

香港科學館 HONG KONG SCIENCE MUSEUM

教育通訊 Education Newsletter

秋季 AUTUMN 2018

第三十期 VOL.30



各位 親愛的校長和老師：

2018/19年的新學期開始了，在此謹祝各位工作順利。香港科學館將繼續舉辦一連串專為老師和學生而設的教育活動，歡迎各位踴躍參加。

香港科學館拓展組

Dear principals and teachers,

We wish you a great success in the new school year of 2018/19. The Hong Kong Science Museum will continue to organise an array of educational programmes for teachers and students. We look forward to your participation.

Development Unit, Hong Kong Science Museum

香港賽馬會呈獻系列：匠心獨運 — 鐘錶珍寶展 The Hong Kong Jockey Club Series: Treasures of Time

自古以來，人類非常重視季節的變化和觀象測時。為了更準確測量時間，古人發明了各式各樣的工具和儀器。在各種計時儀器中，以明末清初，由西方傳教士傳入中國的西洋鐘錶，算是最可靠和最方便的計時器，由於這些「新產品」設計精巧，不但報時準確，還設置了很多機械裝

置，待上弦啟動後，音樂隨之響起，裝飾的鳥獸不斷來回走動，花旋人轉，令人目不暇給，因此清代皇室特別喜愛這些機械鐘錶，大量收藏，作為裝飾擺設，其後清宮內更設置造辦處，開始製作機械鐘錶，並由最初的仿製，逐步形成了自己獨特的風格和設計。



銅鍍金嵌料石轉人升降塔鐘

十八世紀
英國製造

Gilt bronze clock in the form of a five-tiered pagoda with elevating mechanism

18th Century
Made in England



銅鍍金鄉村景色水法鐘

十八世紀
英國製造

Gilt bronze clock with country scene and water automaton

18th Century
Made in England

「香港賽馬會呈獻系列：匠心獨運 — 鐘錶珍寶展」融合科學、歷史和藝術，讓觀眾透過欣賞這些精美的機械鐘錶，從科學角度認識時間的意義、鐘錶的操作原理，以及鐘錶背後的文化交流、歷史意義和科技成就。展覽將展出約120件來自故宮博物院收藏的機械鐘錶，這些鐘錶大部分來自英國、法國和瑞士，也有部分是由清宮造辦處和廣州製造。而其中數件英國鐘錶更是剛於近年完成修復工作，首次在故宮博物院以外地方展出。另外，倫敦科學博物館更特別借出多件十八

世紀英國工匠在製作鐘錶時，所使用的工具，展覽中亦會設置十八世紀歐洲工匠的工作間，呈現工匠們製造鐘錶的情景。除了珍貴文物，展覽還採用多項新媒體科技、電腦動畫、實物模型、互動展品等，以輕鬆活潑的手法為大家介紹中國古代的計時器，機械鐘錶以至原子鐘的科學運作原理。觀眾除了可以近距離欣賞這珍貴鐘錶之外，我們更特別邀請故宮博物院的專家赴港進行鐘錶演示活動，讓觀眾感受時間的流逝，學懂珍惜。



銅鍍金嵌珠瑤瑯番蓮花式懷錶

十九世紀
瑞士製造

Gilt bronze watch in the shape of an Indian lotus flower, inlaid with pearls
19th Century
Made in Switzerland

由香港賽馬會慈善信託基金贊助，學校成功申請參觀「香港賽馬會呈獻系列：匠心獨運 — 鐘錶珍寶展」將可以先到先得形式申請交通津貼服務。有關詳情，請於辦公時間內致電劉小姐（電話：2732 3220）。

展期：2018年12月7日至2019年4月10日

地點：香港科學館地下展覽廳

票價：\$30, \$21[#], \$15*（星期一、二、五、六、日及公眾假期，票價已包括參觀常設展覽廳）

\$10, \$7[#], \$5*（星期三，常設展覽廳免費開放）

\$5（全日制學生）

#20人或以上於同時段參觀的團體之標準票特惠價

*適用於殘疾人士（及一名同行照料者）及60歲或以上高齡人士

博物館通行證持有人及由攜票成人陪同參觀的四歲以下小童免費參觀

星期三免費入場安排不適用於此展覽

康樂及文化事務署和故宮博物院 聯合主辦

香港科學館、故宮博物院和倫敦科學博物館 聯合籌劃

香港賽馬會慈善信託基金 獨家贊助

支持機構：中國科學技術館

Since ancient times, humans have paid great attention to seasonal changes and performed time measurements using astrology. In order to measure time more precisely, different types of chronographs were invented. After being introduced by European missionaries to China during the late Ming and early Qing Dynasties, mechanical clocks proved to be the most reliable and convenient time keepers. These “new products” were designed with novel and ingenious features. They not only reported time accurately, but also comprised a host of other mechanical devices. When the mechanical clocks were wound up, decorative flowers, birds and animals would move back and forth while music played at the same time. The Qing emperors were very fond of these clocks. The palace collected a large number of timepieces and kept them as decorations and furnishings. Later, the Imperial Workshops in the Qing Court were established specifically for the production of timepieces. It first imitated the European style and then gradually developed its own Chinese styles and designs.

“The Hong Kong Jockey Club Series: Treasures of Time” exhibition merges science, history and art. Visitors will have an opportunity to appreciate a number of exquisite timepieces, learn more about time and the mechanisms of mechanical clocks from a scientific perspective, and gain a better understanding of the significance of cultural exchange and its historical

meaning as well as technological achievements. The exhibition will display 120 magnificent clocks and watches from the collection of The Palace Museum. Some of the items in the collections were tributes from Britain, France and Switzerland, while others were manufactured by local craftsmen in the Workshops and in Guangzhou. Several British clocks, repaired just in recent years, will be displayed outside The Palace Museum for the first time. There will also be sections illustrating the workshops of craftsmen during the 18th century in Europe, with displays of different kinds of tools and equipment collected by the Science Museum, London, part of the Science Museum Group. Alongside these treasures, the exhibition will demonstrate the latest technology, animations, models and interactive exhibits to create a special ambience and to show the audience the principles of different time measuring tools, from ancient Chinese instruments and mechanical timepieces to updated atomic clocks. In addition to enjoying the invaluable collections at close range, experts from The Palace Museum have been invited to conduct live demonstrations of the operation of the clocks, thus enabling the audience to gain an insight into the passing of time and to learn to cherish it.



銅滾鐘
十九世紀
法國製造
**Copper clock with
ornate sloping
mount**
19th Century
Made in France



紫檀樓嵌琺瑯轉仙人鐘

乾隆時期

清宮造辦處製造

Zitan wood and enamel clock in the form of a pavilion with rotating automaton figures of the Eight Immortals

Qianlong period

Made in Workshops of the Qing Court



銅鍍金琺瑯葫蘆式水法轉花變字鐘

乾隆時期

廣州製造

Enamelled automaton clock in the form of a gourd

Qianlong period

Made in Guangzhou

Sponsored by The Hong Kong Jockey Club Charities Trust, local transport subsidy is available to schools for visiting “The Hong Kong Jockey Club Series: Treasures of Time” exhibition. Successful school visit applicants are eligible to apply on a first come, first served basis. For details, please contact Ms. Lau during office hours (Tel: 2732 3220).

Exhibition Period: 7.12.2018 till 10.4.2019

Venue: G/F Exhibition Hall,
Hong Kong Science Museum

Admission Fee: \$30, \$21[#], \$15* (Mondays, Tuesdays, Fridays, Saturdays, Sundays and public holidays, fee including admission to the Permanent Exhibition Hall)

\$10, \$7[#], \$5* (Wednesdays, free admission to the Permanent Exhibition Hall)

\$5 (Full-time students)

[#]Special rate of Standard Ticket for groups of 20 people or more per visit

*Applicable to people with disabilities (and one accompanying carer) and senior citizens aged 60 or above

Free admission for Museum Pass holders and children under 4 years old accompanied by an adult with ticket
No free admission on Wednesdays

Jointly presented by Leisure and Cultural Services Department and The Palace Museum

Jointly organised by Hong Kong Science Museum, The Palace Museum and Science Museum, London, part of the Science Museum Group

Solely sponsored by The Hong Kong Jockey Club Charities Trust
Supporting Organisation: China Science and Technology Museum

絲路山水地圖展 Landscape Map of the Silk Road Exhibition

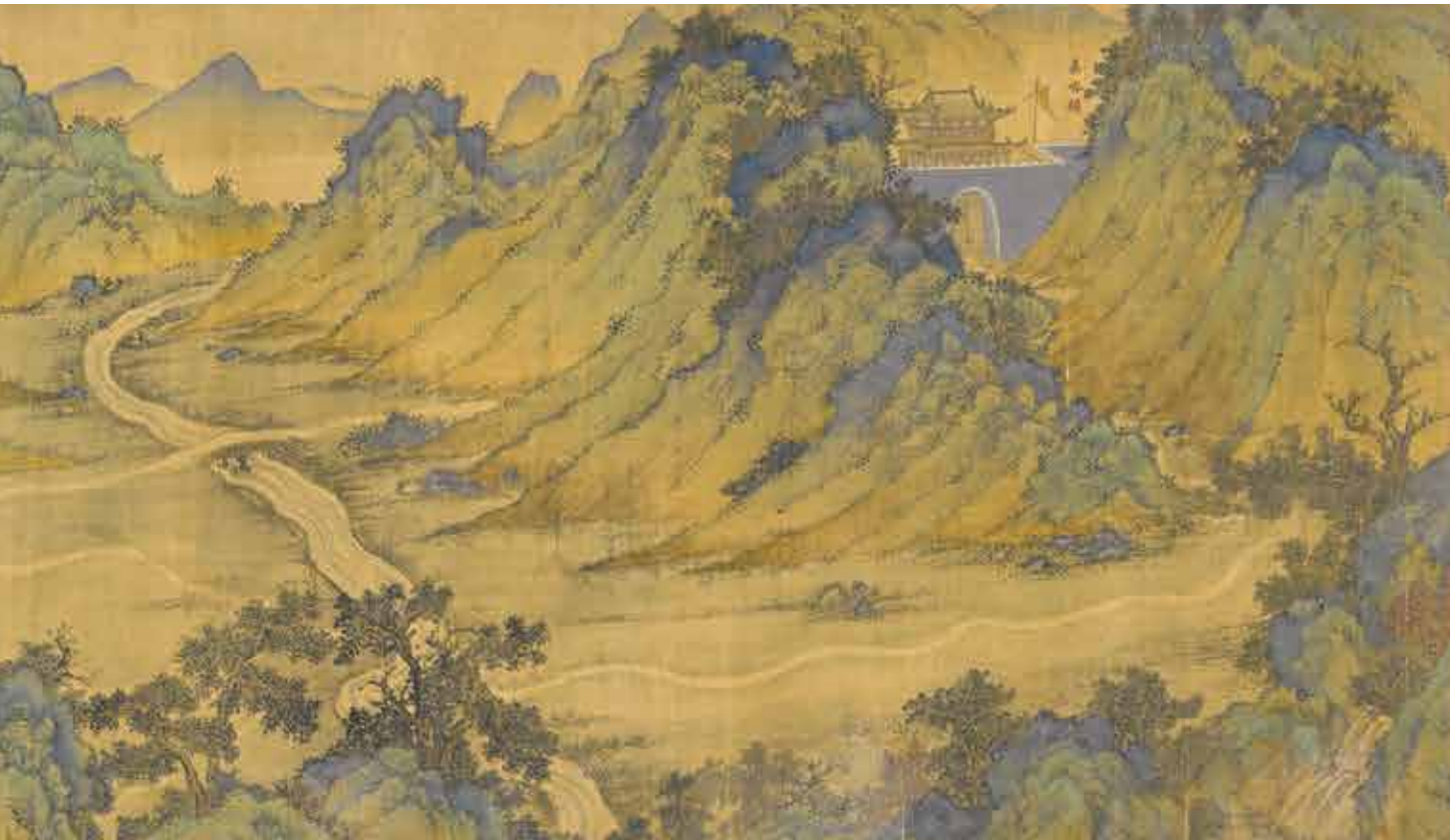


《絲路山水地圖》是一幅以青綠山水風格繪畫的絹本手卷地圖，全長約30米，寬約0.6米。手卷一度由日本的私人博物館收藏，復被中國收藏家回購，再由許榮茂先生收購並捐贈予故宮博物院成為館藏。經學者研究所得，《絲路山水地圖》為明朝嘉靖年間的宮廷繪畫，為皇帝御覽而製。地圖描繪了東起甘肅嘉峪關西至沙特阿拉伯麥加之間的廣闊地域，當中標注了200多個地名，可見中國早於十六世紀已對絲綢之路沿線地域有明確的認識。

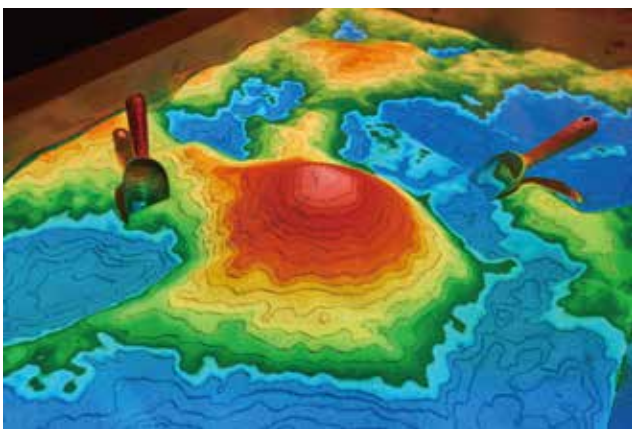
《絲路山水地圖》有着重要的歷史意義，這展覽除把30米長的手卷全幅呈現給觀眾欣賞外，更會利用動畫呈現古代絲路沿線人民的生活情景。你可在展覽中認識青綠山水畫的特色和風格，以及設計屬於自己的香港青綠山水畫；又或透過多組互動展品和不同的模型，了解中國古代和現今繪製地圖的工具和技術。此外，展覽亦同時展出多幅於十六至二十世紀初不同時期繪製的中國和香港地圖，讓你可以認識當時中西方對中國地理的認知和各種地圖的功用和繪製方法。

The “Landscape Map of the Silk Road” is a map that was drawn on a silk handscroll in blue-and-green landscape painting style. The map, which is about 30 metres long and 0.6 metres wide, was once held in the collection of a Japanese private museum and was later obtained by Chinese collectors. Subsequently, Mr. Hui Wing Mau acquired the map and donated it to The Palace Museum. According to researchers, the map was an imperial painting that belonged to the Jiajing Emperor in the Ming dynasty. It marked over 200 cities, ranging from Jiayu Pass, Gansu province, in the east, to Mecca, Saudi Arabia, in the west. This implies that the Chinese had grasped clear understanding of the Silk Road as early as the 16th century.

In light of the great historical value of the “Landscape Map of the Silk Road”, the exhibition will display the entire 30-metre-long map and through vivid animations the everyday activities of people who lived along the Silk Road are brought to life. You can also learn about the features of the blue-and-green landscape painting style and design your own landscape painting of Hong Kong in the same style. Through interactive exhibits and



models, you will learn about the tools and techniques used in ancient Chinese and modern cartography. The exhibition will also display various China maps and Hong Kong maps drawn in the 16th to 20th centuries, allowing you to appreciate both Chinese and Western perceptions of the geography of China, cartographic techniques, and the various functions of maps.



智能沙箱 — 透過造出不同地貌認識等高線
 SandBox – Create different landforms to learn more about contour lines

展期：2018年12月7日至2019年2月20日

地點：香港科學館一樓展覽廳

票價：常設展覽廳參觀人士不另收費

Exhibition Period: 7.12.2018 till 20.2.2019

Venue: 1/F Exhibition Hall,
 Hong Kong Science Museum

Admission Fee: No extra fee is required for museum visitors of Permanent Exhibition

康樂及文化事務署和故宮博物院 聯合主辦

香港科學館、香港歷史博物館和故宮博物院 聯合籌劃

支持機構：香港科技大學圖書館、香港大學圖書館、地政總署和政府檔案處

Jointly presented by the Leisure and Cultural Services Department and The Palace Museum

Jointly organised by the Hong Kong Science Museum, the Hong Kong Museum of History and The Palace Museum

Supporting Organisations:

The Hong Kong University of Science and Technology Library, the University of Hong Kong Libraries, the Lands Department and the Government Records Service

2018青苗科學家研習活動 Young Scientists Study Tour 2018

由香港科學館及教育局合辦的「2018青苗科學家研習活動」已於7月19日至25日舉行。一行20名中學生親身前往倫敦科學博物館、倫敦自然歷史博物館、英國皇家植物園及倫敦濕地中心。透過參觀不同的機構，和參與工作坊及戶外科學考察，學生可以認識到生命科學各個範疇和最新的研

究，以及生物多樣性的評估方法。學生更有機會與當地的科學家對談，細味他們科研的苦與樂。能夠參與是次研習活動的同學都是透過「2018科普快遞科學演示比賽」選出來的。想有一個充實的學習體驗，就不要錯過「2019科普快遞科學演示比賽」了！有關詳情請留意稍後公布。



研習活動團員參觀了世界知名的倫敦自然歷史博物館，並在展館內合照留念。

Members of the study tour visited the world-renowned London Natural History Museum and took a group photo at the exhibition hall.



同學們在英國皇家植物園內，使用抽樣技術進行實地考察，並研究影響物種多樣性的因素。

At Kew Botanic Gardens, students learned to use sampling techniques in fieldwork and investigated the factors affecting species diversity.



倫敦科學博物館的工作人員為同學們講解館內的展品。
Staff of London Science Museum was explaining the exhibits in the exhibition hall to the students.

Jointly organised by the Hong Kong Science Museum and the Education Bureau, the Young Scientists Study Tour 2018 was conducted from 19 to 25 July. A group of 20 students visited London Science Museum, London Natural History Museum, Kew Botanic Gardens and London Wetland Centre. Through visits to various facilities, participation in workshops and outdoor field studies, students learned about the diverse topics and

latest research in life sciences. The students also had the opportunity to meet local scientists who shared the joy and tears of their research life. Students of the study tour were selected from the “SciPOP Science Demonstration Contest 2018”. If you are looking for an enriching learning experience, don't miss the “SciPOP Science Demonstration Contest 2019”! Details will be released soon.



在倫敦濕地中心，工作人員正教導同學分辨不同的淡水動物。

At London Wetland Centre, staff was teaching the students to identify various freshwater animals.



同學在濕地內觀察水鳥的生活習慣。

Students were observing the habits of water birds in the wetland.



學生們有機會參與幕後遊，參觀倫敦自然歷史博物館內令人驚歎的動物標本館藏。

Students had the opportunity to go behind the scenes for a look at the fascinating zoology collections in the London Natural History Museum.



學生與倫敦自然歷史博物館三位駐館的生物學家Natalie Cooper博士，Sarah Alewijnse博士及Veerappan Deepak博士對談，瞭解他們的研究項目。

In the London Natural History Museum, students met three resident biologists namely, Dr Natalie Cooper, Dr Sarah Alewijnse and Dr Veerappan Deepak, and gained a better understanding on their research projects.

巡迴展覽 Travelling Exhibitions

香港科學館為推展博物館教育服務至學校，製作了不同類型的教材，供學校免費借用。教師可以在校內利用本館的展品教材，實踐活動教學，豐富學生的認知。

我們一共提供三套巡迴展覽給學校作教學用途，展覽以中英對照的展板形式製作，主題包括：

1. 腦與認知

以人類腦部結構和功能為主題，揭示腦部神經傳遞信息機制與腦神經疾病的關係。展覽內容適合中四至中六生物科必修部分「生物與環境」、綜合科學科必修部分「體內平衡」，及組合科學科生物部分「生物與環境」課程。

2. 幻影

以視覺感觀為主題，挑戰觀眾的知覺及常識，揭開人類認知的奧秘。展覽內容適合中四至中六生物科必修部分「生物與環境」及組合科學科生物部分「生物與環境」課程。

3. 「沙士」與病毒

以「沙士」及病毒為主題，揭開病毒傳播的途徑。展覽內容適合中四至中六生物科選修部分「微生物與人類」、綜合科學科選修部分「持守健康」及組合科學科生物部分「健康與疾病」課程。

學校須自行安排運送、裝拆及歸還展覽。

查詢借用詳情可致電2732 3220（星期一至五：上午9時至下午1時及下午2時至5時，公眾假期除外）或瀏覽 http://hk.science.museum/zh_TW/web/scm/ed/travelling.html。

To extend the Museum's education services to schools, the Hong Kong Science Museum produces various types of educational kits on loan to schools for free. Teachers can utilise these resources to supplement their teaching in order to enrich students' knowledge.

There are three exhibitions available on loan to schools. They are produced in the format of graphic panels with English and Chinese texts. Topics include:

1. Brain and Cognition

Exhibits the structure and functions of human brain and reveals the linkage between neural transmission and brain problems. This exhibition is suitable for S4-6 Biology compulsory part "Organisms and Environment", Integrated Science compulsory part "Balance within Our Body" and Combined Science Biology part "Organisms and Environment".

2. Optical Illusion

Challenges your common perceptions and unveils the mystery of human recognition through illusion games. This exhibition is suitable for S4-6 Biology compulsory part "Organisms and Environment" and Combined Science Biology part "Organisms and Environment".

3. SARS and Viruses

Demonstrates the pathway of viral infection with SARS and some typical viruses as examples. This exhibition is suitable for S4-6 Biology elective part "Microorganisms and Humans", Integrated Science elective part "Keeping Ourselves Healthy" and Combined Science Biology part "Health and Diseases".

Schools shall be responsible for installation and dismantling as well as round-trip transportation of the exhibition.

For enquiries, please contact us at 2732 3220 (Monday to Friday: 9am - 1pm and 2pm - 5pm, except public holidays) or browse the website http://hk.science.museum/en_US/web/scm/ed/travelling.html.

其他學生活動 Other Student Programmes

1. 「小小科學家」探索活動 — 「飛行的奧祕」

Little Scientists Exploration Programmes – “Miracle of Flight”

香港科學館舉辦「小小科學家」探索活動，旨在藉着饒富趣味性的實驗，向高小學生介紹與特定主題有關的科學知識。本館於二零一八年十月至十二月期間推出「飛行的奧祕」探索活動，讓學生認識各種飛行工具和探索飛行的科學知識。本活動歡迎學校及家長教師會報名參加，詳情請瀏覽本館網頁 http://hk.science.museum/zh_TW/web/scm/ed/lsep.html。

地點：香港科學館實驗室

適合程度：小四至小六學生

費用：每人34.5元

名額：每節40人

截止報名日期：活動日期前兩星期

語言：粵語 (to be conducted in Cantonese)

聯繫課程：小學常識科「日常生活中的科學與科技」

The Little Scientists Exploration Programmes aim to introduce scientific knowledge of specific topics to senior primary students through fun experiments. From October to December 2018, the Hong Kong Science Museum will organise “Little Scientists Exploration Programmes – The Miracle of Flight” to let students learn about various flying objects and explore the science of flight. Schools and Parent-Teacher Associations are welcome to apply. For more information, please visit our website at http://hk.science.museum/zh_TW/web/scm/ed/lsep.html

Venue: Laboratory, Hong Kong Science Museum

Suitable for: P4 ± 6 students

Fee: \$34.5 each (This is the concessionary fee for students. Other discounts are not applicable.)

Quota: 40 students per session

Application deadline: Two weeks before the day of the session

Language: Cantonese

Curriculum Link: Primary School General Studies “Science and Technology in Everyday Life”

2. 學校參觀 School Visit

凡學校團體人數達20人或以上，或特殊學校團體人數達10人或以上，即可以學校名義申請學校參觀。所有申請會以先到先得方式處理。

註：如學校團體中有家長義工，請先聯絡本館職員查詢購票事宜。

School groups of 20 or more members, or groups from special schools of 10 or more members, are eligible for School Visit application. All applications will be processed on a first come, first served basis.

Remarks: For school groups with parents / volunteers, please contact our staff for details of admission fee before the date of visit.

3. 穿越紫禁城系列 — 「從古到今築得起」工作坊

中國古代建築是世界珍貴的文化遺產，這些建築物的結構非常獨特，所用的建築材料雖然只是木和磚，但結構精巧與裝飾優雅，經歷千年，仍屹立不倒。究竟古代建築師發明了甚麼建築技術，建造這些跨越多個世紀的宮殿、寺廟和庭院等古老建築物？而今天的建築師又運用甚麼技術去設計和興建高樓大廈呢？這工作坊將帶領學生們遊走古今，透過實物展示，認識木建築的優點和古代榫卯聯接結構的奧妙之處。此外，活動中亦會介紹現今建築師常用的電腦軟件AutoCAD，體現科技在社會上的應用。歡迎學生們成為新一代的魯班先師！

日期：2018年12月14日、2019年1月18日及25日、3月15日及29日（星期五）

時間：下午2時至4時

地點：香港科學館電腦室

講者：香港科學館助理館長及技術主任

對象：中二至中四學生

名額：每節最多28人

費用：免費

語言：粵語 (to be conducted in Cantonese)

截止報名日期：活動日期前兩星期

（申請會以先到先得方式處理，本活動只限學校及家長教師會報名參加）

報名方法：由2018年9月3日起可於辦公時間內（星期一至五：上午9時至下午1時及下午2時至5時，公眾假期除外）致電2732 3220預約申請，並須於預約後一星期內將填妥的申請表格傳真（2311 2248）至本館。申請人如未能如期遞交申請表，則其電話預約將被取消。

各項活動查詢及報名 Programme Enquiries and Registration

申請方法：填妥有關活動的申請表，並傳真至「香港科學館」拓展組。

How to apply：Complete the application form and fax it to the Development Unit of the Hong Kong Science Museum.

查詢電話 Telephone：2732 3220（劉小姐 Ms. Lau）

服務時間 Office Hours：星期一至五：上午9時至下午1時及下午2時至5時（公眾假期除外）

Monday to Friday：9am to 1pm and 2pm to 5pm (except public holidays)

傳真 Fax：2311 2248

網址 Website：http://hk.science.museum/zh_TW/web/scm/ed.html