

Chairman's Report 2016-2017

Gyver, Kwok-leung Lau
Chairman, HKASME

1. According to the Policy Address 2015-17, the EDB will renew and enrich the curricula and learning activities of Science, Technology and Mathematics, and enhance the training of teachers, thereby allowing primary and secondary students to fully unleash their potential in innovation. In addition, the Government will step up efforts to promote STEM (Science, Technology, Engineering and Mathematics) education and encourage students to pursue the study of these subjects. Furthermore, the EDB strives to promote Science, Technology, Engineering and Mathematics (STEM) education. Following the provision of additional resources for primary schools at the beginning of last year, the EDB is prepared to provide each public sector secondary school with an additional one-off subsidy of \$200,000 to facilitate the implementation of school-based programmes related to STEM education. The council collaborates partners to promote STEM education. We look forward to work with other partners to further promote Science and Mathematics education for the betterment of Hong Kong.
2. Executive Committee

Position	Name	Office
Chairman	Mr Lau Kwok Leung, Gyver	Chinese Y.M.C.A. College
Vice Chairman	Mr Li Chi Man, Jimmy	TYEI MFBM NM Chan Lui Chung Tak Memorial College
Vice Chairman	Mr Wong Wing Kei, Stephen	HKASME
Hon. Secretary	Dr Lau Chi Ho, Humphrey	SKH Tang Shiu Kin Secondary School
Hon. Treasurer	Mr Mok Ming Wai, Michael	Wah Yan College, Kowloon
Hon. Internal Affairs Sec.	Mr Mui Chi Man	Chinese Y.M.C.A. College
Hon. Journal Editor	Mr Lee Wai Hon, Chris	Shun Lee Catholic Secondary School
Biology Convenor	Mr Li Chi Man, Jimmy	TYEI MFBM NM Chan Lui Chung Tak Memorial College
Chemistry Convenor	Dr Bob Lui	King's College
General Science Convenor	Mr Wong Wing Kei, Stephen	HKASME
Mathematics Convenor	Ms Tsui Kwan Yuk	HKSYCIA Wong Tai Shan Memorial College
Physics Convenor	Dr Lau Chi Ho, Humphrey	SKH Tang Shiu Kin Secondary School
General Studies Convenor	Mr Ng Tak Keung, George	Lok Sin Tong Leung Kau Kui Primary School (Branch)

Council Members	Ms Wong Ka Wai, Winnie	CCC Heep Woh Primary School (CSW)
	Mr Ng Bing, Ben	HKASME
	Mr Wong Tak Ming, Jensen	Tin Shui Wai Governmet Secondary School
Immediate Past Chairman	Mr Wong Chi Kong, Alex	HKASME

3. Major Events held in 2016-17

With the effort of our members, we organized different professional events and students activities so as to enhance our professional participation and promote Science and Mathematics education,

- Pedagogy Study Groups
- Science and Mathematics Inter-schools Competitions
- Publications
- HKDSE Paper Review Seminars
- International Assessment Tests/Competitions
- Focus Group Meeting on revision of curriculum, review of laboratory technology establishment
- Dialogue with Education Bureau on the review of the New Academic Structure

No	Subject	Title	Date	In Charge
1	Biology	SBA Annual Conference (Biology)	15 Oct, 2016	Jimmy Li
2	Biology	Hong Kong Biology Olympiads for Secondary Schools 2016/2017	19 Nov, 2016 & 17 Dec, 2016	Jimmy Li
3	Chemistry	SBA Annual Conference (Chemistry)	22 Oct, 2016	Ben Ng
4	Chemistry	Hong Kong Chemistry Olympiad for Secondary School 2016 - 2017	Nov, 2016 – Apr, 2017	Bob Lui
5	Chemistry	“Digi-Science” Video Production Competition for Hong Kong Secondary Schools 2016 - 2017	Nov, 2016 – Apr, 2017	Ben Ng
6	Chemistry	Commercial Testing Laboratory Visit 2016	26 Nov, 2016	Ben Ng
7	Chemistry	2016 香港中學文憑考試 — 化學科模擬考試	26, 27 & 28 Dec, 2016	Ben Ng
8	Chemistry	Australian National Chemistry Quiz 2017	21 Jun – 24 Jul, 2017	Ben Ng
9	Chemistry	2017 暑期測試及校正實驗所參觀活動	27 Jun – 7 Jul, 2017	Ben Ng
10	Chemistry	HKDSE Chemistry Paper Review 2017	12 Aug, 2017	Ben Ng
11	General Science	NSS Integrated Science SBA Conference	26 Oct, 2016	Stephen Wong
12	General Science	2016 Symposium cum Exhibition on Development of STEM Education in Hong Kong	5 Nov, 2016	Stephen Wong
13	General Science	Promote Roche Young Scientist Award 2017	6 Jan, 2017	Stephen Wong

14	General Science	PISA 2015 教師專業發展活動：科學科教師講座	28 Apr, 2017	Stephen Wong
15	General Science	2017 Australia Big Science Competition	8 Jul, 2017	Stephen Wong
16	Physics	SBA Annual Conference (Physics)	29 Oct, 2016	Humphrey Lau
17	Physics	2017 HKDSE Physics Mock Examination	10 Dec, 2016	Humphrey Lau
18	Physics	2017 Fun Science Competition – Briefing	17 Dec, 2016	Humphrey Lau
19	Physics	2017 Fun Science Competition – Stay Right There (Final)	25 Feb, 2017	Humphrey Lau
20	Primary Science	小學常識科 STEM 教案設計獎勵計劃 (2015/16)	3 Dec, 2016	George Ng
21	Primary Science	2016 小學校際科學思維競賽	3 Dec, 2016	George Ng
22	Primary Science	「在常識科推行 STEM 個案分享：羅馬炮架」研討會	13 May, 2017	George Ng
23	Mathematics	電子教學系列(一)——運用應用程式於數學課堂	28 Oct, 2016	Tsui Kwan Yuk
24	Mathematics	電子教學系列(二)——運用學習管理系統於數學課堂	3 Dec, 2016	Tsui Kwan Yuk
25	Mathematics	數學教學研習小組 2016-17 第一次聚會	30 Sept, 2016	Tsui Kwan Yuk
26	Mathematics	課堂點子：一張紙(2)	14 Jan, 2017	Tsui Kwan Yuk
27	Mathematics	電子教學系列(三)——翻轉學習的理念、經驗與實踐	7 Jul, 2017	Tsui Kwan Yuk
28	Mathematics	中國古算今譚——從傳統數學至西學輸入至現代課堂數學 II	27 May, 2017	Tsui Kwan Yuk
29	Mathematics	Focus group Meeting on Secondary Mathematics Curriculum	10 Apr, 2017	Tsui Kwan Yuk
30	STEM	STEM Workshops for Secondary School Educators	17, 18, 21 & 28 Aug, 2017	Mui Chi Man

In addition, we have conducted few EDB/QEF projects on learning and assessment with several deliverables. Several workshops were conducted to disseminate the outcomes and introduce how the deliverables could facilitate better students learning and assessment.

4. The Chairman represented HKASME to be the Guest of Honour/speaker of an event/adjudicator of an event/representatives in various Educational Bodies

- Chairman, Hong Kong International Junior Science Olympic Steering Committee, Hong Kong Academy of Gifted Education
- Chairman, Hong Kong Budding Scientists Steering Committee, Education Bureau

- Committee member, Primary STEM Project Exhibition Steering Committee, Hong Kong Education University
- Committee member, Learning and Teaching Expo Steering Committee, Hong Kong Education City
- Forum Speaker, Global Education Trend – How to implement STEM, 22/6/2016
- EDB STEM meeting, 7/7/2016
- STEM Olympiad, Hong Kong Education University, 8/7/2016
- International Mathematics Olympiad, 10/7/2016, 15/7/2016
- Pre-meeting for MCS Singapore Education Conference, 22/7/2016
- Interview for the out-of-school STEM Ecosystem in Hong Kong, Croucher Foundation
- Speaker, MCS Singapore Education Conference, 15-20/7/2016
- EDB STEM Focus Group Meeting, 20/9/2016
- Inno Tech Expo 2016, 24/9/2016, 26/9/2016, 1/10/2016
- Speaker, Tai Po Joint Primary Schools Professional Development Day, 2/11/2016
- Speaker, Technology Revolution Seminar, 3/12/2016
- STEM Conference-cum-Carnival, Hong Kong Education University, 17/12/2016
- Meeting with Prof HC Man, Faculty Dean of Engineering, Hong Kong Polytechnic University, 3/1/2017
- Press Conference, The Academy of Sciences of Hong Kong, 5/1/2017
- Meeting with The Academy of Sciences of Hong Kong, 1/2/2017
- Spring Reception, Faculty of Engineering, Hong Kong Polytechnic University, 17/2/2017
- Fun Science Competition, Hong Kong Science Museum, 25/2/2017
- Meeting with Faculty of Applied Science & Textiles, Hong Kong Polytechnic University, 6/3/2017
- 2017 World Class Arena Elite Prize Presentation Ceremony, 18/3/2017
- Task Force on STEM Activities, City University of Hong Kong, 24/3/2017
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It is our pleasure to have Prof. TSUI Lap-chee, Founding President of The Academy of Sciences of Hong Kong, Ms. Rita LUN, Honorary adviser of the Academy of Sciences of Hong Kong, Mr. MA Siu-leung, Member of the Advisory Committee on Innovation and Technology to share their views on the direction of Hong Kong STEM Education in our AGM forum 2017.

Finally, I would like to thank our members for your continuous support to HKASME. I would also like to thank our President, Professor Paul CHU, our Hon. Legal Advisor, Mr. Lester HUANG and our Hon. Auditor, Mr. Alex WU for their invaluable advice and support over the years.

香港數理教育學會周年會員大會2017

李偉瀚

香港數理教育學會會刊編輯

日期：2017年6月17日

地點：青年會書院

主題：STEM - How? and Next?

講者：徐立之教授（港科院創院院長）

倫嘉欣女士（港科院名譽顧問）

馬紹良先生（創新及科技諮詢委員會成員）

本年度香港數理教育學會周年會員大會於2017年6月17日假青年會書院舉行。大會論壇的主題為「STEM - How? and Next?」。當日多位數理界的精英及本會會員雲集，本會很榮幸邀請到徐立之教授、倫嘉欣女士及馬紹良先生為周年會員大會作主題演講，就如何在數理科學推行STEM教育，交流經驗和看法。

本年的周年會員大會內容豐富，首先本會主席劉國良先生為大會主題「STEM - How? and Next?」進行簡介。



接著，是各嘉賓講者對STEM教育的分享，打頭陣的是港科院創院院長徐立之教授。沒料到，徐教授預備的Powerpoint原來並不是說科學，反而是講及他童年的一些生平。他擺出一些經典的黑白照片，還打趣說自己是個頑皮的小孩，是老師不喜歡的類型。不過，他也說出他最喜愛做科學實驗，但必須是一些並不知道結果的實驗。徐教授強調他是不喜歡去進行一些已經知道結果的實驗，可見他是有很大的好奇心和非常有探究精神。



經過一輪幽默風趣的自我介紹後，徐立之教授開始引入團結基金的「香港創新科技業概況研究報告」，簡介香港的創新科技生態鏈。

徐教授於是介紹港科院的名譽顧問倫嘉欣女士出來，向本會會員簡介港科院有關「科學、科技和數學教育與香港創新科技發展」的研究報告。倫女士指出科學教育並未普及至所有學生。她運用數據指出，由2012至2016年，香港中學文憑考生當中，沒有修讀任何科學科的學生人數比

率是不斷在上升中，相反許多先進國家都將理科課程列為高中必修學科。



此外，倫女士指出目前越來越多的學科（例如 **Structural Biology**）是需要高等數作為基礎的，然而香港的高中學生當中修讀「高等數」（即延伸課程M1及M2）的人數比亞洲其他國家的人數是偏少的。以目前香港的情況，有七成中學文憑考生只修讀兩個選修科（即2x），加上高等數又缺乏認可，導致整體學生在數學的發展越來越差。有見及此，他們提出一些建議，其中包括調低核心科目的比重、把高等數（即延伸課程M1及M2）重新納入核心科目，並轉化成三個新的數學核心科目。

來到馬紹良先生演講的部分，演講題目為「創意的啟迪」。無獨有偶，他也像徐立之教授一樣，訴說自己的童年往事。他打趣說，自己很有探究精神，童年時見一些工人在檢查電掣插座，他於是有樣學樣，用手去進行檢查電掣當中的火線，導致手部麻痺了好些時間，造成難忘的經歷。

馬紹良先生憶述眼見高中學生越來越少修讀延伸課程M1及M2，曾向教育局局長提出可以設計三個數學科的核心課程，名為MA (**Mathematics for Arts**)、



MB (**Mathematics for Business**)及MC (**Mathematics Comprehensive**)，只是有關當局仍未有積極的回應。馬紹良先生相信未來的人可能主要購物都是在網上進行，因此寄語在座的老師要做好 STEM 教育。

論壇期間不但講者發表寶貴的意見，觀眾席上的數理教育界同工的提問亦引發多方面的討論，氣氛非常熱烈。期間有數學老師慨嘆越來越少高中學生修讀延伸課程M1及M2，而一些較基礎的數學課題（例如 **Equations of Straight Lines**）則已經推了上高中課程，導致數學未能直接輔助學生學習其他理科学目（例如物理科）。此外，也有數學老師批評教育局一些官員官僚地不承認修讀高中數學的學生人數遠比以前高級程度會考的年代為低，令前線數學老師感到氣餒。



論壇完結，接著為本會的周年會員大會，期間本會主席劉國良先生向各會員報告會務及公佈新一屆理事會的投票結果，大會約於下午一時順利閉幕。



Hon. Internal Affairs Secretary's Annual Report for the Year 2016-2017

Chi-man Mui

Hon. Internal Affairs Secretary, HKASME

The year 2016-2017 is inevitably a fruitful year worth looking-back.

Our staff, members and friends have always been, and will continue to be the greatest asset of the HKASME. Let me borrow this column to offer my heart-felt gratitude to Ms Bik-ha Chu, our full time (Secretary), Ms Yvonne Lo, our part time (Accounting Officer) and Mr Anthony Wong, our IT-support who are beyond dedicated to their jobs. Mrs Wong and Mr Alex Wong are two very supportive volunteers who have kindly given their own time and effort to the work of HKASME. Our project staff Mr Golden Wong has contributed valuable ideas into our projects, turning mere thoughts into reality. One must not forget Mrs Yau who has never failed us in maintaining

the order and hygiene of our office.

A pleasant and welcoming working environment for staff members has always been our prior concern. This year, an air conditioner was replaced and the existing modem was upgraded. Our printing contract with RICOH has also been renewed.

Thanks to the effort of Mr Ben Ng, the HKASME stock list was updated with write-offs of old assets. We look forward to continuing the efficient use of our resources.

We vow to keep listening to the feedback from our staff so that the quality of our office can be improved, hence the efficiency and quality of our work as well.

科組簡報 2016-2017

Subject Reports 2016-2017

1. 數學科 (Mathematics)

徐崑玉 香港數理教育學會數學科召集人
Kwan-yuk Tsui Mathematics Convenor, HKASME

A. Summary of Activities Held (2016-2017)

Date	Activity
28 Oct 2016	電子教學系列(一)—運用應用程式於數學課堂
3 Dec 2016	電子教學系列(二)—運用學習管理系統於數學課堂 **是次活動由香港數理教育學會和香港 GeoGebra 學院合辦 
14 Jan 2017	數學教學工作坊：課堂點子 一張紙 (2) 講者：譚志良先生 (香港大學教育學院) 

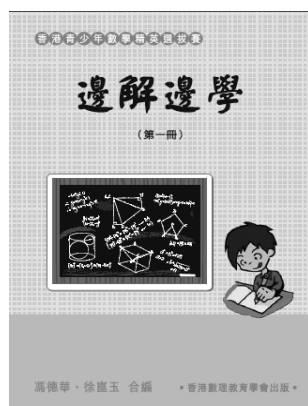
11 Feb 2017	<p>香港青少年數學精英選拔賽 HK Youth Mathematical High Achievers Selection Contest Co-organized by Po Leung Kuk, HKASME</p>
29 April 2017	<p>Prize Giving Ceremony Website: http://www.hkymhasc.org/</p> 
27 May 2017	<p>講座：中國古算今譚 — 從傳統數學至西學輸入至現代課堂數學 II： 現代中學生/古代徐光啟 初遇上綜合幾何</p> <p>講 者：蕭文強教授 (香港大學數學系) 回應嘉賓：梁子傑老師</p> 

B. Feedback to the consultation on the Revised Mathematics Curriculum (P1-S6)

HKASME has joined with HKAME in response to the consultation of the Math curriculum review. The comments of HKASME members had been collected during April 2017 and a joint meeting with HKAME was held on 12 May, 2017. Please refer to P.XXX for the complied comments sent to EDB.

C. Publications

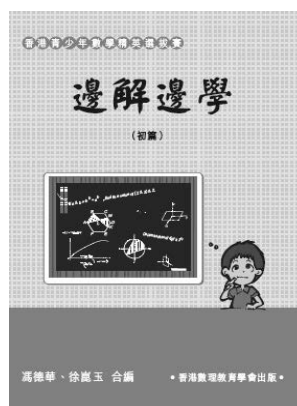
The name of the series of book 《香港青少年數學精英選拔賽--邊解邊學》 was given by Prof SIU Man Keung, the honorable advisor of the Mathematics Subcommittee, HKASME. It is hoped to encourage students to learn Mathematics through solving mathematics problems.



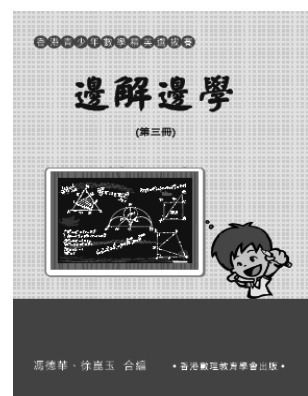
2014年6月修訂出版



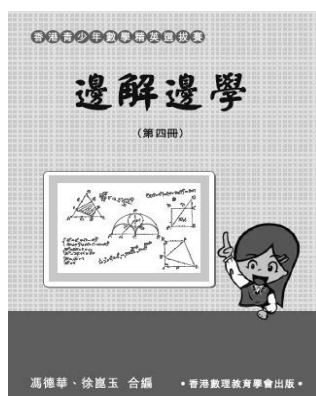
2010年6月出版



2011年6月出版



2012年6月出版



2013年8月出版

*** All the income obtained will go to the association HKASME for professional development.

D. Mathematics Committee Member List 2016-2017


Ms Tsui Kwan Yuk (Mathematics Convenor, HKASME)	徐崑玉女士	HKSYCIA Wong Tai Shan Memorial College
Mr. Wong Tak Ming (Council member, HKASME)	黃德鳴先生	Ju Ching Chu Secondary School (Kwai Chung)
Dr. Arthur Lee	李文生博士	The University of Hong Kong
Ms Tsui Fung Ming, Karin	徐鳳鳴女士	Hon Wah College
Mr. Chow Lai Sum	周禮深先生	STFA Cheng Yu Tung Secondary School
Mr. Lee Kwok Chu	李國柱先生	Pui Ching Middle School
Mr. Ng Tat Yeung	伍達洋先生	STFA Cheng Yu Tung Secondary School
Mr. Fung Tak Wah	馮德華先生	HKASME
Mr. TAM Chi Leung	譚志良先生	The University of Hong Kong
Mr. Kwok Sze Chai	郭思齊先生	HKASME

Honorary Advisor: Prof. Siu Man Keung 蕭文強教授

2. 物理科 (Physics)

劉智豪 香港數理教育學會物理科召集人
Humphrey, Chi-ho Lau Physics Convenor, HKASME

A. Summary of Activities Held (2016-2017)

Date	Activity	Remarks
29 Oct, 2016	Physics SBA Annual Conference held in Lung Kong WFSL Lau Wong Fat Secondary School. Teaching and Learning Resources Selling Booth at <u>HKDSE-Conference</u>	Organized by HKEAA Participants : Physics Teachers of all secondary schools.
10 Dec., 2016	2017 HKDSE Physics Mock Examination around 300 students took part in the examination. 	Participants: F.6 students of all secondary schools
17 Dec, 2016	2017 Fun Science Competition – Briefing 趣味科學比賽 - 簡介會	Sponsored by Tin Ka Ping Foundation Participants : Physics Teachers & Students of all secondary schools
25 Feb, 2017	2017 Fun Science Competition –Stay Right There (Final) 趣味科學比賽 - 適可而止(決賽)	Sponsored by Tin Ka Ping Foundation Participants : Physics Teachers & Students of all secondary schools

B. Fun Science Competition

2017 趣味科學比賽 - 【適可而止】由香港學者協會、香港中學校長會、香港數理教育學會、香港教育工作者聯會和康樂及文化事務署香港科學館合辦，田家炳基金贊助，已於2月25日(星期六)假香港科學館露天廣場舉行。

今年參與比賽的學校非常踴躍，高級組的參賽隊伍共有57隊，而低級組則有94隊參賽隊伍。經過一輪激戰後，低級組在『同軌級』、『平台級』及高級組在『電動級』、『非電動級』的比賽結果如下：

低班組「同軌級」組別

學校	隊員 1	隊員 2	獎項
迦密愛禮信中學	陳大鈞	劉繼興	一等獎
優才（楊殷有娣）書院	溫卓衡	曾鎧洋	一等獎
聖公會聖三一堂中學	黃遠盛	簡卓斌	二等獎、最佳工藝獎、最佳設計圖獎
保良局何蔭棠中學	何炳堅		二等獎、最佳設計獎
保良局何蔭棠中學	鄺加朗		二等獎、最佳設計獎
中華基督教會馮梁結紀念中學	何鴻博	陸偉傑	二等獎
新界西貢坑口區鄭植之中學	張恩齊	蘇瑋程	二等獎
龍翔官立中學	陳曉婷	陳宗瑩	二等獎
香港管理專業協會李國寶中學	譚子聰	陳偉俊	二等獎
十八鄉鄉事委員會公益社中學	楊瑾濤	朱偉明	二等獎
基督教女青年會丘佐榮中學	鄧子軒	黃禧洋	二等獎
保良局百周年李兆忠紀念中學	李偉傑	葉思銘	二等獎

低班組「平台級」組別

學校	隊員 1	隊員 2	獎項
中華傳道會安柱中學	鄭雨芊	潘詠嫻	二等獎
五育中學	蔡皓森	周鎮東	二等獎
路德會呂祥光中學	江健民	冼家聰	二等獎
聖公會聖三一堂中學	李浩賢	林梓洋	二等獎
香港聖公會何明華會督中學	鄺梓滔		最佳設計獎
匯知中學	汪梓煒	陸和敬	最佳設計圖獎
迦密主恩中學	王煒燁	梁峻深	最佳工藝獎

高班組「電動級」組別

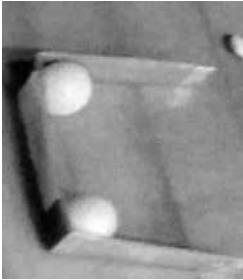


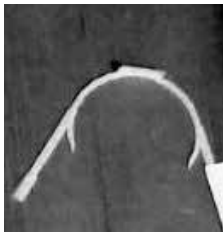
學校	隊員 1	隊員 2	獎項
龍翔官立中學	黃任韜	陳宗誼	一等獎、最佳工藝獎
中華傳道會安柱中學	李旻諺		一等獎
香港道教聯合會圓玄學院第三中學	蔡僑隆	伍嘉偉	一等獎
十八鄉鄉事委員會公益社中學	吳權富	劉碧玉	一等獎
龍翔官立中學	馬繼哲	郭思亮	一等獎
迦密主恩中學	張曉晴		二等獎、最佳設計獎
十八鄉鄉事委員會公益社中學	王嘉興	古翠瑩	二等獎
福建中學	關嘉浩	彭政浩	最佳設計圖獎

高班組「非電動級」組別




學校	隊員 1	隊員 2	獎項
聖公會林護紀念中學	董穎融	陳弘軒	一等獎、最佳設計獎
迦密主恩中學	姚澤霖	鄭王堃	最佳設計圖獎

獲獎器件

(一) 低班組「同軌級」

 <p>一等獎 (迦密愛禮信中學)</p>	 <p>一等獎 (優才（楊殷有娣）書院)</p>
 <p>最佳設計獎 (保良局何蔭棠中學)</p>	 <p>最佳設計獎 (保良局何蔭棠中學)</p>

(二) 低班組「平台級」

 <p>最佳設計圖獎 (匯知中學)</p>	 <p>最佳設計獎 (香港聖公會何明華會督中學)</p>
 <p>二等獎(中華傳道會安柱中學)</p>	

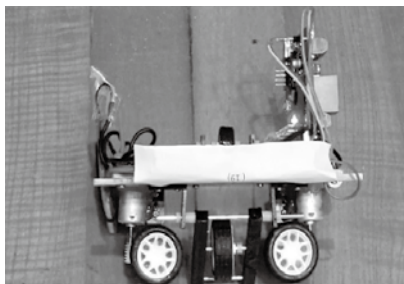


低班組「同軌級」及「平台級」獲獎同學與贊助人田先生、
評判及工作人員合照

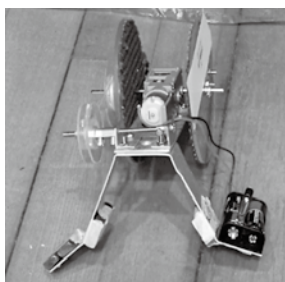
(三) 高班組「電動級」



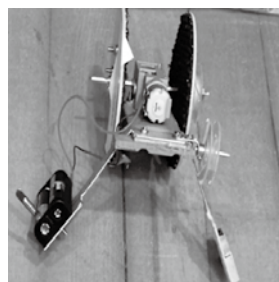
一等獎、最佳工藝獎
(龍翔官立中學)



一等獎
(香港道教聯合會圓玄學院第三中學)



一等獎
(十八鄉鄉事委員會公益社中學)



二等獎
(十八鄉鄉事委員會公益社中學)

(二) 高班組「非電動級」

 <p>一等獎、最佳設計獎 (聖公會林護紀念中學)</p>	<p>高班組「電動級」及「非電動級」獲獎同學與贊助 田先生、評判及工作人員合照</p> 
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3. 化學科 (Chemistry)

呂思奇 香港數理教育學會化學科召集人
Bob Lui Chemistry Convenor, HKASME

A. Summary of Activities Held (2016-2017)

Date	Activity	Remarks
22, Oct 2016	SBA – Conference (Chemistry)	Organized by HKEAA Participants: Chemistry teachers of all secondary schools
Nov, 2016 to Apr, 2017	Hong Kong Chemistry Olympiad for Secondary School 2016-2017	Participants : S.3-6
Nov, 2016 to Apr, 2017	“Digi-Science” Video Production Competition for Hong Kong Secondary Schools 2016 - 2017	Participants : Junior S.1-3, Senior S.4 or above
26 Nov 2016	Commercial Testing Laboratory Visit 2016	Participants : Chemistry teachers of all secondary schools
26, 27 & 28 Dec, 2016	2016 香港中學文憑考試 — 化學科模擬考試	由香港數理教育學會舉辦，是專為高中學生而設的大型本地化學測試
21 Jun to 24 Jul 2017	Australian National Chemistry Quiz 2017	Organized by The Royal Australian Chemical Institute & HKASME Participants : Secondary schools students in over 15 countries
27, June to 7, July 2017	2017 暑期測試及校正實驗所參觀活動	由香港數理教育學會與不同機構的實驗所合辦，全港中三或以上同學參與。
12 Aug 2017	HKDSE Chemistry Paper Review 2017	Organized by HKASME Supported by HKEAA Participants : Chemistry teachers of all secondary schools

B. Highlights of Activities**I. Hong Kong Chemistry Olympiad for Secondary School (2016-2017)**

The Hong Kong Chemistry Olympiad for Secondary Schools is a project learning competition jointly organized by the Hong Kong Association for Science and Mathematics Education (HKASME), the Hong Kong Chemical Society and the Royal Society of Chemistry. It aims at promoting the interest of students in learning Chemistry and developing students' problem solving, communication and science process skills through project learning.

The main theme of the contest for 2016-2017 was “**Chemical Synthesis**”. 30 teams of students from 26 schools had participated in 20th HK Chemistry Olympiad for Secondary Schools. Final Competition Award Ceremony was held on 29th April, 2017.

Results of the 20th HKCHO had been settled as follows:

Award	School	Project title
Champion	St. Paul's Convent School	- From Zero to Hero-Green Synthesis of Nanosilver for Dye Degradation
1st runner-up	Carmel Pak U Secondary School	- Synthesis of Hydrogen Gas by Using Photo-catalysts in the Photo-fermentation of Coal by Green Algae
2nd runner-up	King's College	- An Investigation on Starch-stabilized Nano-Ag in Detection of Proteinuria and Hyperphosphatemia
Honour Award	TWGHs Kap Yan Directors' College	- Synthesis of Salicylaldehyde and Its Applications
Honour Award	Diocesan Boys' School	- An Investigation Into the Optimal Crystallization Condition for Synthesis and Metal Ions Adsorption Capacity of Zeolite A
Honour Award	Carmel Pak U Secondary School	- Synthesis of Different Hydrogels and Investigating the Use of Hydrogels as Carriers for the Formation of Bio-film in promoting the production of Bio-hydrogen by Manure
Best Presenter	Wong Siu Ming (Carmel Pak U Secondary School)	----



Champion : St. Paul's Convent School



1st runner-up : Carmel Pak U Secondary School



2nd runner-up : King's College

II. Digi-Science” Video Production Competition for Hong Kong Secondary Schools 2017

This is the first year of “Digi-Science Competition”. It was an experiment-based video making competition and aimed at promoting students’ interest in learning science and developing students’ problem solving, communication and science process skills through demonstrating and explaining interesting experiments; and encouraging students to communicate scientific ideas to public in a meaningful and creative way.

The competition was jointly organized by the *Hong Kong Council for Testing and Certification (HKCTC)* and the Hong Kong Association for Science & Mathematics Education. The main theme was “*Scientific Testing in everyday life*”. 46 teams of students from 36 secondary schools had participated in the competition this year. Awards ceremony was completed on 29th April, 2017. The winners were shown below.

Junior Secondary Division

Champion: Po Leung Kuk Choi Kai Yau School

Title of Video: Testing for the Presence of BPA in Plastics

Team Members: Kam Anna Yi Ying, Tam Hoi Ching, Cheung Tsz Ching

First runner-up: Diocesan Girls’ School

Title of Video: Is cold or Hot lemon water more Sour?

Team Members: Hayley Chan, Alison Carless, Vivienne Tsui

Second runner-up: 蟲蟲在污水裡的求生日誌

Title of Video: Pok Oi Hospital Chan Kai Memorial College

Team Members: 黃琛如, 譚凱盈

Merit: SKH Tsang Shiu Tim Secondary School

Title of Video: The Creation of Slime

Team Members: Chan Chin Hung, Chung Tin Chi

Merit: St. Paul’s Convent School

Title of Video: Bigger the Better?

Team Members: Chen Lei Claire, Chow Tsz Yau, Choi Man Hei

Senior Secondary Division**Champion: St. Paul's Convent School**

Title of Video: "Fake" Sugar in Drinks

Team Members: Chan Ming Hei Holy, Nam Cheuk Yin

First runner-up: Cheung Sha Wan Catholic Secondary School

Title of Video: The Scientific Testing in Everyday life for detectives

Team Members: Wu Yibin, Ng Ho Cheung, Chan Chun Wai

Second runner-up: St. Margaret's Co-educational English Secondary and Primary School

Title of Video: Determination of Parabens in Personal Care Products

Team Members: Angelo Flores, Limbu Suruti Hangma

Merit: Chan Shu Kui Memorial School

Title of Video: 提子中的抗氧化物

Team Members: Lin Le Yi, Fung Yu Shun, Cai Yau Feng

Merit: Lok Sin Tong Ku Chiu Man Secondary School

Title of Video : 測定果汁中維他命 C 的含量

Team Members: Hung Pui Kwan, Shum Yik Ling, Wu Tsz Ho



Participants of "2017 Digi-Science"



Winners of "2017 Digi-Science"

4. 生物科 (Biology)

李志文 香港數理教育學會生物科召集人
Jimmy, Chi-man Li Biology Convenor, HKASME

A. Summary of Activities Held (2016-2017)

Date	Activity	Remarks
15 Oct, 2016	(Biology) SBA Annual Conference Learning and Teaching Resources Selling Booth at <u>HKDSE-Conference</u>	In attendance: HKEAA Participants: Biology teachers from secondary schools

19 Nov, 2016 & 17 Dec, 2016	<p>Hong Kong Biology Olympiads for Secondary Schools 2016/2017.</p> <p>It consisted of two parts. The first round was the written test held on 19th Nov., 2016. The second round was the practical test held on 17th Dec, 2016.</p> <p>18 teams from schools with the highest average scores from First Round participated in the Second Round.</p> <p>The enrolment was encouraging, over 2583 students had participated. The Biology Subject Committee members had set up 6 centers on the same day altogether to accommodate our students' needs.</p>	Participants: F.4 to F.6 students of all secondary schools
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B. Overall Result of Hong Kong Biology Olympiad for Secondary Schools 2016-2017

The Biology Committee has organized the Hong Kong Biology Olympiad for Secondary Schools 2016-17 in two rounds this year. The first round is “Written Test” (19/11/2016) and the second round is “Practical Part”. It’s encouraging that 2583 students from 176 secondary schools participated in this year’s Bio-Olymp.

The second round is a new item in this year’s Bio-Olymp. It involves practical tasks which was held successfully in the HKEdU. 18 teams (4 students per team) from 11 schools based on their written results in the first round had been chosen for the second round competition. The practical results had been finalized and 3 teams had won the first class award, 5 teams with second class award and 10 teams with third class award.

The results of the second round “Practical Test” and “overall results” are as follows:

Honour	School (Team)	Practical honour	Overall honour
First class	Diocesan Girls’ School (B)	1 st	1 st
First class	Queen’s College (D)	1 st	1 st
First class	Queen’s College (E)	1 st	1 st
Second class	Diocesan Girls’ School (A)	2 nd	2 nd
Second class	G.T. (Ellen Yeung) College	2 nd	2 nd
Second class	Carmel Divine Grace Foundation Sec. School	2 nd	2 nd
Second class	Carmel Sec. School	2 nd	2 nd
Second class	Diocesan Boys’ School (A)	3 rd	2 nd
Third class	SKH Tang Shiu Kin Sec. School	2 nd	3 rd
Third class	C&MA Sun Kei Sec. School	3 rd	3 rd
Third class	Carmel Pak U Sec. School	3 rd	3 rd
Third class	TWGH Kap Yan Directors’ College	3 rd	3 rd
Third class	Munsang College	3 rd	3 rd
Third class	Diocesan Boys’ School (B)	3 rd	3 rd

Third class	SKH Bishop Mok Sau Tseng Sec. School	3 rd	3 rd
Third class	Queen's College (A)	3 rd	3 rd
Third class	Queen's College (B)	3 rd	3 rd
Third class	Queen's College (C)	3 rd	3 rd

The results of the first round (written test) had been finalized in December and all students' certificates had been issued. Most schools had collected their results package. If your school had not got back your certificates, please collect them at the SME Office now. The certificates for the second round would be available later and schools will be called upon to collect their package.

Once again, congratulations to all winners. We would like to thank again all supporting teachers, schools and university that helped to make this year's Bio-Olympi. running. We are surely adding synergy to fostering quality Biology Education in Hong Kong.

C. Biology Subject Committee Member (2016-2017)

Mr. Li Chi Man, Jimmy (Convenor)
 TYYI MFBM NM Chan Lui Chung Tak Memorial College

Mr. Tong Ling Poon, Andrew
 Cheung Chuk Shan College

Ms. Chan Wing Man, Idy
 Fanling Rhenish Church Secondary School

Ms. Lee Hoi Man, Sarah
 The Education University of Hong Kong

Ms. Lau Ka Hoi, Audrey
 Lai King Catholic Secondary School

Dr. Yip Wing Yan, Valerie (Honorary Advisor)
 The University of Hong Kong

5. 綜合科學科 (General Science)

黃永基 香港數理教育學會綜合科學科召集人
 Stephen, Wing-kei Wong General Science Convenor, HKASME

A. Summary of Activities Held (2016-2017)

Date	Activity	Remarks
26 Oct, 2016	NSS Integrated Science SBA Conference	Organized by HKEAA Participants: Integrated Science teachers of all secondary schools

5 Nov, 2016	2016 Symposium cum Exhibition on Development of STEM Education in Hong Kong	It offers insights for educators to deliver STEM education in Hong Kong. This symposium welcomes educators of all levels to share their strategies in promoting STEM and to discuss on the latest trends in Hong Kong.
6 Jan, 2017	Promote Roche Young Scientist Award 2017	Organized by Roche Participants: all secondary school students in Hong Kong to present their scientific research, invention or discovery that will improve the well-being of the people in our community.
28 Apr, 2017	PISA 2015 教師專業發展活動：科學科教師講座	幫助教師： 1. 了解 PISA 的科學評估架構 2. 了解香港學生在 PISA 科學測試的表現 3. 反思科學科在教學和評估設計的方向
8 July, 2017	2017 Australia Big Science Competition	Organized by Australian Science Innovations Participants: All Secondary Schools 



PISA 2015教師專業發展活動：
劉國智教授、藍郁平博士



PISA 2015教師專業發展活動：
科學科教師講座

B. 2017 Australian Big Science Results (Hong Kong) organized by the Australian Science Innovations (Major sponsor: Australian National University) HK: **HKASME**

The “Australian Big Science Competition 2017 (Hong Kong Region)” had completed in July-2017 and processing of results with 703 students’ certificates had been engaged.

There are 4 types of award for each year-level, cutting scores are listed below:

“High Distinction (HD)”, “Distinction (D)”, “Credit (C)”, “Participation (P)”

Year Level // Award Types:	Year 7 Score Range	%	Year 8 Score Range	%	Year 9 Score Range	%	Year 10 Score Range	%
HD	24-30	2	25-30	4	25-30	2	25-30	11
D	21-23	12	22-24	18	22-24	11	23-24	11
C	18-20	12	19-21	30	19-21	21	20-22	27
P	0-17	74	0-18	48	0-18	66	0-19	51
Average score	14.83		18.23		16.05		14.83	

Top scorer in Year 7 (26)= NGAI LONG CHING (PLK Ngan Po Ling College)

Top scorer in Year 8 (27)= HUI TSZ HANG (Rhenish Church Pang Ho Ko Memorial College)

Top scorer in Year 9 (26)= IP HAU YAN (Ying Wa Girls' School)

Top scorer in Year 10 (29)= YIU WING SAN (St. Paul's Co-educational College)

There is also be a summary page of item analysis on the back of the certificate for each student. For each item, the objective of the question is classified and listed with corresponding correct response, the student's response and the Competition overall % correct.

** e.g./ For year 10, the first and the last question of Student X have the following data:

1. -- identifies from a list which organism is not a decomposer. Correct Response = “C”, Student Response = “A”, Correct % (overall) = 81%.

30. -- Evaluates secondary data to draw a logical conclusion. Correct Response = “A”, Student Response = “A”, Correct % (overall) = 48%.

Teachers could learn from their students' results about their strengths and weaknesses according to the scientific skills categorization – which is also listed in our local science curriculum. Some of the action terms used in this year's tests are listed for your reference:

- > Identify, recognize, Explain, determine, apply, understand, interpret, relation pattern,
- > Evaluate, predict

Most questions are comprehensive type. Data and / or graphics are given before the questions. Though all questions are multiple choice, some have multiple assertions – consisting of several inter-related true-or-false responses under different scenario. Such experiences should be good for students as the test is not just for scientific knowledge, but more focus on critical thinking and problem-solving skills. That is also the direction of the contemporary curriculum development for the 21st Century skills cohort.

C. General Science Sub-Committee Members:

Mr. Wong Wing Kei, Stephen (Convenor)	HKASME
Mr. Ronald Chong	China Holiness Church Living Spirit College
Mr. Leung Chung Kee, Kelvin	China Holiness Church Living Spirit College
Mr. Poon Wai Kit	Lai King Catholic Secondary School
Mr. Lau Tsz Kin, Dickson	S.K.H. Kei Hau Secondary School
Mr. Chan Ka Loi	Po Leung Kuk Ngan Po Ling College

Ms. Tam Lai Ming	The Mission Covenant Church Holm Glad College
Ms. Wong Ka Wai, Winnie	CCC Heep Woh Primary School (CSW)

6. 小學常識科 (General Studies)

吳德強 香港數理教育學會小學常識科召集人
George, Tak-keung Ng General Studies Convenor, HKASME

Summary of Activities Held (2016-2017)

Date	Activity	Remarks
5 Nov, 2016	香港數理教育學會與香港理工大學合辦 STEM 教育專題研討會 - 香港實踐 STEM 教育綜述 (對象：一般教師)	
3 Dec, 2016	香港數理教育學會與香港科學園合辦「2016 小學校際科學思維競賽」(對象：小學生)	
3 Dec, 2016	香港數理教育學會與香港科學園合辦「小學推行 STEM 教育經驗談」(對象：小學教師)	
3 Dec, 2016	香港數理教育學會「小學常識科 STEM 教案設計獎勵計劃」(對象：小學教師)	
25 Jan, 2017	教師講座「整合式 STEM 課題分享」(對象：小學教師)	

答教育局課程諮詢書

徐崑玉

香港數理教育學會數學組召集人

一九九九年，教育署公布中學課程綱要，作一九八五年的修訂版，並於二〇〇一年實施。二〇〇五年，教統局公布，新高中學制將於二〇〇九年實施。二〇〇七年，課程發展議會及考评局教學教育委員會（高中）編訂高中課程指引，並於二〇一五年更新。

小學課程綱要，則於二〇〇〇年公布。

現時的中小學課程，小學部份取自二〇〇〇年，初中部份取自一九九九年，高中部份更新自二〇一五年。三者的實施及銜接，多年來不少同工都甚有微辭。是故，課程發展議會建議檢視中小學十二年的課程，並於二〇一五年成立專責委員會，向中小學校長和數學教師、大學和職訓局學者及專業團體成員等與事者，經焦點小組會議、大型諮詢會、會談、探訪和問卷等方式收集意見。二〇一七年，課程發展議會發布諮詢稿，作三月至五月大型諮詢期的討論之本。

本會暨香港數學教育學會，向會員收集意見後，整理並發表公開信如下。



香港數理教育學會



香港數學教育學會

敬啟者：

是次課程修訂，從文件上可看出 貴處各人的努力付出。不過，同工間仍有不少疑問，亟待 貴處解答釐清。

舊課程有不少理念，主導了十多年來的教學發展，包括探究解難精神、重視空間感和數感，和善用科技等。這些思想，由學習單元統合若干學習單位，學習單元再組成不同範疇。例如「數與代數」範疇，包括「比較數量」及「代數關係式及函數」等四個學習單元，而「比較數量」統合「百分法」及「率及比」等三個學習單位。以此結構解釋課題間的關係，並強調重點概念和教學取向。

不過，修訂文件只見學習單位，未見學習單元，則學習單元是否不復存在？若然，何以理解課題間的脈絡？如何檢視原屬同一學習單元的教學內容和策略？還是，舊有理念已然改變？如何改變？為何改變？如有新理念，又是甚麼？文件未有清楚說明，使理念相當含糊，好讓大家明白主軸，了解長遠發展目標，知道數學教育的發展方向。

修訂文件，也刪減了一些課題，以回應大家對課程精簡的要求，但大家的要求來自課題繁瑣混雜。例如平面和立體圖形的變換與對稱、量度方面的估計、實驗概率，逐漸養成直觀幾何和空間感，也是探究活動的常見例子，與 99 綱要強調的理念關係密切。此等內容，或無助升學考試，刪減後可能方便施教，但如果課程理念不清，刪減後的課題仍然零散，真能減輕原有的學習困難？

近年有不少新教育理念，例如大家不時談及的 STEM 教育，未知有否影響數學課程規劃。現時，建議多屬個別教學活動，鮮有教學目標或策略，遑論有清晰指引，道明背後理念，無從得知以培育科研人材還是提升公民素養為最終目標。修訂文件的數學內容，又能否支持學生的 STEM 發展？需要多少學生學多少數學配合？是全體學生，還是一部份？如何配合？增加內容？因應學生能力分成兩三科或評估範圍因材施教？課時又應否增加以配合？課時是最重要的資源，應編配在課堂內，而非放學後或周末早，但現時 M1/M2 的安排，學校多要補課，形同剝削學生時間，不利 STEM 發展。

有意義的學習歷程，需要清晰長久的縱橫向銜接，使課題間的連繫豐富有效，建立核心概念，唯是次課題調動，未見清晰的概念主線，甚或更為破碎。

所謂核心概念，下列四項，其中兩項會詳加分析：

一、函數與變量；二、比與比例推理；三、從運算到代數概念；四、從直觀到演繹幾何。

函數與變量

以變量關係與圖像為主要起點，概念須從初中慢慢建立，一直以來的初高中教學都支離破碎，修訂後更難找到相關內容，情況或更惡劣，但這是 STEM 的重要元素。

另外，初高中都沒有正式介紹線性函數。初中二元一次方程的圖像只著眼方程的解，而高中直線方程主要考慮以分析法處理幾何問題，沒有提及把直線作函數圖像理解，但從二次函數開始，各種函數圖像陸續出現。

縱使初中修訂加入截距計算，並強調配合科學科的應用，但只是介紹斜率作斜度計算（可謂純幾何概念），而非變量關係（rate of change）。缺乏函數概念，截距計算淪為低層次應用，無助學習其他科甚或發展 STEM 教育。

順帶一提，描述兩變數關係的散點圖，不知何故刪去。

比與比例推理

貫穿很多運算、代數、幾何、度量、統計與概率的課題，是極為重要的核心概念，也是 STEM 教育的重要元素，但課程中不易說明其位置，希望修訂文件可以加以解釋及推廣，帶動討論，使大家多加留意。

初中介紹正反比，安排恰當，可加強初中很多課題的教學。高中的正反變，甚至可考慮調到初中，配合函數概念。

「放大縮小」的幾何變換，應予保留，可放入「比和率」一課，應是相似三角形和三角學的基礎，亦牽涉有理數乘法（包括有向數），甚至是指數的幾何表徵（**geometric representation**）。

初步百分變化涉及 **operator** 和 **scaling** 的概念，需時適應，其後的連續變化可連繫到指數運算和增長，涉及不同層次的概念，應較後處理，不宜在同一課。

其他課題，亦須顧及長遠連貫的概念發展，而非個別運算和應用。

對學習重點和課時的問題、建議及其他意見，則見三份附件：《對諮詢稿中學部份的意見》、《對諮詢稿小學部份的意見》及《建議新的課程及新時數》。

敬祝
文祺

此致
教育局課程發展處數學組總課程發展主任衛國強先生

香港數理教育學會及香港數學教育學會謹啟
二零一七年五月十九日

附件 1

對諮詢稿初中部份的意見

學習重點	問題及建議	原因
KS3-1.1	<p>問題：未有探索 11 整除性</p> <p>建議：11 整除性納入課程</p>	<p>質數中，2、3、5 和 11 的整除性易判斷，現唯欠 11 相比 3 或 9 的整除性要用上代數符號和展開括號，甚至同餘，11 的數學解釋卻不困難且與別不同，能擴闊學生視野和思考空間。</p> <p>教師可引導學生進而探討 101、1001 等的整除性，亦符合如今強調學生要懂得探索、自學、創新等教學主題。</p> <p>KS3 要求學生懂得簡化根式，但 KS4 無須學生懂得簡化。</p>
KS3-4.3 及 KS4-1.4 KS4-1.9	<p>問題：簡化根式的注釋間似有矛盾</p> <p>建議：澄清內容，免除誤會</p>	<p>若學生只修讀基礎課程，應根據哪個注釋去理解公開考試範圍和備試？</p> <p>文件的注釋以 $2\pm\sqrt{48}$ 為例，是否要求學生懂得簡化至沒有分母的形式？若是，為何文件寫「不須簡化」？</p> <p>若否，應以「$2\pm\sqrt{48}/2$」為例。</p>
KS3-4.3 及	問題：分母有理化的注釋間似有矛盾	複數的所謂除法，涉及除數的共軛數和簡化，等同複分數的分母有理化過程，但分母有理化過程不在課程內。

KS4-1.9	建議：澄清內容，免除誤會	
KS3-11.3	<p>問題：注釋以「方法」界定多項式的做法，值得商榷</p> <p>建議：注釋改為「學生須分解以下兩類多項式：可以提取因式（及併項）來分解的多項式、可分解的二次多項式」</p>	<p>如無其他方法配合，十字相乘法會令初學者摸不著頭腦，產生「數學太神奇」的負面情緒，並只好默默跟隨老師的指示運算，知其然而不知其所以然。</p> <p>有其他替代十字相乘法的方法，即此法並非用來分解因式的唯一方法。（見梁子傑(2011)。我看《數學課程第三學習階段基本能力》。《數學教育》，32期，29-41頁。香港數學教育學會。）</p> <p>十字相乘法是用來分解二次多項式，因為重點應在可分解的二次多項式</p> <p>文字方程是研究公式主項變換後的必然結果，兩者難度相若。</p> <p>不提文字方程，令課程不完整，減少學生對運用抽象符號的練習機會。</p> <p>一般教科書參考書，都以「等腰三角形性質」指其對稱性質。文件目前做法，或使人覺得「張冠李戴」。</p> <p>等腰三角形的對稱性質非常重要，有應用於其他課題</p>
KS3-13	<p>問題：未有介紹「文字方程」的概念</p> <p>建議：只要文件強調「簡易」和「不涉及根號」，重新加入「文字方程」並不為過，對課時亦不會構成太大壓力。</p>	
KS3-21.3	<p>問題：單指等腰三角形性為其「底角相等」性質</p> <p>建議：也提及其「對稱」性質，甚至把等腰三角形自成獨立學習單位，並包括「理解等腰三角形的判別條件」</p>	
KS4-14.8	問題：加入三垂線定理	KS3-21.3 未有提及等腰三角形的對稱性質，但三垂線定理是該

	建議：取消三垂線定理	性質在立體的推廣，學生何以學習？課堂何以教授？ 若文憑試出現或使用超越《課程及評估指引》範圍的定理或知識，我們應做的，是要求取消該等題目，而非修改指引來遷就。 三垂線定理，可應用到更抽象和困難的立體幾何題目。如此則徒增師生煩惱，為課時加添壓力。
KS3-19	問題：是否 19.4 認識與平行線相關的角的性質 應先於 19.3 認識判別兩線平行的條件	
KS3-22	問題：全等和相似未必需要完全分割 建議：把相似三角形的教學分為兩部份。AAA 在中一教授，安排在全等三角形之前或之後。另外兩種相似條件在中三教授，放在中點定理等課題之後，以此證明一些較難的幾何題。	把 S 和 A 組合，共有 8 個。刪去對稱情況，剩下 6 個。當中 RHS 是 SSA 的直角特例，而 AAA 則可與其餘的全等三角形判別條件互相比較。 儘早建立相似三角形和相似圖形的概念，對以後課文的教學有明顯好處。 相似三角形的另外兩個判別條件，學生最容易混淆，最不感興趣，亦最容易引起循環論證的問題。唯有在較後課文，要深入研究幾何題證明，才發揮關鍵作用。
KS3-22.2	問題：容許學生用 AA 代表 AAA	全等／相似本身根本需要三步判定

	建議：保留對學生用 AAA 的要求，不接受 AA 的證法	只寫 AA，證明不完整，且無法確定學生是否知道等同 AAA
KS3-23	問題：這些判別平行四邊形的方法會否帶來循環論證	馮德華(2007)。一個幾何證明的謬誤。《數學教育》，24 期，9-11 頁。香港數學教育學會。）
KS3-21 至 KS23	應提供有關幾何定理的簡寫表	
KS3-25.1	問題：注釋提及教師可在此介紹第一次數學危機	引發第一次數學危機的導火線，並非畢氏定理。
	建議：把第一次數學危機放在相似三角形介紹	兩者放在一起，容易引起誤會，亦無法令學生了解第一次數學危機真正意義。
KS3-26.9	問題：運用坐標幾何作簡單幾何證明屬基礎課題	要對幾何、邏輯推理、解文字方程等技巧有一定能力，並不容易
	建議：把此重點定為非基礎課題	
KS4-6.3 & KS4-8.3	問題：兩個學習重點，似有不協調 建議：可把 KS4-8.3 界定為基礎部份。若保留為非基礎部份，可在 KS3-6.3 加入字句，指明不包括涉及解一元二次不等式的題目	部份變應用題可能出現解一元二次不等式的情況，如此則屬非基礎部份。 一元二次不等式是一元二次方程的延續，使學生對因式分解、不等式和正負數乘法有全面瞭解。
KS3-24.3	問題：未有提及形心和垂心性質	目前和過去的課程文件，未有提及形心性質（於中線 2:1 位置），但公開試假設學生知道，是否要求學生知道和學習文件沒有提及的性質？題目是否超出學生應有知識範圍？
KS4-3.6	問題：注釋及其兩例未能使學生明白「對數在現實生	兩例的算式，包括了數列和直線方程的概念。如未有闡述如何

	<p>活中的用途」，更可能徒添兩條公式增加學生負擔</p> <p>建議：在注釋解釋引入該兩例的目的和要求</p>	<p>理解，不易掌握。</p> <p>對數的應用，應著重提及，把等比數列轉換成等差數列的特點。</p> <p>對數，是令人類更容易理解和量化音高、震盪、強弱等的主觀感覺。</p> <p>例：音階中，加了兩個八度（等差數列），等同音頻中，倍大了$2^2 = 4$ 倍（等比數列）。音階和音頻間的換算，就涉及指數和對數。同理，以分貝公式表示聲音強級，以黎克特制表示地震強度，都有相同結構。</p>
KS4-7.7	<p>問題：未呼應對數在等比和等差數列的關係</p> <p>建議：加入對數應用題。</p> <p>中文採用 級數 比 數列 好</p> <p>英文採用 progression 比 sequence 好</p>	<p>加強兩種數列的連繫</p> <p>提醒老師不宜使用 A.S.及 G.S.的縮寫，因 sequence 與 series 混淆</p>
KS4-7	<p>問題：未有提及「算術級數」和「幾何級數」</p> <p>建議：加入此兩名稱</p>	<p>故意隱藏其他可接受的譯名，或使學生混淆不安。</p> <p>KS3-5.1, 8.1, 9.1, 14.1, 30.1 及 KS4-17.1 的注釋，都有類似做法</p>
KS4-17.3	<p>建議：加入「盒鬚圖」、「盒式圖」、「盒狀圖」或「箱線圖」的名稱</p>	<p>見《維基百科》</p>
KS4-9.4	<p>問題：未清楚指出是否包括複合變換</p>	

	建議：澄清內容，免除誤會		
KS4-11.1	問題：注釋的文句表達 建議：重寫為「學生須理解給出三個不共線的點有而且只有一個圓經過這三點的原因。」 應提供有關幾何定理的簡寫表		
KS4-11.6	問題：說法空泛 建議：指明是第三學習階段的甚麼幾何知識，例如三角形四心、相似三角形或其他		
KS4-19	建議：注釋加入探討四心、歐拉線和九點圓的關係	回應 KS4-11.6 注釋中的呼籲	
KS4-14	問題：基礎課題與非基礎課題的劃分，未能符合人人必學，基礎實用的條件 建議：把兩組課題對調，從而三角形面積公式、正弦公式、餘弦公式、希羅公式歸入基礎課題，而三角函數及其圖像和性質，以至解三角方程歸入非基礎課題	三角函數在四象限中的定義和正負值變化，以及引伸的函數圖像和解三角方程，內容相當抽象，理論性強，除卻物理科需要，一般地方應用甚少 極坐標與四象限掛鉤。前者已由第三學習階段移除，後者卻出現在第四學習階段，十分不協調。	
KS4-10.1	建議：在注釋加入鈍角的正切定義	解三角延續第三學習階段的三角學應用，較實用，且能由三角形面積公式定義鈍角的正弦，及由餘弦公式定義鈍角的餘弦。 (同上)	

KS4-14.6	<p>問題：強調加入投影概念，未必能改善學生表現</p> <p>建議：重整 KS4-14.6 和 KS4-14.7 為「理解直線與平面垂直的概念和理解直線與平面的相交角」及「理解兩平面的相交角」，刪除 KS4-14.9 以免重複。</p>	<p>直線與平面垂直的定理和定義，比投影更基本、更重要、更有助學生理解。</p> <p>學生閱讀書本上或試卷上的插圖，沒有電腦立體圖像幫助，正需要此定理為解題工具。</p> <p>此定理尚算簡單直接（見歐幾里得《幾何原本》第十一卷命題4），可由簡單的活動和課堂對談，使學生掌握當中道理（梁子傑(2012)。An important but overlooked theorem in 3-D Geometry。《數學教育》，33 期，85-89 頁。香港數學教育學會。），繼而引伸直線垂直平面的定義，及理解「投影」</p>
KS4-16.4	<p>問題：注釋只寫明條件概率包括 $P(A \& B) = P(A) * P(B A)$</p> <p>建議：注釋注明不包括 $P(B A) = P(A \& B) / P(A)$</p>	<p>未有注明是否包含的概念，導致部份教科書的題目或已超出必修部份的設計，屬 M1 範疇。</p>
KS4 M2-8.3	<p>問題：諮詢稿把課程文件原句由「可以」改為「須」</p> <p>建議：保留原句，採用「可以」字眼。</p>	<p>「須」是否表示，考生在未來的考試，只可用除法推算漸近線方程，但如此欠彈性的做法，不符數學和教學的本意。</p>
KS4 M2-15.1	<p>問題：a 的 a 是斜體</p> <p>建議：改為粗體</p>	<p>「a」應是指向量。</p>
KS4 M2	<p>問題：是次諮詢稿所刪公式，甚影響課文的連貫</p>	<p>刪去 $\sin^2 A = 1/2 (1 - \cos 2A)$，會使求 $\sin^2 x$ 的不定積分出現困難，亦無法以定積分計算圓或橢圓面積。KS4 M2-9.5 卻要學生求</p>

	建議：要幫助師生，應著手改變考評局目前「擬卷、評卷、檢討」的過程，由獨立機構或團體審核試卷是否合理及有否超越《課程及評估指引》的範圍。擬卷者亦不應再以類似「踩界」的方式出題。	<p>$\sqrt{a^2 - x^2}$ 的不定積分，有矛盾</p> <p>刪去展開行列式的公式，除非無須學生理解計算逆矩陣的背後原理，否則無法解釋 adjoint matrix 與 inverse 的關係。</p> <p>刪去 $(\sec x)' = \sec x \tan x$，則 M2 的水準比五年制的更低，亦無法了解學生是否真正明白求導的工序（尤其是同時使用 chain rule，如求 $\sec^2 x^2$ 的導數）</p> <p>移除的公式和技巧，最後仍會在公開試遇到，則刪除的作用何在？學生只好更大量操練《課程及評估指引》以外的公式和習題，做「足」準備，以防萬一。如此，課程課時雖少，卻使操練更多，要照顧的範圍更大，根本無助減輕師生壓力。</p>
KS4 M2-16.2&17.1	<p>問題：純量三重積和平行六面體等字眼遭刪去</p> <p>建議：以準確字眼釐清用意</p>	<p>純量三重積最重要的應用，是判別三向量或四點是否共面，求平行六面體體積只是副產物。</p> <p>刪去該等字眼，是否無須學生認識三向量或四點共面的判別方法，且無須考生即場想到技巧？</p>
KS3	<p>問題：從技術上考慮，「判別條件」(conditions) 和「判別法」(test) 兩詞的使用或造成混淆</p> <p>建議：統一用「判別法」或「判別法則」(tests)，減少混亂</p>	<p>「三角形全等共有 5 個判別條件；兩個三角形之間，只要符合 3 個適當條件，就全等。」兩個「條件」，意義不同，於英語更混亂。</p> <p>「三角形全等共有 5 個判別法則 (tests)；兩個三角形之間，只要符合 3 個適當條件 (conditions)，就全等。」</p>

教育局課程發展處數學組應定期出版有關課程闡釋 (Explanatory Notes)，好讓老師更能認識及掌握有關課程的深度及闊度。

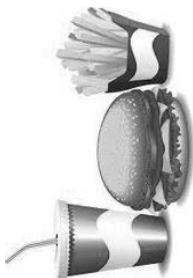
附件 2

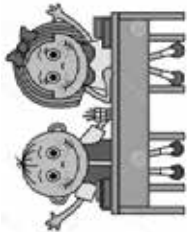
對諮詢稿小學部份的意見

期望英文版與中文版的學習目標、內容及要求一致，好讓前線教師，皆可以此為課堂教學以至長遠設定評核工具的指引。

學習重點	問題及建議	原因
1N4	建議：請重新考慮所需課時	
1M2.2 中文版	問題：注釋「學生只須讀出不多於 10 元的標價」 建議：改為「學生只須讀出不多於 20 元的標價」 或「學生只須讀出不多於 100 元的標價」	二年級的要求，是不多於 1000 元，一個大躍進 學生已學會 1-100，即使擔心點算總值上有困難，亦可考慮 20 元，似更合適。
1M4 2M2 3M2 中文版	問題：取替原有課程中的學習重點之一「以鐘面報時」，諮詢稿的注釋中再三強調一至三年級在時間的單元不包括繪畫時分針以顯示時間 建議：二、三年級保留繪畫時分針以顯示時間	繪畫時分針本有助學生理解在分針帶動時針下，時針所指向位置的合理性，亦屬本單元的學習重點之一，如基於小一學童手肌發展的考量，亦無須在二、三年級同時刪除。
1M4 2M2 3M2 英文版	1. Tell time to the hour and half hour 1. Tell time to the nearest minute 1. Tell time to the nearest second Compare these 3 learning objectives to the Chinese version on p.6, 13 & 23 respectively, they show different meanings of telling the time.	To tell the time in terms of o'clock / minutes / seconds is different from "tell the time to the nearest minute or second". It is suggested keeping the learning objectives of both Chinese and English versions the same, otherwise confusion may occur in teaching, learning and even public assessment.


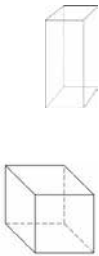
	<p>Which version is the intended learning objectives? Or does it have room to allow both learning the objectives to be implemented? Is there any consideration of learning outcomes for the public assessments at the end of KS1 or KS2?</p> <p>In the new curriculum, it was stated as “Measure and compare the time intervals” starting from P.1 and the remarks as “Students are required to find the time intervals between starting time and finishing time, find the finishing time from starting time using time intervals”. The whole idea directs the learning solely as calculating the time intervals, but not the time concept of duration.</p> <p>Re-phrasing the wordings of the learning of objectives over these three grades needed.</p>	<p>In the current curriculum, either Chinese or English versions describe the learning objective as “2M2 3. Measure the duration of time spent on different activities, or Chinese version as “以「分」為單位，量度活動所用的時間。”，which is more authentic in learning, especially for connecting students really life experience of time concept.</p> <p>Although it is a method of finding the duration of an activity by calculating the time interval between starting time and finishing time, the focus or the core concept of this learning should not be regarded as calculation only.</p>
<p>151 英文版</p>	<p>問題一：以 ball 代替 sphere，弊多於利</p> <p>建議：沿用 sphere 一詞</p>	<p>Ball 與 sphere，數學上定義似有不同</p> <p>以 sphere 一詞描述，沒有任何錯誤。相反，ball 只是日常概括用語，描述某類玩具。如此改變，則此立體或會與日常物品混淆。</p> <p>低年級用 ball，高年級再用 sphere，學生未必接受，需時適應，或</p>

	<p>問題二：英文版沒有提及「認識錐體的直觀概念」，但中文版有</p> <p>建議：中英文版宜一致</p> <p>問題三：英文版注譯只提及要避免以斜圓柱斜圓錐為例，則斜角柱斜角錐又如何？</p> <p>建議：請注明，且中英文版宜一致</p>	<p>窒礙能力弱者。況且，學生過往要認識 sphere 一詞毫無困難。</p> <p>若是捨難取易，何不把 quadrilateral、pentagon 等，改為 4-sided shapes、5-sided shapes 等？</p> <p>我們想數學學習的要求達到何等程度？</p> <p>對學生學習數學語言的水平又有何要求？</p>	<p>An example with picture illustration is suggested. See below.</p> <div><div>Case 1:</div><div>“The soft drinks is on the left of the hamburger.”</div><div></div><div>BUT, Case 2:</div><div>“The boy is to the right of the girl.”</div></div>
153 英文版	<p>The objectives are focused on describing relative positions of objects with respect to the observer’s point of view. What about describing relative positions of TWO PERSONS showing on a picture?</p> <p>In the remarks:</p> <p>Students are set as observers.</p> <ul style="list-style-type: none">•Are there any further information for identifying how to describe relative positions of objects and that of persons? <p>•Clarifying these two distinct examples is</p>		

	needed. ●Examples as in Case 2 are COMMON and UNAVOIDABLE.	 <p>If the curriculum states that “Students are set as observers.”, then how should teachers handle examples as in Case 2? Hence, further elaboration is needed as guidelines in the curriculum.</p>
2M2.6 中英文版	建議：加入「12:00 n.n.」及「12:00 m.n.」的寫法，代表正午十二時（12:00 noon）及午夜十二時（12:00 midnight）	英文一向有此二縮寫，好讓學生習慣
2M4 及 3M5	The new curriculum suggested introducing “Weight” in 2 consecutive years, P.2 & P.3. However, it is advised NOT to separate, but resuming back as in the current curriculum, either learning it in P.2 or P.3.	No advantages are found in such a separation, but an incomplete progress of learning “Measures” without introducing the standard units after using improvised units to compare/measure the weights of different objects would be resulted.
2S1 及 3S2 中英文版	問題：「垂直線」與「平行線」分開了，卻又與「直角」一起 建議：保留現時課程做法	把「垂直線」與「平行線」一起，正是要學生學到兩者分別而分辨之間的不同 把「垂直線」與「直角」一起，容易引起學生在分類上混淆：是「角」的分類還是「線的關係」的分類？

		<p>如像簡介會提及，學校可按校情把課程自行調配，改不改也不重要，則課程文件何用？</p>
3N3 及 4N4 中文版	<p>問題一：為何需要刪去短除法？</p> <p>建議：保留現有課程</p> <p>問題二：課程只要求用短除求得 HCF/LCM，諮詢稿卻刪去短除法，更遑論長除短除兩者關係</p> <p>問題三：舊有課程指引未有硬性規定教師必須教授上述方法，加入短除法的必要性何在？</p> <p>建議：不適宜加入以短除法找 H.C.F.和 L.C.M.</p>	<p>短除本身有助理解長除步驟，使除法運算更快</p> <p>用短除求 HCF/LCM 並非必要。現時以短除法找 H.C.F.和 L.C.M.並不在課程指引中學習重溫建議之內，縱觀不少的出版社均會把以短除法找 H.C.F.納入教科書內，以短除法找 L.C.M.卻不常見，其中一個考慮因素相信與解釋短除法找 L.C.M.的概念便須引入質因數分解有關</p>
3N5	<p>問題：學習重點 2.和注釋矛盾</p> <p>建議：在小三或小四連貫學更好</p>	<p>等值分數與擴約分互有關連，兩者無可避免要一起討論，不可能分兩年學。</p>
3M3	<p>問題：是否用小寫「l」及「ml」？可否草寫連筆？</p>	

	建議：加圖示解釋注明，包括其他度量衡單位。	
3M/4 英文版	修正：2. Tell time in terms of the 24-hour time	
3S1 英文版	<p>Students are required to recognize the names of different prisms and pyramids, such as “rectangular prism” and “pentagonal pyramid”.</p> <ul style="list-style-type: none"> ● But in the Chinese version, it is named as “四角柱”. ● What about “a quadrilateral prism”? Is it a kind of “四角柱”? Or does it refer to “四角柱”, that is a prism with a base of a quadrilateral including rhombus, parallelogram, even trapezium? <p>To summarize the queries:</p> <ol style="list-style-type: none"> 1. What about a cuboid? Is it a rectangular prism? 2. Is there anything confused in the remarks of learning 3-D shapes in both Chinese and English versions? 3. Do you also recognize the difficulty in this regard and accept “rectangular prism” to replace the term “quadrilateral prism”? 	<p>Perhaps naming shapes are less difficult in Chinese for it is usually in the system of naming the number of sides of the 2-D shapes/2-D base, however, it is much more difficult/complicated for students whom are using English as a medium to learn mathematics in HK.</p> <p>Normally speaking, it is very common for teachers (both using Chinese and English as a medium) to illustrate 四角柱(quadrilateral prism) with a rectangular prism/ rectangular box, that is already a cuboid, rather than showing students with an example of solely “四角柱” for the learning unit is in Key Stage 1.</p> <p>It is obvious that a rectangular prism (or a cuboid) is much easier and familiar for young students to understand what a prism with the base having 4 sides is.</p> <p>Something more to be considered, it is plain that limitation is encountered in drawing 3-D shapes on paper, and in fact, a rectangular prism/cuboid or a cube (like a box or a dice) is usually a typical diagram of an example of a quadrilateral prism(四角柱),</p>

	<p>4. IF it is, do P.3 students ought to identify the following picture as a quadrilateral prism because of no information of the base is a rectangle or square? Can a rectangular prism be accepted?</p>  <p>5. Once a rectangular prism is accepted, a cuboid shows the same definition, isn't it?</p> <p>Suggestion: re-phrasing the way of writing the remarks.</p>	 <p>When it is to be named, the above pictures can all be naturally regarded as rectangular prism/cuboid/cube.</p> <p>Other concepts of cuboids and cubes to be introduced in P.5 is acceptable. However, as IF it is stated now in the remarks (p.31 of English version) that "The terms "cubes" and "cuboids" are introduced in Learning Unit 5S3.", then it is really not the case in the everyday classrooms.</p>
4N6	建議：重新考慮所需課時及學生能力	同異分母的分數加減已重新安排到小四。
4N7.4 英文版	修正：(Remarks) Students are required <u>to interconvert</u> between units, ...	
4M1 Perimeter(1)	<p>Some pictures are used in the remarks as "...NOT required to find the perimeters of..."</p> <ul style="list-style-type: none"> •The focus of these pictures is not explicit or clear enough to understand. •Written description is needed. 	Misconception may occur.

<p>關注四年級的課程的安排：</p> <p>新課程中加入的學習重點，所需的課時與刪去的課題/學習重點所需要的並不相同，同時部分課題中學習重點的分拆亦未見合適，如：「認識梯形的概念和性質」調動至三年級，惟教授不同種類四邊形之間的關係時，重溫梯形的概念和性質同樣佔去課時，此調動未見能有效減省新增課程的課時。</p>		
刪去 / 調至其他年級教授的學習重點		新增
<ol style="list-style-type: none"> 乘法結合性質 (調動至三年級) 現代計算工具的認識 認識梯形的概念和性質 (調動至三年級) 對稱(調動至六年級) 同分母分數加減法 (調動至三年級) 一格代表 1、2 和 5 個單位的棒形圖 (調動至三年級) 		<ol style="list-style-type: none"> 3 的整除法判別方法 (原有為增潤課程) 質數及合成數 (原有為增潤課程) 運用短除法找 H.C.F.和 L.C.M. 認識乘法分配性質 認識不同種類四邊形之間的關係 異分母分數加減法(原為五年級課題) 異分母分數大小的比較 (原為五年級課題) 認識近似值 (原為五年級課題) 一格代表 50 和 100 個單位的棒形圖 (原為五年級課題)
量度單位	問題：單位的表達形式或準則是甚麼	
	建議：宜註明以 IS 為準，如米用 m 作答	

附件 3

HKDSE Mathematics Subjects Suggestions**Part A. Information about HKCEE and HKAL Mathematics Subjects**

<u>HKCEE S4-5 Mathematics (266 periods)</u>	177 hrs
- Algebra	75 hrs
- Measures Shapes and Space	59 hrs
- Data Handling	23 hrs
- Further Application	20 hrs
<u>HKCEE S4-5 Additional Mathematics (186 periods)</u>	124 hrs
<u>HKASL Mathematics & Statistics (120 hrs)</u>	
- Statistics part	60 hrs
<u>HKAL Pure Mathematics (312 periods)</u>	208 hrs
- Algebra	102 hrs
- Calculus and Analytical Geometry	106 hrs
<u>HKAL Applied Mathematics (348 periods)</u>	232 hrs
- Vectors and Mechanics	112 hrs
- Differential Equations	30 hrs
- Numerical Methods	30 hrs
- Probability and Statistics	60 hrs

Part B. Suggestions

1. Proposed HKDSE Mathematics

Content Reference	HKDSE Mathematics (Statistics Strand)	HKDSE Mathematics (Further Mathematics Strand)	Remarks
CORE Part			
~ HKCEE Mathematics: Algebra	75 hrs	75 hrs	Common Core for moderation
~ HKCEE Mathematics: Measures Shapes and Space	59 hrs	59 hrs	
Strand Part			
~ HKCEE Mathematics: Data Handling	23 hrs	X	
~ HKCEE Mathematics: Further Application	20 hrs	X	
~ HKASL Mathematics & Statistics: Statistics part	60 hrs	X	
~ HKCEE S4-5 Additional Mathematics	X	124 hrs	
Sub-total	237 hrs	258 hrs	
Adjustment on topics, breadth and depth	+3 hrs	-18hrs	
TOTAL	240 hrs	240 hrs	

2. Proposed HKDSE Pure Mathematics
(taking with Mathematics- Further Mathematics Strand)

Content Reference	
~ HKAL Pure Mathematics: Algebra	102 hrs
~ HKAL Pure Mathematics: Calculus and Analytical Geometry	106 hrs
Sub-total	208 hrs
Revision	+32 hrs
TOTAL	240 hrs

3. Proposed HKDSE Applied Mathematics
(taking with Mathematics- Further Mathematics Strand)

Content Reference	
~ HKAL Applied Mathematics: Vectors and Mechanics	112 hrs
~ HKAL Applied Mathematics: Differential Equations	30 hrs
~ HKAL Applied Mathematics: Numerical Methods	30 hrs
~ HKAL Applied Mathematics: Probability and Statistics	60 hrs
Sub-total	232 hrs
Revision	+8 hrs
TOTAL	240 hrs

Part C. Implementation**3X Arrangement**

	No.of h4 per week		
	S4 (30 weeks)	S5 (30 weeks)	S6 (20 weeks)
Chinese	6	6	6
English	6	6	6
Liberal Studies	4	4	4
Mathematics (Core Part)	5	4	4
Mathematics (Further Mathematics Strand)	5		
Physics	5		
Chemistry	5		
Biology	5		
ICT or DAT	5		
X1 (S.5 declare) : Pure Mathematics or Biology	X	7	7
X2 (S.5 declare) : Applied Mathematics or Chemistry	X	7	7
X3 (S.5 declare) ICT or Physics	X	7	7
PE	2	2	2
Moral Education/Biblical Knowledge	1	1	1
Assembly	1	1	1
TOTAL	45	45	45

2X Arrangement

	No.of h4 per week		
	S4 (30 weeks)	S5 (30 weeks)	S6 (20 weeks)
Chinese	6	8	8
English	6	8	8
Liberal Studies	4	4	4
Mathematics (Core Part)	5	5	5
Mathematics (Further Mathematics Strand)	5		
Physics	5		
Chemistry	5		
Biology	5		
ICT	5		
X1 (S.5 declare) : Applied Mathematics / Biology / Physics	X	8	8
X2 (S.5 declare) : Pure Mathematics / Chemistry / ICT	X	8	8
PE	2	2	2
Moral Education/Biblical Knowledge	1	1	1
Assembly	1	1	1
TOTAL	45	45	45

2017 : Coincident with the 20th Anniversary of the HKSAR - A review of Some Activities in 20 years of HKASME (1997 to 2017)



2017

2017

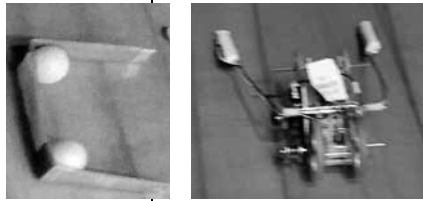
Chi-kong Wong
 Immediate Past Chairman, HKASME



2017 is the 20th anniversary of the HKSAR. It also happens to be a critical period of the development in the Association's history of over 50 years. Other than some scattered important events from 1997 to 2017, coincidentally, it also marks the 20th anniversary of some "life-long" activities organized by the Association alone or with other organizations. Just to name a few, the "**Fun Science Competition (fsc)**" [1], the "**Primary Science/STEM Project Exhibition competition (常識百搭, pspe)**" [2] and the "**Hong Kong Chemistry Olympiad for Secondary Schools (HKChO)**" [3] have attracted a multitude of schools and even parents' attention over the years. Further, the 40th and 50th anniversary of the Association fall within this period. While reviewing this special period of history, it is worth to learn about the factors and contexts that help to maintain such special events and activities and / or even propagate further. Of course, with the impact of the 21st Century skills and some new educational directives (for example, STEM), new activities may be evolved from such old / traditional activities.

Below is a brief summary [Table 1] and review of the above "life-long activities" with some special moments in between. Further, it is worth to have an exploration of how such events could linger on for so long even with the impact of the 21st Century parameters on the "old traditional initiatives" before 2000. For sure, all such activities will pass on to its 21st Anniversary next year (2018) as most parties involved in organizing the activities had already started to plan for the 2018 themes and details.

This brief summary review of the 20-years' (1997-2017) activities of the HKASME is to allow new or younger members of the Association to learn and experience more about what and how our pioneer members had laid foundation for such "life-long activities". Further, this is also a handy guide for some teachers, parents and students in these years of STEM empowerment -- that we have provided chances for students of different levels to experience their science and maths in different investigative scenario.

** Table 1: Brief highlights of some activities of the HKASME in 20 yrs "1997 to 2017"

Year	Activity / Event	Co-organizers *[n1]	Remarks
1972-1992, 1997, [n3] 2003-2017, ...	Hong Kong Science Teachers' Journal	The first journal was sponsored by the "ESSO Standard Oil (HK) Ltd."	[#] The Association Journal has stopped press in 1992 due to the death of our past editor: Dr. Linton
2004 (40th) 2014 (50th)	Association Anniversary Celebration & Publication	---	Other than the Anniversary Dinner, the Anniversary year's events had been included in our Journal in the following year
2003, 2009, 2012, 2016, 2017	Pass away of our memorable key persons in the running of the Association: Dr. P.K.Tao (chairman 1977-80), Mr. Ng C.C. (chairman 2006-2009), Mr Pang C.C. (vice-chairman 2009-2011), Mrs. Cheng (executive officer 1989-2009), Mr. D.R. Too (chairman 1974-76)	---	-- Special publications had been issued for Dr. P.K. Tao and Mr Ng C.C. -- Donation Fund had been established for "Activities In memory of Mr Ng C.C." (2009 to 2011)
2006	Change of Association President: from Sir Q.W. Lee to Prof. Paul Chu	---	-- Sir Q.W. Lee had been our president from 1984 to 2006. He had also sponsored the Office flat in 1986.
2010	Charitable status granted by the Inland Revenue Department	---	-- according to Ordinance 88 -- EGM in 2009 had been held to pass the new memorandum
1991 - 2017, 2018 ...	Fun Science Competition 	Science Museum, Hong Kong Scholars Association, Hong Kong Secondary School Presidents Council, Hong Kong Federation of Educators, Sponsored by Tin Ka Ping Foundation	-- has Junior Secondary and Senior Secondary Sections -- All activities based at HK Science Museum -- Peak participation in 2011: 179 teams -- has a range of awards -- In some years, the outstanding teams had visits to Science related organizations in China
1997 - 2017, 2018 ...	Primary Science / STEM Project exhibition competition (常識百搭)	HKied / HKEdU, Science Museum, EDB, HKedcity	-- The major base of the exhibition is at the Central HK Public Library Exhibition Hall -- Vast team of judges (over 50) in AM and PM sessions due to too many participants -- Record high participants (over

			160 teams) in 2017 competition (Theme: "Green Living" [都市簡約生活]) -- HKedcity provides the online assistance in the e-presentation and voting competitions
1996-2011, 2014 - 2017, 2018...	HKChO: The Hong Kong Chemistry Olympiad for Secondary School	Royal Society of Chemistry (HK Chapter), Hong Kong Chemical Society (pre-2011, also with EDB)	-- mainly practical project competition EXCEPT for 2010 with non-practical part -- Stopped in 2012-13 due to change of Curriculum (from AL to DSE) -- For some years, the winning team would have further award of visiting / participate in some China Science Competition
(2012-2016) 2017, 2018 ...	(Digichem) The 1st "DigiScience" in 2017	(EDB) HKCTC sponsors and helps in promoting the Testing and Certification Industry	-- HKCTC: The Hong Kong Council of Testing and Certification [4] -- has Junior Secondary and Senior Secondary Sections -- Promotion articles had been published in newspaper on the 29th Jun-2017 (Mingpao and Young Post)
2011 - 2017, 2018 ...	ANCQ -- Australian National Chemistry Quiz (www.ancq.com)	RACI (Royal Australian Chemical Institute)	-- The number of participants increase with schools outside HK (e.g. Macau) as we provide the Chinese version for the tests. -- Allow students to choose their levels (e.g. F.1 could take the Year 10 paper) -- FULL credits (100%) will have special badge award.
2015-2017	Big Science Competition	Australian Science Innovation [n4] (www.asi.edu.au)	-- has changing format of Quiz -- 2017 has 4 levels for students to choose (for F.1 to F.4) -- Most questions are database type.
2005-2017 (Primary) 2009-2017 (Sec)	HK Maths Creative Problem Solving Competition	EDB (Gifted), HKFE 	-- Include written Preliminary tests (in groups of 4), Final round include Forum Debate (Primary) and / or Presentation before the Judging Panel (Secondary)
1995 - 2004, 2009, 2010.	Maths and Science Trail	HKUST / CUHK / HKied / HKU [n2]	-- has stopped as the organizers encourage schools / regions to run the activity locally -- Different versions in different years depending on the co-organizer

Note to Table 1:

[n1] The HKASME may not be the lead of organizer. However, in most cases, we provide the basic back-office support for the activity.

[n2] Over the years, depending on situation, there were changes in co-organizers. e.g. the HKChO, DigiScience/Digichem, Maths and Science Trails.

[n3] For some activities, there were suspension during some years due to different reasons. e.g. change of curriculum and / or shortage of resources

[n4] The Australian Science Innovation also runs the Australian Science Olympiad.

Initiation of the “life-long activities”

The initiation of the “life-long activities” could be attributed to the enthusiasm of some dedicated members and educators who consider that through student competition, certain education attributes could be identified. In most cases, the formation of the organizing committee for that activity with several initial discussions, there comes the final division of labour amongst which our Association may or may not be the lead organization.

Financial Implications and Thanks

As for financial issues, each organization will shoulder certain back-office administration and for the prizes or awards, we are lucky that there are always certain funds or donations who would sponsor the activity. One very “life-long sponsorship” is the Tin Ka Ping Foundation who has sponsored a lot with input of a sum each year over the past 20 years for the “Fun Science Competition”. It is also worth mentioned were some donations in supporting our activities. One is “for activities in memory of Mr Ng chung-chun” from 2009 to 2011. The other dedicated member, Ms. Wong shuk-may [8], also left us in 2004. Her family had donated a sum for the main running of the HKChO. Such donations not only support the basic need of the activities, they also push the advancement of our activities spiritually and in some cases we could afford to have further awards for the winners, e.g. having a trip to the other competitions outside Hong Kong.

Other Factors and the Changes

Another success factor for most activities is surely the support of some dedicated educators in the Post-secondary institutes. Through these years, we are lucky to have quite a number of professors in almost all the universities to deliver talks, providing expert advice and also the most important, as adjudicators in the Final Round.

In recent years, due to the soaring number of participants; we are always facing a problem of the first-round screening. Again, we must thank our dedicated members and front-line teachers to take up the hard-work in a very limited period of time so that we could meet the schedule for the final round. Thus, we need to limit the number of participating groups (usually two per school). Hence,

in recent years, some activities have stirred up a wider range of competitions in different schools – as schools have to find the best teams to take part in our competition. This surely bring the students and even the parents to more attention and keen participation during the exploring and preparatory stage. One of such activity is the “Fun Science Competition” which has attracted quite a number of observers outside the Science Museum, even in the evening to try out their design for the competition of “Stay Right” (theme of the 2017 competition) [7].

While some activities are individual and question-based (like ANCQ & Big Science), most of the life-long activities are group project-based. For project works, through collaboration, students could learn more and come up with better solutions to their research topics. During the preliminary research stage, teachers and technicians are the key persons that they could ask for help. Surely, the number of hours spent in school laboratories would be higher than normal and both teachers and technicians need to take up the extra hours besides routine monitoring.

Changes over the years

As some activities had been run for many years, recently some organizers are annoyed with the setting of suitable themes as they may not like to use the old ones. However, as time changes, students could use more advanced technology and ideas in solving the problems; this is not always the main issues. We admit that the theme for some years may be more difficult. Yet, we could still have quite good solutions to the difficult problems that we have set. This showed that the standard of research and creativity of our students is quite high.

Another change links with the time and effort that we could spare in the administration of the activities. We must thank the SME Office in handling the tedious and never-ended calling / emails about details, deadlines and chasing for reports and / or missing items for the so many activities – often, they overlap each other. Due to the limiting manpower, some competitions had trimmed down or simplified some rounds of competition. One example is the elimination of the mid-round poster presentation in the HKChO. The HKChO now only have the Final Round after their project submission. The use of IT had been made possible with more technical backup from larger organization, like the HKedcity. It is through the e-platform that the 20 years of the Primary Science/STEM Project competition could handle so vast number of participating teams (often more than hundreds) with so many judges to give comments before the final submission and the final round online voting. The use of Youtube also facilitate our “Digichem” and “DigiScience” competition. Without such support, there is no way that such competition could be held fluently.

Other than the administrative side, the e-platform also allows students and teachers to learn from each other. The appreciation voting often attracts more students and even parents to learn from each other. This even leads to alert of parents and even students themselves who would like to register for

the activities alone. However, due to certain limitations – especially for those activities that involve practical investigation; there needs teachers’ supervision. Hence, we regret that we must have registration by school and we often guide them to find a teacher to supervise their applications.

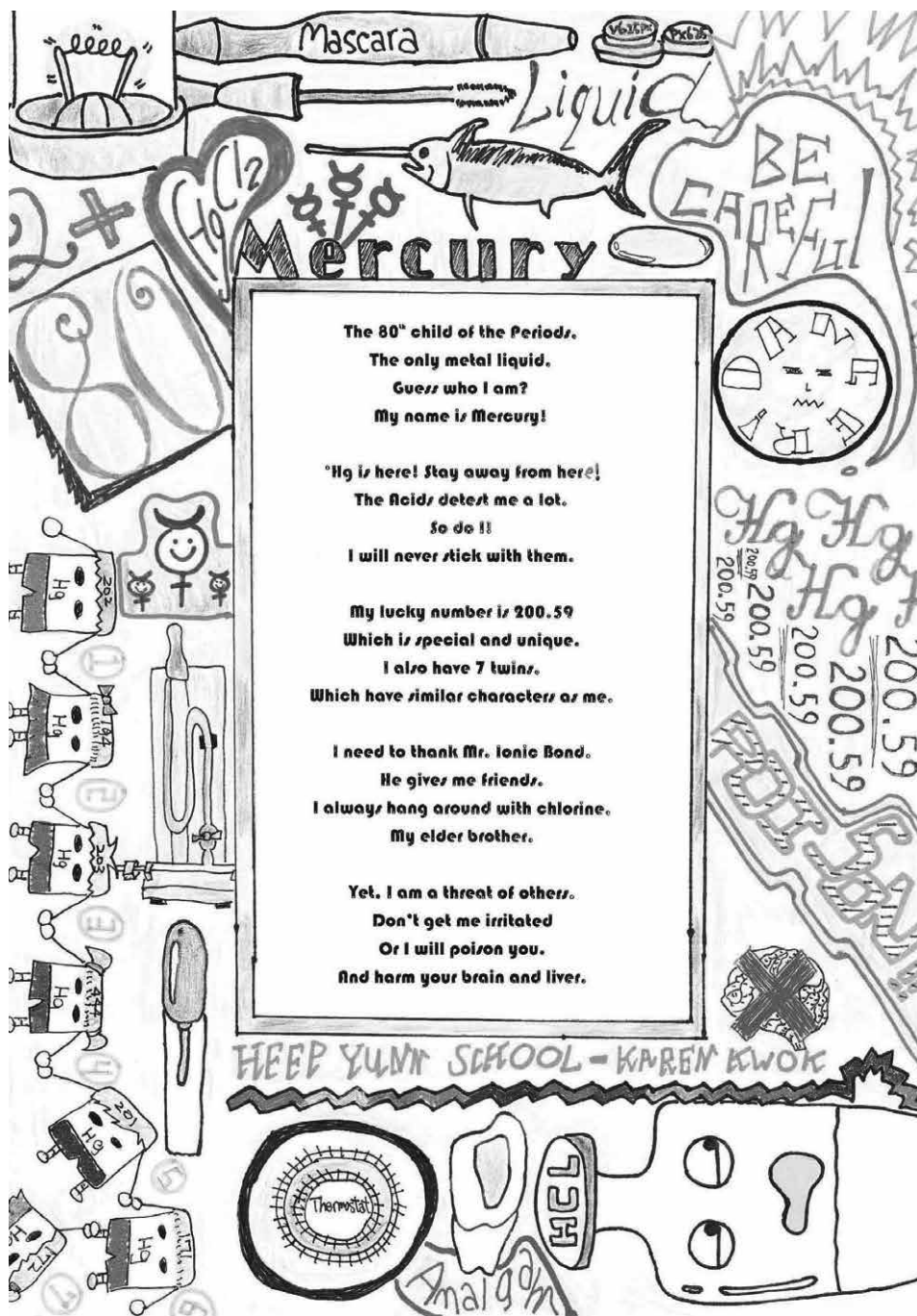
It is the tradition of the Association to involve people with different talents and interests who try to set up channels for teachers from all walks of life to work together. Other than our normal teachers’ workshop or seminars, another way to challenge our daily teaching and learning is through competition. Through such non-routine learning and teaching opportunities, both teachers and students could think out of the box and apply what they have learnt or experience in the classroom or laboratory in different context. Of course, during the final stage of presenting their brilliant products in these competitions, students and teachers of different schools could learn from each other, irrespective of their background. This further raises the horizon of most students in similar competitions in latter years. Though the external format or aims are similar through all these years, the actual context and content could change a lot due to the changing focus of the contemporary social and educational context.

Change may also be initiated by curriculum changes. For example, there was a new item in the prepared SBA for the DSE-Chemistry – the non-practical part. Hence, before the actual SBA was implemented in 2012, the HKChO already had initiated a “Non-practical HKChO competition” in the 2011-HKChO. Actually, there had been a multitude of participants in 2010 and the products were excellent – not just in quality, but also in varieties. The different aspects of presenting Chemistry could be illustrated by the following varieties: poems (English and Chinese), cartoon drawings, creative writing, poster, model, web-site. However, due to many issues, the non-practical part in the SBA-Chemistry had been deleted.



HKChO 2017

One interesting non-practical winner is ...



Another change worth mentioned is the change from Digichem (2012 to 2016) to DigiScience (2017). This is surely due to STEM push. We would like to have a wider perspective for students and schools to try out different things. It happened that the most recent DigiScience (the 1st) was well received and as the activity was sponsored by the HKCTC, we are glad to have the spread of words and also a means of promoting the testing and certification industry which is a flourishing one in Hong Kong [4]. Most probably the DigiScience will continue in 2017-18.

Insistence of People and the Working Parties

One important aspect that we should learn is how to sustain such “life-long activities”. Amongst them, one important element is resources: both financial and human resources. Without financial backup for the renting of space for competition, prizes and other office support, there could not be any of such rewarding records. Though we are not the sole supporter of most activities, we are still the one that backup most administrative and official processes.

Of course, the more important parameter is the insistence of the organizers. For the HKChO, our dedicated council member, Mr Ben Ng and the Chemistry subcomm has insisted for the long run with the support of judges from the different universities have kept the competition and students’ learning go.

The key person of the “Primary science STEM exhibition” would go to another dedicated educator, Ms Winnie So (Professor in the Department of Science and Environmental Studies at the Education University of Hong Kong). For the “Fun Science Competition”, the Science Museum, professors of the HKUST, Mr Ying, Ms Grace Lui and Ms Sophia Chow are surely the major enthusiasts that help to maintain the very successful competition year by year. Without the support of the organizers and the front-line teachers, the activities could never run for such a long period and we will foresee the three life-long activities would still proliferate in the years to come.

Lastly, thanks must be also passed on to our dedicated retired members in assisting all past activities successfully (in whatever position, even for hard labour) which shaped the history of the Association. Even after their retirement, they do not cease to give a helping hand when the Office is in need. Heartfelt gratitude must be passed on to one special member, a nearly regular part-time volunteer staff in the Office -- Ms Sin, whom you have already contact over the phone in these two years. In these years, she had helped in various posts in many of the above "life-long activities". Of course, what we need more is the involvement of our younger generation to maintain some of the above "life-long activities" and take up more challenging projects and routines in the days to come.

Some possible follow-ups after the competitions for Teachers & Students

Sharing is surely one of the possible measures that we could spare the effort of your students and students of other schools. This helps the students to develop their 21st Century skills: for example, communication and presentation skills, critical review, research and development, creativity. Actually, after the competitions, most students would stop their study and research on the topic or the structural models which they had been running for months. Such experience and skills are valuable and worth to be maintained and developed as that may be their first impressive chance of going through a research scheme. No matter whether their products are the winning teams or not, most of their research topics or models could be further investigated and / or be critically reviewed to get more from their initial findings and / or from others' experience.

For example, the champion team in the Junior Secondary section of our 1st "DigiScience" competition (2017, co-organized with the HKCTC [4]) aimed to utilize easily accessible chemicals to verify if a plastic container was BPA-free. The participating students claimed: "After the contest, we realized that not all tests that generate accurate results require costly materials. This has further boosted our interest in testing." Also, one of the judges in the DigiScience, Prof Ho kin-chung (member of the HKCTC and Dean of School of Science and Technology of the OUHK) echoed "This contest benefits the studnets in their personal growth. It inspires their curiosity, which in turn, helps sharpen their logical thinking and unlock their creativity." [5]

For some schools, participation in some life-long activities become a tradition (e.g the HKChO, Fun Science competition, Primary Science Project). From our records, some schools have taken part in every year's competition since our first encounter – yes, that's 20 years' of endeavour. This is surely the effort of both teachers and students and the maintenance of the ideology in their school culture. Without the sharing of the elders and their insistence (of teachers to promote and follow-up), such tradition could not exist. As some schools are building up historical archive of their activities, some have had quite a comprehensive record of their achievements in the past long years. For some years, there are quite a number of winners (not just the first or highest award) have had very impacting ideas and means of presentation. Such hardwork of both teachers and students do serve a place in honour of their education posts.

Thanks also for the various public domain that helps to maintain depository for some of our "life-long" activities. One is the HKedcity which has a summary record of the finalists of the long-live HKChO. Interesting parties could visit the depository in the HKedcity [6]. For those co-organized with the Science Museum, teachers could always search for relevant competitions in the Science Museum website for passing on valuable information about that competitions for their coming potential participants.

The Way Forward

Referring to the development of the Association, we believe that no single method or program schedule could meet the educational needs of all students and teachers, in particular in this era of change. What we had endeavored in the past could still be maintained and we would try different measures to update and upgrade the traditional activities -- not just in the IT-perspective, but also in the hands-on and minds-on activities. We hope that the activities, whether old or new, could help to propagate the 21st Century skillsThis is a success factor that helps our activities to be "life-long", irrespective of the changing curriculum. The activity platforms have provided a basis for the teachers to guide their students and allow them to share their experience with others -- either through direct participation or online.

References / Notes:

[1] The “**Fun Science Competition**” (趣味科學, fsc) is co-organised with the Hong Kong Science Museum, Hong Kong Scholars Association, Hong Kong Secondary School Presidents Council, Hong Kong Federation of Educators. We are grateful that this event is being sponsored by the Tin Ka Ping Foundation and every year they have a least one representative present to take part in the prize-giving session in both the Primary (AM) and Secondary (PM) part. The major venue for all related activities is the Science Museum. Hence, the dates of briefing / competitions needed to be decided a year ahead of next year's competition. <http://hk.science.museum/ms/fsc2017/introduction.html>

[2] “**Primary Science/STEM Project Exhibition competition** (常識百搭, pspe)” is co-organized with Hong Kong Education University, Hong Kong Science Museum, EDB, HKedcity. Details of previous years' activities could be found at <https://www.hkedcity.net/pspe/zh-hant/home>

This year (2017) has a record-high number of teams participated (over 160), including teams outside Hong Kong (Macau and Guangdong). Due to the huge number of participants, the Hall (usual venue for recent years is the Central Public Library Exhibition Hall) was packed with students and judges. The exhibition was divided into AM and PM sessions, of which, each had its own winners: the most outstanding teams, the outstanding teams, the excellent awards. Judges come from various partnered organizations

[3] The “**Hong Kong Chemistry Olympiad for Secondary Schools (HKChO)**” was initially co-organised by RSC-Hong Kong Chapter, HK Chemical Society and EDB. The most recent competition is co-organised with Royal Society of Chemistry - Hong Kong Chapter and Hong Kong Chemical Society.

[4] HKCTC is the “Hong Kong Council for Testing and Certification”. It is a statutory government established organization (first in 2009) to advise on the overall strategy to support the development of the testing and certification industry. Details could be found at www.hkctc.gov.hk
<http://www.hkctc.gov.hk/en/home.html>

[5] Young Post (SCMP), 29-June, 2017.

[6] The 1st to 12th HKChO finalists' project summary could be found at
http://cd1.edb.hkedcity.net/cd/science/chemistry/HKCHO_home/HKCHO_1to12.htm

[7] Results of the "Fun Science Competition 2017" could be found in www.hkasme.org.

[8] Ms Wong Shuk-may left us in 2004 and was a science co-ordinator in Tung Chung Catholic School. She was a dedicated member of the Association. Her last article "Incubating primary students' scientific investigation skills through the Primary General Studies curriculum" could be found in the "Science Teachers' Journal 2005 (the 40th Anniversary edition)".

[9] The chief organizer of the PSPE (Primary Science/STEM Project Exhibition): Ms Winnie So is the Professor in the Department of Science and Environmental Studies, Director of the Centre for Education in Environmental Sustainability, as well as the Associate Dean of the Graduate School at the Education University of Hong Kong.



3rd President == From Nov, 2006 onwards: Prof. Paul C.W. Chu (former president of the HKUST)



Volume 1, Number 1 November 1972

The first volume of our Journal -- front cover with the image of 2 students working on a laboratory bench, which is quite a seldom case in those days where student experiments were considered to be secondary to chalk-and-talk science lessons ...

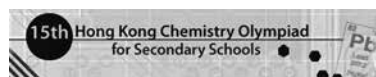
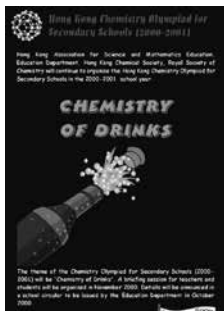
Also, the first Journal had commercial sponsorship as the establishment of

this issue of the journal is sponsored by
ESSO STANDARD OIL (HONG KONG) LIMITED

... from the "Report of HKChO 2000" ---

Part 7: Chinese National Chemistry Olympiad 2000

二〇〇〇年全國化學競賽暨冬令營



Logo

In Memory of Mrs Esther Cheng



This section is dedicated to our past honoured executive officer, Mrs Cheng Lo Mo Kit, Esther, who had served us for almost 20 years from 1989 to 2009 and had left us in August 2016.

A. In memory of Mrs Esther Cheng, our past executive officer (1989-2009):

Amongst the historical events of the HKASME that Mrs Cheng had spent with us, the more outstanding ones were: establishing the new Office in Shamshiuipo (the present office), handling our financial crisis in the 1990s, helping the establishment of the present charitable status and the invitation of Prof Paul Chu as our new president in 2006.

Below are some memory articles and valuable photos contributed by our members. Such memorables help us to alert one important parameter that leads to the success of our activities -- our back office support, as most council members and subject committees are volunteer full-time teachers. Without the careful arrangement and handling of the so many tedious tasks, the Association could not be maintained for a long history of over 50 years. That also involves the dedicated work of financial records and plans for different activities with the sales of equipment, references and/or services. On top of that, Mrs Cheng, though in her old age, still exercised her experience and passion in assisting us to solve problems that we met as some of us were still green and fresh in those days.

Anyway, without the long dedicated service of Mrs Cheng, we would really have trouble in maintaining the Association in those days of hardship (1990s) – both financially and spiritually. As

many council and old members had mentioned, without Mrs Cheng, the Association could not have such development now. She will be missed forever.

B. Memorable events during the service of Mrs Esther Cheng in HKASME (1989-2009):

Year	Events
1989	<ul style="list-style-type: none"> Joined the Association to handle all administrative stuff in a difficult time at the Hung Hom Office (donated by Sir Q.W.Lee in 1984). First few months as part-time and then changed to full time ONE-STAFF Office.
1997	<ul style="list-style-type: none"> Helped to handle the sale of the Hung Hom Association Office (subsidized by past president Sir Q.W. Lee (利國偉爵士). Also helped to settle the New Association Office at Shamshiuipo (used until NOW), a fully owned flat.
2004, 2005	<ul style="list-style-type: none"> The Association celebrating her 40th Anniversary (1964 - 2004). Most of the past chairman had met Mrs. Cheng at the Anniversary Dinner (including Prof. Cheng Kai Ming, Prof. Nancy Law, Mr Tsoi Heung Sang, Mr Chan Kwok Man, Mr Cheng Chi Leung, Mr Lau Tak Chi, ...)
2006	<ul style="list-style-type: none"> Inviting new President, Prof. Paul Chu (then president of HKUST)
2009	<ul style="list-style-type: none"> Mrs Cheng retired and in the same year, Prof. Paul Chu left HKUST but still confirmed us that he would continue to be our honourable president. Mrs Cheng still acted as an advisor for some years to the SME Office administration. Our honorable and remembered chairman Mr. Ng Chung Chun passed away in Sep 2009. Mrs Cheng helped along to maintain the flow and continuation of the Association's Council administration. Some related outstanding events were: <ul style="list-style-type: none"> ➤ organizing donations and funds to address and memorize Mr Ng's contribution to the education sector; ➤ helping in the editing of the Special Publication in memory of Mr Ng ➤ re-establishing the routine Council posts with Mr Wong Chi Kong as chairman and Mr Pang Chi Chuen as vice-chairman Mrs Cheng had made donations to the Association in support of our activities.
2010 (since 1986)	<ul style="list-style-type: none"> EGM to resolve the long prepared application for "charitable status" and successful grant being given by the Inland Revenue. The present charitable status of the Association is a result of the long and numerous preparation work with ups and downs in the servicing years of Mrs. Cheng.

C. Memory articles from members:

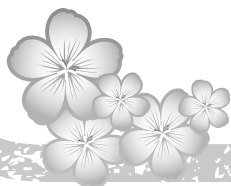
深切懷念鄭太（鄭羅慕傑女士）



「二三三三三五五、
二三三三七六零二」。

這兩個數理學會特別的傳真和電話號碼，是透過鄭太的關係，我們才可以申請到。我們每次聯絡數理學會，都必會想起鄭太……。她對我們的關懷和支持，對學會的投入，是多麼的積極，多麼的深厚！

想必鄭太現在正與鄭先生一起，坐在天父的身傍，慈祥地望著我們！願天父賜給鄭太平安永生！願天父繼續保佑她及她的家人！



柯財權敬上
2016 年 9 月

- - - My Last Respect to Mrs. Cheng - - -

When I received the email that Mrs. Cheng had passed away, I was startled. I thought about seeing her when I had an opportunity of visiting Hong Kong again. Nevertheless, her poise and elegance never have slipped out of my mind.

The three words that I would like to describe Mrs. Cheng were: elegant, amiable and responsible. Though Mrs Cheng possessed a petit outlook, she had a straight spine. Her upright posture signified greatly her determination and confidence. Mrs Cheng always wanted me to call her Ester but I dare not. I respected her as my aunt. At times, I would treat her as my boss because she knew about the nitty-gritty of the Association more than I did.

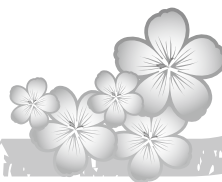
As always, Mrs. Cheng courteously addressed all the council members by Mr. or Ms. So I was always called, "Ms. Lee." Once, I was mischievous and made fun of her attire. I said, "Mrs. Cheng, you must have a gigantic number of pretty suits, pants, and shoes. Why do you have to dress up and put on make-up? You don't need to. There is seldom any person visiting the office." She replied calmly with an affirmative voice, "I RESPECT MY JOB AND ALL OF YOU!" Her prompt response astounded me. From that day on, I respected her ever more.

When I was the Council member, Mrs. Cheng and Ms. Chu were the nuts and bolts of the HKASME. Whenever there were AGMs or seminars, they were the ones who took care of all the logistics. After every AGM, we (council members) usually ate our lunch with our guests in a restaurant. Mrs. Cheng and Ms. Chu did all the coordination of finding a decent restaurant and booking the tables. In order to accommodate all the unpredictable attendees, Mrs. Cheng told me that she had several plans – Plan A, Plan B, etc. Her seamless care and details were amazing.

Mrs. Cheng was more than a staff member; she was a part of us. She ran the Association like running her own business – getting upset if the sales went down and being happy if the membership got higher. Usually a few weeks before the AGM, Mrs. Cheng would chase after us to get the proxy form sent out, to submit the yearly report to the accountant, to send out newsletters to the members . . .

With the long dedicated service of Mrs. Cheng in HKASME, I am sure all of us must have many of her stories. The above episodes are some of my loving memories of Mrs. Cheng. Her kindness and positive attitudes of life are forever engraved in my heart.

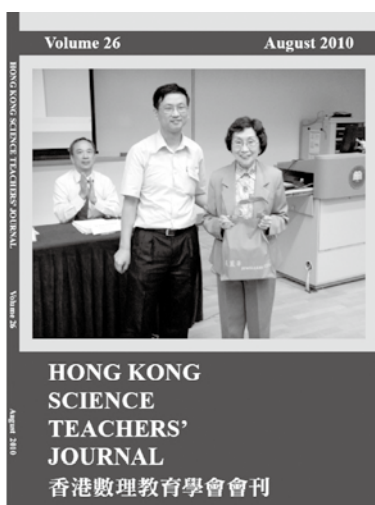
By: Carole Lee Kwan Ping
HKASME Past Council Member
September 9, 2016
Maine, USA



~ Most Memorable Shots with Mrs Cheng ~

My two most memorable shots with Mrs Cheng are:

1. The Meeting with her and our past chairman Mr. Ng CC at the Presidential Office of Prof. Paul Chu. In that memorable meeting, Prof. Chu had accepted to be the President of the Association. [See photo in Section E].
2. The last official shot with her retirement presentation at the AGM of 2010 [See photo below].



Mrs Cheng retired with souvenir presentation during the AGM in 2010.

← there are 2 articles in this Journal that were related to Mrs Cheng: (1) Interview with Mrs. Cheng and (2) Mrs. Cheng's article as the Association executive officer.

As Carole had mentioned most of her personality and working attitude, everyone that had worked with her would feel her dedication to the Association. Her most important contribution to the Association is to keep us financially healthy, especially in times of difficulty. And, she will be remembered as she is actually part of the Association's history.

Before Mrs Cheng resigned from the Office in 2010, she had planned to re-organize the Office stuff. That included compiling of historical documents and statements. This served two purposes. One is to clear some old records and retain those valuable ones. This allowed room for the forthcoming development of the Association. The other is to pass on her experience in running the Association. In particular, she had very good contact with our old members. As always, members are the treasures of an organization. Mrs Cheng had tried her best to keep the treasure box of the Association through her serving years.

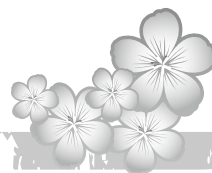
With Peace.

Alex Wong Chi-kong

Member (since 1983)

Vice-chairman (2004-2009)

Chairman (2009-2014)



生命短暫，精神長存，
鄭太的逝世令我惋惜，
她待人處世及工作態度更令我佩服，
她是一位令我懷念的長輩。

朱碧霞 敬上



親切的笑容，溫柔的語調，事事關心，讓我們念記。

盧燕芳 敬上



Mrs Esther Cheng, a Friend of the Association

The last Saturday in August 2016 proved to be a sad day for the HKASME. It was at this day that we lost our good old friend, Ms Esther Cheng Lo Mo Kit.

When Nancy Law, our former Chairman, introduced Esther to me a quarter of a century ago, she had retired from a well-known listed company. With keen eyes, she embraced our cause and agreed to help us to solve the most critical problem we faced at that time. Thus she took on the role of Executive Secretary of the Association in 1990.

This is no easy job. She was the only person at the office and the office space is quite a few times larger than the one we now have at Sham Shui Po. There was no supporting staff, compounded with an extensive gap between corporate cultures. Yet, she was both clever and tough. She struggled on and very soon she was not only knowledgeable about our routines but found ways to improve efficiency and productivity as well.

Time was ripe for getting more hands on board. She recommended to us Ms Chu and some years later Ms Yvonne Lo. Ms Chu works full time while Ms Yvonne Lo takes care of the books specifically.

In staff management, she was more like a kind mother, a mentor and a friend than a demanding superior. Her charisma and affection created a homely atmosphere in the office and the trio worked harmoniously.

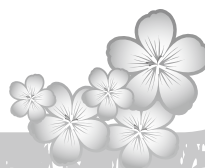
Senior members of HKASME should still remember the warmth that she brought, whether in phone conversations or face to face contacts. She was also extensively accepted by external bodies and the Association worked well with institutions like government departments, accountants, banks, and other companies.

Having worked in the Association for twenty years, she decided to retire and assume a family life. At the time of retirement, she donated a sizable amount to HKASME for the benefit of science and mathematics education to show her loving care of the Association.

Members kept on visiting her and chat with her from time to time after her retirement and we had become friends in the very meaning of the word.

Now that Esther is taking on a new job – the servant of God. We can only wish her well throughout the new career and keep our fond memories in our hearts.

Lau Tak Chi



D. Extracts from Association Journal 2010 (Volume 26):

Some footprints of Mrs Cheng were recorded in our Journal 2010 (Volume 26).

“.....在幾多位職員之中，我們的行政主任鄭羅慕傑女士（鄭太）就像一位精神領袖一樣，一直統領著本會會務的運作。來到這一年，我們尊敬的鄭太要正式退休了。”

~Quoted from the article ‘與鄭太面談’~

The following article was written by Mrs Cheng at her retirement year. These were her last words in our Journal 2010.

愉快之回顧

鄭羅慕傑
香港數理教育學會行政主任

光陰似箭，本人在學會服務已19年，承蒙歷屆主席及各理事不才疏為嫌，錄用至今，銘感之餘更覺榮幸。在此悠長歲月中，各主席及其他理事，均義務付出其實貴時光，不遺餘力，為發揚數理科教育而作出貢獻。身為受薪僱員，又豈能尸位素餐，敷衍塞責，故應盡綿力，謹隨各理事之英明指導，致力推動會務。各上司均甚和善，從不厲言疾色，其他會員亦頗隨和，使僱員可安心工作。另一同事朱小姐亦已任職15年，能幹勤懇，深受稱許。

回憶在1997年，是屆主席及理事，為發展會務，籌辦各科講座，在在需財，而學會素不牟利，故收入不多，因此不惜將自置紅磡會址出售，以大易小，套取部分現金，以供繼續推廣教育之用，實不失為明智之舉。

近年有部分委員盡力搜購新教育器材，供各教師選用，以節省其到處搜羅之時間，此舉甚受歡迎。而另一委員則提供廉價印刷會刊，減少本會支出，誠難能可貴。

吾老矣，無能為也矣，在任期間，愧無建樹，今幸有盧小姐加盟，正宜退位讓賢，以盧小姐之才幹及經驗，與朱小姐合作，自當勝任有餘。承蒙數理學會吳重振主席與各理事議決，惠賜退休金，自覺受之有愧，為酬謝理事會成員之關懷，故捐出港幣壹萬元作舉辦活動之用。數理學會能迄立40餘年，實有賴歷屆主席，理事及各小組委員之英明決策，與各會員及教育界人士鼎力支持，功不可沒。

在此謹祝各理事及會員：

身心康泰，工作順利！

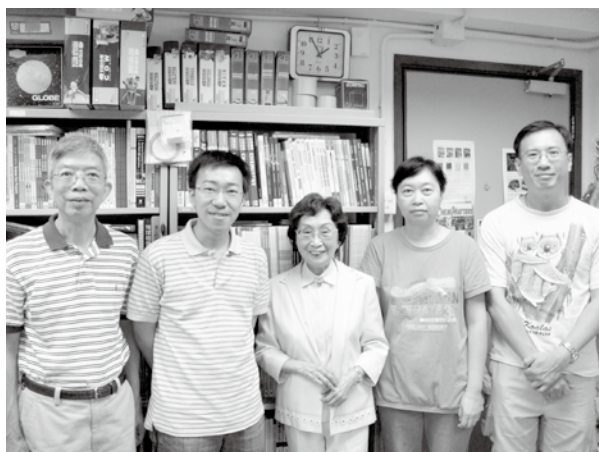
會務蒸蒸日上，更臻完善。

E. Photos with Mrs Cheng:



Mrs Cheng, with chairman (Ng Chung Chun) and vice-chairman (Wong Chi Kong), visiting our President Prof. Paul Chu at his office in HKUST in 2006.

Mrs Cheng with colleagues in the Association Office – after an interview by our Internal Affairs Secretary (Mr Lau Tak Chi), our Journal editor (Mr Lee Wai Hon, Chris), Ms Chu and Council member (Mr Ben Ng) in 2009.



Mrs Cheng shared her experiences of serving the association to members during the AGM in 2010.

F. In memory of other beloved friends:

Apart from the loss of Mrs Esther Cheng, several dedicated chairmen and vice-chairmen had left us since 2003.

Mr. Derek Rodney Too (朱業桐先生)
(chairman 1974 to 1976) left us in 2017.



Mr. Pang Chi Chuen (彭志泉先生)
(vice-chairman 2009 to 2013) left us in 2014.



Mr. Ng Chung Chun (吳重振先生)
(chairman 2006 to 2009) left us in 2009.



Dr. Tao Ping Kee (杜秉祺先生)
(chairman 1977 to 1980) left us in 2004.



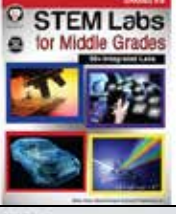



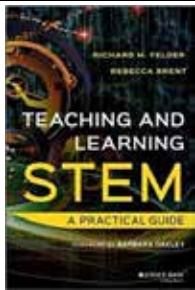
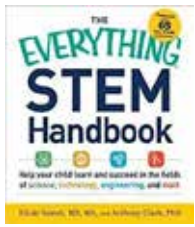




Special thanks are given to Mr Wong Chi Kong, Alex, our immediate past chairman, for compiling the above information.

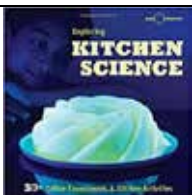










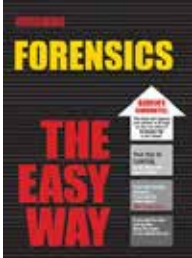

HKASME : STEM

REFERENCES – GET YOUR COPIES ...

Item No.	Book Title	Cover	Remarks	Member price	Non-member price
1	STEM Labs for Life Science -- Integrated Lab Activities		With sections for “Structure of Life”, “Human Body Systems”, “Reproductive & Heredity” and “Ecosystems”. Encourage research, collaborate, design and reflect. > Key components of each lab: creativity, teamwork, communication and critical thinking	90	100
2	STEM Labs for Earth & Space Science (Grades 6 - 8)		With 26 integrated labs that cover topics of geology, oceanography, meteorology and astronomy. Encourage students to apply scientific inquiry, content knowledge and technological design.	130	150
3	STEM Labs for Middle Grades (Grades 5 - 8)		Increase STEM proficiency with fun lab activities that encourage critical thinking and communication. With more than 50 integrated labs to cultivate student interest in STEM.	160	180
4	STEM by design: strategies and activities for Grades 4 - 8		How for teachers! ... to use creative and effective STEM classrooms to energize, to help students grow with creativity, be collaborative and prepare them for futures.	210	230

5	Teaching and Learning Stem : A Practical Guide		“...fill an important gap by providing both insightful and very practical guidance for the college instructor trying to translate the findings of STEM research into effective classroom practice.” —Carl Wieman, Nobel Laureate in Physics, Department of Physics and Graduate School of Education, Stanford University	430	460
6	The Everything Stem Handbook		provides projects and experiments to inspire and challenge students. With easy to understand examples, problem-solving tips, and hands-on projects that family could also try. e.g. racing juice cars, going on a geometry scavenger hunt, food chemistry,	190	210
7	Hands-on engineering		With varied and engaging activities, it prompts students to understand and apply the methodologies of design and engineering as they create innovative solutions to challenges. Teaches valuable 21 st C skills.	250	270
8	More Everyday Engineering : Putting the E in Stem Teaching And Learning		High quality lesson plans with photos to guide through their activities. Includes discussion questions to challenge students to extrapolate their findings.	330	350
9	Science Fair Projects, Grades 5 - 8: A Practical Easy Guide		A fun classroom supplement. From hypothesis to conclusion. Good ideas for plan, schedule and experiment. Collect, organize and quantify data ...	180	200
10	Chemistry Lab Mysteries, Fun Laboratory Tools! Chemistry for kids		Good for introduction to the subject with easy lab guides	110	130

11	Exploring Kitchen Science: 30+ Edible Experiments and Kitchen Activities		Join the world famous Exploratorium for 30+ delicious discoveries, including the science of food, cooking, baking, nutrition, and taste.	140	160
12	101 Great Science Experiments		Step-by-step, illustrated instructions show children how to create projects out of everyday household items to illustrate basic scientific concepts,	110	130
13	The 101 Coolest Simple Science Experiments: Awesome things to do with your parents, babysitters and other adults		You'll investigate, answer your questions and expand your knowledge using everyday household items. Also suitable for parents' guide.	170	190
14	Big Science for little people: 52 activities to help you and your child		Introduce future engineers, inventors, naturalists, and artists to the physics and chemistry, biology and ecology behind everyday play. Create chemical reactions, explore gravity and friction, transform states of matter, play with air pressure, and much more through 52 simple experiments that zip and zoom,...	190	210
15	Oh, Ick: 114 science experiments guaranteed to gross you out!		Featuring 114 interactive experiments and ick-tivities, <i>Oh, Ick!</i> delves into the science behind everything disgusting.	120	140
16	Time for Kids Big Book of Science Experiments: A step-by-step guide		The inquiry-based experiments cover aspects of physical, life and earth science, and dovetail with the school science curriculum. With 100 fresh experiments for kids.	180	200

17	Outdoor Science Lab for kids: 52 Family-Friendly Experiments for the Yard, Garden, Playground, and Park (Lab Series)		Science can be found all around in nature. <i>Outdoor Science Lab for Kids</i> offers 52 fun STEM activities for families to do together. The experiments can be used as individual projects, for parties, or as educational activities for groups	250	280
18	Edible Science – experiments that you can eat.		Using food as our tools (or ingredients!) curious kids become saucy scientists that measure, weigh, combine, and craft their way through the kitchen. Discover dozens of thoroughly-tested, fun, edible experiments, sprinkled with helpful photos, diagrams, scientific facts, sub-experiments, and more	170	190
19	Explore simple machines: with 25 great projects		From zippers to the Pyramids, rolling pins to catapults, we are surrounded by simple machines. <i>Explore Simple Machines!</i> will amaze kids with the ingenuity they already possess and inspire them to look differently at the objects they use everyday.	180	200
20	Forensics – The Easy Way		Introduce criminology to students with 4 major sections: introduction, Physical Sciences, Physical evidences and the future of forensic science. Review questions with answers.	130	150
21	Doing Good Science in Middle School: A Practical STEM Guide		Include new & updated activities (2 nd edition) ... Contains: Big-picture concepts; comprehensive overview of science and engineering practices, STEM and inquiry-based science instruction, activities that integrate STEM with literacy skill-building, information and connections to Common Core Standards (in US).	340	370

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