



STEM

課程活動簡介

Courses & Activities

小學版本
Primary
School
Version



labwork

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Little Scientists

小小科學家



Target: All

對象：所有年級學生

Through simple scientific experiments, students can learn different scientific principles, such as reflection and refraction of light, closed circuits, energy transfer, etc.

Objectives:

- Learn about different scientific principles
- Conduct different science experiments and activities
- Create different science gadgets

透過進行簡單科學實驗，讓學生學習不同的科學原理，如反射及折射、閉合電路、能量傳遞等。

教學目標：

- 學習不同的科學原理
- 進行不同的科學實驗及活動
- 可帶走自己的制成品

Little Makers

小小發明家



Target: P4-P6

對象：小四至小六年級學生

Students will carry out engineering design activities, make different gadgets, learn programming and get in touch with different electronic parts and sensors.

Objectives:

- Learn to program and train up computational thinking
- get in touch with different electronic components and sensors

學生將進行工程設計活動，製作不同的小發明，以學習編程及認識不同的電子零件及傳感器，發揮學生創意。

教學目標：

- 學習編程及運算思維
- 認識不同的電子零件及傳感器

Food Science 食物科學



Target: All

對象：所有年級學生

By conducting food-related experiments, students will learn different scientific principles, such as fruit batteries, dancing candies, invisible ink, etc.

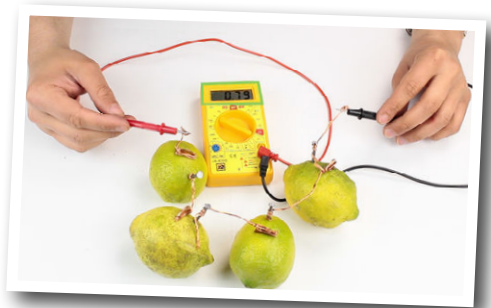
Objectives:

- Learn about different scientific principles
- Conduct different science experiments and activities

透過進行與食物有關的實驗，讓學生學習不同的科學原理，如水果電池、跳舞糖果、隱形墨水等。

教學目標：

- 學習不同的科學原理
- 進行不同的科學實驗及活動



RoboMaster Training Course

RoboMaster 機甲大師訓練課程



Target: All

對象：所有年級學生



The RoboMaster course is a course specially designed for students, aiming to cultivate students' mechanical design, electronic engineering, control theory, creativity, teamwork spirit and practical ability through RoboMaster learning and practice.

Objectives:

- Learn the basic structure and functions of RoboMaster
- Learn how to use RoboMaster for remote control and programming
- Learn how to use machine learning and artificial intelligence techniques, such as deep learning, computer vision, etc.
- Learn how to practice and test, such as designing experiments, data analysis, evaluating results, etc.

RoboMaster課程是一個專門為學生設計的課程，旨在通過RoboMaster的學習和實踐，培養學生的機械設計、電子工程、控制理論、創造力、團隊合作精神和實踐能力。

教學目標：

- 學習 RoboMaster 的基本結構和功能
- 學習如何使用 RoboMaster 行遙控操作和程式編寫
- 學習如何使用機械學習和人工智能技術，例如深度學習、計算機視覺等
- 學習如何進行實踐和測試，例如設計實驗、數據分析、評估結果等

Future Leaders and Entrepreneurs Programme

未來領袖與企業家課程



Target: All

對象：所有年級學生

Future Leaders and Entrepreneurs Programme is designed to encourage students to develop design thinking and entrepreneurial skills. Students will be guided from creating a business plan for a new product or service and pitching their idea.

Objectives:

- Develop entrepreneurship skills
- Foster creativity and innovation
- Build confidence and leadership skills

未來領袖與企業家課程在鼓勵學生培養設計思維和創業技能。學生將被指導為新產品或服務制定商業計劃並提出他們的想法。

教學目標：

- 培養企業家思維
- 提高創造力和創新
- 建立信心和領導能力

Aerospace Technology - Lunar Exploration

航天科技 - 探月小工程



Target: P4-P6

對象：小四至小六年級學生



This course aims to cultivate students' engineering thinking and their understanding of aerospace technology. Students can deeply understand its structure, they can also understand the relationship between the structure of the lunar rover, its mission and the space environment. With the Lunar Rover Software, students can control and get the data of the lunar rover. It helps in data analysis and learning.

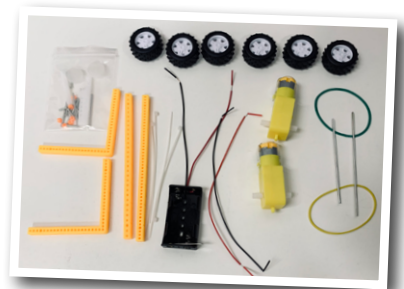
Objectives:

- Working on science experiments about space
- Learn about data collection and analysis
- Logical Thinking and coding

此課程志在培養學生工程思維及其對航天科技的認識，透過操控月球車，學生能深入理解其結構；過程中，亦能認識月球車結構與其任務及太空環境的關係。配合專用操作軟件教學，除控制月球車外，學生亦能從軟件中得到月球車的數據，再作數據分析學習。

教學目標：

- 有關太空的小實驗活動
- 學習數據整理及分析
- 學習編程及訓練邏輯思維



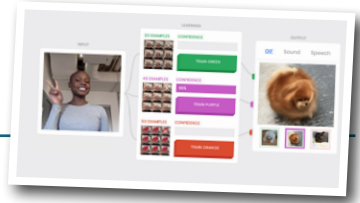
AI Little Explorer: Teachable Machine Course

AI 小小探險家：Teachable Machine 課程



Target: P4-P6

對象：小四至小六年級學生



Teachable Machine is a machine learning tool based on artificial intelligence technology, which can help users quickly build custom machine learning models. It can help you quickly train the computer, let the computer learn to recognise your own voice, gestures and images, and through practical operations and exercises, let students learn how to use the Teachable Machine for machine learning in terms of images, voices and gestures.

Objectives:

- Understand the principle and application of Teachable Machine
- Familiar with the usage and common functions of Teachable Machine
- Learn to use the Teachable Machine for sound, gesture and image training

Teachable Machine 是一款基於人工智能技術的機器學習工具，可以幫助使用者快速建立自定義的機器學習模型。它可以幫助你快速地訓練電腦，讓電腦學會辨識你自己的聲音、手勢和圖像，並通過實際操作和練習，讓學生學會如何使用 Teachable Machine 進行圖像、聲音和手勢等方面的機器學習。

教學目標：

- 了解 Teachable Machine 的原理和應用
- 熟悉 Teachable Machine 的使用方法和常用功能
- 學會使用 Teachable Machine 進行聲音、手勢和圖像等方面的訓練

ChatGPT Drama Course

ChatGPT 劇本創作課程



Target: All
對象：所有年級學生



This course aims to teach students using ChatGPT, while also cultivating their creativity and expression skills. The course will focus on scriptwriting, and students will need to use ChatGPT to help write the script, culminating in a performance at the end of the course.

Objectives:

- To understand the basic concepts of AI and learn how to use ChatGPT to write scripts
- To develop their creativity and expression skills through scriptwriting
- To collaborate effectively in a team to complete the scriptwriting and performance
- To demonstrate their expression skills and confidence through the performance

本課程旨在讓學生學習ChatGPT這個人工智能，並培養他們的創意思維和表達能力。課程將以劇本創作為主題，學生將需要利用ChatGPT來幫忙寫劇本，並最終進行表演。

教學目標：

- 學生能夠了解 AI 的基礎概念，並了解如何運用 ChatGPT 來創作劇本
- 學生能夠透過劇本創作，培養自己的創意思維和表達能力
- 學生能夠進行團隊合作，共同完成劇本創作和表演
- 學生能夠透過表演，展現自己的表達能力和自信心

* Each students need an iPad and install specific app
每個學生都需要一部 iPad，並需安裝特定的應用程序

Programming with Minecraft

程式編寫與 Minecraft



Target: P4-P6

對象：小四至小六年級學生

Students will learn blocky programming (Scratch-like) and Python coding using Minecraft. Students could see the immediate outputs in the Minecraft world after they did the coding.

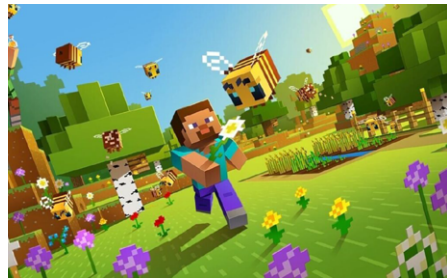
Objectives:

- Learn the basic of programming in a funny way
- Discover new knowledge: 3D coordinate system, biodiversity etc.
- Good for creativity, collaboration, and problem-solving

學生將會透過 Minecraft 學習程式編寫（方塊式 Scratch 編程或 Python），學生可以即時於 Minecraft 世界中見到自己的編程結成果。

教學目標：

- 以有趣的方法學習編寫程式的基本
- 於 Minecraft 發掘新的知識，例如 3D 立體座標，生物多樣性等
- 發揮學生的創意，協作及解難能力



* This course requires Minecraft Education Edition and Microsoft account
此課程需要 Minecraft 教育版及 Microsoft 帳戶

Wheel Real Experience

科技 · 輪



Target: All

對象：所有年級學生



We combine character development and AR elements into the course to raise learning fun also provide another form of the learning experience. Teachers and students can explore disabilities' daily challenges and learn empathy from the experience.

Objectives:

- Wheelpathy Hunt: Ride on the wheelchair and complete mission to learn empathy
- Design Thinking STEM Workshop: Transform challenges into an design idea, use STEM to create meaningful tool
- Human Library: Wheelchair leaders use storytelling to enhance students' awareness about disabilities

課程融合了品格培養和擴增實境元素，務求增加學習趣味性和提供另類教學模式，讓教師和學生可以用另一個角度探索殘疾人士的日常生活並學習同理心。

教學目標：

- 輪同「理」定向：用輪椅四處尋寶完成任務，從中學習同理心
- 設計思考 STEM 工作坊：用體驗中的困難啟發設計靈感，以 STEM 創造有意義的輔助工具
- 真人圖書館：輪椅導師用說故事形式分享自身經驗，加強學生對殘疾人士的認識



Gerontech - Smart Walking Sticks

樂齡科技 - 智能助行手杖



Target: P5-P6

對象：小五至小六年級學生

Students will experience the use of walking sticks, understand the needs of the elderly in using walking sticks, and add anti-fall functions to the walking sticks.

Objectives:

- Learn the science of fall detection
- Program and add fall detection to the walking stick
- Learn and experience design thinking

學生將體驗使用助行手杖，了解老人家使用助行手杖的需要，並為助行手杖加入防跌功能。

教學目標：

- 學習跌倒偵測的科學原理
- 進行編程為助行手杖加入跌倒偵測
- 學習及體驗設計思維



Mealworm 麵包蟲體驗



Target: All

對象：所有年級學生

By interacting with this unique insect farming device, students can get in-touch with nature and understand the future of our food. Let's meet insects face-to-face and understand their habitats and lifecycles - don't forget to ask questions!

Objectives:

- Learn about the future of food & sustainable food
- Understand the relationship between our food & our environment
- Understand insect biology by taking a visual hands-on approach
- Get to know more about edible insects

通過展示這個特別的粉蟲（麥皮蟲/麵包蟲）生長養殖器具，學生可以了解自然界的運作及我們的未來食物，讓學生面對面接觸粉蟲，可以令學生更了解粉蟲的棲息地和生命週期。

教學目標：

- 了解未來的食物/可持續食物
- 了解食物與環境之間的關係
- 讓學生面對面接觸粉蟲，了解昆蟲的生物學
- 了解食用昆蟲



Drone Programming

無人機編程



Target: All

對象：所有年級學生

Students will control the drones to perform different tasks through programming indoor. For example, passing through some terrain or dance in the air etc.

Objectives:

- Learn the basic of drone programming
- Understand the flying principle of drone
- Experience in aerial photography

學生將編組程式讓無人機於室內完成任務，例如穿過不同障礙或在空中起舞等等。

教學目標：

- 學習編寫無人機的程式
- 了解無人機的飛行原理
- 體驗航拍過程



Coding with iPad

程式編寫與 iPad



Target: P4-P6

對象：小四至小六年級學生

Students will start by solving puzzles and laying a solid foundation for programming on iPad. By using real code, specific characters can walk in a 3D world and complete different tasks.

Objectives:

- Think Like a Computer: Commands and Sequences
- Think Efficiently: Functions and Loops
- Thinking Logically: Conditional Code

學生將於 iPad 上，先從破解謎題開始，打好程式編寫的基礎，透過運用真的程式碼，讓特定角色游走於一個 3D 世界，並完成不同任務。

教學目標：

- 像電腦般思考：指令和序列
- 高效思考：函數和迴圈
- 邏輯思考：條件碼

* Each students need an iPad and install specific app
每個學生都需要一部 iPad，並需安裝特定的應用程序

Little KOL (Key Opinion Leader) 小小KOL (關鍵意見領袖)



Target: P4-P6

對象：小四至小六年級學生



Video gives students a powerful means of interpreting ideas, expressing their thoughts, and informing, influencing, and inspiring their audience. In this course, students will use the iPad cameras and video editing app as a KOL, to explore composition, lighting, camera angles, creating special effects, and learn how to construct strong narratives through short films.

Objectives:

- Experience the skills needed by KOLs
- Basic movie shooting skills with iPad
- Learn to use storytelling techniques
- Basic movie editing skills using the iPad
- Basic speaking skills in front of cameras



短片為學生提供了一種強而有力的方式來解釋及表達他們的想法。此課程讓學生體驗 KOL 的工作，使用 iPad 的相機和影片編輯應用程式，學生將探索構圖、燈光、相機角度、創建短片特殊效果，並學習如何通過短片構建強而有力的敘事。



教學目標：

- 全方位體驗 KOL 需要的技能
- 掌握使用 iPad 的基本影片拍攝技巧
- 掌握使用 iPad 的基本影片剪接技巧
- 學習運用分鏡技巧
- 掌握基本鏡頭演說技巧

* Each students need an iPad and install specific app
每個學生都需要一部 iPad，並需安裝特定的應用程式

Study Tour 遊學團

We provide study tours with licensed and experienced travel agency. We believe study tours nurture students' potentials through experiential learning. Our all-rounded study tours cater the 21st century education needs, especially for STEM education.

我們與持牌旅行社合作，提供不同形式的遊學活動。為配合21世紀的時代趨勢，特別針對STEM範疇，設計多元化的遊學團。遊學活動着重實踐及「動手做」能力，激發學生的創作潛能，讓老師和學生從中有所得着。

Selected Destination 精選目的地

Asia 亞洲

China 中國、Japan 日本、Korea 韓國、
Singapore 新加坡

Europe 歐洲

Finland 芬蘭、Estonia 愛沙尼亞

North America 北美洲

Canada 加拿大、United States 美國



STEM Week and Activities

STEM 學習週及活動



We provide STEM Week and Activities, teachers may choose from the list of activities, or we could tailor-made to suit school needs and budget.

Our team has fruitful experience in holding STEM activities on-site and with different level of students, including parent-child STEM activities. The activities listed in this booklet are examples and they are adaptable depends on students' level and size.

STEM Week may held during lunch time or at designated time for few days, allow students to learn different science knowledge through activities.

我們亦有提供STEM 學習週及活動，老師可從STEM 課程中選擇心儀的活動，我們亦可按可照學校需要及預算度身訂造。



我們的團隊有豐富的STEM 活動經驗，其中包括親子活動等。可參考本小冊子中的活動，我們亦可按照學生的程度及人數而修改課程內容。

STEM 學習週可一連幾天於午膳或指定時間舉行，讓同學透過各種活動學習不同的科學知識。





About Us 關於我們

Labwork graduated from the Hong Kong Science and Technology Park (HKSTP) incubation program. As a research spin-off of the Hong Kong Polytechnic University (PolyU), we provide all-rounded and qualified science and STEM education in Hong Kong.

Labwork shows professional expertise in science and STEM education. We have been awarded the Certificate of Merit in Hong Kong ICT Awards 2019, Smart People (Smart Education and Learning). We also are one of the semi-finalists in “Reimagine Education Challenge” organised by Esperanza, an education-focused community formed by former Financial Secretary of HK, John Tsang.

Labwork 為香港科技園科技培育計劃的畢業培育公司，同時為香港理工大學的研究計劃分支，在香港提供全面的科學及STEM教育。

我們的服務得到教育界及公眾認可，除了獲得2019香港資訊及通訊科技獎智慧市民（智慧教育及學習）優異證書，亦於同年成為前財政司司長曾俊華「薯片叔叔共創社」重塑教育挑戰的6強，為香港提供高質素的科普及科技教育。

In Partnership With 合作夥伴



AFH Experience 創藝飛凡



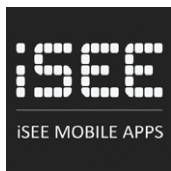
Fruit Peels Family 果皮家族



Gabi Education 嘉比教育



Goodlight Studio



iSEE Mobile Apps



Livin Farms



Panlab 迴匠



Smart Connex Technologies

Awards and Recognitions

我們的獎項



Graduated from
**Hong Kong Science Park
Incubation Programme**



成為
香港科學園畢業培育公司

Labwork graduated from the Hong Kong Science Park. Based at Hong Kong Science Park, Labwork is honoured to be the incubatee under the Incu-Tech programme to continue its business development.

我們已於2018年成為香港科學園科技創業培育計劃 (Incu-Tech) 的培育公司。科技創業培育計劃為期三年，以扶植從事科技開發的初創企業，利用創新改變世界。我們很榮幸成為 Incu-Tech 計劃下的培育公司，以繼續其業務發展。



**Semi-finalist of
Reimagine Education Challenge**
重塑教育挑戰準決賽

Labwork stood out from 56 teams and entered to the Semi-Finals of the Reimagine Education Challenge 2019. Reimagine Education Challenge is organised by Esperanza, an education-focused community formed by John Tsang, former Financial Secretary of HK Government.

Labwork 能夠從56隊參賽隊伍中脫穎而出，以遙距實驗室項目進入由 Esperanza薯片叔叔共創社主辦重塑教育挑戰準決賽。薯片叔叔共創社是由香港政府前財政司司長曾俊華先生創辦的，致力為香港教育作出改變。



Cert of Merit
優異證書

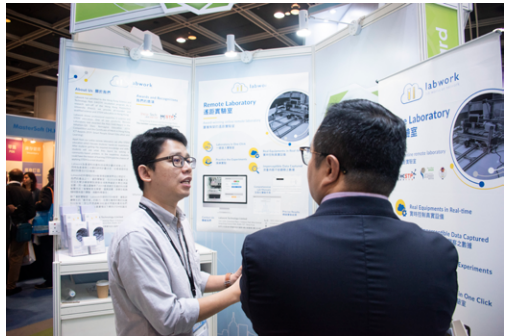
HONG KONG
ICT AWARDS
2019 香港資訊及
通訊科技獎

Won
Hong Kong ICT Awards 2019

獲頒
香港資訊及通訊科技獎 2019

Our project was awarded the Cert of Merit in Hong Kong ICT Awards 2019 (Smart People - Smart Education and Learning), for bringing positive improvement in teaching and learning of science education.

遙距實驗室從 64 隊參賽隊伍中脫穎而出，獲頒香港資訊及通訊科技獎 2019-智慧市民（智慧教育及學習）優異證書，以肯定我們推動科學普及和香港創科發展的貢獻。





Designed by Oyster Studios

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