

資訊科技教育教學法系列： 在中學有效運用流動電腦裝置進行電子學習 (修訂) EI0020220264 第二節



香港中文大學 學習科學與科技中心 (CLST)

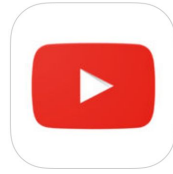
Centre for Learning Sciences and Technologies (CLST)
The Chinese University of Hong Kong



請先下載

步驟一：將你手機連接 **WIFI NETWORK**

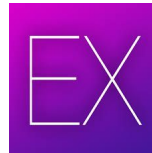
步驟二：下載 **YOUTUBE APP**



步驟三：下載 **EduventureVR**



步驟四：下載 **Eduventure (IOS)**



步驟四：下載以下 VR/ AR APPs (未必兼容所有手機)

Google StreetView



Google Arts & Culture



Google Arts & Culture

Within - VR (Virtual Reality)



Google Cardboard



中學 R8AA 班

第一節：

日期：2022/06/07 (星期二)

時間：18:30 - 21:30

地點：香港中文大學崇基校園信和樓614室

第二節：

日期：2022/06/14 (星期二)

時間：18:30 - 21:30

地點：香港中文大學崇基校園信和樓614室



簡介

文可為 MAN HO WAI, WALLACE

BSSc. (HON.) / PGDE (DIST.) / MEd, CUHK

樂善堂余近卿中學副校長

教育局資訊科技教育組

香港中文大學 學習科學與科技中心 顧問

香港大學電子學習發展實驗室 導師

香港教育大學「卓越教學發展中心」顧問

澳門教青局 資訊科技教育 導師

課程目標：

本課程旨在介紹基本的電子學習應用程式和其功能，以有效運用流動電腦裝置進行電子學習。

活動詳情：

1. 概述常用的流動電腦裝置；
2. 了解流動電腦裝置用於學與教的基本操作；
3. 用戶身份驗證和帳戶管理；
4. 運用EdPuzzle進行翻轉課室；
5. 運用Google Classroom促進電子學習；
6. 介紹擴增實境 (AR) 虛擬實境 (VR) 增強課堂體驗；及
7. 運用EduVenture VR進行探究式學習。

Objectives:

This course aims at:

equipping teachers with the **necessary knowledge and skills** in the effective and smooth operations of **mobile computer devices** in lessons by introducing the **essential applications and functions** for e-learning.

This course enables participants to:

- (a) understand the **types of popular mobile computer devices** by operating systems (e.g. iOS, Android and Windows)
- (b) understand the operations of the **built-in functions** of mobile computer devices in lessons, e.g. searching and opening an app, connecting to WiFi access point / hotspot, screen mirroring to TV / projector, screen capturing and recording, etc
- (c) understand the major differences of applications **with and without student accounts** and understand the use of **single sign-on (SSO)**
- (d) understand the operation of simple applications to conduct **e-Learning activities without student accounts** e.g Plickers, Kahoot and Quizizz (instant response and assessment), Poll Everywhere (polling and brain-storming);

This course enables participants to:

- (e) understand the operation of **applications with student accounts**, e.g Quizlet (online quiz), Coggle (mind mapping), Class Dojo (classroom community);
- (f) understand the features of some other applications / platforms for **specific purposes**, e.g Google Drive and related applications (**online collaboration**), HP Reveal (**augmented reality**), EdPuzzle (**flipped video**) and Google Classroom (**integrated learning management system**);
- (g) **design and create simple e-Learning activities** using the e-learning applications for specific learning objectives, e.g to enhance students' learning motivation and engagement, to conduct assessment and provide instant feedback, to enhance class interactions, to promote collaborative learning and to facilitate students to master abstract concepts

Session 1

1. Overview of **Mainstream Mobile Computer Devices**
2. Understanding **Basic Operations of Mobile Computer Devices** for Learning and Teaching
3. Using **Google Classroom** to Facilitate e-Learning
4. Conclusion and Discussion of Course Assignment



Session 2

1. Assignments Feedback
2. Digital data logger for PBL
3. User **Authentication** and **Account Management**
4. Using **EdPuzzle** for **Flipped Classroom** Learning
5. Using **AR/ VR** to Enhance Classroom **Experience**
6. Using **EduVenture® X** and **EduVenture® VR** in **Inquiry-based Learning**
7. Conclusion and Discussion



1. 外置數據收集裝置



外置數據收集裝置



Flow Rate Sensor

The Flow Rate Sensor measures the **velocity** of water in studying the discharge, flow patterns, and sediment transport of a stream or river.

外置數據收集裝置



Optical DO

The Vernier Optical DO Probe makes it easy to measure the **dissolved oxygen** concentration in water.

Perfect for the field or for the laboratory, this plug-and-play probe requires no calibration, no filling solution, no warm-up time, and no stirring.

外置數據收集裝置



pH Sensor

Our general-purpose pH Sensor can be used across disciplines, including chemistry, biology, middle school science, and environmental science.

外置數據收集裝置



Nitrate Ion-Selective Electrode

The Nitrate Ion-Selective Electrode (ISE) can be used to measure the concentration of Nitrate (NO_3^-) in aqueous samples.

2. User Authentication and Account Management

用戶身份驗證和帳戶管理



用戶身份驗證和帳戶管理

facebook



Google for Education



用戶身份驗證和帳戶管理

Current Authentication

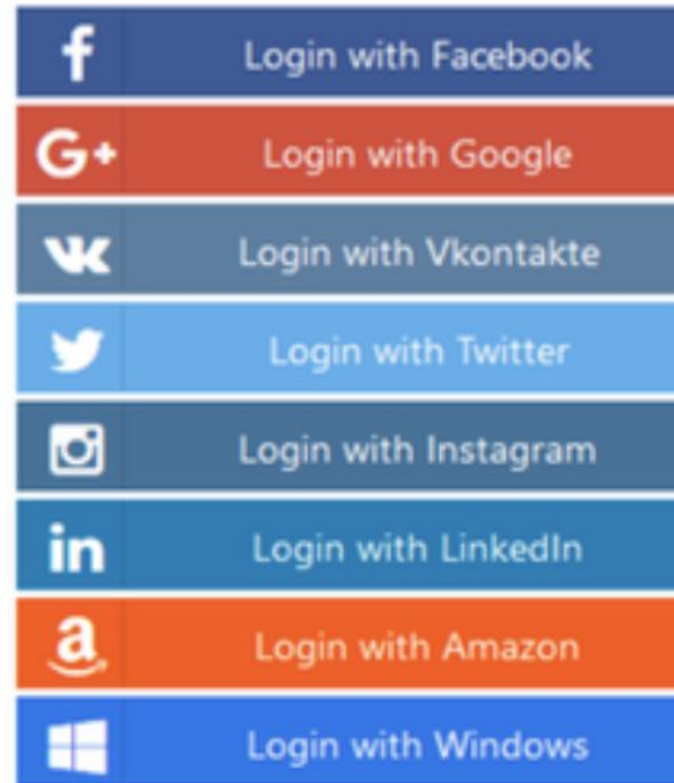
Authenticate to **multiple systems** with Many username and Many password



用戶身份驗證和帳戶管理

Single Sign On

One Credential Authenticate to multiple systems with **one username** and **one password**



用戶身份驗證和帳戶管理

<https://www.hkedcity.net/home/>



The screenshot shows the HkedCity website homepage. At the top, there is a search bar, social media icons for Facebook and Twitter, and links for '登入/註冊 | English | Home'. The main navigation menu includes '認識教城', '教師', '中學生', '小學生', '家長', and '企業'. A prominent banner features an illustration of a girl reading a tablet in space, surrounded by books and a large moon. The banner text reads: 「閱讀策略與實踐—塑造學生良好品格」網上研討會, 於7月13日(一)舉行. Below the banner, there are sections for '焦點' (Focus) and '活動' (Activities). The '活動' section highlights an event on July 11: 網「樂」同行家長講座(四): 護骨E世代及認識資訊素養(網上研討). The footer contains the URL www.hkedcity.net/registration/form.php?reg_form_id=1045 and logos for the Chinese University of Hong Kong and the Education Commission of the Government.



用戶身份驗證和帳戶管理

<https://www.hkedcity.net/home/>

登入/註冊

以電郵地址或教城帳戶登入:

保持登入狀態 🔒

[忘記密碼](#)

註冊成為會員

或以其他帳戶登入:






將第三方帳戶與教城帳戶連繫

您可以使用以下第三方帳戶登入教城網站。
請點擊以下圖示以連繫 / 取消連繫。



輕鬆實踐網上教學

認識教城 教師 中學生 小學生 家長 企業

香港教育城 HkedCity × Microsoft 網上教學普及計劃

輕鬆實踐網上教學
簡易登記即時啟動Office 365帳戶

網上教學普及計劃

促進專業交流

共建教師社群

登入/註冊 | English |

訂閱教城資訊

焦點

活動 更多活動

15 Apr 「教城 x Microsoft : 網上教學普及計劃」網上研討會
15/04/2020

20 Apr 於小學中文科運用STAR深化學習及照顧學習差異
20/04/2020

多元資源助學生持續學習

【通識習作】香港年金計劃

精選閱讀挑戰：小王子的領悟

停課不停學

香港年金計劃

小王子的領悟

<https://www.hkedcity.net/o365>

認識教城 教師 中學生 小學生 家長 企業

搜尋

登入/註冊 | English |

教城 x Microsoft : 網上教學普及計劃

香港教育城（教城）與Microsoft香港攜手推出「網上教學普及計劃」，透過結合教城完備的教師會員系統及Microsoft Office 365 教育版（Office 365 A1）帳戶的全面功能，免費支援數萬位教師輕易地以Microsoft Teams雲端協作平台，展開遙距教學，滿足網上學與教需要，促進電子教學普及化；同時，持有帳戶的教師可在平台上互相交流，促進跨校合作，共建專業教育社群。

Office 365 A1帳戶特色：

1. 隨時隨地舉行線上課堂及會議
在Microsoft Teams平台進行不設時間的網上會議（最多250人），獲邀參加者無需帳戶，直接點擊會議連結以「訪客」身份參與。會議主持人可錄影網上課堂、會議及研討會，錄影將儲存於Microsoft Stream網上平台供會議主持人下載分享至參加者。
2. 於雲端共享及設計教學資源
每個帳戶配備1TB OneDrive雲端容量，用戶可即時存取、共用和編輯 Word 文件、PowerPoint 和 Excel 檔案，讓教師在網上共同作業，設計及優化教學資源。
3. 建立專業教育社群
計劃協助持有Office 365 A1帳戶的教師於Teams平台上可建立專屬社群。持有帳戶的教師可在平台上聊天、建立或加入不同群組，以組織各式各樣的教育社群，凝聚同工共享教學資源、討論教育心得等，促進跨校協作。

[立即登記](#)

註：

1. 本計劃只限「教師會員」登記；如申請人的「教師會員」帳戶被移除，其註冊的Office 365 A1帳戶亦會被刪除。
2. Microsoft Office 365 教育版（Office 365 A1）帳戶由Microsoft 提供，用戶須同意Microsoft使用協議條款。
3. 教城提供教師會員帳戶，也是根據此計劃創建的Domain的管理員。使用教城服務須同意教城的服務條款、私隱政策、版權及知識產權政策及免責聲明。

1



以教城教師帳戶登入

會員登入:

保持登入 顯示密碼

[忘記密碼](#) | [忘記帳戶](#)

登入

或以其他帳戶登入:



加入成為會員:

註冊

2



教城 x Microsoft : 網上教學普及計劃

申請Microsoft Office 365 教育版(A1) 帳戶

* 登入帳號¹

@school.edcity.hk

* 密碼²

* 確認密碼

確認

可更改登入名稱

設定個人密碼、
再確認

註

1. 登入帳號：申請人可選擇以教城帳號（系統自動填寫）或自訂帳號開戶。自訂登入帳號須由5至15個字元組成，可包括大寫字母、小寫字母、數字及 / 或符號「_」。
2. 密碼：包含至少8個字元，以及下列任何三項：大寫字母、小寫字母、數字或符號。

Centre


The Chinese University of Hong Kong




Microsoft Teams Search for or type a command LH

Teams Join or create team

Your teams



HKEdCity x Microsoft - A



HKEdCity Innovators

Activity

Chat

Teams

Assignments

Calendar

Calls

Files

...


Apps

Help

Download

Microsoft Teams Search for or type a command

< All teams



HKEdCity x Microsoft - A

General

Share Your Problems

Activity

Chat

Teams

Assignments

Calendar

Calls

Files

...

General Posts Files TEAMS 教學影片 遙距教學資源... New +


+ New Upload Sync Copy link Download Add cloud storage All Documents

General		
Name	Modified	Modified By
Resource Recommendation	April 3	Thom Lai
Experience Sharing	April 3	Thom Lai
如何批准學生加入會議.mp4	5 days ago	Microsoft Educatio...
Teams 快速入門手冊.pdf	5 days ago	Microsoft Educatio...
會議直播設定.mp4	April 6	Microsoft Educatio...
如何開展直播.mp4	April 6	Microsoft Educatio...
如何登入TEAMS.mp4	April 6	Microsoft Educatio...


< Back


Join or create a team


Search teams



Create a team



 **Create team**



Join a team with a code

Enter code

Got a code to join a team? Enter it above.



Physical Education
Public

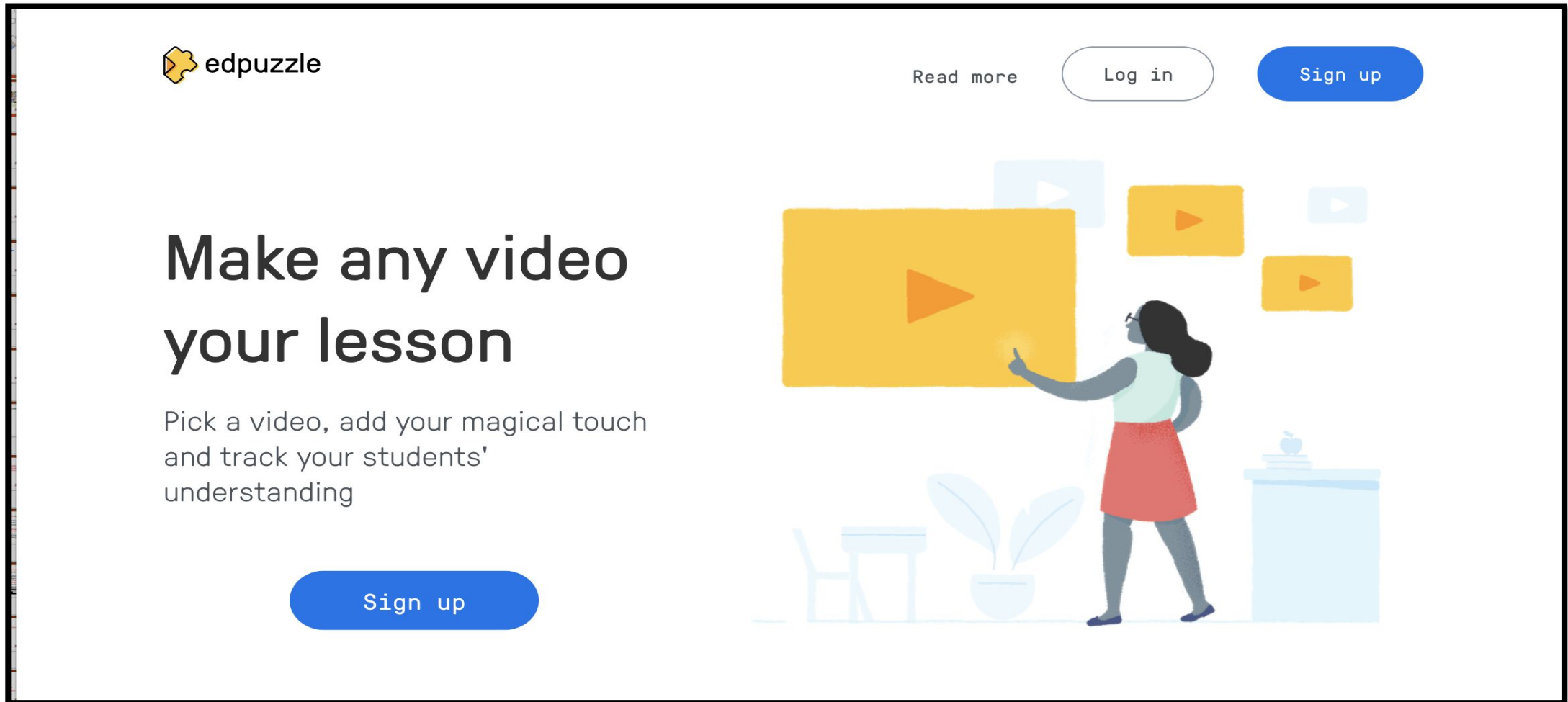
感謝教城與MICROSOFT的信任，經過多方專家背後的努力，於6/4/2020讓有關平...

3. 運用 EdPuzzle 進行翻轉課室



運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>



The image shows a screenshot of the EdPuzzle website's landing page. At the top left is the EdPuzzle logo, which consists of a yellow puzzle piece icon followed by the text 'edpuzzle'. To the right of the logo are three navigation links: 'Read more' in a light blue rounded rectangle, 'Log in' in a white rounded rectangle with a light blue border, and 'Sign up' in a solid blue rounded rectangle. The main content area features the headline 'Make any video your lesson' in a large, bold, black sans-serif font. Below the headline is a sub-headline: 'Pick a video, add your magical touch and track your students' understanding'. At the bottom left of this section is a blue rounded rectangle with the text 'Sign up'. On the right side of the page is a large illustration of a female teacher with dark hair, wearing a light green top and a red skirt, pointing at a large yellow video player icon with a play button. Several smaller video player icons are floating around her. In the background, there are faint illustrations of a desk, a chair, a potted plant, and a desk with books and an apple.

edpuzzle

Read more Log in Sign up

Make any video your lesson


Pick a video, add your magical touch and track your students' understanding

Sign up

運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>

Please check your inbox (manhw@ykh.hk) and verify your account. [Resend email](#)

edpuzzle [Content](#) [Gradebook](#) [My Classes](#) 

Content

Home

Curriculum

Lok Sin Tong Yu Kan Hing Se...

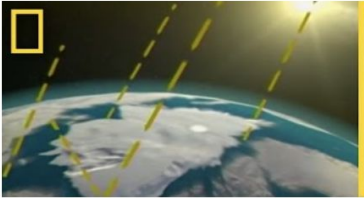


My Content

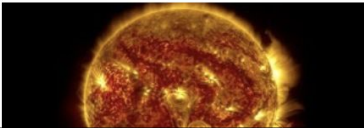


Popular channels

Edpuzzle

YouTube

YouTube

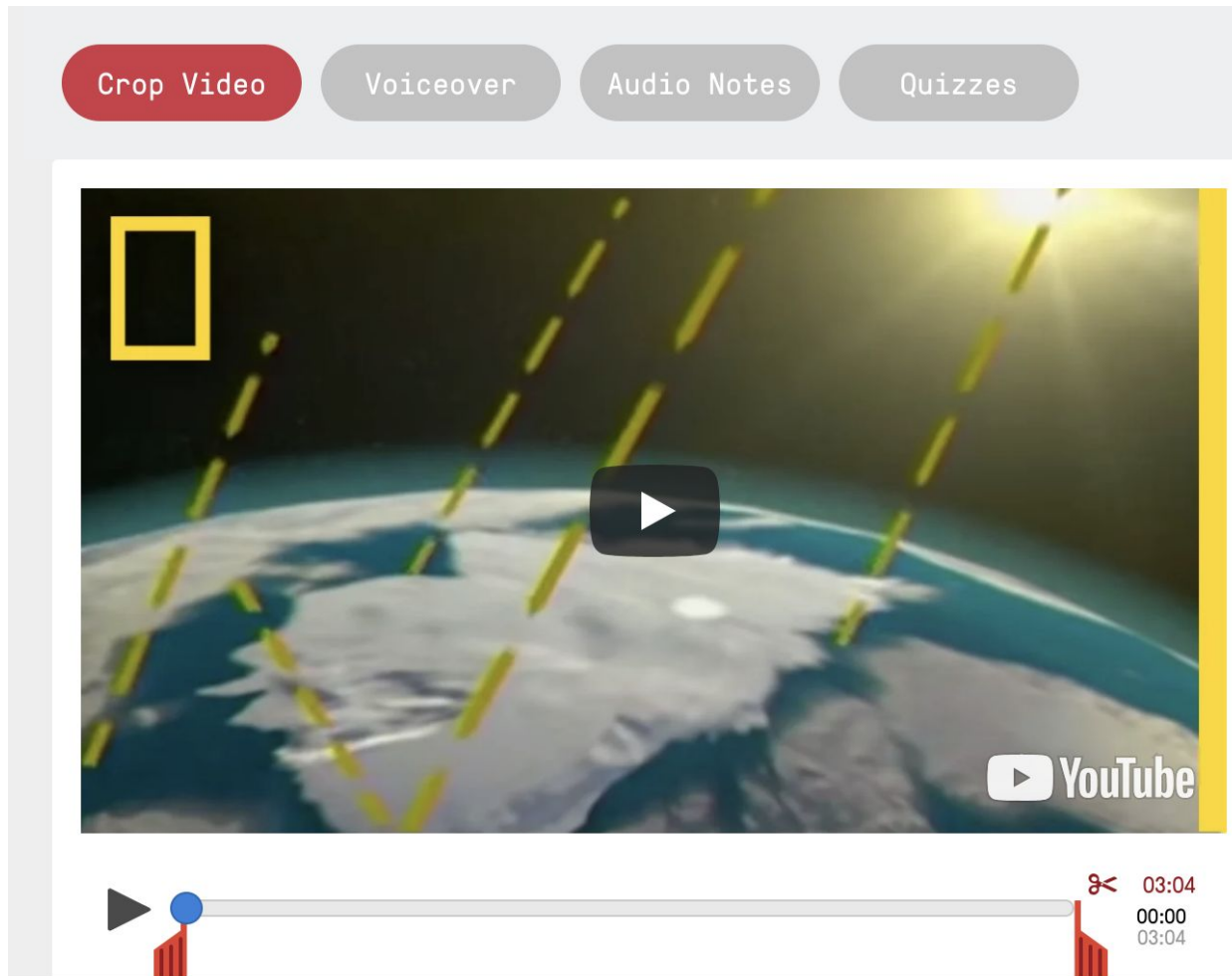
		
03:04	04:29	06:50
Global Warming 101 National Geographic	U.N. releases gloomy report on global warming	13 Misconceptions About Global Warming



運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>



The screenshot displays the EdPuzzle interface. At the top, there are four buttons: "Crop Video" (highlighted in red), "Voiceover", "Audio Notes", and "Quizzes". Below these is a video player showing a scene from a National Geographic video. A yellow rectangular crop box is positioned in the top-left corner of the video frame. The video player includes a play button in the center, a progress bar at the bottom, and a "YouTube" logo in the bottom right corner. The progress bar shows a current time of 00:00 and a total duration of 03:04.

Why crop a video?

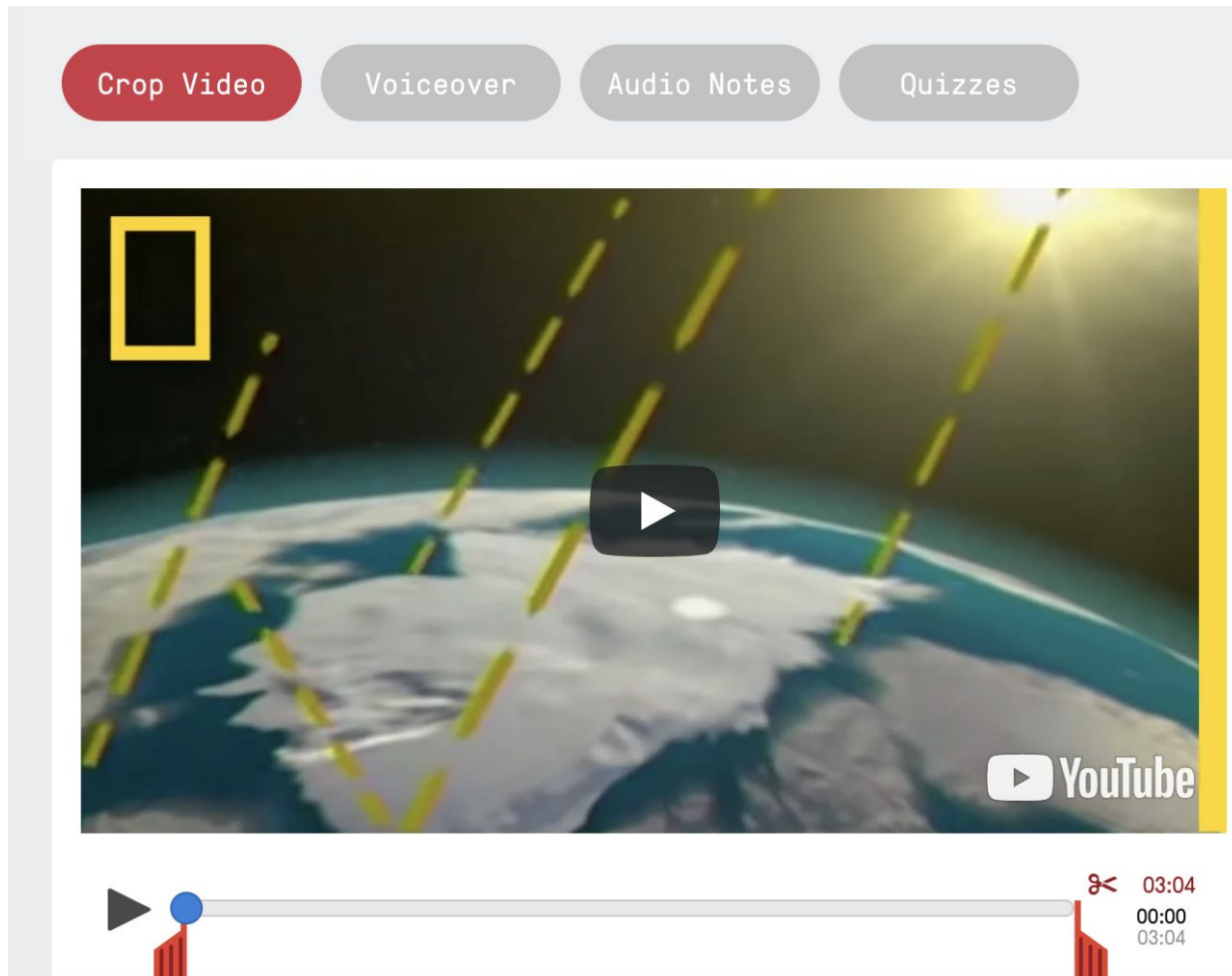
Save yourself and your students' time - crop a video down to just the important stuff.

Why record voiceover?

Explain a concept the way you would in class - in your own style or maybe in another language.

運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>



The screenshot displays the EdPuzzle interface. At the top, there are four buttons: "Crop Video" (highlighted in red), "Voiceover", "Audio Notes", and "Quizzes". Below these is a video player showing a scene from a National Geographic video with a play button in the center. The video player includes a progress bar at the bottom with a play/pause button on the left and a volume icon on the right. The video title "YouTube" is visible in the bottom right corner of the player area.

Why record audio notes?

Get your students' attention - pause the video for an introductory comment, to explain a concept in more detail, or just to make sure they're not sleeping.

Why add quizzes during the video?

Make sure they understand - include formative assessment to check for student comprehension and review results in Gradebook.

運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>

Assign to a class

Public links

Start Date

Today

12:00 AM

Due Date

No due date

--:--

+ Add new class

Now create your first class

Later, you will invite your students



Prevent Skipping

Later

Assign

Assign to a class

Public links

Public link

Share this link with colleagues

<https://edpuzzle.com/media/5c4eaddb622b0c>

Copy link

Embedded code

Embed this video on your LMS

Medium size

```
<iframe width="470" height="402" src="https://edpuzzle.com/media/5c4eaddb622b0c" >
```

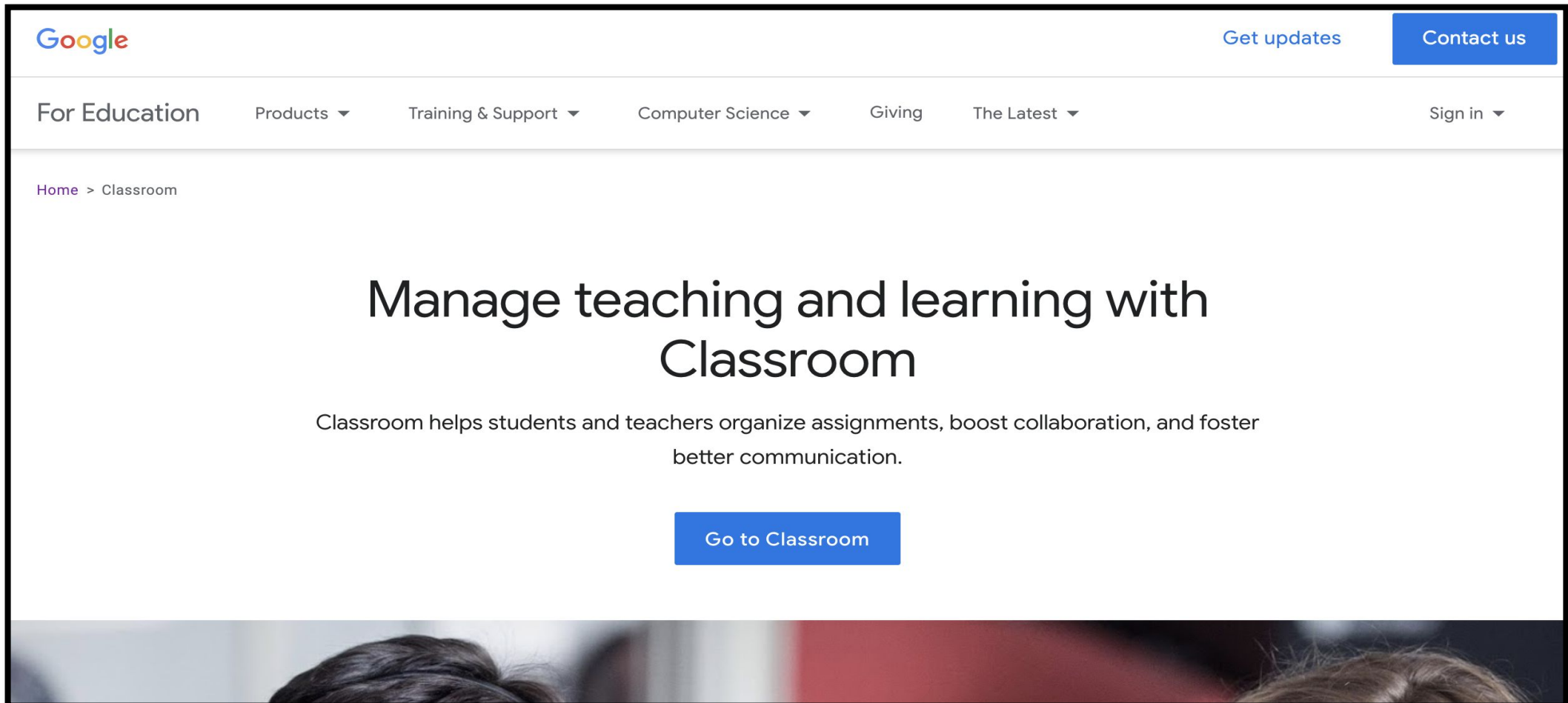
Copy link

4. 運用Google Classroom 促進電子學習



運用 Google Classroom 促進電子學習

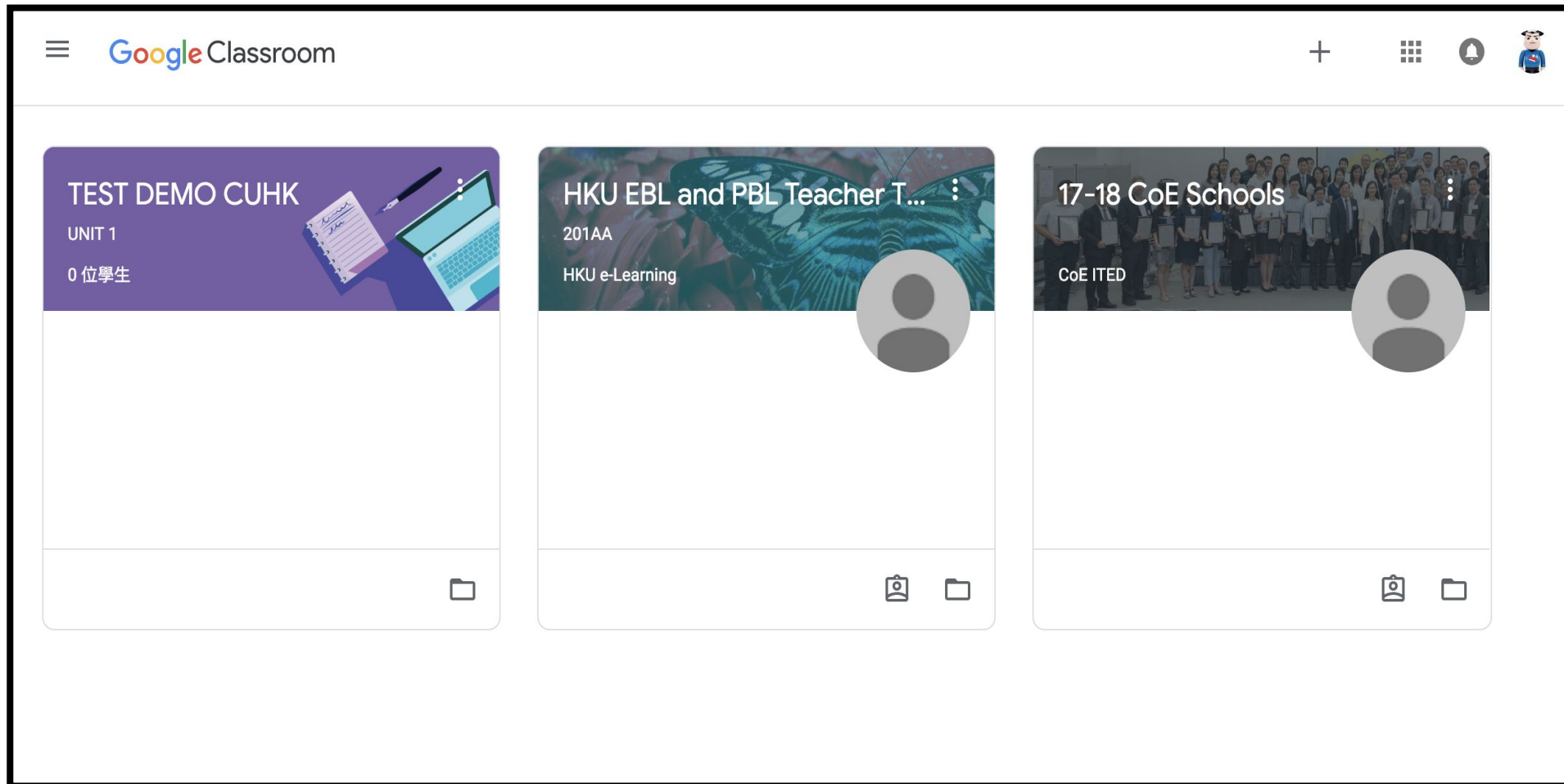
<https://classroom.google.com/>



The screenshot shows the Google Classroom website homepage. At the top left is the Google logo. To the right are links for "Get updates" and "Contact us". Below the logo is a navigation bar with "For Education" and several dropdown menus: "Products", "Training & Support", "Computer Science", "Giving", and "The Latest". On the far right of this bar is a "Sign in" link. Below the navigation bar, the breadcrumb "Home > Classroom" is visible. The main heading reads "Manage teaching and learning with Classroom". Below this is a sub-heading: "Classroom helps students and teachers organize assignments, boost collaboration, and foster better communication." A prominent blue button labeled "Go to Classroom" is centered below the text. The bottom of the page features a blurred image of people's heads.

運用 Google Classroom 促進電子學習

<https://classroom.google.com/>



The screenshot displays the Google Classroom interface. At the top, the Google Classroom logo is on the left, and navigation icons (plus, grid, bell, profile) are on the right. Below the header, three class cards are visible:

- TEST DEMO CUHK**: UNIT 1, 0 位學生. The card features a purple header with a notebook and laptop icon.
- HKU EBL and PBL Teacher T...**: 201AA, HKU e-Learning. The card features a teal header with a butterfly icon.
- 17-18 CoE Schools**: CoE ITED. The card features a grey header with a group photo of students.

Each class card includes a profile picture placeholder and icons for a camera and a folder at the bottom right.



運用 Google Classroom 促進電子學習

Quiz: Google Form

The screenshot displays the Google Classroom quiz creation interface. At the top, a purple header bar contains navigation icons (back, folder, star), the title "Blank Quiz", and a status message "所有變更都已儲存到雲端硬碟". On the right side of the header, there are icons for chat, view, settings, a "傳送" (Send) button, and a user profile icon.

The main content area is divided into two tabs: "問題" (Questions) and "回覆" (Responses). The "問題" tab is active, showing a score of "總分: 0". Below the tabs, the title "Blank Quiz" is displayed, followed by a "表單說明" (Form Description) section.

The question editor shows an "Untitled Question" with a dropdown menu set to "選擇題" (Multiple Choice). Below the question, there are two radio button options: "Option 1" and "新增選項 或 新增「其他」" (Add option or Add "Other").

At the bottom of the question editor, there is a "答案 (0分)" (Answer (0 points)) field, a "必填" (Required) toggle switch, and a vertical toolbar on the right with icons for adding (+), text (Tt), image, video, and list.

In the bottom right corner, there is a small "E-Learning" logo and a help icon (?).

運用 **Google Classroom** 促進電子學習

- Google Drive
<https://www.google.com/drive/>
- Google Docs
<https://www.google.com/docs/about/>
- Google Forms
<https://www.google.com/forms/about/>



Google Docs



運用 Google Classroom 促進電子學習

<https://support.google.com/edu/classroom#topic=6020277>

The screenshot shows the Google Classroom support page. At the top, there is a navigation bar with a hamburger menu icon, the text "Classroom說明", and icons for a grid, a bell, and a user profile. Below this, there are two tabs: "說明中心" (Help Center) and "社群" (Community). To the right of the tabs is a "Classroom" link with an external link icon. A light blue banner below the tabs contains a lightbulb icon and the text: "Have questions about the new features in Classroom? Take a look at our [Back to School FAQ](#)." Below the banner is a large illustration of a school campus with a central search bar. The search bar contains a magnifying glass icon and the text "請說明您的問題". Above the search bar, the text "請問您有什麼需求?" is displayed. At the bottom of the page, there is a section titled "探索 Classroom" with an upward-pointing arrow icon.

運用Google Applications 促進 VR 電子學習

- Google Maps

<https://www.google.com/maps>



- Google Earth

<https://www.google.com/intl/zh-HK/earth/>



- Google Street View

<https://www.google.com/streetview/>



運用Google Applications 促進 VR 電子學習

- Google Art and Culture <https://artsandculture.google.com/>



- Google Expedition
<https://edu.google.com/products/vr-ar/expeditions/>



Google Expeditions



5. 通過擴增實境 (AR) / 虛擬實境 (VR) 增強課堂體驗



虛擬實境 (VR)於教學應用

EduVenture VR : <http://vr.ev-cuhk.net/>



學習科學與科技中心 CLST | 香港中文大學 CUHK |



EduVenture®VR

主頁

VR學與教資源

VR/AR 簡介

先導學校

活動回顧

聯絡我們

EduVenture®VR

協助教師輕易製作出低成本、具互動功能的360度全景虛擬實境戶外考察學習視頻，及結合真實場景的擴增實境教學



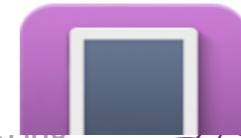
Version 1.3.0

Composer

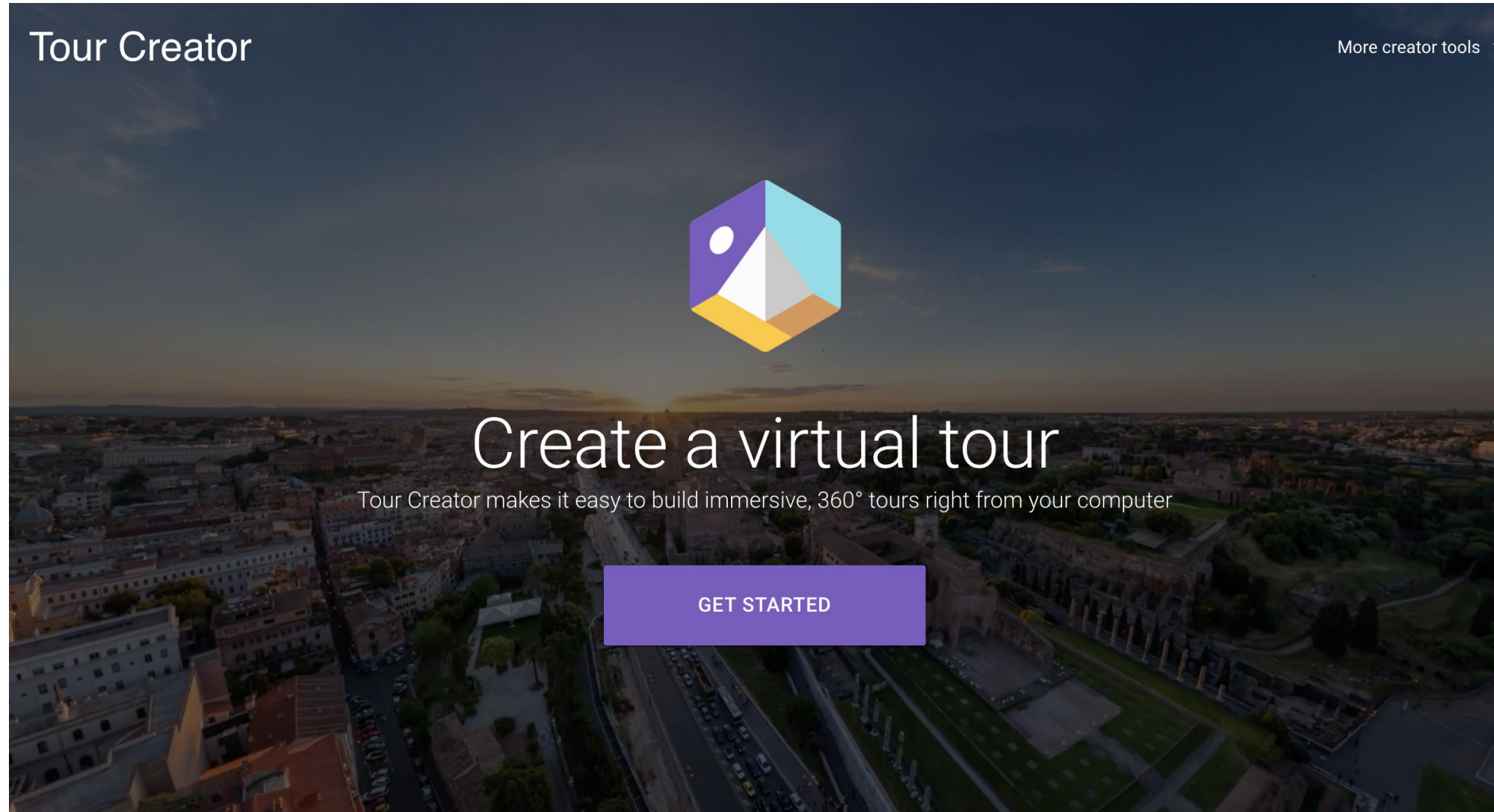


Mobile Apps
手機應用程式

The Chinese University of Hong Kong



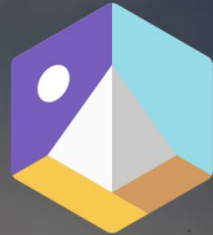
Google Tour Creator: <https://poly.google.com/>



The image shows the landing page for Google Tour Creator. The background is a dark, aerial view of a city at dusk. In the top left corner, the text "Tour Creator" is displayed. In the top right corner, there is a link "More creator tools" with a dropdown arrow. In the center, there is a colorful hexagonal logo with a white circle inside. Below the logo, the main heading "Create a virtual tour" is written in large white letters. Underneath the heading, a subtitle reads "Tour Creator makes it easy to build immersive, 360° tours right from your computer". At the bottom center, there is a purple button with the text "GET STARTED". In the bottom right corner, there is a small logo consisting of five colored squares (red, yellow, green, blue, and purple).

Tour Creator


More creator tools



Create a virtual tour

Tour Creator makes it easy to build immersive, 360° tours right from your computer

GET STARTED



Google AR & VR

<https://arvr.google.com/experiences/>

Google AR & VR

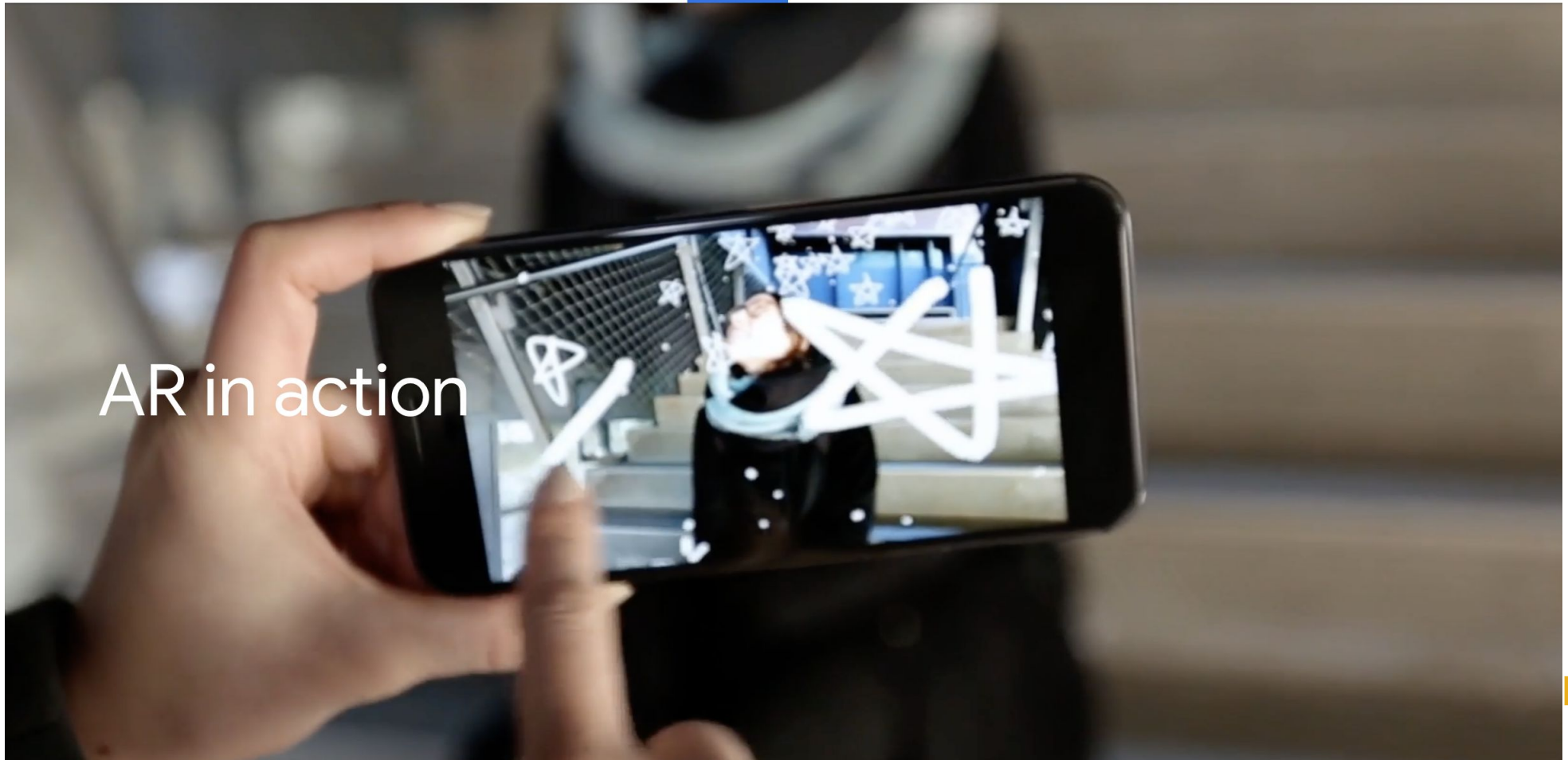
Augmented Reality ▼

Virtual Reality ▼

Experiences

News

AR in action



<https://arvr.google.com/experiences/>



Measure

Measure helps you with quick everyday measurements around the house or office, similar to a tape measure.

Try now [↗](#)



Human Anatomy Atlas

Millions of medical professionals, students, and anatomy enthusiasts use Human Anatomy Atlas to see inside and better understand the human body with AR.

Try now [↗](#)



Just a Line

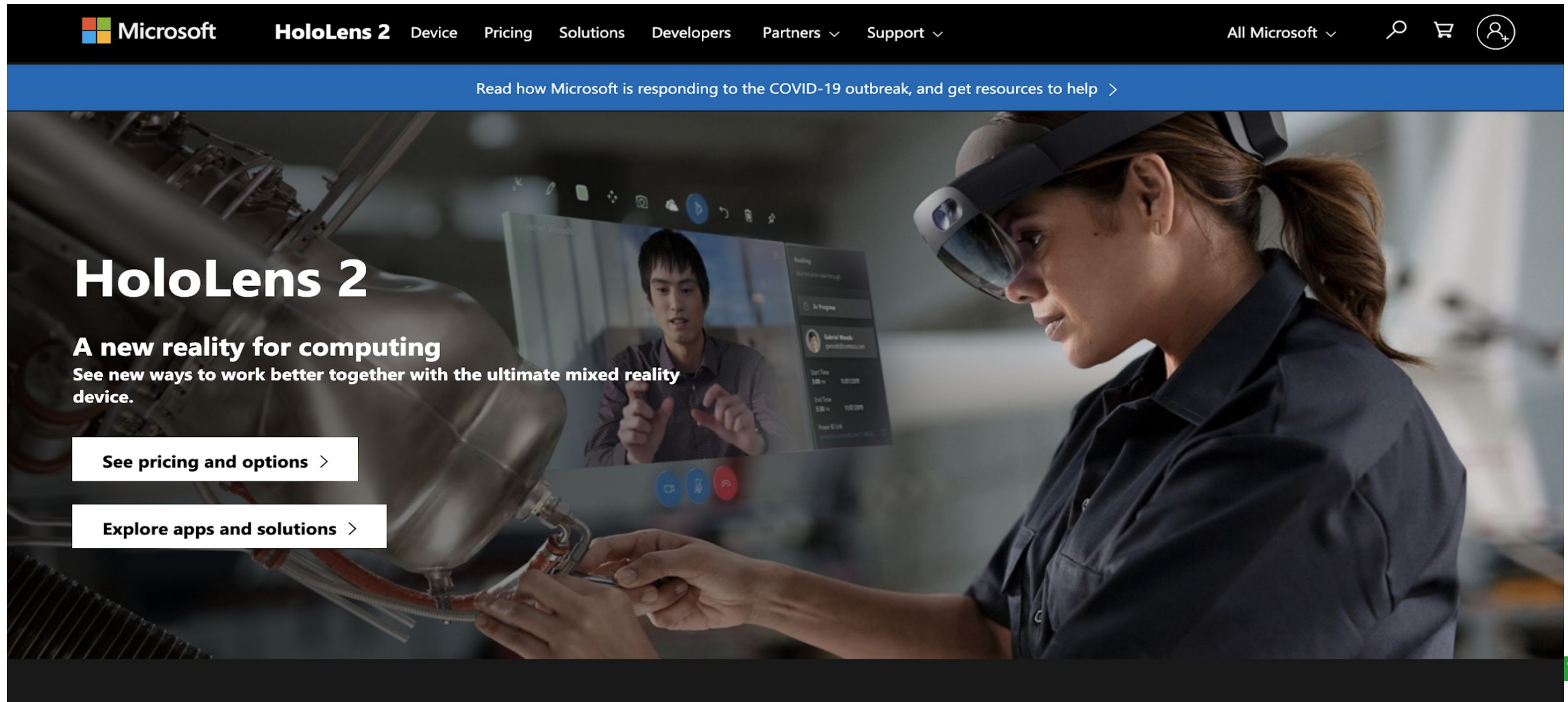
Just a Line is an AR Experiment that lets you make simple drawings in augmented reality, then share your creation with a short video. Draw on your own or with a friend, then hit record and share what you made with #justaline.

nologies
y of Hon

Try now [↗](#)

Microsoft HoloLens 2

<https://www.microsoft.com/en-us/hololens/>

The image shows a screenshot of the Microsoft HoloLens 2 website. At the top, there is a navigation bar with the Microsoft logo, 'HoloLens 2', and links for 'Device', 'Pricing', 'Solutions', 'Developers', 'Partners', and 'Support'. On the right side of the navigation bar, there are icons for 'All Microsoft', search, shopping cart, and user profile. Below the navigation bar is a blue banner with the text 'Read how Microsoft is responding to the COVID-19 outbreak, and get resources to help >'. The main content area features a large image of a woman wearing a HoloLens 2 headset, interacting with a virtual interface. The interface includes a video call window with a man, a 'Settings' panel, and various icons. The text 'HoloLens 2' is prominently displayed in white, followed by the tagline 'A new reality for computing' and the subtext 'See new ways to work better together with the ultimate mixed reality device.' Below this, there are two white buttons with black text: 'See pricing and options >' and 'Explore apps and solutions >'. The bottom right corner of the page has a small Microsoft logo.

6. 運用EduVenture VR 進行探究式學習



多元化資訊科技教學示例：移動學習

香港中文大學- EduVenture



Centre for Learning Sciences and Technologies (CLST)
The Chinese University of Hong Kong



多元化資訊科技教學示例：移動學習

香港中文大學- EduVenture



EduVenture® Composer

需要登入才能使用這功能

EduVenture® Composer 是創建戶外學習教材的平台，操作簡易，登入後可於瀏覽器上進行教材編輯。教材設計者可依據學習內容，在不同學習情境中設計個性化的戶外學習教材。平台題供包括選擇、問答、填充、錄音、數據收集、影相、概念圖等多種題型。多元化的題型能滿足教材設計者的各需求。教材數據將自動儲存至伺服器，並支持在 Windows PC和MAC上編輯。



EduVenture® eXplorer

下載 iPad 版

下載 iPhone 版

EduVenture® eXplorer 是一款在iPad或iPhone上運行的應用程式 (App)，在沒連接互聯網時仍可使用。學生先將指定教材下載至應用程式中，通過全球定位系統 (GPS) 的幫助在教材中的不同地點開展探究活動，回答相關問題及任務。答案會被自動儲存於應用程式中。借助使用此應用程式，學生可親身體驗真實環境，實踐自主學生，並強化以學生為中心的學習模式。



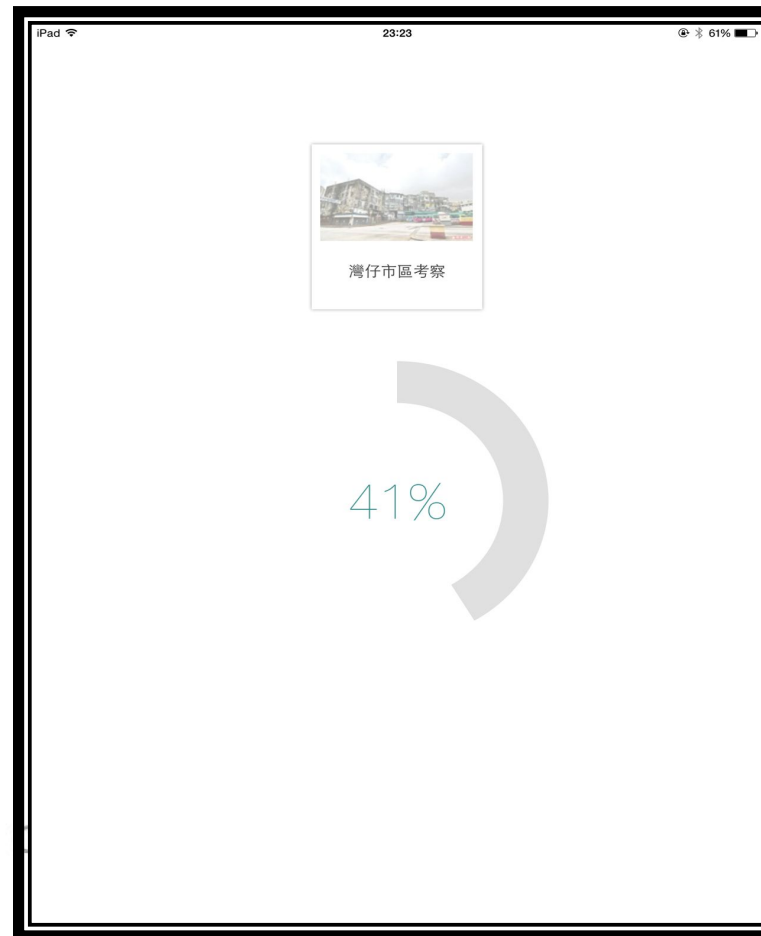
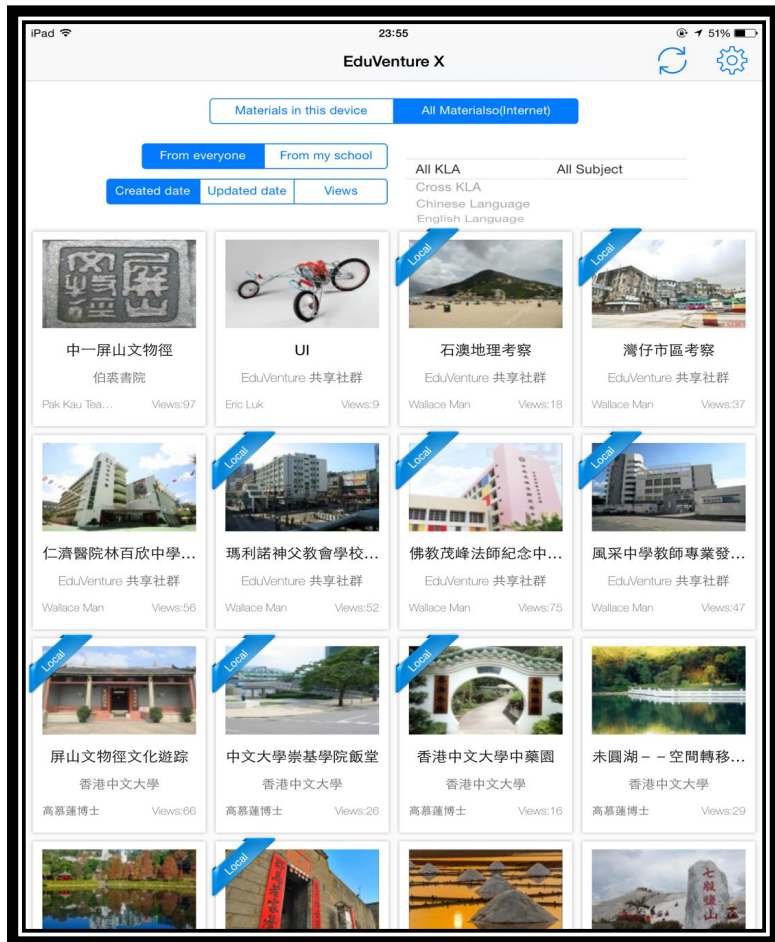
EduVenture® Retriever

需要登入才能使用這功能

EduVenture® Retriever 是檢視及管理學生戶外學習成果的平台。教材設計者教師可閱讀、批改、檢索學習者的學習成果或相關的討論和分享，當中包括相片，錄音，統計資料等。該平台也可以幫助評估學習者的表現，教師可以基於學習成果給予學生反饋，幫助他們總結和反思學習過程。

多元化資訊科技教學示例：移動學習

香港中文大學- EduVenture

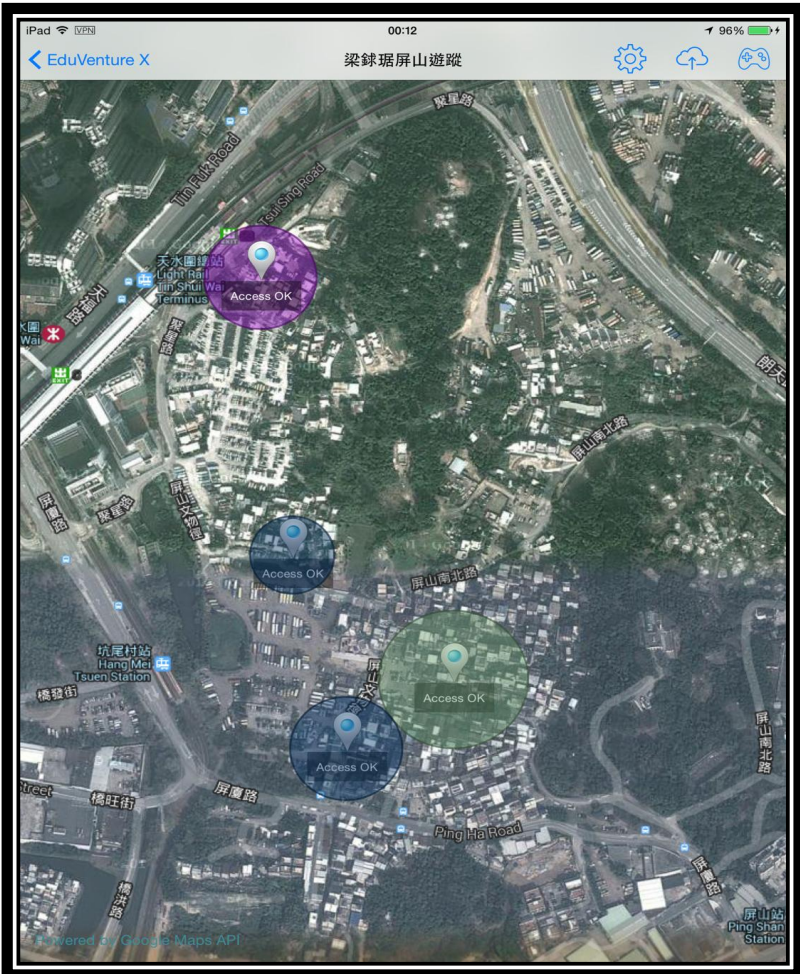


(CLST)
ing Kong



多元化資訊科技教學示例：移動學習

香港中文大學- EduVenture



EduVenture VR

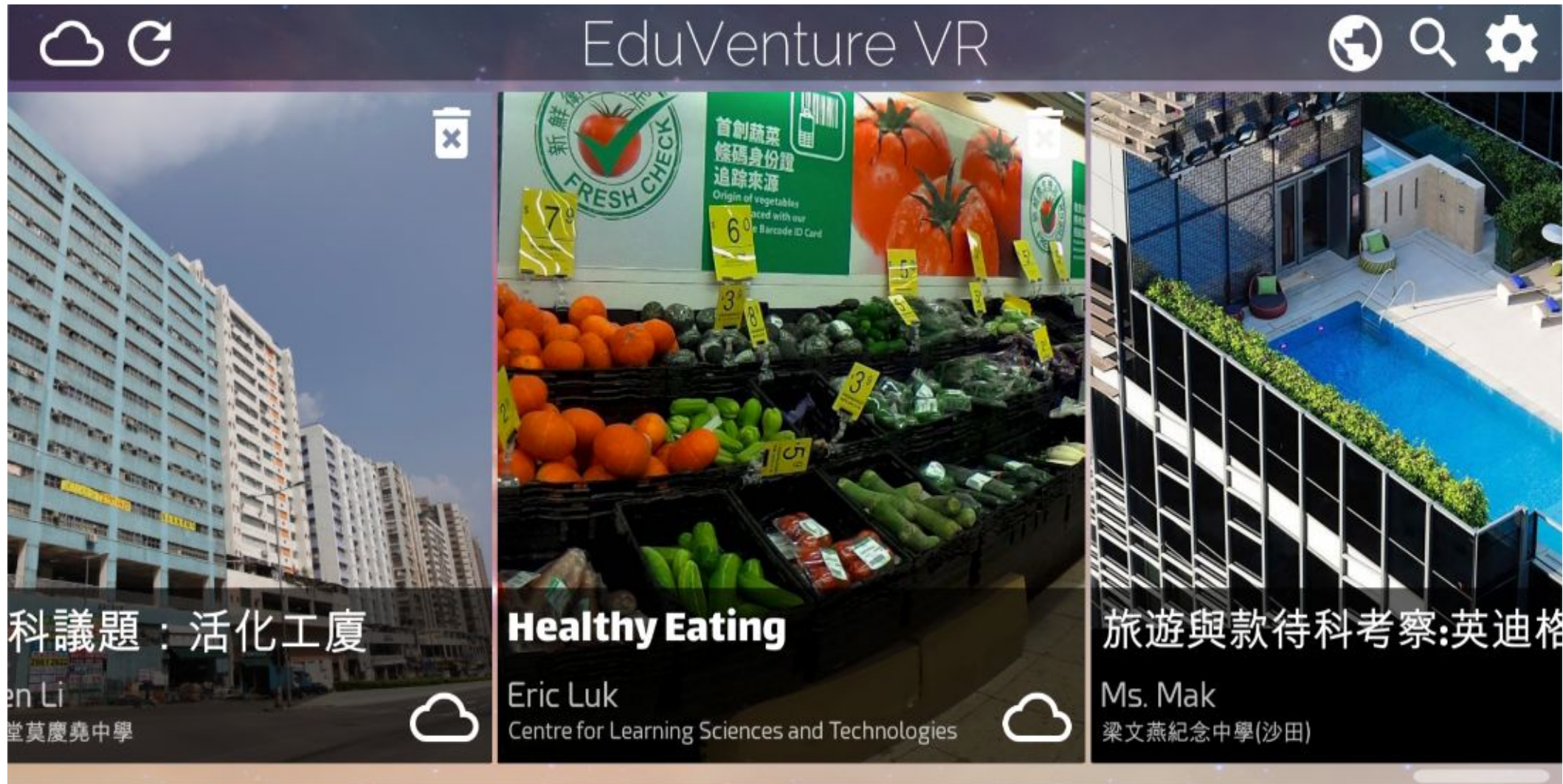
- EduVenture VR (EVVR) is an online platform to carry out Virtual Reality (VR) learning. Using the EVVR **composer**, teachers can **distribute VR content** and **construct a VR field trip** for students.
- They can also add interactive elements inside to enhance students' learning motivation. With mobile devices and tray glasses on hand, students can experience outdoor learning in VR style, which makes teaching and learning more interesting and flexible.

EduVenture VR

- EduVenture VR (EVVR), developed by CLST, CUHK, adopts Virtual Reality (VR) to carry out teaching and learning. VR technology generates a 3D virtual world and simulates student's presence in the environment.
- Students can have better chances to explore the world using VR technology.

<http://vr.ev-cuhk.net/>.

EduVenture VR



Entering EduVenture VR

Open the browser and enter the URL: <http://vr.ev-cuhk.net>


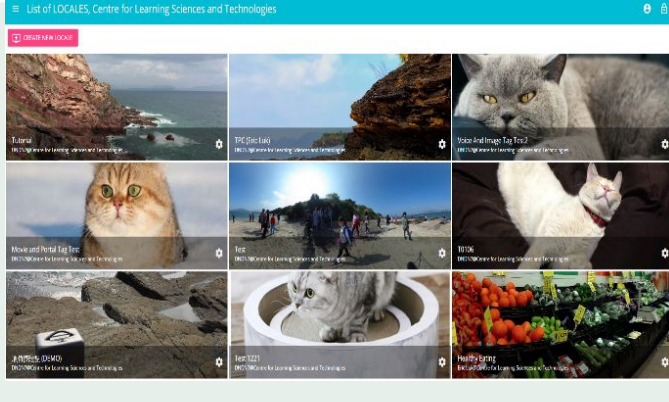
Step	Procedures	User Interface
1	Press the button to enter the EVVR Composer	
2	Go to iTunes (iOS) / Play Store (Android) to download the EVVR App	



EduVenture VR Composer


Using the EVVR Composer, teachers can distribute VR content and create their own teaching materials.

In order to identify the owner of the VR content, teachers will be given a username and password to login.

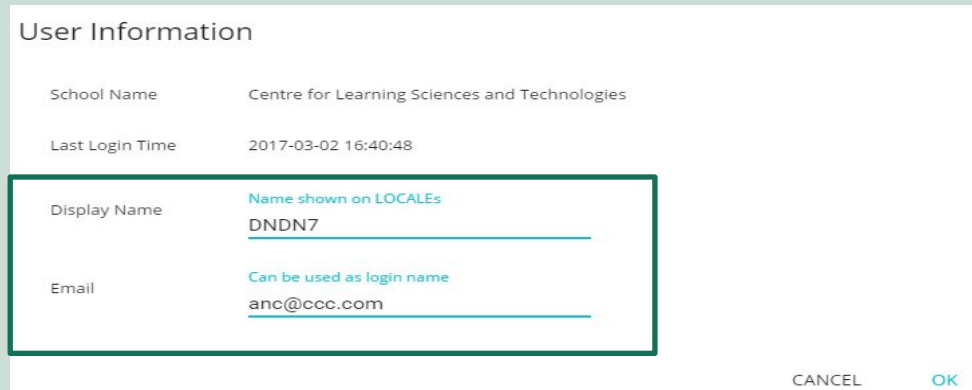
Step	Procedures	User Interface
1	Input username and password, then press “OK”.	
2	Upon successful login, teachers should be able to see a list of VR contents in the main menu.	

Control Panel

How to Edit User Account Information

Step	Procedures
1	Press  at the top, then select “My Info” (name and email).
2	Input the new name, email or password, then press “OK”.
3	Press “Cancel” to discard everything and return to main menu.

UI



User Information

School Name Centre for Learning Sciences and Technologies

Last Login Time 2017-03-02 16:40:48

Display Name Name shown on LOCALEs
DNDN7


Email Can be used as login name
anc@ccc.com

CANCEL OK

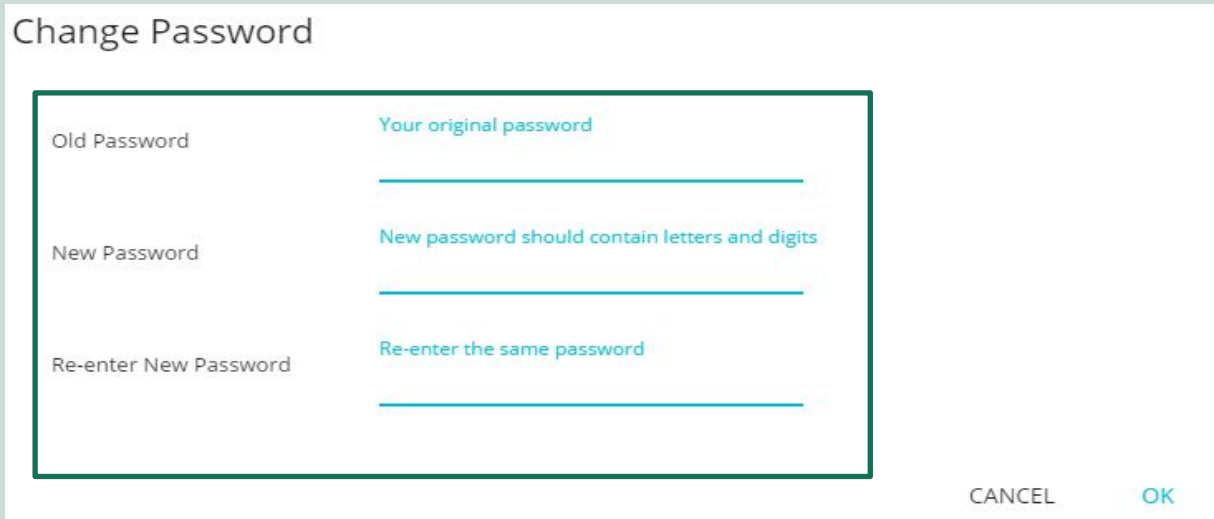


Control Panel

Similarly, teachers can also change their password.

Step	Procedures
1	Press  at the top, then select “Change Password”.
2	Input the old password and new password, then press “OK”.
3	Press “Cancel” to discard everything and return to main menu.

UI



Change Password

Old Password Your original password

New Password New password should contain letters and digits

Re-enter New Password Re-enter the same password

CANCEL OK


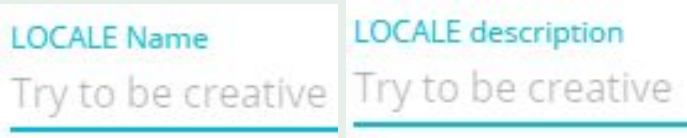
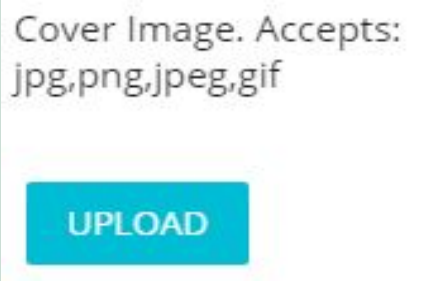


Locales

- “Locale”, place or locality, especially with reference to events or **circumstances** connected with it
- “Locale” is referring to the VR **learning materials**. Each locale is made up of a series of **stages**;
- Each stage can either be a **360 movie** or a **360 image**. These stages can combine together to produce a VR learning experience.



How to Create a Locale

Step	Procedures	User Interface
1	Press “Create New Locale” at the top.	
2	Enter the locale’s name and description. Be creative!	
3	Upload the locale’s cover image (jpg, jpeg, png, gif).	

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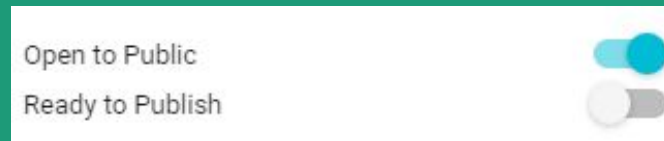


How to Create a Locale

4 Indicate these 2 settings.




“Open to Public”:
Can all users view the locale?

“Ready to Publish”:
Is the locale ready to be used by public?



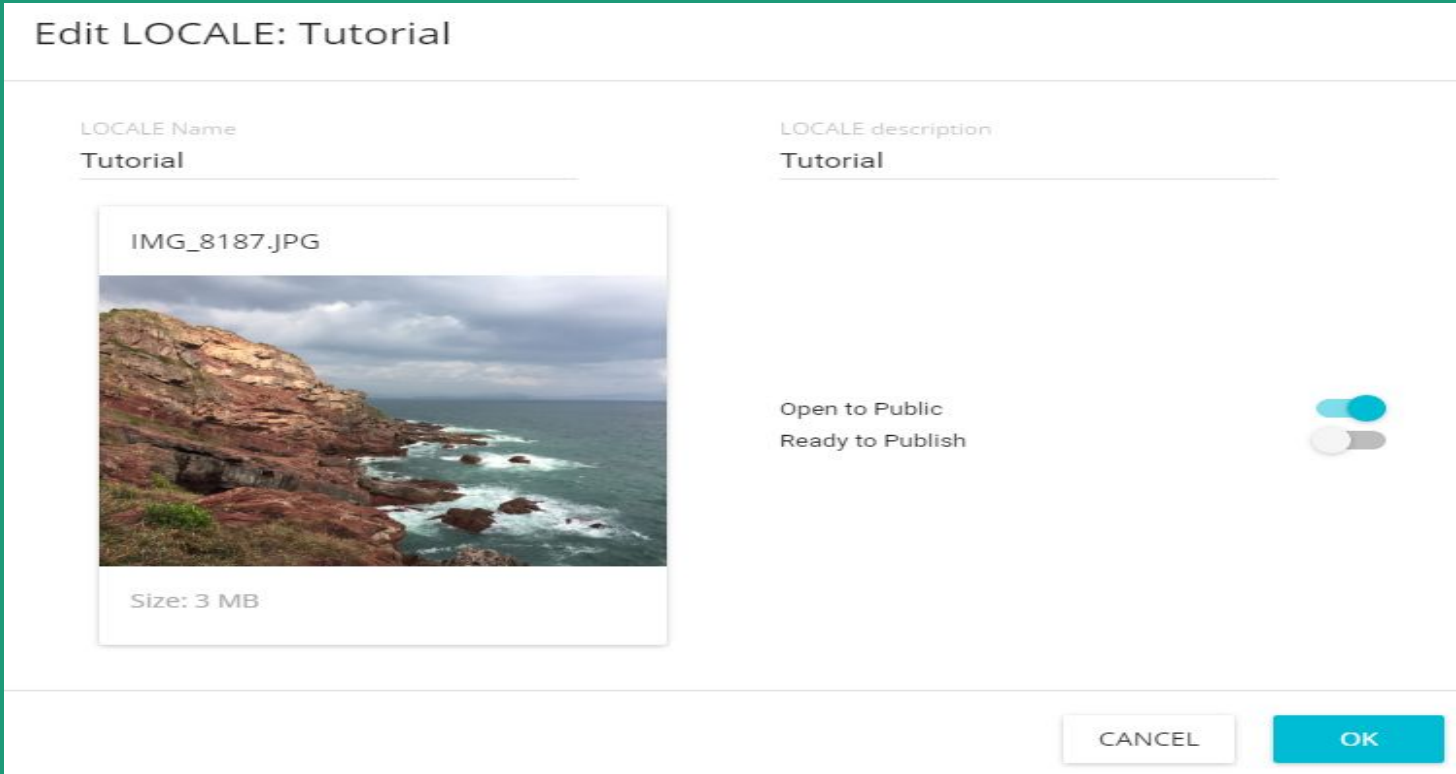
Upon successful creation of locale, a new locale
(with the owner's name, the locale's name and the locale's cover image)
should appear in the main menu.

How to Edit a Locale




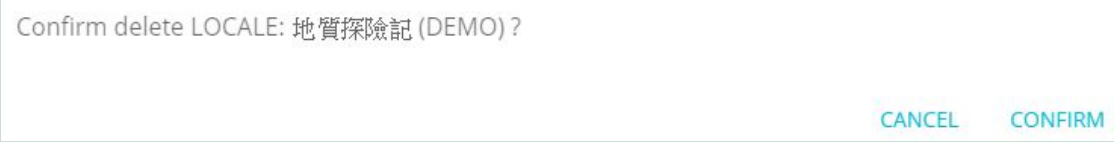
Step	Procedures	User Interface
1	Press the setting button  the right bottom corner.	
2	Press “View/Edit Detail”.	
3	Edit the locale’s name, description, public and publish settings. Press “OK” to confirm and “Cancel” to return.	



How to Edit a Locale

Step	Procedures	User Interface
UI		



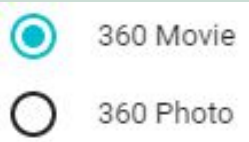
How to Delete a Locale

Step	Procedures	User Interface
1	Press the setting button at the right bottom corner. 	
2	Press “Delete”.	
3	Press “Cancel” to return and “Confirm” to delete.	
UI		

Stages

- Stages are the **building blocks** of a locale.
- A stage can be a **360 movie** or a **360 image**.
- Inside a stage, teachers can add interactive elements such as **tags, MCs and portals**.





How to Create a Stage

Step	Procedures	User Interface
1	Press “Create New Stage”.	
2	Enter the stage’s name.	
3	Indicate 360 Movie / Photo (Default: 360 Movie).	




Upon successful creation, **the new stage** will appear on the left navigation bar.

How to Create a Stage

- The left navigation bar shows all the stages in sequence
- The right hand side allows teachers to upload their 360 movie / image



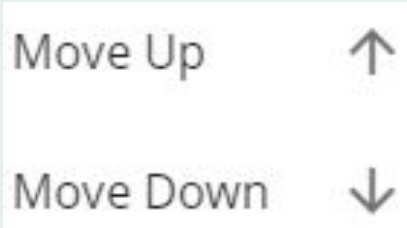
Icon	Meaning
 Stage 1 	360 Movie
 Stage 2 	360 Image

Upload 360 Movie / Image for a Stage



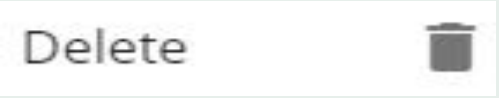

Step	Procedures	User Interface
1	Press “Upload”. Movie: mov, mp4, m4v, avi Image: jpg, jpeg, png, gif	
2	Wait until 100%.	
3	Upon successful upload, teachers should be able to see the thumbnail and the timeline for the VR content.	
UI		

Edit a Stage

- Teachers can further edit the display sequence of stages using the left navigation bar.



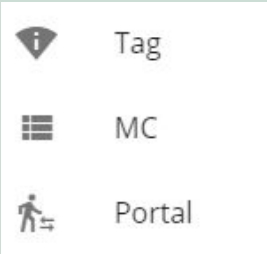
Step	Procedures	User Interface
1	Press the  button.	
2	Press “Move Up” / “Down”.	

Delete a Stage

Step	Procedures	User Interface
1	Press the  button.	
2	Press “Delete”.	
3	Press “Cancel” to return and “Confirm” to delete.	
UI		





Playback Elements

- Teachers can add interactive elements in the VR world.
- They include tags, MCs and portals.

Step	Procedures	User Interface
1	Drag the timeline to indicate when the element should appear.	
2	Press “Element At This Moment”	
3	Choose the element: “Tag”, “MC” or “Portal”	



How to Create a Tag

- Tag can display information such as text, voice or enlarged image.

Step	Procedures	User Interface
1	Enter the display text.	
2	Choose the tag type.	
2a	For voice, upload an mp3. Toggle autoplay or not (Default: Off).	
2b	For image, upload these formats: jpg, jpeg, png, gif.	


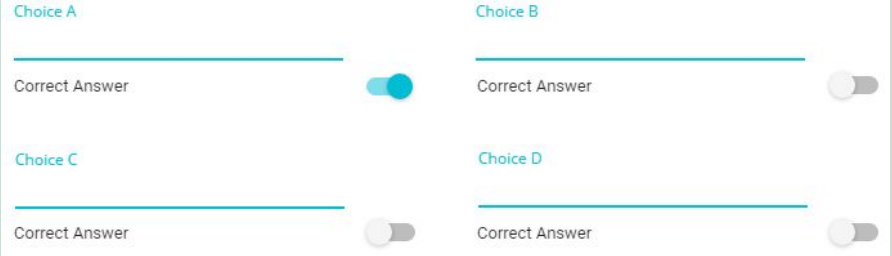

How to Create a Tag

- Tag can display information such as text, voice or enlarged image.

Step	Procedures	User Interface
3	Drag the pin to indicate where the tag should appear.	
4	Drag the timeline to indicate how long the tag should appear.	

Create a MC



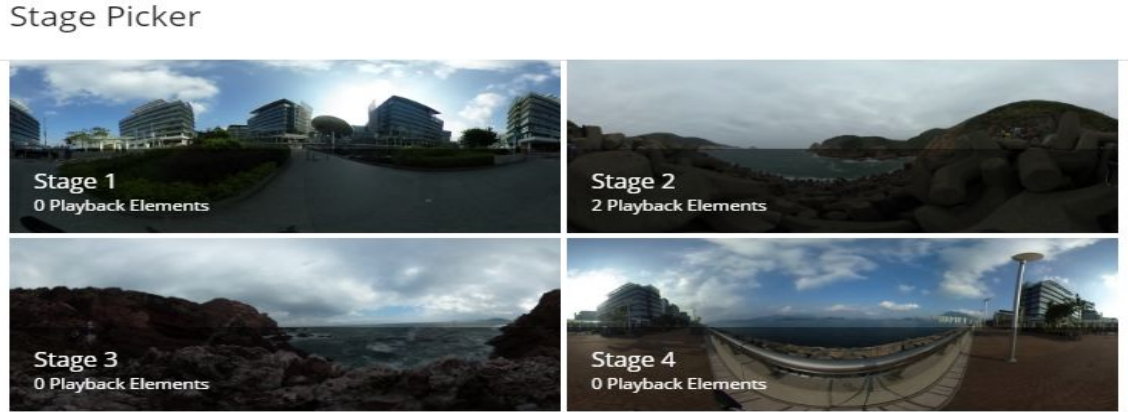
- Each MC has 4 choices and at least 1 correct answer.
- Teachers can limit how many times the students can attempt a MC.

Step	Procedures	User Interface
1	Enter the question.	
2	Enter the 4 choices and toggle at least 1 correct answer.	
UI		
3	Adjust how many times the students can answer this MC.	



Create a Portal

- Portal is the transfer gateway to other stages.
- Teachers can set at most select 4 destination stages for a portal.

Step	Procedures	User Interface
1	Enter the display text, e.g., “To Stage 2”	
2	Pick the destination stages.	
UI		



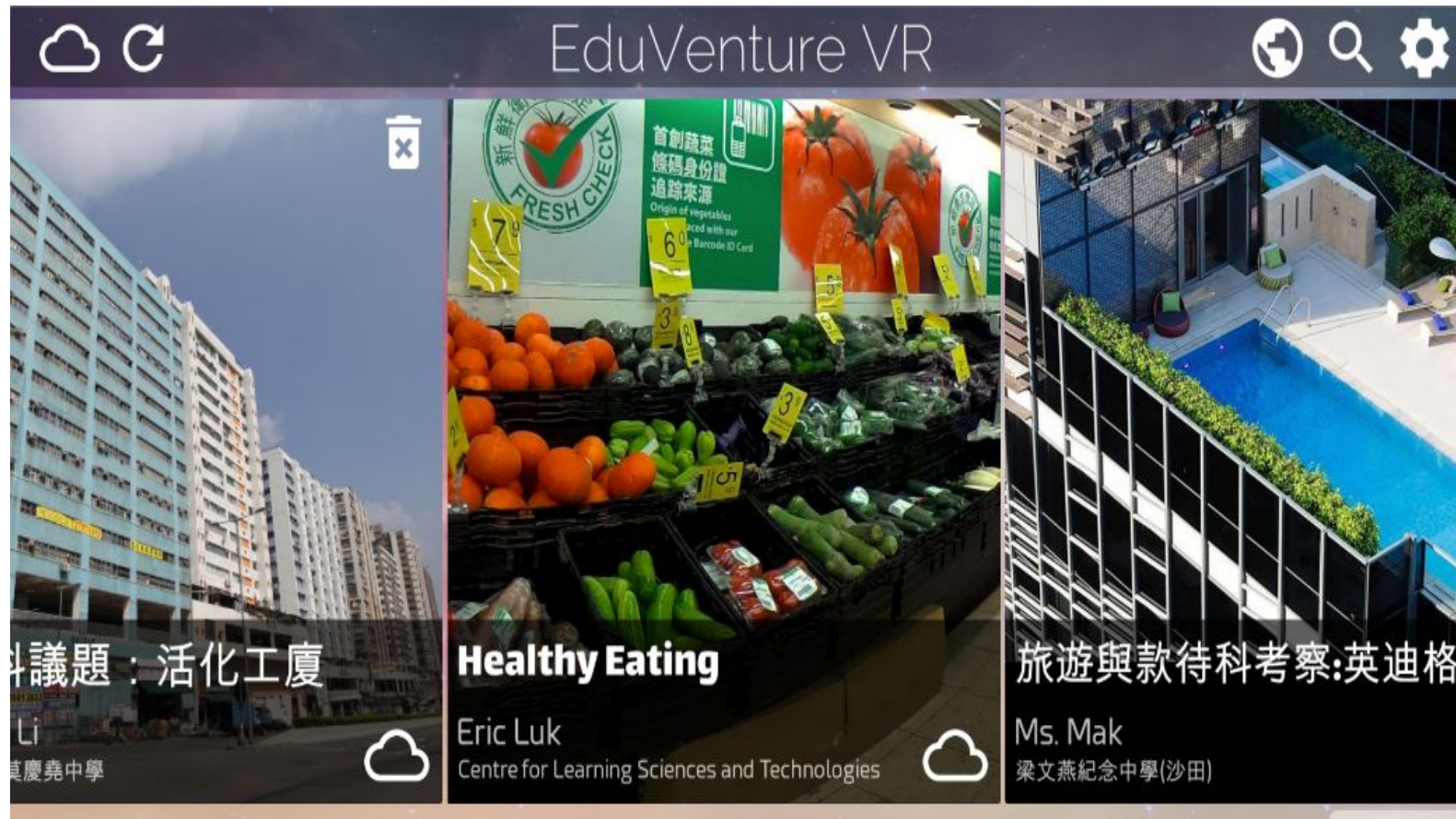
Review the Playback Elements

- Teachers can review the playback elements they added in the bottom panel.

UI		
Step	Procedures	
1	Press  to edit the element.	Press  to delete the element.

EduVenture VR App

After installing the EVVR App, students should be able to see the locales that are set public and ready to publish in the composer.










ies (CLST)
Hong Kong



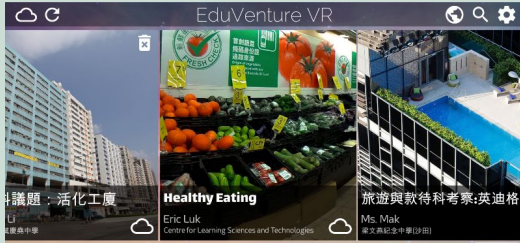
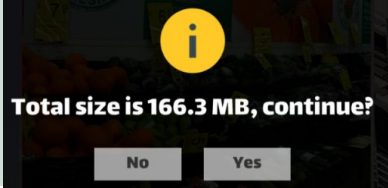
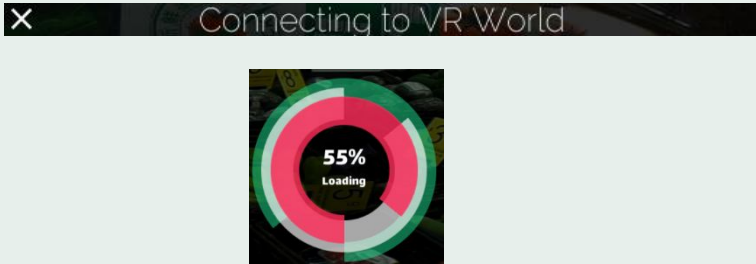
Control Panel



No.	Icons	Functions
1a		Display the online locales (Can switch to 1b)
1b		Display the downloaded locales (Can switch to 1a)
2		Refresh the locale menu
3a		Display all public locales (Can switch to 3b)
3b		Display private locales only (Can switch to 3a)
4		Search a particular locale
5		Configure game settings



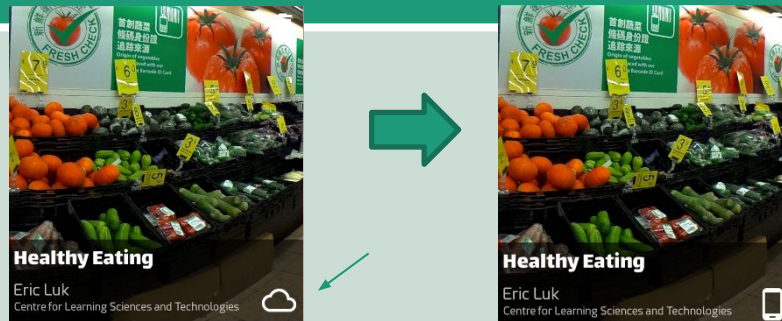
Download a Locale

Step	Procedures	User Interface
1	Press the locale to download	
UI		
2	Press “Yes” to download and press “No” to return.	
3	Press X to stop downloading if necessary. Otherwise, wait until 100% downloaded.	

Download a Locale

4 Upon successful downloading, the students can start the locale! Note that the icon at the right bottom corner changes.

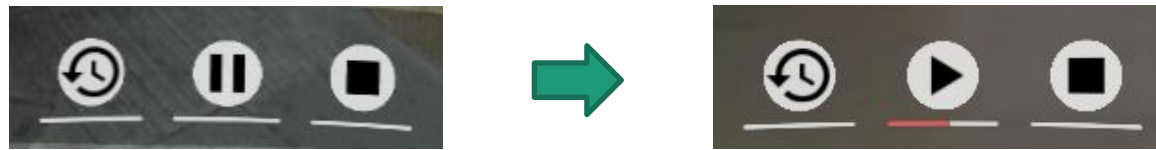
UI



Inside the VR World

How to Reverse/Play/Stop the VR content


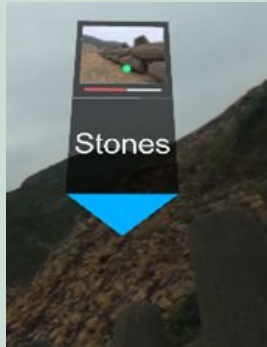
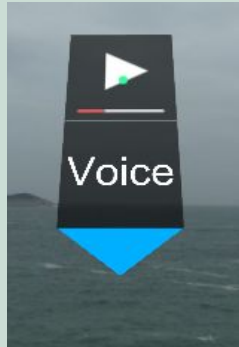
When the students look **downwards**, a control panel will pop up.



- There are 3 actions: **reverse, pause/resume and stop the 360 movie / image.**
- To perform these in the VR world, simply move the pointer to the button for 2 seconds.

How to Respond to a Tag



Either text, image or voice tag will be displayed (according to the composer's database).

Type	None	Image	Voice
UI	 A screenshot of a grocery store shelf with a black tag overlay that says "Other Fried Food" and a blue downward-pointing arrow.	 A screenshot of a rocky landscape with a black tag overlay that says "Stones" and a blue downward-pointing arrow.	 A screenshot of a seascape with a black tag overlay that has a play button icon and says "Voice" and a blue downward-pointing arrow.
Step	Procedures		
1	N/A	Point to the thumbnail image for 2 seconds.	Point to the play button for 2 seconds.
2	N/A	An enlarged image will come out eventually.	The sound will be played eventually.




How to Respond to a MC

The number of chances, the MC question and the 4 choices will now be displayed (according to the composer's database).

Step	Procedures	
1	Move the pointer to the answer.	
2	Correct	Wrong
UI		

How to Respond to a Portal

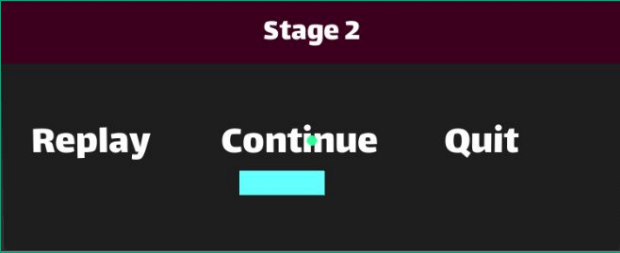
Students can teleport to other stages through portal. The portal title and destination stages will now be displayed (according to the composer's database).

Step	Procedures
1	Move the pointer to the destination stage and wait for 2 seconds. The portal will then teleport to the destination stage.
UI	



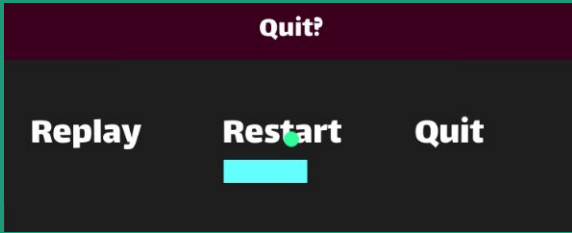
How to Continue to Next Stage

- After finishing a stage, a “Continue Panel” will pop up.
- The student can either replay, continue or quit, by moving the pointer to the option.

UI	
Actions	Meaning
Replay	Replay the current stage.
Continue	Go on to next stage.
Quit	Return to the main menu.

Quit Panel

- After finishing all stages, a “Quit Panel” will pop up.
- The student can either replay, restart or quit, by moving the pointer to the option

UI	
Actions	Meaning
Replay	Replay the current stage.
Restart	Restart from the first stage.
Quit	Return to the main menu.

7. 總結



Session 1

1. Overview of **Mainstream Mobile Computer Devices**
2. Understanding **Basic Operations of Mobile Computer Devices** for Learning and Teaching
3. Using **Google Classroom** to Facilitate e-Learning
4. Conclusion and Discussion of Course Assignment



Session 2

1. Assignments Feedback
2. Digital data logger for PBL
3. User **Authentication** and **Account Management**
4. Using **EdPuzzle** for **Flipped Classroom** Learning
5. Using **AR/ VR** to Enhance Classroom **Experience**
6. Using **EduVenture® X** and **EduVenture® VR** in **Inquiry-based Learning**
7. Conclusion and Discussion



課程習作

試用 Google Applications, 去設計一個有效的教學設計, 及說明如何提升教學成效

輸入

<https://forms.gle/VbGbTn8fK2XUwioM7>



查看

<https://docs.google.com/spreadsheets/d/1PQJ42Rd3PEjrtGce3fbqRkYe6a8ZhCEIQLkxBYhJEhU/edit?usp=sharing>



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Email : manhw@ykh.edu.hk

