increase the tax by at least **75%**!!

	Before	After
Tobacco Tax (per pack)	HK$50	HK$87.5
Retail price of cigarettes (per pack)	HK$78	HK$115.5

1. 30% for $10,000
2. 4% for $50,000
3. 2% for $100,000

Regressive

Percent of Income Paid in Taxes

30%
20%
10%
0%

Low $10,000   Middle $50,000   High $100,000

</div>

Sample 1: Tobacco Duty in Hong Kong

(C) The effects on Government Revenue 💰

When municipalities implement a solid waste charging system, where individuals and businesses pay for their waste disposal based on the volume or weight of the waste generated, it can lead to an increase in government revenue. This additional revenue can be allocated towards waste management infrastructure, recycling programs, or other environmental initiatives, ultimately benefiting the community in terms of better waste management practices and potentially reduced environmental impacts to reduce climate change.

Sample 2: Municipal Solid Waste Charging in Hong Kong

Reflection

Four fiscal policies (Tobacco Duty, Municipal Solid Waste Charging, Consumption Voucher Scheme and Hong Kong tourism) were selected as presentation topics by the students. Students were able to apply concepts such as income inequality and aggregate output to analyze and evaluate the chosen policies. Some higher-ability students were even able to use data and diagrams to support their arguments. However, some students found it difficult to design their presentation topics as they had no prior knowledge of the fiscal policy in Hong Kong. The provision of guided questions and examples of fiscal policy were important as it provided a clearer direction for the students to start their research.

國防建設：明長城
——以體驗式學習提升教學效能

科目：中國歷史科
老師：賴正琼老師、鄧嘉麗老師
年級：中二級

教學理念

為進一步提升學習成效，本科採用體驗式學習活動，以促進學生觀察反思和提煉經驗，以深化學習成效。（見圖一「體驗式學習循環」）

圖一 ： 學者戴維・庫伯（David A. Kolb）的「體驗式學習循環」[1]

本科選取中二級課題「國防建設：明長城」，利用「體驗式學習循環」理論，設計活動。由老師示範，讓學生應用、實踐課堂所學，並進而主動搜尋相關知識，以深化其所學。

課堂活動設計如下：

1. 具體經歷：學生自行製作長城模型及搜尋資料；
2. 觀察反思：透過課堂匯報及同儕互評，明白自身不足之處，從改善中學習；
3. 提煉經驗：透過學習他人的長處及老師的回饋，在競賽前改進自己；
4. 積極實踐：在競賽中，展現自己的長處及自身所學。

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[1] 體驗式學習，又稱為實踐式學習(Hands-on Learning)，是美國教育理論學者大衛・庫伯則於一九八零年代，在杜威的學說基礎之上，提出了一套庫伯體驗學習圈理論(Kolb Experiential Learning Cycle Theory)。庫伯提出，學習是一個透過轉化經驗而獲取知識的過程，而當中涉及具體經驗、反思、抽象概念化及主動實驗四個循環階段。在上述循環中，具體經驗及抽象概念化兩個階段屬於體驗的過程，反思及積極實驗則屬於轉化的過程。

根據庫伯的理論，學習者可從任何一個階段開展其體驗學習的過程，但要有效學習，學習者需要完成四個階段，而每個階段亦互相依存，承上啟下，因此即使可從任意階段開展學習，但必須依次完成四個循環階段。

(Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development (Vol. 1).p.38. Englewood Cliffs, NJ: Prentice-Hall.)

教學目標

　　透過認識明代長城的建設目的和相關設施，讓學生以「體驗式學習活動」呈現學習成果，不但加強學習歷史的趣味，更以自主學習的方式，深化學習成效。

以「體驗式學習活動」讓學生自主學習

1. 老師在課堂上講授明代長城的歷史、建設目的、長城的不同結構及其作用，讓學生對課題有基本的認識。

2. 學生需要以小組形式完成「立體長城模型」，並以「長城國防系統及作用」為主題，運用課堂所學的知識和網上搜尋的資料展示在背景板上，及自行美化長城模型和設計展板。

長城模型

透過競賽，促進學習

　　學生們分組完成長城模型後，需於堂上進行匯報，優勝隊伍進入班際決賽。評分項目分為內容、長城設計及匯報技巧，老師會要求學生進行互評，並給予回饋。此舉可以令學生互相欣賞他人的長處，互補不足，從改善中學習；同時也令學生能自我省察和評估，促進同儕間的學習，亦可以訓練學生的口頭匯報技巧，並能在競賽中促進學習。

校長吳博士、教務主任孔老師與
中二級冠軍組合照

校長吳博士、教務主任孔老師
與中二級亞軍組合照

校長吳博士、教務主任孔老師
與中二級季軍組合照

教學計劃

	教學目的	學習活動	教學活動	教學工具
第1階段：教授知識	透過「體驗式學習活動」刺激學生思考和運用所學，從而發揮探究精神。	提問、講解	・老師以簡報教授長城的基本知識，如修建歷史、時期、建設目的，講解長城的不同結構及其作用。 ・老師向學生介紹「明代長城面面觀」比賽事宜，並提點學生砌模型時需要注意的事項。	工作紙、簡報、白板
第2階段：分組協作	透過分組協作，提升學生的學習動機，又可令學生連繫課堂所學。	分組製作模型、搜集相關知識	・全班分成4-5組，以小組形式拼砌明長城模型，並且裝飾背景展板。 ・製作過程中，學生需整合課本的知識，再把網上搜尋課本以外，而與長城有關的設施及其作用的資料貼在展板上。	長城模型、展板
第3階段：班內匯報	透過課堂匯報，讓學生能學以致用；讓學生互相欣賞他人的長處，互補不足，從改善中學習。	課堂匯報、互評、反思	・學生於班課堂上進行匯報。 ・學生進行互評，並由老師邀請各組1位同給予別組口頭回饋。 ・最後，由老師再給予回饋，令學生可以改進。	簡報、長城模型、展板、互評紙、老師評分表
第4階段：班際比賽	透過班際比賽，不但訓練學生的匯報技巧，更能在競賽中促進學習。	匯報	・各班賽勝出的組別於圖書館進行「明代長城面面觀」班際比賽。 ・由校長及教務主任選出最後得獎組別。	長城模型、展板
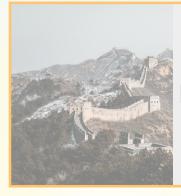
教學反思

　　「體驗式學習活動」的設計能讓學生實踐探究式自主學習。學生在自行搜集長城的資料時，也可探索到周邊相關的概念和知識。在篩選閱讀資源時，學生更能協助自己進一步探究、解難，深化對主題「長城」的認知。

　　此外，學生自行建構學習成果的形式和內容，能讓她們領略到自主學習亦是學習方法的一種。在製作長城的過程中及競賽中，學生能互相協作、互相欣賞，更能促進學習。「體驗式學習活動」讓學生享受學習過程的樂趣，容易記起自己的體驗，從而牢記所學。

附件一：教學簡報

國防建設：明長城

長城的演變

秦代長城　　　明代長城

分組匯報

題目：「明長城」的防禦系統及其作用

一、分組及整理
全班分為5組，合組後有5分鐘整理。

二、匯報
各組順序匯報，每組有3分鐘匯報時間。

長城的修建原因及作用

秦代長城及靈渠示意圖（約公元前210）
匈奴

隋代建設圖（大業八年，612年）
東突厥
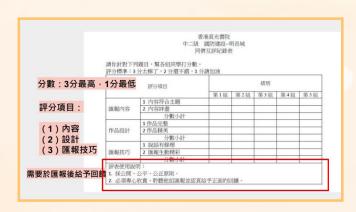
秦代
（1）防禦北方邊族：匈奴 （2）保衛京師 咸陽
隋代
（1）防禦北方邊族：東突厥 （2）保衛京師 大興

持續修築長城以保衛國家

香港真光書院
中二級　國防建設--明長城
同儕互評紀錄表

請你針對下列題目，幫各組同學打分數。
評分標準：3分太棒了，2分還不錯，1分請加油

分數：3分最高，1分最低

評分項目：

（1）內容
（2）設計
（3）匯報技巧

評分項目		級別				
		第1組	第2組	第3組	第4組	第5組
匯報內容	1 內容符合主題					
	2 內容詳盡					
	分數小計					
作品設計	1 作品完整					
	2 作品精美					
	分數小計					
匯報技巧	1 說話有條理					
	2 匯報生動精彩					
	分數小計					

需要於匯報後給予回饋

評表使用說明：
1. 採公開、公平、公正原則。
2. 必須專心欣賞、聆聽他組匯報並認真給予正面的回饋。

總結　明代長城的修建及作用

（1）抵禦北方邊族
（2）守護都城：北京

➔ 國土安全的重要
➔ 修建長城，甚至擴大長城的規模（18次）
➔ 費時最久、工程最大、防禦體系和結構最為完善
➔ 前人堅持不懈修築長城以保衛國家

明代北京地理形勢圖（公元1421年）
蒙古諸部　女真諸部

附件二：同儕互評紀錄表

香港真光書院
中二級　國防建設--明長城
同儕互評紀錄表

請你針對下列題目，幫各組同學打分數。
評分標準：3 分太棒了，2 分還不錯，1 分請加油

評分項目		級別				
		第 1 組	第 2 組	第 3 組	第 4 組	第 5 組
匯報內容	1 內容符合主題					
	2 內容詳盡					
	分數小計					
作品設計	1 作品完整					
	2 作品精美					
	分數小計					
匯報技巧	1 說話有條理					
	2 匯報生動精彩					
	分數小計					

評表使用說明：
1. 採公開、公平、公正原則。
2. 必須專心欣賞、聆聽他組匯報並認真給予正面的回饋。

附件三：老師評分表

香港真光書院
中二級　國防建設--明長城
老師評分表

班別：＿＿＿＿＿
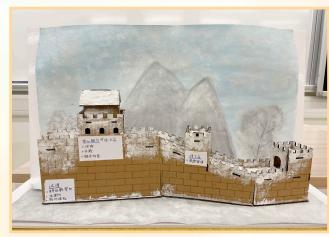
一、評核全組表現，分數以 1 分為最低，3 分為最高。

1 分：表現一般	2 分：表現中上	3 分：表現理想

評核範疇		第 1 組	第 2 組	第 3 組	第 4 組	第 5 組
匯報內容	1 符合主題					
	2 內容詳盡					
作品設計	1 作品完整					
	2 作品精美					
匯報技巧	1 說話有條理					
	2 生動精彩					
總分						

二、回饋
第 1 組：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

第 2 組：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

第 3 組：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

第 4 組：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

第 5 組：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

*圈出得獎組別
● 冠軍：第 1 組 / 第 2 組 / 第 3 組 / 第 4 組 / 第 5 組
● 亞軍：第 1 組 / 第 2 組 / 第 3 組 / 第 4 組 / 第 5 組
● 季軍：第 1 組 / 第 2 組 / 第 3 組 / 第 4 組 / 第 5 組

附件四：學生分組製作的「立體長城模型」

附件五：學生反思

學生一

在製造長城的過程中，我覺得非常有趣，我們互相幫忙和交流，完成不同的任務，例如寫稿、在網上搜尋相關的資料、練習讀稿。我們分工合作，不但可以增加中國歷史的知識，還可以學習不屈堅毅的精神。

學生二

這一次活動我學習到團隊合作精神，並且能夠認識到古時長城的機關以及興建它們的作用，令我們對於歷史的內容有更深入的了解。在活動過程中，製作十分困難，要畫背景和設計對白，搜集資料。我們分工合作，最終成功完成這次的專題報告，也能成功入圍決賽。雖然未能獲得名次，但經過這次的失敗，下一次我能做出更好的作品。

學生三

「長城」的這個專題研習令我有一個十分深刻的印象。我與同學在製作長城模型的過程中，令我了解到團隊合作的重要性，以及關於古人製作的原因和其用途。這個活動令我再次讚嘆古人的智慧和策略，這次活動實在令我獲益良多。

學生四

從這次活動中，令我對長城有更多的認識。在搜集資料的過程中，我了解到更多關於長城的背景及知識。此外，很高興在這次活動中，可以跟同學齊心合力地努力完成本次長城的模型製作。匯報時，我亦很欣賞其他隊伍所做的模型，並從中學習到如何改善自己不足之處，日後我希望可以做得更好。

從「屏山文物徑」考察提升歷史學習興趣

科目：歷史科
老師：梁敏娜老師、謝業鉅老師
年級：中六級

摘要

　　為了加強學習歷史的趣味，中五歷史科學生在2024年5月6日到「屏山文物徑」考察，透過歷史考察活動，讓學生了解中國傳統圍村的建築格局以及宗族文化的歷史。

教學計劃

流程	目的	活動
考察前	透過不同的教學方法刺激學生思考和運用，從而發揮探究精神。	出發前的一周，在課堂上教授屏山文物的相關歷史知識，讓學生能加強相關歷史的概念。先讓學生進行自學，透過分組，每組學生就不同的概念進行研究，並且將研究成果輸入在Padlet，讓學生之間可以互相參考。相關概念如「宗族」、「宗祠」、「廈村鄧氏」、「六日戰爭」、「圍村」、「春秋二祭」等等。
考察日	透過委派任務給學生，提升學生的學習動機。	學生分組負責不同的景點，並記錄每個景點的歷史意義及特色。
籌備展覽	透過籌備展覽讓學生能學以致用，並且教授學生使用電子工具設計海報。	中五學生分成5組，每組學生就所負責的景點設計海報，並在圖書館舉行「屏山文物徑展覽」，學生能夠透過展覽，將所學推廣給其他級別的學生，進行跨級學習，在校內推廣歷史文化。 每張海報上設有一條問題，讓參觀者可按有關展覽內容回答問題。海報景點包括「達德公所」、「聚星樓」、「鄧氏宗祠」、「愈喬二公祠」、「清暑軒」、「古井」、「覲廷書室」、「上璋圍」等等。
跨級學習	了解香港與中國內地在歷史和文化上的淵源及連繫，並欣賞國家優秀的傳統文化。	為了加強中一學生對「新界五大氏族」的認識，中一學生需要到圖書館「屏山文物徑展覽」區，完成工作紙，從而了解香港與中國內地在歷史和文化上的淵源及連繫，並欣賞國家優秀的傳統文化。

活動日照片

學生設計的海報

鄧氏宗祠 愈喬二公祠

黎愷寧 李錦儀 李真芝

小知識

- 屏山鄧氏宗祠是新界現存最具規模的祠堂之一。據鄧氏族人考究，是五世祖鄧馮遜在元朝興建的，至今己有七百多年歷史。
- 鄧氏宗祠是三進兩院式的宏偉建築，建築物三進大廳上的樑架雕刻精美，有各種動植物和吉祥圖案。屋脊飾有石灣鰲魚和麒麟。

考考你

4. 鄧氏宗祠上的兩塊「孝」與「弟」牌匾反映了以下哪個觀點？
1.熱愛書法藝術 2.篤信風水命理
3.重視傳統道德 4.強調與世無爭

鄧仔回憶錄

- 踏入門內，我就能看到宗祠正廳兩邊有「孝」和「弟」兩塊牌匾。我由衷地感受到宗祠內的氣派，可見氣派恢宏和鄧氏的傳統道德。
- 每年的春秋二祭和點燈儀式等活動，我都會到宗祠內參加，祭祀祖先和舉行傳統慶典。而我最喜歡是到吃盆菜環節，大家分甘同味，一起傳承和保護鄧氏的文化和價值，感受來自鄧族的傳統氛圍。
- 我十分欣賞宗祠的特色建築風格，以精湛的技藝展現獨屬鄧族的傳統。例如以博古、石灣鰲魚、麒麟陶塑等的吉祥象徵。讓我感受到鄧氏族人的特色傳統風味。
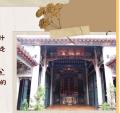
- 當我看見大門懸對聯：「遵期兼善；德修於身」的時候，都感覺他們具有一種傳統和莊嚴的氣氛。提醒我們要在日常生活中堅持優良的品德和道德價值觀，並且通過自身修練來達到內外兼收的目標。

觀廷書室

張偉嘉 林佩欣 江曉澄

小知識

大家聽到書室二字可能只會聯想到只是看書的地方，能有什麼意思？但其實書室也並非只用做看書，現在請和我一起走進並了解觀廷書室這個地方吧！

觀廷書室原先是屏山鄧族廿二世祖香泉公為紀念先父觀廷公而興建，希望族中子弟能考取科舉，進身仕途，提升家族的社會地位

建築亮點

- 觀廷書室屬於兩進式建築，第一進為門廳，門廳與正殿之間是天井；二進則為正殿，供奉祖先靈位。
- 廂房、耳室和內室均為左右對稱
- 書室牆壁、柱礎及柱身以花崗石為基礎，上半部分鋪上青磚，架樑為斗拱木結構，斗拱和壁畫都刻上民間故事。
- 大門、側門和兩窗都有對聯，大門的「紫山敬秀，德澤流芳」指鄧氏家族長久流傳，充分顯示了中國南方傳統豪門宅第的氣派。
- 神牌櫳的圖案意味着「八仙過海」、「一馬當先」、「福祿壽」、蓮花代表多子多孫。

鄧仔回憶錄

還記得小時候與夥伴上課，一不留神便睡了，老師發現後被罰打手掌，現在想起來，我的手掌心還有點隱隱作痛呢⋯⋯

以前我們在愈喬二公祠唸完小學之後，倘要繼續應考科舉，便得到村裡其中一間書院進修，而觀廷書室就是最大的一間。

考考你

5.觀廷書院是多少進的建築？
A.一進　B.二進
C.三進　D.四進

6. 以下哪個不是觀廷書室神牌櫳上的圖案？
A.八仙過海　B.一馬當先
C.四枚柿子　D.福祿壽。

聚星樓

胡嘉琪 林芊芊 蕭凱瑩

小知識
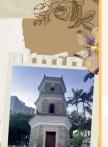
聚星樓坐落於上璋圍北面，是香港現存唯一的古塔。據屏山鄧氏族譜所載，聚星樓由鄧族第七世祖鄧彥通所興建，已有超過六百年歷史。

據鄧族父老相傳，聚星樓矗立的位置原是河口，面對后海灣，興建聚星樓是用以擋北煞、鎮水災，而聚星樓與青山風水遙相配合，亦可護佑族中子弟在科舉中考取功名。

鄧族父老相傳，聚星樓矗立的位置原是河口，面對后海灣，興建聚星樓是用以擋北煞、鎮水災，而聚星樓與青山風水遙相配合，亦可護佑族中子弟在科舉中考取功名。

聚星樓以青磚砌成，呈六角形，高約13米。塔高三層，各層之間建有造型獨特的屋脊。上層供奉著魁星，據說是主宰功名的神祇。聚星樓正面各層均有吉祥刻字，由上而下分別是「凌漢」、「聚星樓」和「光射斗垣」。聚星樓原打算建成七層，但上層兩度給颱風雅毀以後，便放棄了原來的計劃。

考考你

7.你是否知道聚星樓原打算建多少層？
a.五層
b.沒有改變
c.六層
d.七層

8.聚星樓最頂層的牌匾為_____
a.凌漢
b.光射斗垣
c.聚星樓
d.衡上雲宵

上璋圍

梁家茵 梁綽敏 李凱雲

小知識

上璋圍是於十八世紀由鄧氏的農佃陳氏及黃氏所建的圍村。四角當建有角樓作監視，後來陳氏及黃氏搬出上璋圍，才由鄧氏遷入居住。

至於名字來源⋯⋯精測跟圍村人渴望男丁有關。傳統社會以璋喻作男孩子，以瓦喻作女孩子。故有「弄璋之喜」以恭賀家庭添丁！

門聯曰：「乾峰烈紫丁財旺,辛水橫坦富貴昌」意思是蔭佑興隆～門樓之上門額為「南陽世澤」，大門聯曰：「上林斑秀樟壁生輝。」

考考你

9.圍內門聯「乾峰烈紫丁財旺,辛水橫坦富貴昌」有甚麼意思
A.身體健康 B.蔭佑興隆 C.長命百歲 D.誕生貴子

鄧仔回憶錄

我在這裡住過一段時間，生活得非常安全！因為圍村和周遭環境加起來是一套複雜的防禦系統。敵人來襲時，首先要穿越過一連串的障礙物，而在不少圍村門外村民都會種植一片茂密的樹林或竹林。除了是風水的考量外，其實更重要的是要阻擋敵人前進的路線，為村民爭取防禦的時間！

當敵人越過了風水林，又馬上要面對另一個障礙--護城河！一些圍村的遺址刻意靠近河流除了生活上取水方便，村民也會挖掘護城河從附近的河溪引水呢～

了解完之後是不是很想到我家參觀呢～？
哎呀～可惜我家是私人物業，外人不能進入喔～
有緣才給你參觀吧！

中一學生的工作紙表現

1. 屏山文物徑上的歷史文物如何反映香港與中國內地在歷史和文化上的連繫？（4分）

元朗屏山是香港歷史最悠久的地區之一，鄧族則為新界其中一個重要的宗族。 4/4
鄧族的歷史源流長，至八十六世祖鄧徽於北宋初由江西省遷居廣東省，
為鄧族粵派一世祖。

2. 你會如何透過課餘活動增加對國家歷史的認識？（4分）

我會自己上網搜索關於國家歷史的科書、資訊影片觀看，增加對國 4/4
家的了解，我也會在假期時段去關於國家歷史的博物館和國家的歷
史文物建築參觀，可以親身體驗古時的人們的生活。

⑧

總結

　　整體而言，本次透過不同的教學活動刺激學生的思維，例如透過考察前的學習活動，讓學生對考察的地方有基本認識。而在活動當天，透過導賞員的詳細講解及親身接觸不同的歷史文物，讓學生對整個宗族文化的了解更深一層。而回到學校，期望學生能將所學推廣到其他級別的學生，進行跨級學習。學生利用CANVA設計海報，製作展覽，而中一學生則透過工作紙及展覽，了解宗族文化，學習香港史。是此活動結合多種教學方法，如電子學習、協作學習、跨級學習等等，藉此讓學生提升對歷史學習的興趣。

高中地理科實地考察

科目：地理科
老師：馮松渭老師、伍美橋老師、吳婉媚老師
年級：中五級

摘要

　　實地考察是地理科的重要技能，2019年開始的香港中學文憑試，實地考察成為地理科卷一的必答題。本文介紹本校高中地理科一次有關工業區位的實地考察，地點是觀塘及將軍澳工業區，文章會逐一論述實地考察五個步驟。

背景簡介

1. 實地考察為本題目

　　由2019年開始，實地考察成為香港中學文憑試地理科卷一的必答題，佔全卷總分15%。儘管在2021至2024年期間因應新冠疫情爆發，大部分學校暫停外出活動，該題目一度成為選答題；隨着疫情遠離，全港學校已恢復實地考察活動，由2025年開始，該題目重新成為必答題。

2. 學校的實地考察歷史

　　實地考察是地理科的重要技能，在會考及高考年代，學校亦舉辦過各類不同的實地考察活動，本校學生早在1979年已在長洲進行實地考察。隨着公開試轉為文憑試後，學校亦不斷參加各種不同的實地考察，特別是由長洲明愛陳震夏郊野學園及荃灣嗇色園可觀自然教育中心舉辦的實地考察課程，這些課程多數是為期兩日一夜或三日兩夜的宿營，不但裝備學生準備文憑試的題目，而且有助增強學生深入探索地理現象的能力。如果學校未能抽中以上兩個機構的課程，就需要與校外機構合辦實地考察活動，確保學生有足夠的學習機會。今年本校地理科就是與校外機構合辦中五級實地考察。

觀塘及將軍澳工業區實地考察

1. 引言

　　2025年實地考察題目再次成為必答題，將考核「氣候變化」、「熱帶雨林」及「工業區位」三個必修議題。由於前兩者分別在2023及2024年的文憑試中考核，故集中訓練學生有關大熱課題「工業區位」實地考察。為了讓學生掌握相關議題的實地考察，本校地理科聯同資深地理科老師陳耀生老師在2023年12月23日（星期六），進行了一次有關「工業區位」的實地考察，地點為觀塘工業區及將軍澳工業邨。

實地考察分為5個步驟，以下將會詳細闡述是次實地考察的過程：

步驟1：構思主題和預備考察

在2023年12月15日（星期五），我們在學校地理室舉行了一次預備工作坊，讓學生構思考察主題、了解考察行程和預備考察所需的物資。

由於該實地考察主題為「轉變中的工業區位」，我們選取了兩個考察地點。第一個考察地點是觀塘工業區，它是香港早期的工業區。但由於近年香港工業北移珠三角地區，導致不少工業用地也逐漸改變用途，例如活化工廈作商業用途成為了觀塘工業區的發展焦點；另外，部分工廈重建後，成為大型辦公室和商場；加上創意產業的興起，亦大幅地更改了這一帶的工廈用途。這些轉變均為觀塘帶來不少挑戰，包括舊工廠結業、工廈的租金大幅上升等。第二個考察地點是將軍澳工業邨，它是一個較新型的工業邨，該地區集中了高科技和低污染的工廠，包括數據技術中心、先進製造業中心等。將軍澳工業邨除了擁有完善的國際電訊連接網絡外，還是香港匯聚最多數據中心的地方。

這兩個考察地點不同的工業類型能夠為學生提供充足數據，讓她們進行分析和對比。在外出進行考察前，她們先訂立四個假設，以便透過考察驗證真確性：一、將軍澳工業邨的環境較觀塘工業區佳；二、將軍澳工業邨的交通問題較觀塘工業區輕微；三、將軍澳工業邨的建築物密度及高度較觀塘工業區低；四、將軍澳工業邨的工業種類較觀塘工業區先進及多元化。另外，她們亦學習如何使用不同的儀器搜集環境數據，例如風速計、噪音計、風向標、分貝計、二氧化碳濃度計等。

在規劃考察行程時，我們考慮了可達度和安全性的問題，這兩個考察地點皆是容易到達的地方，尤其是觀塘區，有不少公共交通設施，例如港鐵站等。此外，17位學生分成三個小組進行考察，每組約五至六並及設一組長，再由一位老師隨同進行考察活動，把考察的安全風險降低。

① 將軍澳考察
○ 抵達地點 ＋ 接駁巴士集合點
第1組：
第2組：
第3組：

② 觀塘考察
○ 接駁巴士抵達地點
● 解散地點
第1組：
第2組：
第3組：

步驟2：搜集數據

到了12月23日實地考察當日，我們以定額系統抽樣的方法，搜集一手數據。在觀塘工業區，我們揀選了三條街道進行系統抽樣，每條街道定額搜集14幢工業大廈數據；而在將軍澳工業邨，我們揀選了三個區域進行系統抽樣，每個區域定額搜集七幢工業大廈數據。三組學生由三位老師分別帶領，在這些街道和區域中搜集數據。

為驗證假設一：將軍澳工業邨的環境較觀塘工業區佳，我們分別在觀塘和將軍澳兩地系統抽樣了三個和一個環境數據。學生透過使用不同的儀器以協助搜集環境數據，例如使用二氧化碳濃度計量度二氧化碳濃度；溫度計量度溫度；分貝計量度街道的噪音水平；使用光度計和風速計量度光強度和風速。另外，學生使用有評分系統的表格記錄工業大廈外觀及內部情況，例如用「L1」、「L2」及「L3」分別代表「最好」、「一般」和「欠佳」。

為驗證假設二：將軍澳工業邨的交通問題較觀塘工業區輕微，我們分別在兩地系統抽樣了一個交通數據。學生以點算的方法記錄一分鐘內馬路上車輛經過的數量、種類、人流，以及路旁汽車違泊數量。

為驗證假設三：將軍澳工業邨的建築物密度及高度較觀塘工業區低，我們分別在兩地系統抽樣了14幢和7幢工業大廈的層數。在觀塘，學生進入每一幢大廈內查看大廈指示牌，以數算大廈層數；在將軍澳，學生只能在工廠外面目測或數算工業大廈的層數。

為驗證假設四：將軍澳工業邨的工業種類較觀塘工業區先進及多元化，我們分別在兩地系統抽樣了14幢和7幢工業大廈的土地利用數據。在觀塘，學生先觀察及記錄每一幢大廈底層的土地利用；然後進入每一幢大廈內查看大廈指示牌，判斷及記錄大廈一樓以上的樓層的土地利用；在將軍澳，學生只能在工廠外面憑工廠名稱判斷該工業大廈內的土地利用，同時上網查考網上二手數據作確認。

步驟3：處理、分析和展示數據

學生搜集完一手數據後，於現場即時進行簡單的處理和分析。首先，三組學生需要將各自的數據分享給其他組，令三組齊集一套觀塘工業區三條街道和將軍澳工業邨三個區域的完整數據，從而作出分析。

假設一有關將軍澳工業邨和觀塘工業區的環境，學生要將兩地的各個環境數值取平均值，以及統計工業大廈外觀及內部哪一種情況較多，再作比較。然後得出將軍澳工業邨的二氧化碳濃度較低、相對濕度較高、溫度低、音量分貝較低、光度較高和風速較快等；工業大廈外觀及內部情況「L1最好」及「L2一般」較多。假設二有關兩地的交通問題，學生要將兩地的車輛經過的數量、汽車違泊數量和人流等各個數值取平均值，再作比較。然後得出將軍澳工業邨車輛經過的數量、汽車違泊數量和人流均較少。假設三有關兩地的建築物高度，學生要計算大廈的平均層數，再作比較。然後得出將軍澳工業邨的工業大廈普遍較矮，而且佔地面積較大，所以建築物高度及密度較低。假設四有關兩地的工業種類，學生要統計哪種土地用途較多，再作比較。然後得出將軍澳工業邨的工業種類較多元化，而且較多屬高增值高科技的工業，相反觀塘工業區很多工業大廈已轉作商業用途，工業種類因而較少。

學生處理及分析數據後，將假設一至四的比較結果展示於工作紙上，三組學生分別匯報結果。

步驟4：闡釋結果和定下結論

學生結論是假設一至四全部都成立，並運用所學的地理知識，例如香港城市發展及工業發展的歷史，闡釋結果。

結論一：將軍澳工業邨的環境較觀塘工業區佳。學生認為將軍澳工業邨較新落成，在規劃方面做得較完善，所以路面較寬闊，光線充足（光度較高）、空氣流動較快（風速較快）、空氣較清新（二氧化碳濃度較低），散熱速度較快（溫度較低及相對濕度較高）；工業大廈較新落成，故外觀及內部情況以「L1最好」及「L2一般」佔多。

結論二：將軍澳工業邨的交通問題較觀塘工業區輕微。學生認為將軍澳工業邨較新落成，在規劃方面做得較完善，道路寬闊，亦有充足的車位供停車之用，所以沒有交通擠塞問題，也沒有汽車違泊問題。

綠組 1　觀塘工業區數據蒐集　　　日期：**23/12/2023**　　　時間：＿＿＿＿＿

開源道							駿業街					
土地利用 (1)	租金/平方 呎(2)	層數	外觀及內 部情況(3)	狀況(落成 年)(4)			狀況(落成 年)	外觀及內 部情況	層數	租金 ($/ 平方呎)	土地利用
a)L b)C		27	L2	1995	源成 中心	觀塘 廣場	1986	L3	3		a)C b)C
a)L b)L		27	L1	1996	泓富 廣場	亭晉 中心	2010	L1	22		a)C b)C
a)C b)C		30	L1	2014	電訊 一代	怡生 中心	1990	L3	14		a)L b)I
a)C b)I		11	L3	1979	怡生 中心	成運 工業	1992	L3	14		a)L b)C,I
a)L b)I		12	L3	1970	怡生 工業	成業 工業	1987	L3	13		a)L b)C
a)L b)I		14	L2	1992	華富 工貿	駿聯 電話	1960	L3	1		a)I b)I
a)L b)I		27	L2	1995	利華 科技	日昇 中心	1986	L3	13		a)L b)I

(1) 土地利用 – 蒐集首兩層資料: **C** = 商業、零售或酒樓 / **L** = 大堂及泊車場 / **I** = 工業 (員是指出工業種類)
(2) 每呎租金(Opional) – 於互聯網/ 地產舖記 或 路邊宣部等 蒐集估價/蒐集 2 個中層單位, 每中間 2 個及街尾 2 個中層單位共 6 個單位的平均呎租
(3) 外觀及內部情況 – 用 3 等級觀察標準及評估方法 (L1 = 最好 / L2 = 一般 / L3 = 欠佳) (可參閱主無組內有關的相片及描述)
(4) 狀況(落成年份) – 3 種狀況 (**R** = 重建綠色圖例) / **Re** = 復修及翻新(橙色)/ **F** = 舊工廠大廈(藍色); 落成年份 (上網找二手資料)

綠組 1　觀塘工業區數據蒐集　　　日期：**23/12/2023**　　　時間：＿＿＿＿＿

		開源道	*(環境素質)*					*(交通情況)*		
		二氧化碳濃 度(ppm)(1)	相對濕度 (%)及溫 度°C	分貝	光度	風速	汽車數目 (每分鐘架次)(2)	汽車 (種類)(3)	違法泊車 (4)	行人流量 (5)
*源成 中心	觀塘 廣場	455	相對濕度% 56.4 溫度°C 17.3	70.5	209x10	0.4		GV PV		
泓富 廣場	亭晉 中心									
電訊 一代	華成 工業									
*怡生 中心	成運 工業	407 390	相對濕度% 60.4 溫度°C 15.4	69	293	0		GV PV		
怡生 工業	成業 工業									
華富 工貿	駿聯 電話									
利華 科技	日昇 中心	430 423	相對濕度 50.6 溫度°C 15.2	62.5	300	0		GV PV		

(1) 量量度二氧化碳濃度、相對濕度及溫度、分貝、光度及風速時, 同學應面向**駿業街**及將在關盛墻單高進行量定及讀數。
(2) 汽車(每分鐘數量)–同學應面向就業街並計算每分鐘內汽車經過的數目(間隔分鐘數多一次, 並紀錄兩次的平均值)
(3) 汽車(種型)–**GV** = 載貨汽車包括貨車、客貨車及貨櫃車；**PV** = 載客汽車
(4) 違法泊車–以 3 等級觀察標準及評估方法 (L1 = 沒有問題 / L2 = 一般 / L3 = 問題嚴重)
(5) 行人流量–站的行人路的後段並面向更道, 計算每分鐘經過你前面行人的數目

綠組 1　將軍澳工業邨數據蒐集　　　日期：**23/12/2023**　　　時間：＿＿＿＿＿

工業建築物 (1)	公司名稱	土地利用 (2)	工業活動的本質 (3)	狀況(落 成年)(4)	外觀及內 部情況 (5)	層數	租金 ($/平方呎) (6)	備註
1	香港科技探索 (HKTV mall)	C	IT	1992	L2	6	/	
2	Technoform Bautec	I	E	2008	L2	1	/	
3	IWS	I	Ev	1968	L1	4	/	
4	中國移動	I	IT	2014	L1	2	/	
5	星島報業	I	MM	2000	L2	8	/	
6	卡牌 B 四滴有限公司	C	FD	1994	L3	2	/	
7	數技術中心	I	IT	2016	L1	14	/	

(1) 為**駿業昌**的工業建築物 (參閱將軍澳地圖)
(2) 土地利用 – **C** = 商業及批發；**I** = 工業
(3) 工業活動的本質 – **IT** = 資訊科技 / 數據中心；**HT** = 高科技工業；**FD** = 食品及飲料；**MM** = 傳媒推介；**E** = 工程 / 機械；**Ev** = 環保工程；**O** = 其他 (請註明)
(4) 建築狀況 (落成年份) – 以互聯網搜尋大廈落成年份
(5) 外觀及內部情況 – 以 3 等級觀察標準及評估方法 (L1 = 最好 / L2 = 一般 / L3 = 欠佳)
(6) 租金 ($平方尺) – 互聯網搜尋(如適用)

綠組 1　將軍澳工業邨數據蒐集　　　日期：**23/12/2023**　　　時間：＿＿＿＿＿

		環境素質				交通情況			
		二氧化碳濃度(3 合 1)		音量計	光度計	風速計	駿昌		
建築物 3 IWS	駿昌街	二氧化碳濃 度(ppm) (1)	相對濕度 (%) 及溫度°C	分貝	光度 Lux	風速 m/sec	汽車數目 (每分鐘架次) (2)	汽車 (種類)(3)	違法泊車 (4)	行人流量 (5)
		396	相對濕度 90.3 溫度 13.5°C	70	427	0		GV 2 PV 1	3	2

(1) 量度度二氧化碳濃度、相對濕度及溫度、分貝、光度及氣流時, 同學應面向**駿昌街**及將在關盛墻單高進行讀數。
(2) 汽車(每分鐘數量)–同學應面向駿昌街並並計算每分鐘內汽車經過的數目
(3) 汽車(種型)–**GV** = 載貨汽車包括貨車、客貨車及貨櫃車；**PV** = 載客汽車
(4) 違法泊車–以 3 等級為觀察標準及評估方法 (L1 = 沒有問題 / L2 = 一般 / L3 = 問題嚴重)
(5) 行人流量–站立的行人路後段並面向更道, 計算每分鐘內經過你前方的行人數目

◇ 是次考察中我們利用了甚麼 取樣方法？ 這方法有甚麼優點與缺點？

◇ 根據考察項目 / 假設, 我們還有甚麼 數據值得蒐集？

◇ 你在是次考察的數據蒐集 途程中遇到甚麼困難？你 如何解決這些困難？

◇ 於不同時間：如平日或 假日本真的數據有何不 同？試略作解釋。

結論三：將軍澳工業邨的建築物密度及高度較觀塘工業區低。學生認為觀塘工業區的工業大廈較早落成，普遍向高空發展，所以樓層較多，高度和密度亦較高。將軍澳工業邨的工業大廈較新落成，規劃較完善，地積比率較低，建築物高度及密度較低。

結論四：將軍澳工業邨的工業種類較觀塘工業區先進及多元化。學生認為將軍澳工業邨主力發展高增值工業，例如數據中心，工業種類較先進；觀塘工業區很多工業大廈已轉作商業用途，以致工業活動大幅減少，剩下的工業多元化不足，商業用途亦令觀塘在週末吸引大量車流及人流，加上以前規劃不善，車位不足，結果導致上述結論二的交通擠塞及汽車違泊等交通問題嚴重。

步驟5：評估

在考察活動最後的步驟，老師和學生一起評估該次實地考察的優點和缺點，以及建議怎樣改善實地考察的設計。

首先，針對步驟一構思主題和預備考察，我們認為研究題目是合適的，能驗證地理科有關工業區位轉變的問題，而考察規模及師生人手比例亦合適。考察的地點安全、容易到達，亦能提供合適的數據。不過，考察時間略為緊迫，如能增加一至兩小時會較充裕。考察的日期亦需改變，當日早上天氣為全年最冷，而且下起大雨來，學生搜集數據期間顯得較為辛苦，如能改為十一月秋天時進行實地考察可能更佳。另外，考察使用的儀器不足，因為有部分儀器充電不足，以致當日未能使用，三組學生需要輪流使用部分儀器，較為不方便。還有，在觀塘考察時，學生多未能辨認工業大廈位置，如能在正式實地考察前額外舉辦一次先導研究，讓學生事先前往當地熟習考察環境，又或拍攝街道樓宇外貌，讓學生對社區有初步印象，學習之效果將會更佳。

其次，針對步驟二搜集數據，我們認為搜集數據的抽樣方式和數量是合適的。不過，由於當日早上天氣寒冷並且下大雨，部分學生在街上使用儀器顯得很困難，影響數據的準確性，記錄數據時亦有缺漏，以致後期處理及分析數據出現困難。另外網上資料欠齊備，學生需要上網查找工業大廈的部分數據，如落成年份等，可是她們未能直接從網上找到部分相關二手數據。

再者，針對步驟三處理、分析和展示數據，學生需要即時計算所搜集到的數據，並分析及口頭匯報。她們很努力完成這步驟的工作，如果能有其他輔助工具會更好，例如每位學生有一部平板電腦，可以將已處理和分析的數據即時開放給所有學生，匯報的效果會更理想。

最後，針對步驟四闡釋結果和定下結論，本次實地考察定下的四個假設均較簡單，容易驗證是否成立，並能引用課本所學闡釋結果。不過，在闡釋結果方面，如果有更多時間讓學生搜集二手數據，可讓學生更深入了解工業區位轉變的原因，例如為何觀塘工業大廈內有較多商業活動，但將軍澳工業大廈則主要為工業活動等，這樣可拓寬學生所學。

總結與前瞻

透過這次實地考察活動，讓高中學生走出課室，深入社區，探究及印證課本所學知識，學以致用，同時裝備中六地理科文憑試，一舉多得。

事實上，地理科的實地考察活動並不限於高中學生，過往也亦有為初中學生舉辦考察活動，例如為中三學生舉辦海下灣考察活動，學生除了乘坐玻璃船觀察海底的珊瑚礁外，還會親自在海下灣的沙灘「撿拾垃圾」，了解及印證課本有關海洋垃圾的課題。

地理科實地考察將會繼續舉辦下去，並會精益求精，讓更多的學生探索世界，學會學習，熱愛及享受探索學習的過程。

參考資料

高中地理考察與評估練習2025：牛津大學出版社

法治精神的意義

科目：公民與社會發展科
老師：曾穎傑老師、張志華老師
年級：中四級

教學計劃

	學習重點		
導入	・檢視學生的預習成果 ・檢視對本港法治精神的認識 ・老師以簡報來歸納學生的看法		・學生能歸納香港的法律制度能否體現法治精神
討論及匯報	・全班學生分組 ・學生閱讀有關本地案例 ・每組學生填寫討論工作紙 ・學生匯報案例如何體現的法治精神		・認識法治的含義
深化部分	・播放短片，總結本港法律制度的特點 ・老師引導學生思考和歸納法治對本港經濟和社會的影響		・透過討論令學生多反思法治的重要性
鞏固部分	・派發和講解功課，鞏固知識		・答題技巧的訓練 ・提升應付考試的能力

　　通過以上課堂活動，讓學生認識法治與法治精神的內涵，能夠運用法治思維分析事件，培養守法觀念及法治精神。

以下的案件體現哪些法治精神？

- 01 **萬寧婆婆** 毫無合理疑點 / 疑點利益歸於被告 / 無罪推定　　反思：為何要「無罪推定」原則？寧枉莫縱？寧縱莫枉？

- 02 **升中派位** 法律面前人人平等　　反思：法庭判決結果能否達致公平？

- 03 **堅尼地道豪宅須強檢** 必須依法行事，市民與政府均須守法 / 法律面前人人平等
反思：個人自由？公眾利益？

- 04 **維港填海工程** 必須依法行事，市民與政府均須守法　反思：公眾利益？

- 05 **黃伯殺妻** 被告人享有辯護權 / 公平審訊 / 法律面前人人平等　　反思：必需要律師嗎？
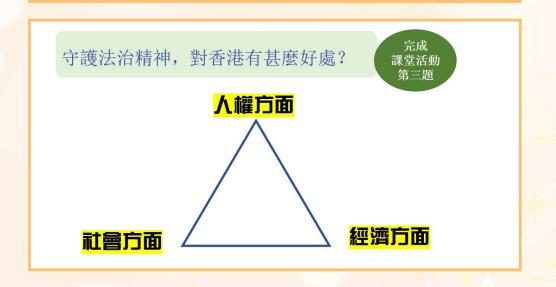
- 06 **僱員受傷索償** 法律面前人人平等　　反思：打官司為何花費多？

香港司法制度對法治精神的體現
A. 司法獨立
B. 法律面前人人平等
C. 公平公開的審訊
D. 被告人有權盡早接受公正審判
E. 無罪推定
F. 被告人享有緘默權
G. 被告人享有辯護權

守護法治精神，對香港有甚麼好處？

完成
課堂活動
第三題

人權方面

社會方面　　　　經濟方面

課外活動

參加由善導會主辦的「禁毒教育@模擬法庭2.0」的計劃。

計劃為期9個月，期間學生參與不同活動，例如旁聽高等法院審案、模擬法庭比賽及各項教育活動。通過這些活動，可以加深學生對法律制度的認識，從中體驗、學習及思考公民責任、法治系統的重要性。

學生 蕭欣靖

今年我們參加了由善導會主辦的「禁毒教育@模擬法庭2.0」的計劃。

整個計劃為期9個月，由2023年10月至今年6月。

期間我們參加了不同的活動，當中我最深刻的是聽高等法院審案，案件是關於販運危險藥物，當日是審訊的最後部份，法官聽取被告求情，然後宣判20歲的被告坐監16年，聽完後我感到震驚。為了金錢而販毒犯法，代價真是非常大，原來年少無知並不能成為減刑的理由。

而我最深刻的就是模擬法庭。我們要做律師在法庭上打官司。我們8位學生分別扮演律師、證人、被告，模擬在法庭上為被告辯護，又要盤問證人，當中涉及很多法律知識、法庭規矩、盤問用語。幸好，有現職大律師協助我們。他常常到校，教我們如何分析案情、提問盤問技巧、如何為當事人爭取最大利益。令我們獲益良多。

透過多元化禁毒教育活動，加深我們對毒品的禍害及相關刑事責任的認識，並提升法治、公義、公民責任等概念的認識，藉此加強其批判性思考及強化道德判斷能力，抗衡毒品的誘惑。

模擬法庭比賽中，我們代入法庭內不同的角色，包括控、辯雙方律師、被告、證人等，參與整個法律程序，並嘗試從不同角度探討犯罪行為以及相關社會議題，進一步反思法治與公義等概念與自身和社會的關係。

「法治」是香港的核心價值，我們需要認識社會的制度和明白自身的公民責任，提升我們對法治、公義、公民責任等概念的認識和認同，從而建立正確的價值觀。

科學教育

Lesson plan of LAC/Integrated Science

Subject   : Integrated Science
Teachers: Ms Ng Mei Kiu and Mr Tam Chi Chung
Level: S.2

Aims

To enable students to read and pronounce the vocabulary related to the parts of the eye, understand the part of speech of words, and properly write complete sentences describing the four processes of how we see.

Previous Teaching and Learning

Students have learned about the ten main parts of the human eye, their functions and features, and how our eyes work to produce the sense of sight.

Key Question of the Lesson

Can you write down the four processes of how our eyes see?

Sub-questions of the Lesson

1. Can you read aloud the ten main parts of our eyes?
2. Can you spell them out without checking your textbook?

Content Objectives

1. Content / Knowledge

Revision:

(i) The 10 main parts of the eye

(ii) The process of how our eyes see

2. Subject Skills

Procedure thinking

Language Support Objectives (via EMI)

1. Language Activities

(i) Assist students in spelling through speaking and writing activities

(ii) Assist students in forming sentences or new texts through writing activities.

2. Language Skills

Speaking, reading and writing

Materials and aids

Science Textbooks, PowerPoint and worksheets
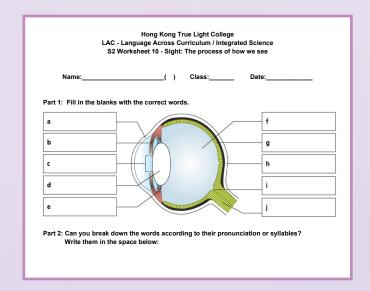
Content of lesson

Stage	Purpose	EMI/ skills Working Patterns		Time
Stage 1 Ask students to finish part 1 of the worksheet (fill in the blanks).	As a warm up exercise, and to recall what they have learnt in the previous lesson.	Writing	Std	2 mins
Stage 2 Checking the answers: Ask students to read aloud the vocabulary (the 10 main parts of the eyes) to their partners, and to indicate the words they fail to pronounce.		Reading, speaking	Std/Std	2 mins
Stage 3 Through the vocabulary: Ask students to read the vocabulary to the whole class. Ask them to break down the words according to their pronunciation/syllables and write them down on Part 2 of their worksheet.	To address students' inquiries on difficult wordings.	Reading, speaking	T/class	5 mins

Stage 4 Ask students to read all the vocabulary to their partners again for 5 times. Meanwhile, the teacher walks around to check and see if any students need help.	To reinforce their pronunciation of words.	Speaking	Std/ Std, Std/T	5 mins
Stage 5 Ask students to finish Part 3a of the worksheet.	To check the concept of IS content, and to help students identify the noun phrases/ verbs/ subjects/ objects of the sentences, as well as understanding the sentence structure and tenses.	Writing	Std	1 min
Stage 6 Review the meaning of words, in Part 3b, then ask students to fill in the blanks.		Reading	T/ std, Std	3 mins
Stage 7 Check the answers, ask students to use different colors of highlight pens to identify the subjects/ verbs/ objects in the sentences.		Writing	T/ Std	5 mins
Stage 8 Ask students to read aloud the 4 sentences in Part 3b to their partners.	To reinforce their concept and understanding of the sentences.	Speaking	Std/ Std, Std/T	7 mins
Stage 9 Ask students to finish Part 3c of the worksheet.	To check/ reinforce their understanding of the sentence structure and noun phrases.	Reading and writing	Std	5 mins
Stage 10 Check the answers and summarize the lesson: Ask students to study the spelling the vocabulary for their next dictation / quiz.	To summarize the lesson.	Reading and writing	T/ Std	5 mins

Post Lesson Review
(Observation of student's performance in IS class)

1. At the end of the lesson, some students were still confused with the pronunciation of some words. More repetitive reading aloud activities would be needed.

2. It is possible to conduct additional concept-revision exercises, such as labeling the four events in the appropriate positions within the given diagram and adding additional descriptions to the other parts of the diagram. This will enhance understanding of the concept, leading to deeper learning in both Science and English during class.

Hong Kong True Light College
LAC - Language Across Curriculum / Integrated Science
S2 Worksheet 10 - Sight: The process of how we see

Name:_____( )   Class:_____   Date:_____

Part 1: Fill in the blanks with the correct words.

a		f
b		g
c		h
d		i
e		j

Part 2: Can you break down the words according to their pronunciation or syllables? Write them in the space below:

Part 3a: Fill in the blanks.

Brain

Light from an object

Message — An upright image

Part 3b: How do our eyes see?
Fill in the blanks with the following *verbs* using the correct grammar.

| bend | enter | interpret | focus | stimulate | form |

1. Light from an object _____ the eye.

2. The cornea, lens and jelly-like fluid _____ and _____ the light onto the retina. An inverted image _____* on the retina.

3. The light _____ the light-sensitive cells on the retina.
They_____ messages to the brain through the optic nerve.

4. The brain _____ the message as an upright image.

Part 3c: Now, fill in the blanks again. Try NOT to check Part 3b !!

1. _____ enters _____.

2. _____ bend and focus _____.
_____ is formed on_____.

3. _____ stimulates _____.
_____ send _____.

4. _____ interprets _____.

Teaching Materials

Investigating the Effectiveness of Self-Directed Learning (SDL) in Chemistry

Subject   : Chemistry
Teachers: Mr Hong Yu Kiu, Miss Wong Wing Chi, and Mr Chan Chi Hung
Level: S.4

Introduction

Self-directed learning (SDL) is a crucial skill for fostering lifelong learners. SDL can be viewed as both a process where individuals take primary responsibility for their learning and a set of personal characteristics that the learner possesses (Knowles, 1975). In this process, individuals identify their learning needs, set goals, find resources, choose strategies, and evaluate their outcomes.

One area where students often face significant difficulties is the systematic naming of organic compounds. The challenges students encounter include:

1. Complex Nomenclature Rules: The IUPAC (International Union of Pure and Applied Chemistry) system for naming organic compounds has many intricate rules and conventions that students must memorize, such as identifying the parent chain, locating and naming functional groups, and indicating the positions of substituents.

2. Unfamiliar Terminology: Organic chemistry introduces many new and unfamiliar terms, like alkanes, alkenes, alkanols, and halogens, which students must learn and apply correctly. Remembering the meanings and differences between these terms can be cognitively demanding.

3. Lack of Consistent Logic: The IUPAC rules for naming can sometimes appear arbitrary to students, making it more challenging to remember and apply the naming conventions.

4. Extensive Practice Required: Mastering systematic organic nomenclature necessitates extensive practice working through numerous examples. Without repeated application, students struggle to retain and properly apply the naming principles.

Teaching Pedagogy

In this study, the Chemistry department explored the potential benefits of utilizing self-directed learning for high-achievers, as opposed to intermediate students, in the context of learning organic nomenclature. The rationale for this approach is that high-achieving students often possess a natural curiosity and intrinsic motivation to learn, and self-directed learning allows them to pursue their interests and take ownership of their educational journey, which can further boost their engagement and enthusiasm (Knowles, 1975). Moreover, high-achieving students typically thrive on intellectual challenges and may become bored or unchallenged in a more traditional, teacher-directed classroom.

To investigate the effectiveness of this approach, the teachers divided the students into two groups based on their learning abilities. The high achievers engaged in self-directed learning, with the teacher providing instructional videos on the rules of organic compound naming, with tremendous drilling exercises. In contrast, the intermediate students received face-to-face instruction from another teacher, which allowed for real-time feedback, questions, and dialogue to promote active engagement and clarification of concepts.

After applying these different teaching strategies, a post-test with similar questions to the pre-test was administered to compare the learning outcomes between the two groups.

Data Analysis

The table below shows the average marks of the students in each group in the pre-test and post-test.

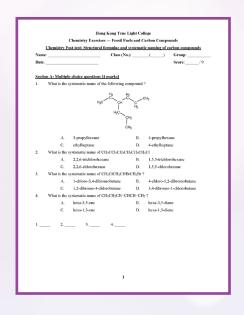| Group	Multiple-choice questions		Structured questions		Overall results	
	Pre	Post	Pre	Post	Pre	Post
Experimental group (n = 7)	3.14/4	3.57/4	2.29/5	3.86/5	5.43/9	7.43/9
Control group (n = 9)	1.89/4	3.56/4	2.00/5	3.44/5	3.89/9	7.00/9

The experimental group has a higher average score than the control group in both the pre-test and post-test.
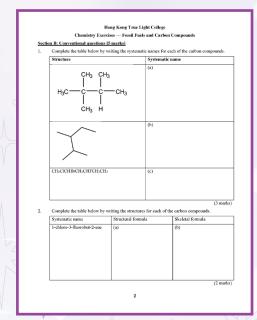
A paired-samples t-test was conducted to compare the pre-test and post-test scores of each group and the results are tabulated below.
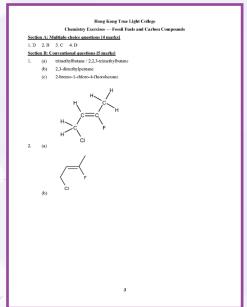
Group	Multiple-choice questions		Structured questions		Overall results	
	Pre	Post	Pre	Post	Pre	Post
Experimental group (n = 7)	$t(12) = -1.299$ $p = 0.2183$		$t(12) = -2.157$ $p = 0.0519$		$t(12) = -2.242$ $p = 0.0447$	
Control group (n = 9)	$t(16) = -3.906$ $p = 0.0013$		$t(16) = -2.307$ $p = 0.0348$		$t(16) = -3.776$ $p = 0.0017$	

For the experimental group, there was a significant improvement in the overall pre-test scores (M=5.43, SD=4.95) and post-test scores (M=7.43, SD=0.62); $t(12)=-2.242$, $p=0.0447$. However, there were no significant differences in their performances in multiple-choice questions and structured questions, despite a general improvement in their results.

For the control group, there was a significant improvement in the overall pre-test scores (M=3.89, SD=4.61) and post-test scores (M=7.00, SD=1.50); $t(16)=-3.776$, $p=0.0017$. Students also showed significant improvements in their performances in both multiple-choice questions and structured questions.

Teaching Materials

Reflection and Discussion

Although both groups showed improvements in the overall results, it is noteworthy that the improvement in the experimental group was less significant than the control group. A possible explanation is that the high-achieving students had performed generally well in the pre-test even without formal instruction, limiting the room for their improvement. On the other hand, the results also suggest that teacher's guidance remained crucial to students with intermediate abilities.

An interesting finding is that self-directed learning through instructional videos and practices could cater to students' learning diversity well. For the experimental group, the standard deviation drops significantly from 4.95 to 0.62. This has shed light on the possibility of providing instructional videos to cater for learning diversity at the secondary school, as well as to ensure effective classroom instruction (Talib et al., 2017) .

Our results also suggest the importance of revision, a key indicator of self-directed learning, to their academic achievements. For both the experimental and control groups, students would still need to revise their work based on their teachers' feedback, which requires them to reflect on their own learning and apply their knowledge to new contexts. This contributes to students' continuous improvement in their academic results, and thus teachers may consider to facilitate students' revision by offering them chances to revisit and revise their own work.

Conclusion

This investigation aims at studying the effectiveness of self-directed learning strategies in Chemistry as compared to traditional modes of instruction. Results indicate that both students practicing self-directed learning strategies and receiving traditional modes of instruction show significant improvements in learning the IUPAC nomenclature rules. Results suggest that self-directed learning through instructional videos and practices could cater to students' learning diversity. Revision remains the key for students' academic success, regardless of the mode of instructions. In short, the study highlights the possible ways for improving students' achievements in chemistry.

Reference

Knowles, M. (1975). Self-Directed Learning: A Guide for Learners and Teachers.

Talib, C. A., Ali, M., Zawadzki, R., Baharuddin, N. S., Thoe, N. K., & Aliyu, H. (2017). Video-based learning in Chemistry education: Exemplars, issues and challenges. SEAMEO RECSAM, (12), 35-51.

Appendix

Materials used in the pre-test and post-test
https://drive.google.com/drive/folders/1n5-63WVhuL9h-Obh6Q9RTaTSNpu3ILaj?usp=sharing

General form of Snell's Law

Subject   : Physics
Teachers: Mr Kwan Chi Hung and Mr Tsui Ki Fan
Level: S.3

Background

1. Students perform satisfactorily in Physics. Some students can learn the topic by themselves with some simple guidance from the teacher.

2. Some students are active in the lesson but weak in presenting their ideas.

Objectives

1. Students will learn to compare the refractive index of different medium.

2. Students will learn the general form of Snell's law.

Prerequisite Knowledge/ Skills

1. Students need to have basic concept about the refraction of light.

2. Students need to know the concept of the refractive index.

Lesson plan

Time	Teacher Activities	Student Activities	Remarks
3 mins	Wait for the students to arrive and set up the computer.	Students sit in the classroom and self-learn the new topic.	
2 mins	Introduce the learning objectives of the lesson.		Students were asked to preview page 17 of the notes at home.
	Questions from the teacher		
5 mins	Show how the light ray travels from the air to the water. Ask students what the relationship between the angle of incidence and angle of refraction is.	Students are expected to answer $\dfrac{\sin i}{\sin r} = n$.	
	Further ask students what 'n' in the corresponding formula is.	Students try to answer the questions.	
	Point out that the formula can only be used when the light travels from air/vacuum to another medium.		

Time	Teacher Activities	Student Activities	Remarks
1 min	Ask students to study the following materials or their own.\n\npage17-20 of the notes and page 43 of the textbook. Students also need to complete the questions in the notes.		
Self-learning time/ discussion time			
10 mins	Walk around the classroom & track their progress observe how they study.\n\nProvide guidance by asking questions to more able students. For less able students, teach them directly.	Students read the notes and textbook.\n\nStudents try to answer the questions in the notes. In the self-learning time, students can discuss with their classmates.	Most students are capable of learning by themselves without the direct teaching from the teacher.
Presentation time			
5 mins	Ask students what the meanings of optically denser medium and optically less dense medium are.\n\nAsk students what would happen when light travels from an optically denser medium to an optically less dense medium.\n\nFurther ask students what would happen in the reverse situation.\n\nMake some simple conclusions about this part.	Students answer the questions from the teacher.\n\nStudents try to write down some notes.	Some students may be passive in answering questions.
5 mins	Ask students what the general form of the Snell's law is.\n\nAsk students about the method to complete question 9.\n\nMake some simple conclusions about this part.	Students try to answer the question.\n\nStudents compare their answers with those of their classmates.	
5 mins	Ask students to answer question 10 and question 11 from the notes.	Students try to answer the question.	

Time	Teacher Activities	Student Activities	Remarks

Conclusion / Summary (Approx. 3 minutes):

Optically denser medium and optically less dense medium.
The general form of Snell's law.
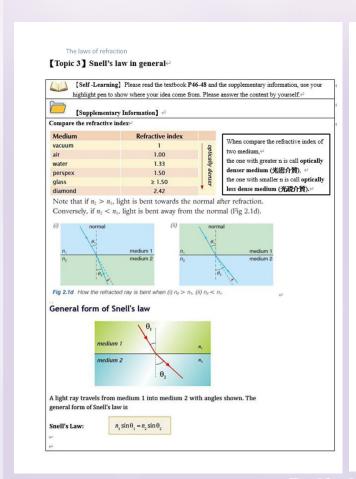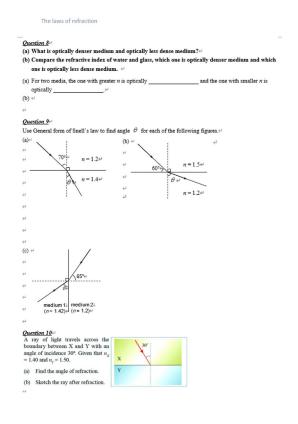
Homework / Follow-up Work:

Assignment Ex. 2A

Equipment Needed:

iPad, whiteboard, computer and projector.

Teaching Materials

動手「毒」理科——STEM抗毒計劃

科目：生物科
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　　價值觀教育是全人教育的核心，能夠有效培養學生正確的價值觀和態度，幫助她們在面對逆境時進行客觀分析和合理判斷。根據保安局禁毒處藥物濫用資料中央檔案室的統計資料，2024年第一季度初中程度的21歲以下首次被呈報吸毒人士佔65.1%，而達到高中或專上教育程度的吸毒人士只佔33.9%。這顯示提升教育水平能有效避免吸毒現象。

　　配合學校年度目標「優化深層思維、發揮探究精神，拓闊學習視野、活出正向態度」，中五生物科參加了由香港青年協會籌辦的「動手『毒』理科：STEM抗毒計劃」。本計劃包括四個主題工作坊（設計思維、數據科學、鑑證毒理學和神經科學），旨在提升學生的抗毒意識。學生通過動手實驗和活動，從多學科的角度探討毒品的知識和影響。

　　本教育研究採用定量研究方法，分析參與的21名中五生物科學生在前測和後測中的表現變化。研究結果顯示，學生在學科知識和正向價值觀方面均有顯著提升，顯示抗毒計劃對學生的知識增長和價值觀建構產生了積極影響。學生在數據分析、毒品結構及神經系統的理解上均取得進步，並在生活中樹立了健康的價值觀，為未來挑戰打下良好基礎。

引言

　　價值觀教育是全人教育的關鍵所在。通過各學科課程的教學，以及其他相關的學習經歷，能夠培養學生正確的價值觀和態度。這有助學生在不同的成長階段面對逆境時，能夠清楚辨識其中涉及的價值因素，作出客觀分析和合理判斷，並付諸實踐。如此，學生才能更好地應對未來生活中的各種挑戰。

　　有鑑於此，生物科教學也應該充分發揮作用，為價值觀教育注入新的元素。本校生物科參與了STEM抗毒工作坊，期望學生可以從重視設計思維和動手能力的STEM活動，學習到相關的生物科知識，更能夠在實踐中感悟生命的意義，培養正確的人生觀，從而樹立「守法」、「同理心」和「堅毅」的首要價值觀和態度。

文獻回顧

　　根據保安局禁毒處藥物濫用資料中央檔案室的統計資料，在2024年第一季度的數據中顯示，只有初中程度教育水平的21歲以下首次被呈報吸毒人士佔65.1%，而達到高中或專上教育程度的吸毒人士只佔有33.9%（按年齡組別及教育水平劃分的首次或曾被呈報吸食毒品人士，n.d.），可見教育水平的提升更加有效避免吸毒的出現。然而作為教育工作者，都知道大部分的學生在就讀小學的時候已經學習過不同毒品的危害。不過，以神經學的角度去認識毒品對人體的破壞是學生們未曾接觸過的。

　　此外，STEM設計思維重視同理心，是以人為本的解難工具。其核心思想是以用戶為中心，通過同理心了解使用者的需求，然後設計出切合用戶需求的解決方案（馬敏元、謝辰甫與遲家琦，2023）。這個過程要求設計者不斷地與使用者互動，傾聽她們的反饋和建議，並且不斷迭代、改進。學生們在以往的學習路上，可能已經接觸過不少戒毒人士的分享，但未能夠深入反思吸毒人士的需求、代入其角色，並且主動地提出預防或解決方案以避免吸毒的情況出現。

　　究竟學生們能否從愛惜自己身體的角度，透過深入了解大腦運作、毒品對大腦的危害，以提升學生們的意志力，堅毅地拒絕毒品，將會是這次計劃目標的其中一部分。而設計思維工作坊對於引導學生深入理解使用者的需求和情感，從而建立同理心的成效亦需仔細探討。

計劃簡介

　　配合學校本年目標「優化深層思維、發揮探究精神　拓闊學習視野、活出正向態度」，中五生物科參與由香港青年協會籌辦的「動手『毒』理科：STEM抗毒計劃」。計劃以STEM工作坊為切入點，提升學生抗毒的意識。計劃共有四大STEM主題，讓學生從動手實驗及活動中以生物、化學、數學及設計思維的角度探討毒品的知識（認知），並從中體會毒品對人體的禍害（情感），從而拒絕毒品，鼓勵學生建立正向思維及健康人生（行為）。

以下是由香港青年協會到校進行四個工作坊的內容：

1. 設計思維工作坊

學習以人為本的思考模式，著重提升學生的溝通合作及創意解難能力。透過訪問，了解吸毒青年的故事，讓學生學習及運用同理心及創新思維，解決難題並建立正面的生活模式。

2. 數據科學工作坊

透過學習有系統性的分析方法，學生除了可獲得數學及資訊科技的知識，更可從不同的數據中，了解到毒品對健康、個人發展，以至整個社會的影響。

3. 鑑證毒理學工作坊

認識不同毒品的有效成分、化學結構及其相關的化學反應，並了解如何利用鑑證科學方法來檢測不同毒品，以及辨別出與大麻相關的產品。

4. 神經科學工作坊

以生物科的角度探討人體神經系統的運作模式，透過觀察毒品對細胞影響，除了可認識不同毒品如何擾亂及破壞神經系統，亦可了解到毒品成癮的原因。

推己及人，學生運用以上工作坊所學的知識，以4-6人為一組，共同設計和製作一塊展板和一個攤位活動，於2024年6月27日午膳時間在排球場讓老師和學生參與，向全校師生推廣抗毒訊息。攤位的活動形式由學生創作自定，同時引發學生的創意，並訓練學生不同的共通能力，如：創造力、協作能力、溝通能力、批判性思考能力及解難能力等。

學生創意無限，攤位以不同形式推廣抗毒知識，包括：配對遊戲、擲球遊戲、使用電腦程式micro:bit推廣抗毒知識的攤位遊戲，甚至以戲劇形式與參加者進行互動，從而推廣拒絕毒品的方法。雖然當日正值盛夏，天氣炎熱，但仍有不少學生到場參與攤位活動，負責學生也努力推廣，成效顯著。當日更設有由校長、老師和學生投票選出最受歡迎的攤位活動。

研究方法

本教育研究採用了定量研究方法，以探討是次抗毒計劃的三個主題工作坊（數據科學、鑑證毒理學和神經科學）如何影響中五級生物科學生的知識增長和正向價值觀建構。

在工作坊實施的前後，參與整個計劃活動的21名中五級生物科學生分別填寫了前測和後測評估問卷，其後由生物科老師分析學生的前後數據表現比對。評估問卷分為兩部份，採用了共同題目和特定題目相結合的設計，兼顧研究的全面性和深入性，為計劃的成效分析提供依據。評估問卷的甲部為三個主題工作坊的共同題目，用於宏觀評估計劃對學生的整體影響（表一）；而乙部則針對每個工作坊所教授的內容設置兩至四題特定題目（表二），以更深入瞭解學生在各主題上的知識和正向價值觀改變。

數據分析

前測及後測結果的比較如下所示：

		數據科學工作坊			鑑證毒理學工作坊			神經科學工作坊		
		前測數據 $\bar{x}(\sigma)$	後測數據 $\bar{x}(\sigma)$	$\bar{x}$ 的百分比變化	前測數據 $\bar{x}(\sigma)$	後測數據 $\bar{x}(\sigma)$	$\bar{x}$ 的百分比變化	前測數據 $\bar{x}(\sigma)$	後測數據 $\bar{x}(\sigma)$	$\bar{x}$ 的百分比變化
Q1	吸毒會嚴重危害健康。	4.67 (0.91)	4.95 (0.22)	+6.1%	4.56 (0.62)	4.89 (0.32)	+7.4%	4.71 (0.46)	4.95 (0.22)	+5.0%
Q2	吸食毒品會損害記憶力及判斷力。	4.62 (0.92)	4.95 (0.22)	+7.2%	4.63 (0.60)	4.84 (0.37)	+4.5%	4.71 (0.46)	4.95 (0.22)	+5.0%
Q3	吸食毒品可引發焦慮症及抑鬱症。	4.52 (0.93)	4.90 (0.30)	+8.3%	4.58 (0.61)	4.84 (0.37)	+5.7%	4.67 (0.48)	4.90 (0.31)	+5.0%
Q4	吸食毒品可引發幻覺、幻聽及妄想症。	4.57 (0.93)	4.95 (0.22)	+8.3%	4.63 (0.60)	4.84 (0.37)	+4.5%	4.71 (0.46)	4.95 (0.22)	+5.0%
Q5	吸毒會令人上癮，難以控制吸食的份量及次數。	4.62 (0.92)	4.95 (0.22)	+7.2%	4.63 (0.60)	4.89 (0.32)	+5.7%	4.71 (0.46)	4.95(0.22)	+5.0%
Q6	吸食毒品不可以緩解壓力。	3.95 (1.02)	4.81 (0.51)	+21.7%	4.37 (0.76)	4.63 (0.68)	+6.0%	4.57 (0.68)	4.75 (0.64)	+3.9%
Q7	吸食毒品會上癮，並且對身體造成永久傷害。	4.57 (0.93)	4.95 (0.22)	+8.3%	4.68 (0.58)	4.84 (0.37)	+3.4%	4.57 (0.75)	4.95 (0.22)	+8.3%
Q8	我認識不同拒絕毒品的技巧或方法。	4.00 (1.10)	4.62 (0.59)	+15.5%	4.32 (0.82)	4.68 (0.48)	+8.5%	4.48 (0.60)	4.85 (0.37)	+8.4%
Q9	即使面對重大壓力和引誘，我也不會以吸食毒品來緩解壓力。	4.52 (0.93)	4.81 (0.40)	+6.3%	4.53 (0.70)	4.89 (0.32)	+8.1%	4.62 (0.50)	4.85 (0.37)	+5.0%
Q10	就算面對朋友的慫恿，我都有能力抗拒吸毒的引誘。	4.38 (0.97)	4.75 (0.55)	+8.4%	4.47 (0.70)	4.79 (0.42)	+7.1%	4.62 (0.59)	4.85 (0.37)	+5.0%
Q11	學習 STEM 能夠訓練批判性思考和多角度思考。	4.19 (0.93)	4.90 (0.30)	+16.9%	4.42 (0.61)	4.68 (0.48)	+6.0%	4.57 (0.51)	4.70 (0.47)	+2.8%
Q12	學習 STEM 有助我作出一個正確的決定。	4.19 (0.93)	4.86 (0.36)	+16.0%	4.37 (0.60)	4.68 (0.48)	+7.2%	4.57 (0.51)	4.70 (0.47)	+2.8%
Q13	我對科學與科技有興趣。	3.90 (1.09)	4.48 (0.87)	+14.7%	4.26 (0.65)	4.21 (0.92)	-1.2%	4.38 (0.74)	4.50 (0.69)	+2.7%
Q14	工作坊有助我優化深層思維、發揮探究精神。	4.14 (0.57)	4.48 (0.68)	+8.1%	4.11 (0.57)	4.58 (0.51)	+11.5%	4.48 (0.51)	4.60 (0.50)	+2.8%
Q15	工作坊有助我拓闊學習視野、活出正向態度。	4.10 (0.62)	4.62 (0.50)	+12.8%	4.21 (0.54)	4.63 (0.50)	+10.0%	4.48 (0.51)	4.65 (0.49)	+3.9%
Q16	工作坊能夠提升我的學習自信。	3.90 (0.70)	4.48 (0.68)	+14.7%	4.21 (0.63)	4.53 (0.61)	+7.5%	4.43 (0.51)	4.65 (0.49)	+5.0%

表一 ：工作坊的評估問卷數據結果分析（甲部：共同題目）

			前測數據 $\bar{x}(\sigma)$	後測數據 $\bar{x}(\sigma)$	$\bar{x}$ 的百分比變化
數據科學工作坊	Q1	我知道甚麼是數據科學及處理或展示數據的基本方法。	3.57 (0.68)	4.62 (0.59)	+29.4%
	Q2	我懂得如何分析數據。	3.67 (0.73)	4.48 (0.60)	+22.2%
	Q3	我了解如何利用數據去分析哪些項目與吸毒^有關或受到吸毒所影響。	3.62 (0.74)	4.43 (0.60)	+22.4%
	Q4	學習處理和分析數據，有助我的生物科學習和表現。	4.14 (0.65)	4.48 (0.68)	+8.1%
鑑證毒理學工作坊	Q5	我認識不同毒品的結構、分類方法及當中雜質的影響。	3.47 (0.84)	4.21 (0.63)	+21.2%
	Q6	我知道甚麼是化學物的 LD50。	2.89 (1.10)	4.05 (0.91)	+40.0%
神經科學工作坊	Q7	我了解甚麼是神經科學，如：大腦的基本運作。	4.38 (0.50)	4.60 (0.50)	+5.0%
	Q8	我明白毒品如何影響大腦的認知能力。	4.38 (0.59)	4.60 (0.50)	+5.0%
	Q9	我知道不同毒品對腦部的影響。	4.24 (0.77)	4.55 (0.51)	+7.4%
	Q10	我了解如何進行實驗以研究毒品對腦部的影響。	4.14 (0.73)	4.65 (0.49)	+12.2%

表二： 工作坊的評估問卷數據結果分析（乙部：特定題目）

評估問卷每項以五點量表調查#，5 分為滿分。

#評估問卷選項：(1) 非常不同意　(2) 不同意　(3) 很難說　(4) 同意　(5) 非常同意

^吸毒泛指在沒有醫生指示下使用違禁或合法的危害精神毒品，例如K仔、大麻、「冰」、搖頭丸、咳藥水、天拿水等。

從整體評估問卷結果來看，參與學生在學科知識和正向價值觀方面絕大部分均有提升，後測成績明顯優於前測。這表明此次抗毒教育計劃的主題工作坊對學生整體知識和價值觀建構產生了積極影響。

在甲部共同題目中，學生在不同主題工作坊的整體後測表現都比前測有明顯進步。在學科知識方面，學生在數據分析、神經機制批判性思考和多角度思考等專題內容上都有較大幅度的得分提升（如甲部Q11、13、14、16），表明她們對相關知識和原理有了更加深入的理解和掌握。同時，在正向價值觀建構方面，學生也展現出更加積極的思維傾向，如對毒品危害的認知加深、拒絕吸毒的決心增強等（如甲部Q6、8、12、15）。這說明抗毒計劃不單單傳授了生物的學科知識，更重要是培養了學生健康、正面的價值取向，有助她們在生活中作出正確決定。這些成果都對應了學校本年目標：「優化深層思維、發揮探究精神、拓闊學習視野、活出正向態度」。

而在乙部方面，學生在各主題工作坊的學習成果也有不同程度的進步。例如在數據科學工作坊中，學生掌握了數據處理和分析的方法，並能運用數據分析不同風險因素與吸毒行為的關係。相關題目（如乙部Q1至3）的後測成績上升超過20%。在鑑證毒理學工作坊中，學生認識到毒品的結構、分類及其雜質影響，並學會一些專業概念，如LD50。因此，有關題目（如乙部Q4和5）的後測成績分別上升21.2%和40%，顯示學習成效超卓。而在神經科學工作坊中，學生了解如何通過實驗研究毒品對腦部的影響，有關題目（如乙部Q10）的後測成績上升12.2%，可見活動有效加深她們對腦部的不同功能的認識和理解，增進她們對學科知識的掌握。

總結

　　是次教育研究通過定量研究方法，系統分析了參與學生在生物科知識和正向價值觀兩個關鍵方面的學習成效變化趨勢。經過主題工作坊的針對性教學活動，學生在後測中均取得了顯著進步，體現了抗毒計劃的明顯成效。
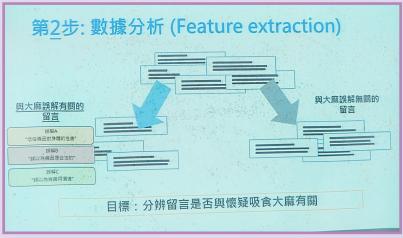
　　通過STEM抗毒工作坊，學生們可以學習到生物科的相關知識，優化深層思維。例如認識藥物濫用對人體的危害、毒品成癮的生理機制以及毒品對神經系統的破壞等。此外，學生運用設計思維去解決與毒品相關的問題。在分析問題、提出創新方案的過程中，學生發揮同理心，設身處地思考毒品問題對他人和社會的影響。有助學生樹立「守法」、「同理心」和「堅毅」的首要價值觀和態度，為應對未來生活中的各種挑戰打好根基。

活動倩影

設計思維工作坊

數據科學工作坊

鑑證毒理學工作坊

抗毒推廣活動日

神經科學工作坊

資料來源

保安局禁毒處(2024)。《按年齡組別及教育水平劃分的首次或曾被呈報吸食毒品人士》。取自 https://www.nd.gov.hk/tc/statistics_list.html

馬敏元、謝辰甫與遲家琦(2023)。〈日本的中國研究〉。《設計學報》，28(3)，25-46。

實驗學習對後進學生的學習成效
——如何鞏固後進學生的基礎知識

科目：化學科
老師：周秀雯老師、黃卓盈老師
年級：中六級

簡介

　　香港中學文憑試化學科分為必修單元及選修單元兩個部分，其中選修單元安排在中六教授。選修單元分為工業化學及分析化學兩部分，本文主要探討分析化學部分中，有關紙色層分離法的實驗學習如何有效鞏固後進學生的基礎知識。
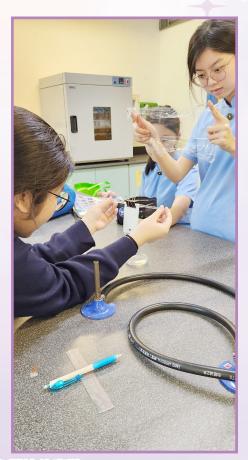
　　在教授有關紙色層法的內容時，中六化學科中文組採取了「課堂講解 —— 實驗前測 —— 實驗 —— 實驗後練習 —— 實驗後測」循環的教學策略，以協助學生掌握課堂所學，再把知識加以運用於實驗上。

　　首先，在課堂講解中，老師會就本章的重點內容向學生說明，例如：不同種類的色層法、流動相和固定相的概念、分析色譜的方法等，並以教科書所提供的課堂練習作引入，讓學生在實驗前先清楚理解實驗原理及其操作。

　　完成課堂講解的部分後，老師便安排實驗前測，目的是要了解學生是否掌握課堂所學。前測是在課堂講解及實驗之間的時段進行，題目包括紙色層法的操作和原理，例如是繪畫基線、流動相、固定相的概念，另外就是分析色譜的技巧，也就是從比移值繪出色譜。學生在實驗前測後，應對實驗操作及原理有更深入的認識和理解，以致能更順暢地進行之後安排的紙色層法實驗。

　　在實驗的部分，老師先向學生簡單講解實驗步驟及注意事項，然後就讓學生動手做，期間每組學生互相合作進行實驗，討論及分析實驗結果，完成實驗工作紙。在各組實驗完成後，老師作最後總結，概括實驗結果。

學生進行紙色層法的實驗

紙色層法的實驗結果

實驗完結後，學生運用實驗過程所學，完成實驗後練習。實驗後的練習，是提供與實驗相似的情景，讓學生把實驗中學習到的分析技巧加以應用，在練習中學生需從題目提供的色譜中，計算Rf值、解釋待分析物質在溶劑的溶解度，以為色譜的物質色斑分析及分離結果作出結論。老師會引導及教導學生完成習作，亦為學生提供機會在進行練習時互相討論以修正答案。

而研究最後階段中，老師會安排後測，後測的內容與前測相同，目的是要比較學生在實驗和練習之後，能否更有效地掌握紙色層法的原理，及是否優於單以課堂解說。在研究過程中，老師把學生分成兩組，分別是「第一組」的學生是成績較佳的學生和「第二組」是成績較弱的學生，下表列出了這兩組學生在前測、練習和後測的平均分數及得分的百分率：

	總分	學生平均得分		得分百分率		相比前一次升幅 #	
		第一組	第二組	第一組	第二組	第一組	第二組
前測	6	2.87	2.05	47.83%	34.17%	-----	-----
練習	4	3.13	2.88	78.25%	72.00%	30.42%	37.83%
後測	6	5.45	5.23	90.83%	87.17%	43.00%	53.00%

註：# 代表練習與預測的得分百分率的比較、和後測與練習的得分百分率的比較。

從上表數據得知，單以課堂教學，學生難以了解紙色層法中的重要概念，例如是待測試的物質與溶劑（即流動相）的作用，及在固定相流動的程度等等。學生通過實驗能看到墨水含有的不同物質在溶劑流動下的作用，再加上回答實驗工作紙的題目都能引導學生理解紙色層法的運作，故此學生在完成練習工作紙的得分，都比預測的得分要高，不論是第一組（成績較佳的）學生還是第二組（成績稍遜的）學生，他們的得分都有顯著的進步，而以第二組學生的得分上升幅度更為明顯有37.83%，比第一組學生的得分更高出7.41%，經過老師在練習後的解說，學生的理解更是大幅改善，例如是Rf值計算、分析色譜等，學生都比預測較優，同樣第二組學生的得分上升幅度較第一組學生多出10%，反映學生對紙色層法的運作，有更深層的了解和掌握。

在「講解」、「實驗」、「練習」、「小測」循環中，整個學習流程分拆成幾個階段，每一個階段中都有其學習目標，老師可以得知學生在不同知識或技巧上遇到的學習困難，並適時介入，這對後進學生的幫助更大，老師在各階段完成後再總結講解，比單向式的課堂講解有效得多，學生更易明白。

總括而言，學生只從課堂學習知識，未必能立體地、多方面地了解相關概念或技巧，必須「動手做、眼看見」才可解決學習上的困難，尤其是一些後進的學生，文字理解可能是她們的弱點，通過理科實驗學習的優勢，更可有助她們改善學習，擊破難點。

科技教育

Leveraging e-learning tools and software to enhance learning effectiveness

Subject : Business, Accounting and Financial Studies
Teacher : Mr Ng Chin Ting Biliy
Level: S.5

Introduction

The aim of Business, Accounting and Financial Studies (BAFS) is to provide students with fundamental business knowledge and skills, and develop their positive values and attitudes so they can fulfill their roles competently and confidently as consumers, investors, employees and entrepreneurs. In the BAFS curriculum, accounting accounts for over 60% of the overall assessment. It is a very important area of study.

Cost accounting is an important field of accounting. It provides data that allows managers to create detailed budgets and monitor costs. This enables them to identify areas for cost reduction and improve overall financial control. Therefore, the teacher has picked a breakeven analysis and marginal costing question for students' practice.

In the lesson, the teacher had adopted a software called "Padlet" for giving students an e-learning experience. The great feature of Padlet had been used for collecting all students' work done on a cost accounting-related past paper question efficiently. This software also provides the teacher with a very effective and efficient way of giving instant learning feedback to students.

It is believed that providing instant learning feedback for students' learning helps them identify and correct errors or misconceptions. By receiving the teacher's immediate clarification or guidance, students can quickly rectify any misunderstandings and avoid further reinforcement of incorrect knowledge or approaches. This real-time error correction supports more accurate learning and prevents the development of misconceptions.

Instant feedback also provides students with a sense of progress and accomplishment, which boosts their learning motivation and engagement. When students receive immediate feedback that acknowledges their efforts and achievements, they are more likely to stay motivated and actively participate in the learning process. This positive reinforcement encourages students to continue their learning journey and strive for improvement.

Learning objective
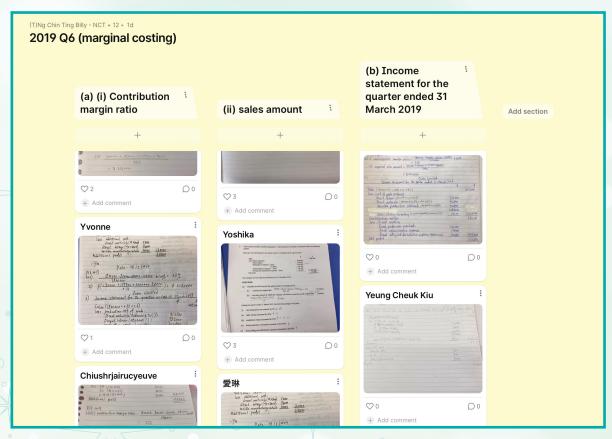
1. Consolidating students' knowledge and understanding of calculating contribution margin ratio, breakeven sale revenue and preparing income statement using marginal costing system.
2. Equipping students with the technique and confidence of tackling DSE examination question for this topic.

Lesson plan

Duration	Content	Teacher's Activities	Students' Activities
8 mins	Revision of the following contents: 1. Contribution 2. Contribution margin ratio 3. Breakeven analysis equation 4. Income statement for marginal costing	Briefly introduce the planning and expectation of the lesson. Ask questions for checking students' understanding about prerequisite knowledge.	Listen and answer questions.
3 mins	Read and study DSE 2019 Q6	Distribute the DSE 2019 Q6 past paper question. Go through the whole question with students. Identify some important concepts or equation that needed for answering this question.	Answer questions, jot notes and remarks on the worksheet.
5 mins	Complete part (a) of the past paper	Require students to finish part (a) of the question on their own. Walk around and provide assistance to students who are in need.	Complete part (a) of the question.
3 mins	Collecting students' work	Require students to scan the QR code and login into the Padlet platform. Ask them to take a picture of their work and upload to the platform.	Scan the QR code Submit their work for part (a)
10 mins	Give feedback on students' work	Teacher exports all students' pictures into a pdf file. Open the pdf file by using the app "Goodnotes" on Ipad. Give instant feedback about their performance.	Listen and do corrections when needed.

Duration	Content	Teacher's Activities	Students' Activities
9 mins	Complete part (b) of the question	Require students to finish part (b) of the question in groups of two to three students. Walk around and give assistance to students who are in need. Ask students to check their understanding. Collect and give feedback on their work in the lesson.	Discussion with classmates. Complete part (b) of the question.
2 mins	Summary and conclusion	Sum up the basic concepts and techniques that have been taught during the lesson. Instruct students to complete the whole question after lesson.	Listen to the teacher and complete the remaining part after class.

Students' learning situation and work done

(T)Ng Chin Ting Billy · NCT + 12 · 1d

2019 Q6 (marginal costing)

(a) (i) Contribution margin ratio

+

♡ 2   💬 0

+ Add comment

Yvonne

♡ 1   💬 0

+ Add comment

Chiushrjairucyeuve

(ii) sales amount

+

♡ 3   💬 0

+ Add comment

Yoshika

♡ 3   💬 0

+ Add comment

愛琳

(b) Income statement for the quarter ended 31 March 2019

+

♡ 0   💬 0

+ Add comment

Yeung Cheuk Kiu

♡ 0   💬 0

+ Add comment

Add section

Sending your PDF to the publisher... ○

Your document should be ready in 30 seconds, unless a new story breaks.

a) i) contribution margin ratio = $\frac{1800000 - 800000 - 250000 - 156000}{1800000} \times 100\%$

= 33%

ii) required sales amount = $\frac{300000 + 190000 + 139400 + 90000}{33\%}$

= $2180000

b)

Owen Limited

Income statement for the quarter ended 31 March 2019

	$	$
Sales (1800000 × (1 + 20%) × (1 - 5%))		2052000
Less: cost of goods produced		
Direct labour (250000 × (1 + 30%))	325000	
Direct materials (800000 × (1 - 8%) × (1 + 30%))	956800	
Variable production overheads (156000 × (1 + 30%))	202800	
	1484600	
Less: closing inventory ((250000 + 800000×92% + 156000) × 10%)	114200	1370400
Contribution margin		681600
Less: Fixed expenses		
fixed production overheads	210000	
fixed administrative expenses	139400	
fixed selling and distribution expenses (90000 + 10000)	100000	449400
Net profit		232200

less: DM (25 × 2000)	50000	
DL (40 × 2000)	80000	
V-MoH (15 × 2000)	30000	160,000
Additional profit		290,000

DSE 2019

6(a)(i) contribution margin ratio = $\frac{1800,000 - 800,000 - 250,000 - 156,000}{1800,000} \times 100\%$

good! job

_?_

= 33%

(ii) $\frac{190,000 + 139,400 + 90000 + 300,000}{33\%}$ = $2180,000

Income statement for the quarter ended 31 March 2019 of marginal costing system

	$	$
Sales (1800,000 × 0.95) ← × 120%		1710,000 ✗
less: cost of goods sold		

Company name missing!

?

Reflection on teaching

1. All students were observed to be attentive and eager to learn. The overall learning atmosphere was good. They had tried their best to complete the questions during class.

2. The teaching and learning process during the lesson was smooth overall, with all students remaining on task and focused on the lesson content. This facilitated the effective and efficient use of class time.

3. It was appropriate to revise some important concepts or equations before attempting the past paper question. Many students tried to review their notes again to recall the concepts and techniques needed in this lesson.

4. It is a very efficient way to use Padlet to collect all students' work and provide instant feedback. This can help students understand the learning requirements immediately after finishing their work and quickly address any misunderstandings or errors.

環保時裝

科目：家政科
老師：蔡潔賢老師
年級：中三級

教學流程

　　本課題共5課節，在課堂之先，讓學生了解時尚產業所造成的環境問題日益嚴重，然而時尚和環保之間難以取得平衡。本課題的教學目的就是讓學生將環保理念落實於設計中，並製作一件環保時裝。
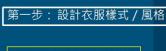
第1課：介紹環保時裝概念
第2-4課：設計及製作
第5課：小組匯報及Catwalk

學生作品及上課情況

家政
舊衣改造

成員：
3B12 蘇靖桐
3B14 鄧椅蕾
3B18 游尚清
3B21 阮康蕎

第一步：設計衣服樣式 / 風格

我們要畫出全身的衣服**設計**，並指出它是由哪些舊物料改造而成的。

描述改造的主題和**設計意念**。

第二步：處理舊衣

模擬穿着觀感

Hong Kong True Light College
Form 3 Home Economics
☺ Green Fashion ☺

Name : _____ (   )   Class : _____   Date: _____

Draw your design in the following place :

THEME :
_____

Idea :
_____
_____
_____
_____
_____
_____
_____
_____

Design	10	
Colouring & drawing	10	
Description	10	
TOTAL		/30

感想

　　感謝老師推行舊衣改造計劃，讓我們有機會將閒置或過時的舊衣服重新設計改造，製作成嶄新的服飾，賦予它們新的生命與價值。過程中，我們學習了多種縫製技巧和不同的製衣方法，更加深了對環保和循環再用的認識，明白減少布料浪費和衣物丟棄對減輕環境負擔的重要性。此外，這次計劃也讓我們體會到團隊合作的力量，大家齊心協力，共同完成作品，收穫豐富且難忘。

送你一點甜

合作科組：家政科及輔導組
老　　師：曾雅逸老師、社工鄭洋洋姑娘
年　　級：中三級

教學目標

　　中三學生代入中六學姊的處境，理解學姊面對的困境和壓力，從中培養同理心，加強校園的關愛文化。而學妹一份小小的心意，可使中六學姊有更多鼓勵，更有信心迎接文憑試。

教學流程

　　中三學生於家政堂學習焗製曲奇餅，並且觀看一段有關文憑試考生面對公開試時的心路歷程的影片。接著，每位中三學生寫一張為中六學姊打氣的心意卡，然後親手把曲奇餅和心意卡送給學姊。

教學計劃

時間	課堂內容
10分鐘	老師教授製作 朱古力曲奇
35分鐘	學生分組實習及收拾
10分鐘	由社工帶領觀看影片
15分鐘	由社工引導學生填寫 心意卡
10分鐘	包裝曲奇餅

如何讓有不同學習差異的學生投入學習有關「人口老化」的議題?

科目：健康管理與社會關懷科
老師：梁美玉老師、高采好老師
年級：中五級

合作機構

香港小童群益會

要點問題

1. 學生如何在健康管理與社會關懷科（以下簡稱健社科）學習有關長者與關懷的知識？

2. 透過課堂學習及實地學習活動，學生對於長者的態度有何轉變例如：長者體驗活動、探訪獨居長者、為長者撰寫生命故事？

3. 透過課堂學習及實地學習活動，學生對於關懷的概念及與長者相處的能力有何轉變？

4. 課堂學習及實地學習活動設計是否切合學生的個別差異？

5. 學生是否投入各項課堂學習及實地學習活動？

行動目標

1. 探討學生如何學習「長者與關懷」這主題。

2. 探討學生在實地學習活動後的改變。

3. 推動共融的學與教措施：
   ★課堂教學能切合學生的個別差異；
   ★學生積極投入學習。

行動計劃對於改善學與教的重要性

　　健康管理與社會關懷科是香港高中課程的新科目，著重培養學生應有的知識與覺知，去面對一些不僅影響個人生活，還涉及整個社會及世界的健康與社會問題，例如：人口老化、傳染病的散播、日漸惡化的環境及人與人之間互動關係引致生活方式的改變等。

　　修讀本科的學生學習差異頗大，需要同時選取多種的取向和策略，以促進不同學習需要的學生掌握課程內容，並提升共通能力，傳統單一的學與教模式實在難以滿足所有學生的需要。

數據分析

　　根據教務組2022-23學年上學期「學與教問卷調查」的數據，修讀健社科的中五級學生在「我滿意自己在本科的學習表現」的自評分數在13個自評項目中得分最低，只有2.64分（以1-4分作評分，4分為最高）；相比中四級的2.86分及中六級的3.00分，是修讀本科三個年級之中的最低。反映本科中五級學生的學習自信不足，在學習上應該出現一定程度的問題或困難。

　　另一方面，根據老師在上學期課堂上的觀察、課後面談，以及分析學生的測考成績，中五級健社科學生認為課程內容比中四時艱深、概念抽象難以掌握、功課的要求亦較高、測考成績亦比她們在中四時退步，因此在學習上漸漸失去自信。

建議改善策略

　　由於中五級健社科下學期的課程與「人口老化」這社會議題有關，為了令課堂能切合學生的個別差異，同時讓班內不同學習需要的學生能夠更積極投入學習此課題，有更大的得著，從而提升學習自信。老師希望利用新設計的多元化課堂活動，教授相關的知識及理論；此外，會與社工及課外活動導師合作，帶學生走出社區，透過實地參觀與學習，讓學生對長者與關愛有更深入的體會，並能作出反思。

　　另外，將學生分成4人一組，按不同能力編入不同組別，在進行協作學習時，老師及各組長可照顧到個別學生的學習差異，分配合適的學習任務，最後分組匯報討論的成果，從而增加不同能力及需要的學生在課堂上的投入及參與度。

　　在整個學習過程，老師的角色要從傳統的「教授者」，演變成一位協助學生自主學習的「促進者」(Huang & Liaw, 2007)。

其他相關文獻

　　透過實地學習活動，將健社科課程與學生身處的社區連繫起來，學生便可以透過義工服務貢獻社會，與此同時，學生亦能夠掌握課程內容，並學習到不同技能協助他們未來的發展。這種社區為本的服務學習模式，首先需要學生辨識到一項社會問題或需要，然後從不多角度及層面提出建議，幫助有需要人士。老師不單要求學生提出解決問題的方案，亦鼓勵他們培養同理心，作出深入的反思。當學生感覺愈投入和有能力完成任務，她們的學習便愈有效，亦更貼近真實社會議題(Gonsalves, 2011)。

　　協作學習是與個別學習、競爭學習不同的學習方式，它指學習者以小組形式，在共同的目標和一定的激勵機制下，為獲得最大的個人、小組學習成果而進行協作互助的學習模式。在協作學習中，成員個人學習的成功是以他人成功為基礎的，學習者之間的關係是融洽的，相互協作的，在共享信息與資源、共負責任、共擔榮辱的基礎上，完成共同的學習任務，實現相同的學習目標。與個別學習和競爭學習相比，協作學習能更好地發揮學習者的主動性、創造性，更有利於問題的深化理解和知識的掌握運用，能促進高級認知能力的發展、協作精神的培養和良好人際關係的形成(Slavin, 1995)。

　　「人口老化」是一項重要的社會議題，根據教育局的課程及評估指引（課程發展議會，2007），新高中健社科的學生應學習有關人口老化的知識，並實踐所學理論，協助建立關愛的社區。所以，是次行動計劃亦會嘗試探討學生如何在健社科學習有關長者與關懷的知識，並了解學生透過課堂學習及實地學習活動，對於關懷的概念與長者相處的能力有何轉變。

行動計劃

1. 課前／課後測試：
- 了解學生在參與行動計劃前／後在相關課題的知識、態度和技巧上的改變。

2. 多元化課堂活動：
- 包括：腦震盪、電影欣賞、閱讀及整理資料、分組匯報、辯論比賽；
- 讓不同能力的學生也可以透過協作學習，增加課堂的參與度及投入感。

3. 實地學習：
- 「香港小童群益會」的社工為學生安排義工培訓、長者體驗活動及探訪獨居長者，藉此理解長者的需要，從而策劃義工服務；
- 然後，老師於課堂上培訓學生成為「生命故事」義工撰寫員，以2人為一組，根據與所服務長者的訪談內容，撰寫生命故事；
- 另外，學生亦需分組討論並完成專為長者服務而設的「創新點子方案」。

4. 個人反思：
- 學生將課堂上所學的理論及實踐，作出深層次反思，並提出可行建議。

行動計劃之實踐

1. 課前／課後測試：

- 課前測試在2月初進行；而課後測試於6月初進行。

- 此問卷分為三部份，包括：「態度」、「關懷概念」及「技能」；

- 在問卷的最後部份，學生需列出「健社科」與「年長」有關的比喻，並繪畫一幅有關長者的圖畫；

- 這種多元化的問卷形式，讓學生頗感興趣，大部份均能夠即堂完成；少部份完成得較慢的學生亦肯於課後多留一會，完成後才離開。

2. 多元化課堂活動：

- 老師將課程內容重新整合，在開始行動計劃的首星期，老師先利用一齣與長者有關的電影片段引發學生的同理心，並讓學生分享感受；

- 然後，讓學生閱讀一位香港長者的生命故事，並根據工作紙上的引導性問題，分組進行資料整理，每位組員負責其中一題，完成後，與組內成員匯報；

- 接著，老師開始介紹「人際支援網絡」的概念，引導學生進行反思；

- 學生再根據老師派發的其他長者生命故事，分組探討「社區聯繫瓦解的因素」，並以腦圖表示相關概念，最後向全班匯報；

- 往後兩個月，老師繼續以這種多元化課堂設計，配合分組協作學習的模式，介紹其他與「人口老化」相關的概念、理論，以及社會政策等，學與教的進度理想，學生最後會利用課堂理論、資料搜集及在實地學習活動中的觀察，分組進行不同議題的辯論比賽，並在老師回饋後撰寫相關的議論文，最後與其他組別互相分享。學生們只需分組合作完成一篇議論文，便可以同時獲得其他組別的成果，大大提升學習效能。

實地學習

1. 學生完成義工培訓、長者體驗活動及探訪獨居長者後，以創新點子方案參加了「2022-23感創敢為——青年社會創新服務獎2.0」比賽，並於暑假期間，將「視出新世界」這方案實踐，亦獲評審賞識，勇奪銀獎及最佳團隊合作獎；

2. 每組學生與長者進行3次面談，為他們撰寫自傳形式的生命故事，各組均能夠在期終考前完成。

個人反思

1. 全部學生均能夠將課堂上所學的理論及實踐，以及所搜集到的資料，在暑假期間，以不同層面及角度撰寫「實地學習反思」，並提出相關建議。學生亦在老師指導下，將有關反思於中六級上學期作出修訂，呈交考評局作為校本評核課業；

2. 老師提名其中3位中五級學生以她們撰寫的實地學習反思報告，參加由教育局舉辦的「HMSC傑出學生獎 2023」，3位學生分別勇奪金獎、銅獎及嘉許獎。

行動計劃評估
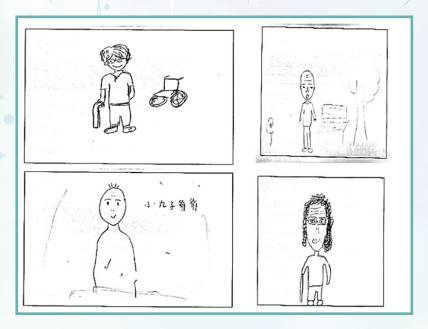
　　根據學生在課前及課後測試、工作紙、分組匯報、實地學習反思、考試成績，以及老師數月來的觀察，發現整體中五級健社科學生在本科的「知識」、「態度」、「技能」及成績上均有明顯的改善，即使能力稍遜的學生，也能夠積極地投入不同的課堂活動及實地學習，成績也有進步。
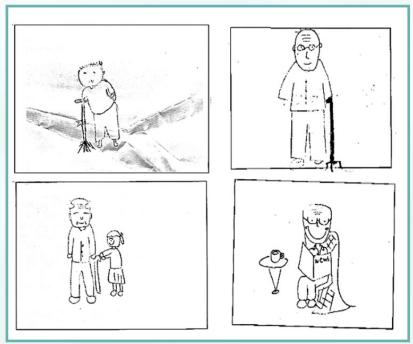
1. 比較課前及課後測試結果以了解學生的轉變：

(i) 加深對「年長」及「長者」的了解

　　在開展整個課題之前，學生普遍認為「長者」一詞與年老的意思相等，甚至只定義為比她們年長的意思，只有數名學生有較為廣闊的定義。

　　學生：「年長是指年紀比較大的長輩，進入老年期階段，身體機能可能開始退化，進入退休生活……」

　　在課前測試的結果中，在收集到的19份問卷中的其中12份圖畫，只顯示一名長者獨自撐著拐杖站立，並無闡述他／她正進行甚麼活動。這顯示學生對長者的了解不足，且概念薄弱。

圖一：課前測試的繪圖：長者撐著拐杖獨自站立

　　經過數月的課程，從她們的詞語上看得出，學生對長者的印象大大改變，例如：「並不是」、「不一定」。

　　學生：「年長的人並不是甚麼也不能做，而且他們也不一定是身患重病以致不能外出或要經常拿著拐杖……」、「……他們能四處旅遊，吃盡美食和運動。」
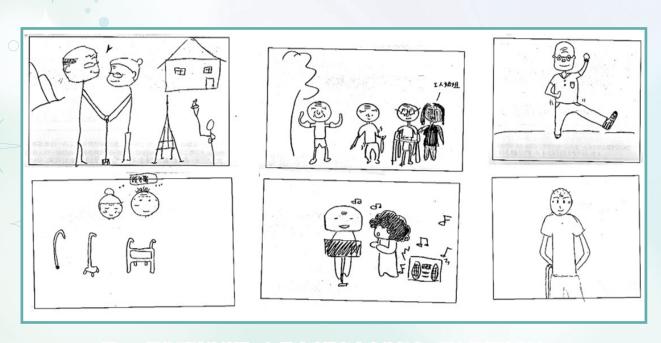
圖二：課後測試的繪圖：長者撐著拐杖是用來行山，並非行路的輔助器材

圖三：課後測試的繪圖：長者的外觀變得年青，而且會跟年青人分享人生經驗

另外，當學生被問及若她們一夜之間變老，會如何生活下去。在課前測試中，部份學生認為自己會積極面對改變，而另一部份學生對於變老持負面感覺，例如：對於失去數十年青春感到傷心。但在課程完結後，絕大部份學生均能夠抱著更正面的態度接受自己變老。

學生：「我會更珍惜剩下的時間，做自己想做，跟不同的朋友／家人相聚。」、「保持積極的心情，樂觀的生活態度。」

圖四：課後測試的繪圖：年長時珍惜與家人的相處，開心快樂地生活

(ii) 加深對「關懷」的理解

　　課堂前，學生通常將關愛理解成「關心」、「愛」、「關注他人的需要」。很少學生能夠明白「關愛」是社會上的公民責任。課堂後，學生終於能夠理解何謂「關愛」，並擴展「關愛」的概念為「對別人存有同理心，並關懷及對人付出愛心，無論是家人、朋友、甚至是社會上不認識的人。」

(iii) 加深對「健康」及「健康地年長」的理解

　　課堂前，部份學生能夠辨識到健康生活模式是對日漸年長的人十分重要。但是，課堂後，學生們對如何建立健康生活模式有更鞏固的理解，例如：能夠從生理、心理及社交層面作出可行建議。

2. 多元化課堂學習活動的成果：

(i) 增加投入感

學生對於課堂上不同的挑戰及學與教模式感到新鮮，所以變得留心上課。在進行分組討論及協助學習時，不同學習能力的組員也肯參與其中，並較過往願意向全班匯報組內的學習成果，學習自信亦慢慢建立起來。

(ii) 認真完成課業

對於不同類型的功課，學生比以往願意認真完成，欠交或遲交課業的人數大大下降，而且課業質素亦較上學期為佳。

3. 實地學習活動對學生的裨益：

(i) 理解長者的需要

透過穿著長者體驗衣及生活體驗活動，學生明白到視障或行動不便長者的苦況，更進一步聯想到當長者面對自己的機能衰退時，對他們的自我形象造成的負面影響。

(ii) 態度上的改變

學生們除了培養到對長者同理心，亦意識到由年青時開始建立健康生活模式的重要性。

(iii) 自信心的提升

當老師看到學生在策劃及籌備義工服務時的認真及投入程度，以及在不同活動期間，學生變得更為自信，便覺得這類型配合課程的學習活動實在很值得推廣。

(iv) 深入掌握科本概念

由於學生在活動期間有機會觀察長者地區中心內的設施，所以能夠在實地學習反思報告中評論社會上現有院舍及中心設施對長者福祉的影響。例如：「社會上的基本設施不足，部份安老院舍質素差，而且缺乏員工，令長者未能得到適當照顧……」。

在上學期，學生對於學習有關醫療及社會政策的概念及用語也頗為抗拒，經過這課程後，學生對於「福利制度」、「長者生活津貼」、「一筆過撥款」等詞彙及概念得以鞏固。

4. 撰寫生命故事對學生的幫助：

　　而透過為長者撰寫生命故事，學生們從長者身上學習到寶貴的真實人生經驗，並明白到個人信念及對健康的概念，是受到他／她的社會背景、社經地位，以及是否容易獲得健康資源所影響。

　　另一方面，經過數次跟長者的訪問，學生們在課堂分享生命故事時曾表示，覺得自己的溝通技巧有所提升，不單是眼神上的交流，在組織力、發問技巧、聆聽能力及口語表達能力均有改進。她們的書寫能力亦大有進步，而老師從她們所完成的生命故事及考試時的答題流暢度亦可以察覺得到。

5. 學習成果：

　　在「我滿意自己在本科的學習表現」一項的自評分數，由中五級上學期的2.62分上升至中六級時的2.87分，反映她們在健社科學習的信心提升了。

總結及反思

　　整個校本行動計劃著重讓有不同學習差異的學生投入本科學習，從而提升學習自信。雖然在推行這個教學計劃時付出了不少努力，而且困難重重，但看著學生有所成長，一切也是值得的！

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以設計思維教學促進學生
在STEAM的深層思維學習

科目：初中電腦科
老師：黃溢聲老師、曾志偉老師
年級：中二級

摘要

設計思維近年在教育界備受關注，但在教學實踐時卻面對不少挑戰。為此，本校與香港理工大學合作，將設計思維融入STEAM專題研習，並利用簡單工具協助學生經歷研習過程。計劃首先從老師培訓入手，讓老師親身體驗設計思維流程，並探討如何在課堂中有效實施。針對初中生經驗不足、難以發掘問題的痛點等情況，我們設計了一套卡牌讓學生在既定範圍內思考問題及構思可行方案。在不斷的測試及改善後，學生都能將點子製成實體原型，並將意念向學生及老師展示。

計劃背景及理念

近年設計思維在學界興起，目的旨在啟發學生創意，以人為中心發掘及解決生活中的大小難題。然而，要實踐設計思維，往往需要大量時間，從設想問題、了解用家需要以至成品的製作過程，對緊迫的課程而言無疑是「奢侈品」。因此，如何在有限時間內讓學生體驗整個過程便成了一大難題。有見及此，本校與香港理工大學賽馬會社會創新設計院合作，參與了「The Tech Lab」計劃，由老師自身的學習開始，再探討以不同方式教授學生設計思維，帶領學生經歷各個設計階段。

第一階段——老師培訓

整個計劃歷時一年時間。STEAM組老師在理大學者帶領下，先後兩次參與設計思維課堂。課堂上除介紹設計思維基本概念外，更著重的是實習過程。老師會進行多個簡單活動及討論如何從用家（學生）角度改善日常課堂，務求令學生更有效地學習。同時，老師亦會動手製作不同模型，從自身體會學生在創作時的難點。

先由老師開始學習，從不同活動中體會「設計思維」的理念

第二階段——課堂實踐

　　老師完成課堂後，理大學者便著手跟電腦科老師探索STEAM專題研習的安排。中二級STEAM專題研習以「智能城市」作背景，透過科技改善生活。從過往經驗中，因初中學生閱歷尚淺，在設計產品時遇到最大問題，大多是因無法找出現有的問題，令她們難以確立研習方向。另一方面，在設計原型(Prototype)的過程中多會天馬行空，未有考慮可行性等。因此，我們便發展出不同的小工具協助學生去探索。整個課程規劃如下：

(1) 首先，學生從「理解用戶」開始。老師會先選取數個不同的生活場景及弱勢社群組別，並製作「場景卡」及「對象卡」讓學生作配對，配合不同的「可持續發展目標」，思考某類群體於生活中遇到的困難。此方式能避免學生漫無目的憑空思考，收窄學生的想像範圍。如下圖，學生透過不同的卡片組合便可聯想出相關的產品意念。

場景卡（綠）	可持續發展目標卡（紫）	對象卡（黃）	智能產品意念
交通工具	良好健康與福祉	傷殘人士	製作一個自動伸縮板，讓傷殘人士可更有效率地上落巴士或港鐵。
交通工具	性別平等	男／女	在港鐵列車中，製作一個扶手響鬧裝置，當扶手感應到有人用身體倚靠著，會發出提示聲音。

(2) 當學生鎖定某一群組及某一場景作目標後，學生便要開始作深入了解，釐清問題。學生下課後嘗試透過自身觀察、訪問他人等了解用戶需要，透過既定框架記錄該群體在使用不同產品或作不同活動時所出現的難點及原因，以同理心找出問題核心。

(3) 有了清晰方向後，學生便要構想解決方案。過程中學生多會聯想出天馬行空的方案。為避免過份偏離實際情況，老師將學校所有的科技資源，如不同的傳感器、輸出裝置、3D打印機等，印成卡牌，學生透過使用不同的卡牌嘗試聯想出多個能解決問題的方案；再以「比併卡」將各個方案按照一定條件評分。最後將不同方案比併篩選出最合適的定案製作模型。

Button 按鈕	**Temperature** 溫度	**Radio** 無線電波
Shake 搖動	**Sound Level** 聲音強度	**Water Temperature** 水溫

LED Light LED燈	**Sound** 聲音	**Text** 文字
Movement 動作	**Animation** 動畫	**Water pump** 水泵

透過「科技資源卡」輔助學生將概念在現有資源下轉化成實體模型

(4) 有了好的計劃便能著手製作模型。因初中學生在完全沒有製作模型的經驗，所以會由STEAM組不同老師帶領學生逐步將循環物資製作成模型。而在實際建立模型時往往與構想的有很大出入，如需考慮程式在何時停止運作、模型活動部份與配件的位置等。故STEAM組老師會花大量時間在這階段介入，與學生共同製作並提出建議，同時測試不同情況下模型的運作，引導學生改善設計。

當學生完成作品後，學生會將設計理念及成品示範拍攝成影片介紹，再交由STEAM組老師評分並選出各班表現較佳的兩組。被挑選出的兩組會於校內舉行展覽及進行比賽，由校長、老師及學生作評分及回饋。

學生向觀眾展示模型的設計理念

藝術教育

身同感受——雨衣改造

科目：視覺藝術科
老師：陳婉華老師、許蕙羚老師
年級：中三級

教學設計理念

　　天氣變幻，上學時會突如其來的傾盆大雨，同學衣衫盡濕，故希望透過身同感受，設計一件適合自身的雨衣。

教學目標

1. 學習基本時裝設計。
2. 了解用家使用雨衣之需要。
3. 探索物料創作之可能性。
4. 成品製作。
5. 培養學生的協作能力。

教學計劃

	教學目標	教學活動	教學策略	教材／工具	評估準則
單元一	探討下雨時服裝的需要	學生透過說出自身感受，整理理想雨衣的重點。	• 討論 • 歸納 • 繪畫	• 工作紙 • 簡報	• 學生能歸納自身需求，寫下理想雨衣設計重點。
	基本時裝設計引入	了解時裝造型，繪畫雨衣草圖。			• 能繪畫出雨衣草圖。
單元二	探索物料創作之可能性	透過電線膠紙、雨衣物料、防水物料等，探索物料創作之可能性。	• 討論 • 實驗 • 記錄 • 小組協作 • 回饋能力	• 工作紙 • 簡報	• 學生能按物料的限制及特性，作出物料試驗。 • 學生能夠展示及分享物料探索之優異之處。
單元三	繪畫時裝圖	繪畫雨衣時裝圖。	• 繪畫	• A3工作紙 • 相應物料 • 簡報	• 學生能畫出時裝圖。
單元四	雨衣改造	透過小組形式，學生改造其中一件雨衣。	• 討論 • 小組協作 • 改造	• 雨衣 • 電線膠紙 • 電熱夾／熨斗 • 牛油紙 • 與設計相關的物料 • 防水顏料	• 學生能製作雨衣。 • 學生能按時完成作品。
單元五					
單元六	學習成果分享	學生需身穿所設計之雨衣，並進行匯報	• 匯報能力 • 作品展示能力 • 小組協作 • 回饋能力	• 作品 • 創作自白	• 學生能有信心地展示創作。 • 學生能清楚匯報其創作。

教學成果
單元一　時裝草圖設計工作紙
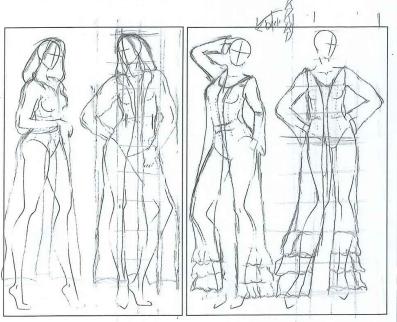
1. List out 3 main functions of raincoats.

   a) To dodge rain　b) Better than umbrella　c) Fashionable

2. According to the above function, design two raincoats with front view and side view.

1. List out 3 main functions of raincoats.

   a) To shield the wearer from rain　b) Fashion: Catwalk　c) Beautiful

2. According to the above function, design two raincoats with front view and side view.
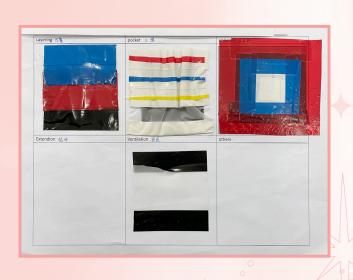
單元二　物料探索工作紙

單元三　繪畫時裝圖

單元六　優異成果分享

雨衣給人老土的感覺，在設計上，雖然沒有特別的功能改造，但採用了黑白幾何圓形，將平凡的雨衣，變得有時尚感。

在設計雨衣時，我們考慮加設與校服相關的元素，所以選擇了中式的造型結構，讓我們穿上後變得溫文。而袖口內側有「大開口」式設計，雨衣底部加上裙擺，讓雨衣更女性化。

粵劇教學

科目：音樂科
老師：陳仲嘉老師
年級：中三級

簡介

粵劇一直被香港和中國視為重要文化教育政策的一環。傳統粵劇更是不可忽視的藝術，文化價值高，十分值得在學校推廣，令這一項藝術得以流芳百世。

這門藝術一直以來均以「師徒制度」傳授，普遍大眾並未能輕易接觸。加上香港的音樂課程指引中一向以認識西方音樂為主，故本港的音樂老師培訓大多亦以西方音樂為主，對粵劇的認識較薄弱，因此令香港的粵劇界出現「青黃不接」的局面。自1997年，教育統籌局輔導視學處音樂組成立了「粵劇教學研究工作小組」，並首次進行粵劇教學研究工作，鼓勵學校自行推行粵劇教學。

教育統籌局輔導視學處音樂組的「粵劇教學研究工作小組」於1998年5月便發表了《粵劇教學研究報告》，指出「工作小組認為粵劇、粵曲教學在中學正規課程是可行的」，及後得到政府「優質教育基金」的支持，不少中、小學校隨即於音樂課或課外活動中引入粵劇教學，至今已有一定數量的學校於課外活動中設有粵劇小組。經過這些年與中國文化的配合和交流，香港粵劇的發展也慢慢成熟。除此之外，硬件和軟件教學上也進步了不少，加上政府的努力參與，令粵劇成為了更能引人入勝的藝術，供大眾欣賞。

本教案目的是對粵劇教學的價值進行探討，及於學校作個案研究，評估教授粵劇、粵曲的可行性，並提出建議。

學生已有知識／經驗

1. 學生已認識中國音樂的元素，如：五聲音階。
2. 學生曾欣賞的西方歌劇。

教學目標

1. 學生能認識中國粵劇和京劇藝術的元素比較。
2. 學生能認識中國粵劇的戲服、面譜、化妝。
3. 學生能辨識子喉和平喉的不同唱腔方法。
4. 學生認識工尺譜並能唱《帝女花香夭》。
5. 學生能數白欖及創作白欖。

教材及教具

1. 戲服
2. 面譜
3. 教學簡報
4. 工作紙
5. Ipad –Garage Band

教學流程

時間	教學目標	四大目標				教學內容	綜合活動			評估
		創意	技能	評賞	情境		創作	演奏	聆聽	
2分鐘	引起動機			✓	✓	問學生一些有關粵劇的問題，例如： 1. 你們看過粵劇沒有？看過哪一齣？誰人主唱？ 2. 你對粵劇有何認識? 3. 你喜歡粵劇嗎?			✓	學生對粵劇產生興趣
3分鐘	學生能認識中國粵劇和京劇藝術的元素			✓	✓	2.1 加入京劇元素，以豐富中國戲曲之色彩。 《帝女花》影片欣賞： 留意有關的特色，例如男女主角不同的唱腔、旋律、伴奏、服飾、佈景及文字的處理等特色。 2.2 中國粵劇和京劇的分別			✓	

時間	教學目標	四大目標				教學內容	綜合活動			評估
		創意	技能	評賞	情境		創作	演奏	聆聽	
10分鐘	學生能認識中國粵劇的戲服、面譜、化妝		✓	✓	✓	3.1 學畫面譜、試穿戲服 3.2 介紹粵劇表演化妝技巧，利用面具繪畫面譜，了解如何突顯人物角色的性格。（課後功課） 3.3 服裝試穿：學生作示範，體驗中國的針織如何融入藝術當中，學生加入步法和水袖。	✓			
5分鐘	學生能辨識子喉和平喉的不同唱腔方法 學生認識及試唱《帝女花香夭》		✓	✓		4.1 介紹子喉和平喉 4.2 試唱《帝女花香夭》，平喉子喉均試唱。 4.3 以子喉和平喉不同方法演唱，分兩組。讓學生認識唱曲、說唱及說白的特色。		✓	✓	學生能掌握不同的唱腔
5分鐘	學生認識工尺譜及能唱《帝女花香夭》		✓	✓		6.1 學生認識粵劇的記譜方法：工尺譜及板叮、常用的調性、唱腔及常用樂器。 6.2 先認識工尺譜，跟西方唱名樂譜的分別。試唱音階低音區域至高音區域。		✓	✓	學生能唱一段工尺譜音階
15分鐘	數白欖	✓	✓	✓		著學生演繹白欖選段並以卜魚伴奏： 7.1 學生先聆聽老師創作的白欖。 7.2 老師引導學生創作白欖。 白欖的內容有哪些特色？（多為三字句、五字句及七字句；最少兩句，句數不限，可無限延伸） 白欖有哪兩個戲劇功能？（介紹人物、交代劇情）	✓			學生能掌握重拍和創作白欖

時間	教學目標	四大目標				教學內容	綜合活動			評估
		創意	技能	評賞	情境		創作	演奏	聆聽	
20分鐘	創作白欖	✓	✓	✓		著學生演繹白欖選段並以卜魚伴奏： 4.1學生觀看白眼影片唐伯虎點秋香之選段(0'13'-0'31') https://www.youtube.com/watch?v=CFWMXM715NY 提問學生：白欖甚麼敲擊樂器？速度又沒有改變？ 4.2學生先聆聽老師師創作的白欖，留意白欖的結構有押韻。 4.3老師先引導學生創作白欖。 白欖的內容有哪些特色？（多為三字句、五字句及七字句；最少兩句，句數不限，可無限延伸） 白欖有哪兩個戲劇功能？（介紹人物、交代劇情） 4.4學生分組創作及表演，並記錄於工作紙上，用Ipad garage band演奏。 Garage band: set to Chinese kit 木魚。	✓			學生能掌握重拍和創作白欖
	總結 （生命教育）			✓	✓	長平公主與世顯是否對自己的生命負責任呢？ 歌詞中提到：原喪生回謝爹娘，江山悲災劫，感先帝恩千丈，與妻雙雙叩問帝安。 捨身感恩報答亂世代，如果是你會怎樣做，怎樣面對國破與家亡？ 唱詩歌集P.159《橋》		✓		

教學反思

　　學生表現比預期效果理想積極，運用生動的方法可以清除學生對粵劇的偏見。以往，部分學生當聽見學習粵劇時，認為這些音樂受眾是屬於年紀大的人士。是次教學設計老師先介紹戲服，帶領他們看見中國的傳統服飾、妝扮，希望他們能初步接受中國藝術。課堂中可以多加一些音樂元素，讓學生體驗更豐富。如果使用道具，讓學生可以演一套粵劇選段，從音樂中感受，效果會更為理想。

　　有些班別未能外出欣賞現場的粵劇，只能觀看網上片段。若能夠安排得到，可以邀請劇團到校表演，讓學生先欣賞表演再開始課堂更臻完善，效果會更理想。

　　經過三節的粵劇教學後，本人發現粵劇教學於學校中具有推行的價值。老師們普遍支持推行粵劇教學，且學生對粵劇教學也呈正面的態度。

　　粵劇教學後，本人發現學生的音樂知識得以提升，能多認識一種傳統音樂藝術。在技能上，學生的節拍感和歌唱技巧大有進步，學生也嘗試創作「白欖」，同時對創作的興趣增加。這不但令他們進一步欣賞中國文化，更能培養學生對藝術的鑑賞能力。

體育

推行「活躍及健康的生活方式」

科目：體育科
老師：葉健榮老師、康嘉文老師
年級：中一至中六級

簡介

　　近年香港學童大多沈迷電子遊戲，嚴重缺乏運動，大大影響身心健康。課程發展議會「中學教育的七個學習宗旨」(2017)其中一項是「健康生活方式」，可見社會重視學童的身心健康發展，鼓勵學生恆常參與體育活動，協助他們建立活躍及健康的生活方式，以達致世界衞生組織所建議的體能活動量，即每天應累積最少60分鐘中等至劇烈強度的體能活動（簡稱MVPA60）。所以學校透過不同的體育活動提供學童參與體育運動的機會，建立活力健康校園。

活躍及健康的生活方式：MVPA 60定義

　　按世界衞生組織的建議，5-17歲兒童及青少年每天應累積最少60分鐘中等強度至劇烈強度的體能活動。體能活動是指所有會消耗能量的身體活動，包括體育課、運動競賽、體能訓練；以及交通往來（如步行或踏單車）、家務勞動、各類動態的遊戲和娛樂等。進行中強度活動時，呼吸和心跳稍為加快及輕微流汗，但不覺辛苦（例如仍然可以交談自如）；進行劇烈強度活動時，呼吸急速、心跳很快及大量流汗，覺得辛苦（例如不能夠交談自如）。每星期最少三天進行劇烈強度的體能活動，以強化肌肉及促進骨骼成長。（圖一）

MVPA60

- **M**oderate 中等強度
- **V**igorous 劇烈強度
- **P**hysical 體能
- **A**ctivity 活動
- **60** minutes
  每日累積最少60分鐘

Moderate中等強度：做體能活動的時候，呼吸與心跳稍為加快和輕微流汗，但不覺太辛苦（即仍然可以交談自如）。

Vigorous劇烈強度：活劇烈強度：做這些活動的時候，呼吸急速、心跳加快及大量流汗，覺得辛苦（即不能夠交談自如或感覺困難）。

Physical Activity體能活動：所有會消耗能量的身體活動，包括體育課、運動競賽、體能訓練、交通往來（例如步行或踏單車）、家務勞動、各類動態的遊戲和娛樂等。

（圖一）

香港學童參與體能活動的概況

近年香港學童大多沉迷電子遊戲，嚴重缺乏運動，大大影響身心健康。香港大學心理學系(2017)「香港高小學生打機習慣調查」指出受訪學童平均一周有3.6天會打機，每周平均花8小時打機。有見及此，中大教育學院體育運動科學學系發表了「2018香港兒童及青少年體力活動報告卡」，發現香港兒童在多個範疇均表現欠佳，包括整體體力活動水平評分為C-，體適能評分更低至D，低於全球49個國家及地區的平均分C，對比亞洲地區尤為明顯，日本評分達A、台灣B-、韓國亦有D+。報告指香港青少年兒童心肺適應能力較差，有研究曾發現9至17歲兒童和青少年峰值攝氧量平均只有30.8%。中大曾於2016年進行同類調查，對比2次評分，港童於「靜態行為」及「家庭」2個範疇表現顯著轉差，分別由C變C-及由D變D-，過往研究指只有35.5%的10至19歲兒童及青少年每日花少於2小時對著電子屏幕產品，及僅37%的7至12歲兒童每周最少一次與家人參與體力活動，即不足一半兒童及家庭達至國際標準。（圖二）

A+	94% to 100%	
A	87% to 93%	絕大部分兒童和青少年能夠達標
A-	80% to 86%	
B+	74% to 79%	
B	67% to 73%	超過半數兒童和青少年能夠達標
B-	60% to 66%	
C+	54% to 59%	
C	47% to 53%	大約一半兒童和青少年能夠達標
C-	40% to 46%	
D+	34% to 39%	
D	27% to 33%	少於半數兒童和青少年能夠達標
D-	20% to 26%	
F	< 20%	只有小部分兒童和青少年能夠達標
INC		未能評級

整體體力活動水平評分為 C-

（圖二）

從以上報告顯示香港學童受朋輩影響沉迷電子產品，再加上父母或因工時過長、運動意識不足，未積極安排家庭體能活動。專家建議應限制學童使用電子產品時間，並安排家庭體能活動，培養學童運動習慣。另一方面，學校應配合政府建議安排不同形式活動和計劃，讓學童進行合適體能活動，並建立具體的評估系統，以監察學童的情況和變化。

　　張佩儀(2017)研究是比較體育課和課後活動與學童日常體育活動的關係。她指出學童參與課後學校體育活動(PA)可以提高日常MVPA 60水平，這證實了課後運動時間比體育課對增加兒童參與體育活動的重要性。因為課後學童可以按著自己的興趣和時間去參與不同形式的體育活動，這比較有彈性和目標為本。研究也證明體育課的運動量比不上和課後活動的運動量（圖三）。所以如果要提升學童的運動量，單靠一星期的體育課是不足夠的。同時老師要留意課育課的內容是否達到MVPA 60的水準指標。

Table 2. PA behaviour in school segments during PE time, after-school hours and within-school hours (n = 242).

PA behaviour (minutes)	PE time		After-school hours		Within-school hours	
	M (SD)	%	M (SD)	%	M (SD)	%
Sedentary	21.2 (7.4)	48.3%	95.9 (27.4)	61.0%	259.1 (68.1)	67.8%
Light	14.9 (16.3)	33.9%	49.1 (16.6)	31.2%	100.2 (33.8)	26.2%
MVPA	7.9 (4.5)	17.8%	11.9 (6.9)	7.5%	18.0 (9.4)	4.7%

PA: physical activity; MVPA: moderate-to-vigorous physical activity.

（圖三）

　　社區體質測試計劃調查結果摘要(2012)顯示只有17.7%的幼兒平均每天進行1小時或以上的戶外活動；另外，根據「基礎指標」，即一星期至少3天、每天累積達30分鐘中等或以上強度體能活動的評估標準，分別有51.8%的兒童、42.3%的青少年和37.1%的成人及長者為達標的活躍人士（圖四）。可見香港學童每日的運動量嚴重不足，對身體健康造成慢性影響，大大衝擊香港的醫療系統，增加了患癌症、心臟病、中風、慢性呼吸系統疾病、糖尿病、高血壓等都市疾病的機會。

（圖四）

校園體能活動的意義和重要性

從以上種種數據和報告來看，普遍香港學童每日的運動量過低，造成健康和情緒的問題。課程發展議會「中學教育的七個學習宗旨」(2017)其中一項是「健康生活方式」，而教育局的體育學習領域課程指引（小一至中三）(2017)亦提出以《建立活躍及健康的生活方式》的目標。可見社會重視學童的身心健康發展，鼓勵學生恆常參與體育活動，協助他們建立活躍及健康的生活方式，以達致世界衛生組織所建議的體能活動量，即每天應累積最少60分鐘中等至劇烈強度的體能活動（簡稱MVPA60）。所以學校應透過不同的體育活動提供學童參與體育運動的機會，建立活力健康校園。

衛生署非傳染病直擊報告(2018)中指出兒童參與運動或多進行體能活動與他們有更好學校成績呈正向關係。相比不活躍的同輩，活躍的青少年於數學或英文科獲得「A」的比率高20%。參與運動與不參與運動的兒童和青少年相比，參與運動的兒童和青少年，有更積極和較高的抗逆能力、更好的社交技巧、更高的社會適應能力和心理社會功能。

本校體育科的現況和學校背景（推動MVPA60的強弱機危）

本校是位於南區的一所資助女子中學，全校共27班，學生人數約600人。可供進行體育活動設施包括有籃球場、排球場、雨天操場、健身室、禮堂、學生活動室、全天候跑道、跳遠沙池、擲項草地及室外射箭場。本校本著基督博愛犧牲的精神從事女子教育的工作，本校注重德、智、體、群、美、靈的均衡教育，重視教導學生真光傳統的創造建設、愛群服務、克己犧牲、力求完善的精神。本年度本校的三年發展計劃是「拓闊學習視野」，體育科利用課堂所學的知識、技能和態度，讓學生得到多種不同的「學習」和「經歷」機會拓闊學習視野。

體育科的強項是體育設施及設備完善、學校有良好的體育文化和傳統、學校資源上大力支持發展；而弱項是女生較為被動、學生專注學業成績難兼顧體育活動。每年我校學生都參與衛生署身體檢查，2023-2024學年參與檢查人數為598人，發現超重的人數為153人(21.8%)，比全港數字19.9%為高（圖五）。衛生署建議學校多關注學生肥胖和運動量不足的問題。根據本校「學校活動詳細紀錄表」發現有參與課後體育活動只佔全校人數約65%，即是有35%學生每星期只有課育課能達到MVPA60水平（圖六）。有見及此，我們在下年度開始推行校本MVPA60的計劃，鼓勵學生能每天累積最少60分鐘中等至劇烈強度的體能活動，建立活躍及健康的生活模式。

2023/24 學年

本校	
出席學生健康服務中心的學生比例(覆蓋率)	77.0%
超重 (包括肥胖) 的甄別率 ^	21.8%
所有中學	
總覆蓋率	45.8%
超重 (包括肥胖) 的甄別率	19.9%

^ 超重 (包括肥胖) 的甄別率 = 被甄別為超重 (包括肥胖) 的學生人數 / 出席學生健康服務中心的人數 x 100%

（圖五）

學校活動詳細紀錄表

香港真光書院

全校人數：700
體育教師人數：2
體育隊隊數：11
體育隊人次：
體育隊人數：200
體育興趣班數：12
體育興趣班人次：
體育興趣班人數：250

早會前時段

活動名稱	頻次/星期	時間	參與人數	時數(分鐘)
跑橋	3	7:30-8:10	20	40分鐘
排球校隊	2	7:30-8:10	30	40分鐘
籃球校隊	2	7:30-8:10	30	40分鐘
羽毛球校隊	1	7:30-8:10	15	40分鐘

早會時段

活動名稱	頻次/星期	時間	參與人數	時數(分鐘)
/				

小息時段

活動名稱	頻次/星期	時間	參與人數	時數(分鐘)
/				

午息時段

活動名稱	頻次/星期	時間	參與人數	時數(分鐘)
健身室開放	5	1:10-1:40	20	30分鐘
禮堂開放(羽毛球)	4	1:10-1:40	20	30分鐘
球場開放(籃、排)	5	1:10-1:40	30	30分鐘
排球校隊	2	1:10-1:40	30	30分鐘
籃球校隊	2	1:10-1:40	30	30分鐘
羽毛球校隊	1	1:10-1:40	15	30分鐘
射箭	2	1:10-1:40	20	30分鐘

（圖六）

推行活躍及健康校園政策

1. 課前

	課前計劃	內容
i	• 步行回校	• 鼓勵學生少乘搭車輛，步行回校（約10分鐘路程），這可養成恆常運動習慣。
ii	• 跑橋練習（2公里）	• 每星期舉辦2次跑橋練習，歡迎全校學生參加，帶氧運動可訓練學生心肺功能。
iii	• 球類練習	• 不同球隊自行組織練習（40分鐘）
iv	• 中一早操	• 中一學生於每年10月至12月進行全級早操，內容包括手腳協調練習、韻律操、運動知識等，目的是培養學生自律精神及養成運動的習慣。（40分鐘）

2. 課堂活動

原則：增加學生體能活動的機會和活動量。

	課堂計劃	施行時間	
i	• 全年進行3次不同帶氧運動，並測試和紀錄學生成績。	• 上學期：9分鐘跑/行 • 下學期：3分鐘室內划艇 跑橋（2公里）	• 測試前教授有關運•動的知識和有訓練節
ii	• 製作體能卡，學生可以在課堂或課餘使用，學生可依照卡上指引進行運動，培養學生恆常運動的習慣。	• 課堂：每月設一次，利用一節體育課（40分鐘）作訓練 • 課餘：鼓勵學生於家中自行訓練	• 課後延伸：學生要自製家中體能短片（7分鐘）作下學期功課
iii	• 體育體適能課以Mosston教學光譜理論之共融式教學法進行。分成不同層級的難度，學生可選擇某一程度的動作練習，掌握後可挑戰難度較高之動作以測試自己的能力。這可增加學生成功感和運動量。	• 如：射箭課，利用不同大小的靶紙進行練習。能力稍低的學生用大靶紙，校隊學生可射較大距離的箭靶，這可增加課堂趣味和成功感，使學生多參與。	
iv	• 利用康文署場地，配合課程設計，使活動多元化	• 包括壁球場、網球場、草地滾球場、泳池	

	課堂計劃	施行時間	
v	• 課育課加入新興運動	• 包括躲避盤、閃避球、健球、地壺球、旱地冰球、輕排球等，讓學生能接觸不同類型的運動，培養終身運動的習慣。	
vi	• 體育課會教授理論課	• 內容包括體適能及自主設計循環訓練的方法等，使學生可課後自行安排訓練。	
vii	• 利用google classroom作網上延伸學習	• 把課堂的練習片段及學習重點放在內聯網，讓學生自評及外評，以進行反思。	

體能卡

A. 上肢

A1. 平板碰膝 Plank Knee Touch	A2. T型掌上壓 Push Up with Rotation	A3. 碰肩膊 Shoulder Taps	

B. 下肢

B1. 蹲起側踢 Squat with Side Kicks	B2. 前後跨步 Front and Reverse Lunges	B3. 開合蹲起跳 In and Out Squat Jumps	

C. 核心肌群

C1. 捲腹伸腿 Crunch Kicks	C2. 爬蟲式側彎腰 Standing Side Crunch	C3. 蜘蛛平板支撐 Spider Plank	

D. 心肺耐力

D1. 踏點步 Toe Taps	D2. 登山者 Mountain Climbers	D3. 跨步跳 Jumping Lunges	

3. 小息時段

善用小息時間，在校園劃出多個簡單運動區，如：跳繩區、籃球場投籃區、排球對牆傳球區、室內單車區、羽毛球區，鼓勵學生多做運動。

4. 午膳時段

本校全校學生只可在學校午膳，利用這個優勢舉辦不同的體育活動，豐富她們的午膳時間。

	午膳計劃	內容	
i	• 體育學會體育設施和器具借用服務	• 於午膳時間提供不同的借用服務，鼓勵學生多進行體育活動。	
ii	• 健身室開放	• 有合資格老師當值，並指導學生進行有系統訓練。（每星期開放2次）	
iii	• 體適能挑戰周	• 每年在校曆表加入體適能挑戰周，為期一星期。在校內設置攤位和挑戰站，利用獎賞咭鼓勵學生參加。 • 帶領學生組織籌辦挑戰周，帶動校園的體育文化。	• 攤位是由體育學會負責設計和統籌。 • 挑戰站是邀請不同體育總會到校提供服務
iv	• 多元化運動比賽	• 提供機會讓不同能力的學生參與運動比賽，推動校內的體育氣氛。	• 師生賽 • 社際賽 • 班際賽

5. 課後延伸

先於堂上建構活動概念，鼓勵學生課後延伸，達至自主學習的概念。

	課後延伸計劃	內容	
i	• 製作FITT運動短片	• 與資訊科技科合作，學生以小組形式製作FITT拍攝片段，期望她們在家都能繼續進行體能活動。	
ii	• 運動員分享	• 邀請香港運動員到校作分享（周會時間），利用他們的經歷鼓勵學生恆常參與運動。	
iii	• 運動興趣班 • （普及運動）／ • 校隊練習（精英運動）	• 全校學生都可以按自己興趣和能力參加運動興趣班和校隊練習。 • 學生從練習中進步，為自己訂下目標，繼而升為校隊。	• 球類 • 舞蹈 • 射箭 • 劍擊 • 游泳
iv	• 體適能獎勵計劃	• 利用獎勵計劃提升學生做運動的習慣（全校學生必須參加），每年學期尾設「頒獎禮」頒發達標學生獎狀和書券，培養學生積極的生活態度和堅毅不屈的精神。	
v	• 動感親子運動日營	• 通過家長以身作則，為學生樹立榜樣，使學生更有動力參與運動。	• 項目包括圓桌乒乓球、高爾夫球、體感跑步機、電子飛鏢、桌上足球、棍網球、棒子足球、VR划艇、VR單車、動感單車、地壺、沙壺及舞蹈。
vi	• 體育海外交流團	• 學校每年暑假籌辦海外交流團，給予學生參與多元化的體育活動學習經歷，擴闊他們的視野和增廣見聞。	
vii	• 以「活躍及健康校園」 • 為主題壁報比賽	• 中二級班際壁報比賽，以「活躍及健康校園」為主題，學生於壁報展示相關訊息，增加學生知識。	
viii	• 家務（每日20分鐘）	• 鼓勵學生每日回家做家務，如：洗碗、打掃、清潔家具等，一來可以增加運動量，二來可以培養學生責任感。	

6. 大型活動／比賽

i	・陸運會及水運會	・所有學生均必須參加陸運會，而水運會可選擇性參加。兩個大型項目均由學生擔任不同角色，如裁判、司儀等，培養學生相應體育知識。
ii	・環校跑籌款比賽（4公里）	・讓學生做善事以外，提升學生對長跑興趣，培養終身運動習慣。

建議學生每星期可行達標方案：（420分鐘或以上）

回校步校	10分鐘x5日=	50分鐘
跑橋／晨早球類練習	30分鐘x1日=	30分鐘
小息活動	10分鐘x3日=	30分鐘
午間活動	30分鐘x2日=	60分鐘
課外活動	90分鐘x1日=	90分鐘
家務	20分鐘x7日=	140分鐘
周末或假日	60分鐘x1日=	60分鐘
	合計：460分鐘	

記錄和評估

要全面有效地推行MVPA60政策，必須有一套完善而方便使用的記錄系統。本校資訊科技組會設計程式（手機Apps）去記錄學生運動資料。體育科會以下程序進行:

> 9月上旬：學生使用簡介會（周會講座形式進行）；
> 9月中旬：初中利用電腦堂、高中利用體育課進行登記和開設戶口；
> 9月中旬：正式使用系統；
> 1月：體育老師檢視學生使用情況，分發中期報表給學生；
> 7月：體育老師分放年終報表給學生，頒發獎勵給達標學生。

系統運作和記錄保留至學生畢業，學生可以按年度檢查進度。

香港真光書院
學生MVPA60紀錄系統

姓名: XXX　　　　　　學生編號: XXXXX
登記日期: XXXXXXX

日期	活動	時數

香港真光書院
學生MVPA60紀錄系統
報告

姓名: XXX
學生編號: XXXXX
年度: 2019-2020
總分鐘:
平均每日分鐘:

紀錄內容

日期:	活動	時數(分鐘)
2/10/2019	跑橋	40
10/10/2019	午膳-羽毛球	20
15/10/2019	舞蹈組	60
22/10/2019	早上排球練習	30
30/10/2019	社際羽毛球比賽	30
2/11/2019	跑橋	40
5/11/2019	舞蹈組	60
10/11/2019	午膳-單車	20

　　評估是學與教不可分割的，並鼓勵及促進學習。評估使學生明白及展示學習目標繼而努力改進。本校利用手機Apps（程式），讓學生自己記錄運動數據。記錄數據的方法一定要令學生易於使用，這直接影響學生形成習慣。另外，設立獎勵計劃讓學生制定自己的目標繼而獲取獎項，以MVPA60標準為基礎，學生於年終平均每日達30分鐘則獲到銅狀；每日達45分鐘則獲到銀狀；每日達60分鐘或以上則獲到金狀。本校根據收集數據去檢討和制定下年目標。

策略／工作	成功準則	評估方法
・利用手機Apps紀錄讓學生自己紀錄運動數據，以釐定學生達至每日運動60分鐘。	・七成以上學生達至每日運動60分鐘。（約490人） ・2010-21年度超重的人數較上年度低（低於18%）	・統計達標人數 ・問卷調查 ・衛生署學生身體檢查報告
・MVPA60獎勵計劃	・每日達30分鐘則獲到銅狀 ・每日達45分鐘則獲到銀狀 ・每日達60分鐘或以上則獲到金狀	・學生MVPA60紀錄系統

總結

教育局《中學教育的七個學習宗旨》中提倡健康的生活方式,證明香港學校重視建立活躍及健康校園。而本校基於校情也投放資源發展MVPA60政策,使學生享受運動,建立身心健康的生活。

本科展望MVPA 60政策能建立學校的運動文化,將重點發展的項目變成學校的傳統,促進教學團隊的專業發展和增強凝聚力及歸屬感。另一方面,可以與外間機構或學校合作,建立MVPA 60地區伙伴,共同分享和交流成功的心得。

<table>
<tr><td colspan="6" align="center">香港真光書院
MVPA60 時間表</td></tr>
<tr><th></th><th>星期一</th><th>星期二</th><th>星期三</th><th>星期四</th><th>星期五</th></tr>
<tr><td rowspan="3">課前</td><td colspan="5" align="center">步行回校(20-30分鐘)-上課日</td></tr>
<tr><td colspan="5" align="center">中一級早操(30分鐘)-每年10至12月</td></tr>
<tr><td>跑橋(30分鐘)</td><td>校隊練習(30分鐘)</td><td>校隊練習(30分鐘)</td><td>跑橋(30分鐘)</td><td>校隊練習(30分鐘)</td></tr>
<tr><td>小息</td><td colspan="5" align="center">體育活動(球類、康樂棋)(15 分鐘)</td></tr>
<tr><td>課堂</td><td colspan="5" align="center">體育課(80 分鐘)</td></tr>
<tr><td rowspan="3">午膳</td><td colspan="5" align="center">體育活動(球類、單車)(30 分鐘)</td></tr>
<tr><td colspan="5" align="center">體適能活動(健身室)(30 分鐘)</td></tr>
<tr><td colspan="5" align="center">班際/社際比動(35 分鐘)</td></tr>
<tr><td rowspan="2">課外活動</td><td colspan="5" align="center">體適能活動(健身室)(60 分鐘)</td></tr>
<tr><td colspan="5" align="center">校隊訓練/體育興趣班/舞蹈練習(120 分鐘)</td></tr>
<tr><td>回家</td><td colspan="5" align="center">家務(30 分鐘)</td></tr>
<tr><td>大型體育活動</td><td colspan="5" align="center">陸運會、水運會、運動周</td></tr>
</table>

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中大教育學院體育運動科學學系：2018香港兒童及青少年體力活動報告卡

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