

資訊科技教育教學法系列：  
在中學策略性運用資訊科技工具設計教學活動  
以提升學生以電腦為本的協作解難(CPS)能力  
(第二節)



香港中文大學學習科學與科技中心

## 中學 AA 班

### 第一節

日期：2018/01/03 (星期三)

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：2018/01/10 (星期三)

時間：18:30 - 21:30

地點：香港中文大學崇基校園信和樓614室



# 導師簡介

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

借調： 香港教育局資訊科技教育組

行政長官卓越教育獎秘書處

專研： 網絡探究 WebQuest

資訊素養 Information Literacy

教育遊戲 Game-based Learning

網誌教學 Blog-based Learning

移動學習 Mobile Learning

翻轉教學 Flipped Learning

自主學習 Self-directed Learning

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



# 課程目標

本課程旨在介紹教師如何運用資訊科技工具和創新教學法，以提升學生以電腦為本的協作解難(CPS)能力。透過本課程讓學員：

- a) 了解CPS和以電腦為本的CPS的定義，及相關社交和認知技能；
- b) 了解以電腦為本的CPS活動的學習機會、特點、優勢和限制；
- c) 透過有關社會及科學的CPS活動案例，了解如何運用資訊科技工具和創新教學法，以提升學生以電腦為本的CPS能力；



# 課程目標

- d) 運用各種**資訊科技工具**（思維導圖工具等創造性工具、網上論壇等知識建構工具、交流工具和協作工具）創建與科目有關的簡單CPS活動；
- e) 設計和整合以電腦為本的CPS課堂活動；
- f) 運用常用**網上協作平台**（進展性和總結性電子評估）監察和評估學習成果；及
- g) 了解由CPS延伸的技巧及才能（例如領導技巧、團隊管理、時間管理和項目管理），並介紹如何使用資訊科技培育學生相關才能（例如使用翻轉教室和協作講故事）

# 課程詳情

## 第一節：

1. 以電腦為本的協作解難（CPS）能力的理論基礎
2. 課室設置、環境及學生分組
3. 於現時學校網絡環境中應用CPS流動應用程式/平台
4. 整合CPS應用程式/平台的介紹及實際操作（如real-time whiteboard、Google for Education、Microsoft Office 365等）
5. 課業討論



# 課程詳情

## 第二節：

1. 課業討論及回饋
2. 網上CPS應用程式/平台的介紹及實際操作  
(如AnswerGarden、Coggle、Cacoo等)
1. 社交學習平台 (如Edmodo) 和翻轉課堂
2. 案例：於不同學習領域實踐CPS
3. 常見的CPS誤解
4. 介紹遊戲化的概念以促進協作學習
5. 討論、問與答及課程總結

# **1.課業討論及回饋**

## **Feedback and discussion on Participants' Assignments**



# 1.課業討論及回饋

## Feedback and discussion on Participants' Assignments

習作檢視：

[https://drive.google.com/open?id=1\\_TyTnYGWhPmgWxnLxDQRfLDceorAOLiq](https://drive.google.com/open?id=1_TyTnYGWhPmgWxnLxDQRfLDceorAOLiq)



# LESSON 1

## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Google for Education

[https://edu.google.com/k-12-solutions/g-suite/?modal\\_active=none](https://edu.google.com/k-12-solutions/g-suite/?modal_active=none)

### Google for Education



- ◆ Google Drive: Teaching material sharing; Document management; Cloud-based access.
- ◆ Google Docs: Co-authoring and co-construction; Knowledge building; Peer review/assessment.
- ◆ Google Forms: Data collection; Data analysis;
- ◆ Google Draw: Mind-mapping; Illustration of ideas; Knowledge Building with non- verbal elements.



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Google for Education

[https://edu.google.com/k-12-solutions/g-suite/?modal\\_active=none](https://edu.google.com/k-12-solutions/g-suite/?modal_active=none)



#### Manage your classroom with ease

Create classes, distribute assignments, give quizzes, send feedback, and see everything in one place.



#### Administer with confidence

Add students, manage devices, and configure security and settings so your data stays safe.



#### Communicate your way

Connect with email, chat, and video conference.



#### Collaborate anywhere

Co-edit documents, spreadsheets, and presentations in real time.



#### Manage all your tasks

Build to-do lists, create task reminders, and schedule meetings.



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Google for Education

[https://edu.google.com/k-12-solutions/g-suite/?modal\\_active=none](https://edu.google.com/k-12-solutions/g-suite/?modal_active=none)

- Google Drive
- Google Docs
- Google Forms
- Google Keeps



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>

### Microsoft 365

- ◆ Microsoft One Drive/Share Point: Teaching material sharing; Document

- ◆ management; Cloud-based access.

Microsoft One Note: Sharing ideas; Sharing messages;

Microsoft Task/Calendar: Communication among team members; Project and time

- ◆ management.



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>

Office 365

























我的 App

搜尋 App

預設順序

名稱 (遞增)

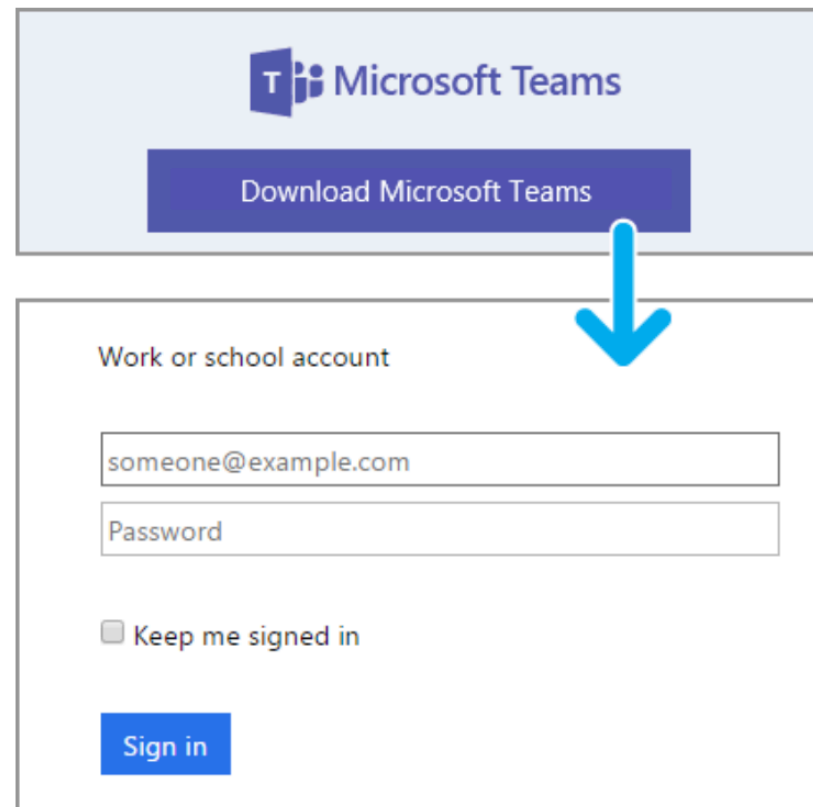
名稱 (遞減)

	OneNote		Class Notebook		Staff Notebook		郵件
	行事曆		Sway		Word		PowerPoint
	Excel		OneDrive		Forms		Planner
	人員		工作		Video		SharePoint
	Delve		新聞摘要		Yammer		PowerApps
	Flow		Stream		Teams		Dynamics 365

# Microsoft Teams

## 登入 Microsoft Teams

1. 前往 <https://teams.microsoft.com>
2. 使用公司或學校帳戶登入。



Microsoft Teams

Download Microsoft Teams

Work or school account

someone@example.com

Password

☐ Keep me signed in

Sign in

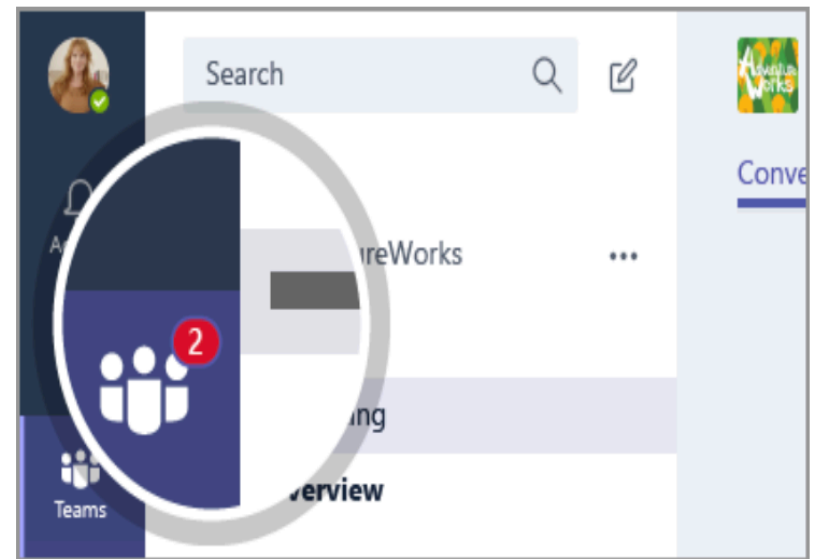
# Microsoft Teams

## 選取團隊和頻道

團隊可以匯集相關人員、交談、檔案和工具 — 全部集中在一處。頻道則是團隊的討論主題。熟悉團隊和頻道的最佳方式，就是選取團隊和頻道，然後開始探索。

選取 [團隊] 圖示

在團隊底下，選取頻道並查看頻道中的 [交談]、[檔案] 和 [記事] 索引標籤。



# Microsoft Teams : 交談

## 開始新的交談

當您有新的主題或想法要發表到團隊時，可以開始新的交談。

## 選取團隊和頻道

在 [開始新的交談] 方塊，新增您的訊息並按 Enter 鍵



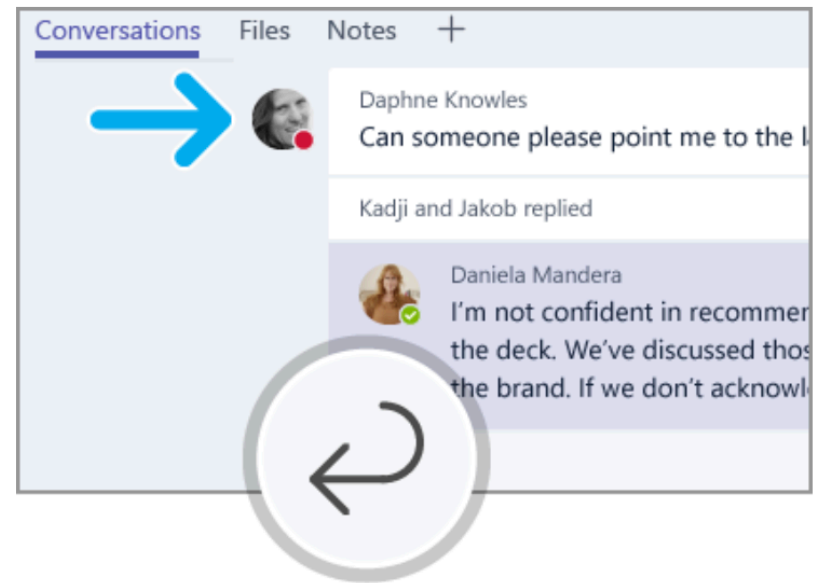
# Microsoft Teams : 交談

## 回覆交談

頻道中的交談會依日期、再依討論串分門別類。在往來交談中的回覆會歸類到初始交談底下，讓您可以更輕鬆地追蹤交談內容。

尋找您要回覆的交談討論串。

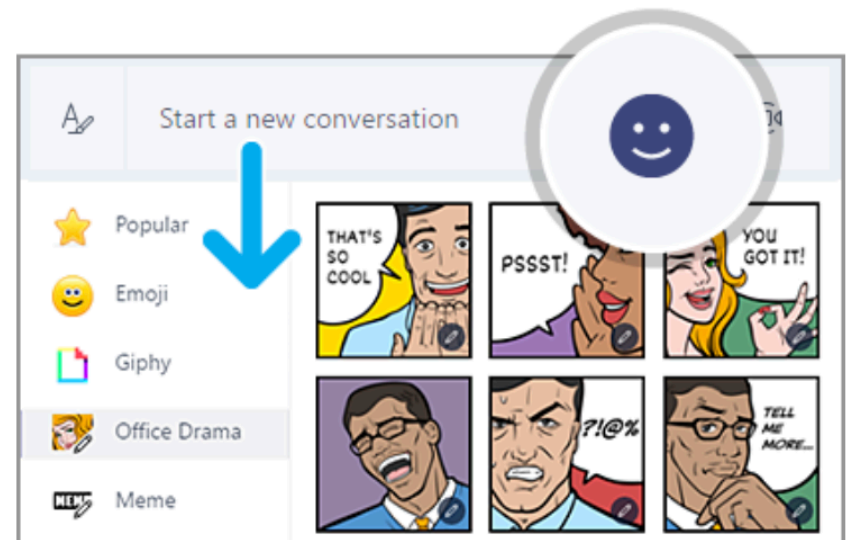
選取 [回覆]，新增您的訊息，然後按 Enter 鍵。



# Microsoft Teams : 交談

利用 Emoji、Meme 和貼圖增添樂趣 利用 Meme 和自訂的貼圖，來表達自我風格，並讓同事印象深刻。

選取 [團隊]，然後選取頻道。在撰寫訊息方塊/文字編輯器中選取選取以開啟 Fun Picker。。我們建議使用辦公室小劇場貼圖，所以請選取 [辦公室小劇場]。選取貼圖，輸入有趣的標題，然後選取 [完成]。在傳送訊息之前使用 @ 提及同事，然後按 Enter 鍵。





# Microsoft Teams: 共同作業

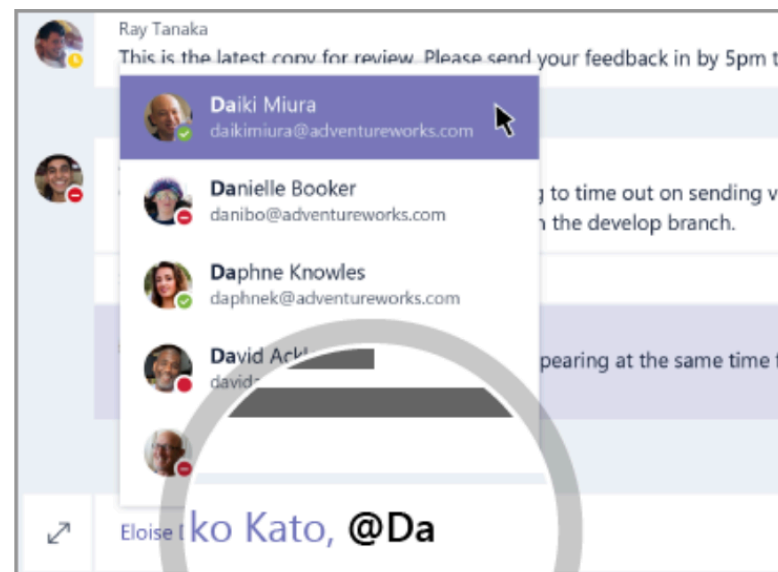
## 使用 @ 提及某人

如果您想要某人接收有關您傳送訊息的通知，您可以使用 @ 提及某人。您可以使用 @ 提及頻道、團隊、某個人或多個人。

在 [回覆] 或 [新交談] 方塊，輸入 @ 符號，然後輸入該人名字的前面幾個字母。

在 [建議] 方塊，選取人員。針對您想要使用 @ 提及的更多人員，重複上述動作。

對於您使用 @ 提及的人員，@ 符號會顯示在他們的 [頻道] 的訊息中和 [團隊] 圖示上。立即查看您的 [團隊] 圖示，查看某人是否使用 @ 提及您。



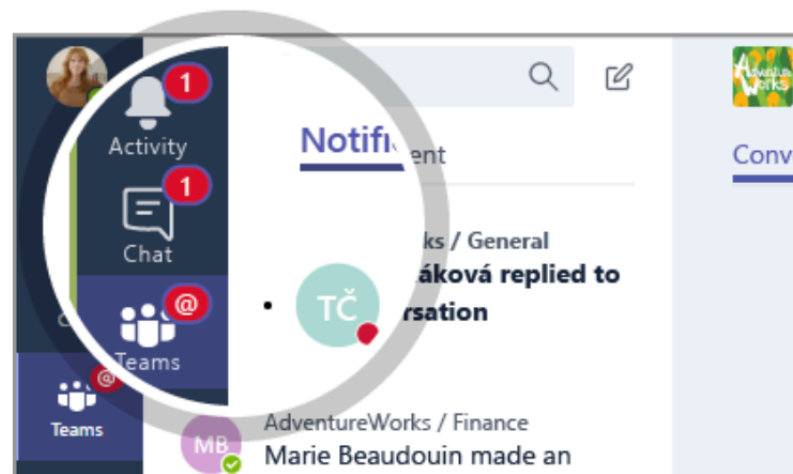
# Microsoft Teams: 共同作業

## 利用活動和通知隨時掌控全局

當有人使用 @ 提及您、有人對您的貼文按讚，或是有人回覆您開始的討論串，您都可以輕鬆地一覽無遺。在 [活動] 和 [聊天] 圖示上會顯示一個數字或遞增數字，而 @ 會出現在 [團隊] 圖示上。

選取 [活動] 圖示。

若要檢視適用於您的交談，請選取 [通知]。選取 [最近] 可檢視最新的團隊交談。

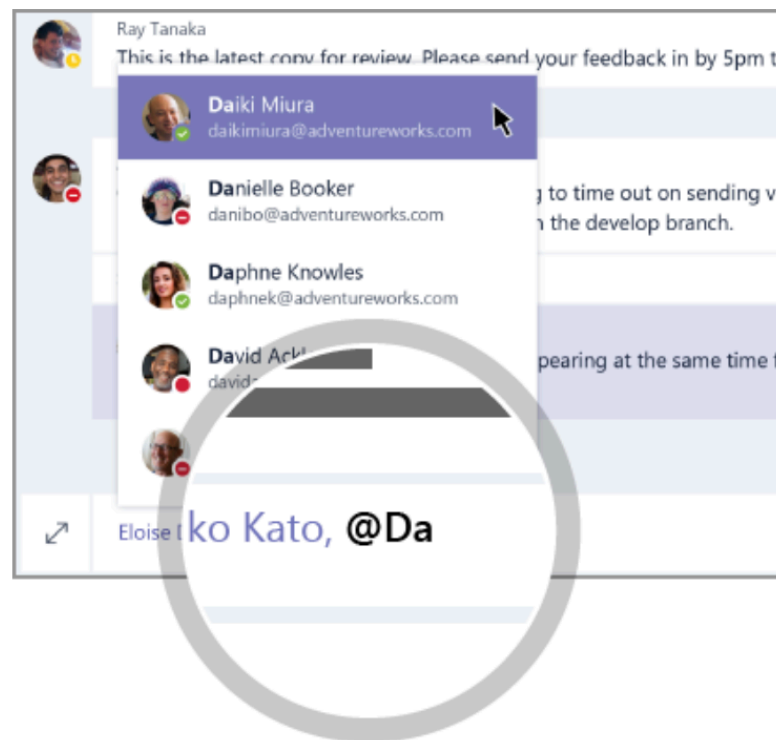


# Microsoft Teams: 共同作業

## 搜尋訊息、人員或檔案

您可以跨團隊、頻道和檔案進行搜尋。  
在 [搜尋] 方塊輸入詞句，然後選取 選取以開始搜尋。

- 選取 [訊息]、[人員] 或 [檔案]。
- 選取搜尋結果中的項目。您可以按一下 [篩選] 圖示來排序或篩選搜尋結果。



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

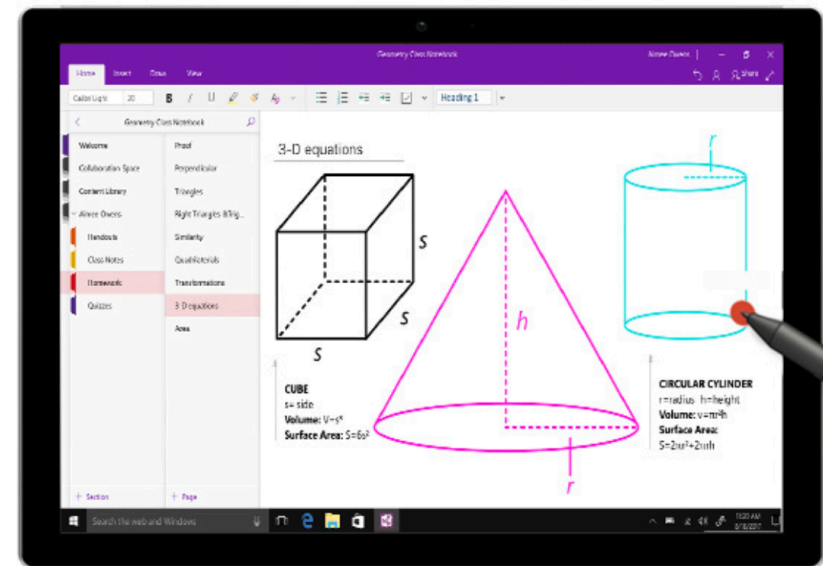
### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>

### OneNote—用於組織和協同合作的終極數位筆記本

利用手寫文字、網站內容，甚至是來自您裝置的音訊和視訊來組織課堂教材和準備作業。然後即可輕鬆與學生和同事協同合作。

探索 **ONENOTE** > 在這裡免費取得 **ONENOTE** 訓練 >



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>



### Microsoft Teams

Teams 是集合對話、內容和 app 的數位中心。教育者可以創造協同合作課堂教學、與專業學習社群連結，並與學校人員對話—全部透過 Office 365 教育版完成。

[瞭解詳情 >](#)

## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>



### PowerPoint Online

- 使用專業的範本，只要幾分鐘就能將您的想法轉換成令人信服的簡報。全部免費。
- 使用動畫、轉場效果、相片和線上影片，讓您的投影片更加生動活潑。
- 無論您人在哪，都能同時與您的小組共同撰寫同一份簡報。

開始使用 PowerPoint

## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>

#### Excel Online

- 在熟悉的 Excel 試算表和活頁簿中整理和分析資料。所有變更都會在您輸入時自動儲存。
- 使用新式圖表和圖形以視覺化的方式呈現資訊，將多個數字欄轉換成有用的深入見解。
- 即時線上共同作業功能可確保每個人編輯最新版文件。

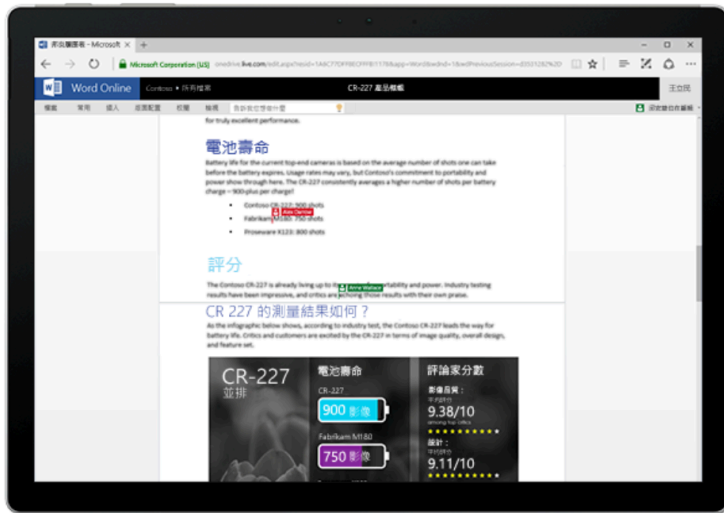
開始使用 Excel



## 4. Examples of Using CPS Apps/Platforms to Facilitate Collaborative Learning

### Microsoft for Education:

<https://www.microsoft.com/en-us/education/products/office/default.aspx>



### Word Online

- 建立並編輯外觀精美的履歷表、電子報和文件，並邀請其他人檢閱並即時共同撰寫。
- 使用免費範本節省時間，還包含針對 MLA、APA 和 Chicago 樣式需求所設計的格式設定工具。
- 運用免費的 Office 增益集額外增添功能，像是方便您撰寫文件時快速查詢資料的 Wikipedia 增益集。

開始使用 Word



## **2. Introduction and hands-on practices on free CPS Apps/Platforms**



## 2. Introduction and hands-on practices on free CPS Apps/Platforms

Introduction to the following free CPS Apps/Platforms and illustration will be given to how to adopt them in carrying out classroom activities and collaborative learning.

- ◆ CoeFFEE Learning Platform  
(Gamified Learning Environment)
- ◆ AnswerGarden  
( Formative assessment and polling)
- ◆ Coggle  
(Collaborative concept map and graph)
- ◆ Cacao  
(Collaborative flow chart)
- ◆ Alternative ways to adopt the above Apps/Platforms and their pros/cons:
  - ◆ On mobile devices;
  - ◆ As Google Chrome extensions.

## 2. Introduction and hands-on practices on free CPS Apps/Platforms

### CoeFFEE Learning Platform (Gamified Learning Environment)

- Learning language in a **gamified environment**
- **Word Explainer**: explain and guess words with peers;
- **Learn phrases** created by other teachers from all over the world.

The screenshot displays the CoeFFEE Learning Platform interface. At the top, the CoeFFEE logo is on the left, and user options (Profile, Logout, 0 new messages) are on the right. A navigation bar includes links for Language Exchange, Make a Phrase, Word Explainer (which is highlighted), Blog, and Learning Stats. The main section is titled "Word Explainer" with the subtitle "Language practice that's pure fun". Below this, there is a "Game language" dropdown menu set to "English", a note "Playing in your native language is fun too :)", and a "Play!" button. A warning icon and text state: "Before you start playing we need to [measure your vocabulary](#). This way we can adjust the game precisely to your language level." On the left, a pencil icon is next to the text: "Word Explainer is an advanced game for advanced students and native speakers. The purpose of the game is to explain words and guess words explained by other players. [Read more about Word Explainer](#)". At the bottom left, the URL <https://coeffee.com/> is displayed.

**Game language** English Playing in your native language is fun too :) **Play!**

**Word Explainer is an advanced game** for advanced students and native speakers. **The purpose of the game** is to explain words and guess words explained by other players. [Read more about Word Explainer](#)

Before you start playing we need to [measure your vocabulary](#). This way we can adjust the game precisely to your language level.

<https://coeffee.com/>

## AnswerGarden ( Formative assessment and polling)

- AnswerGarden
- 

+ Q ♥ ?

Now also for iPad!



AnswerGarden is a new minimalistic feedback tool. Use it for real time audience participation, online brainstorming and classroom feedback.

[Learn more »](#)

AnswerGarden has many different users: classroom, conference and corporate audiences, creative teams, online crowds, mindmappers, and more!

[Learn more »](#)

AnswerGarden fits educational, professional and creative purposes, is standalone and embeddable, and shows thousands of answers in a glance!

[Learn more »](#)AnswerGarden 

+ Q ♥ ?

Try out this sample AnswerGarden. Respond to the question by typing in the answer field or click an existing answer, then press the submit-button to add your entry. Only the most frequent answers are shown, as there currently are more than answers in this garden! [Click here](#) to learn more on how to create and apply your own AnswerGarden. Or [create an AnswerGarden](#) right away!

Type your answer here...

Submit

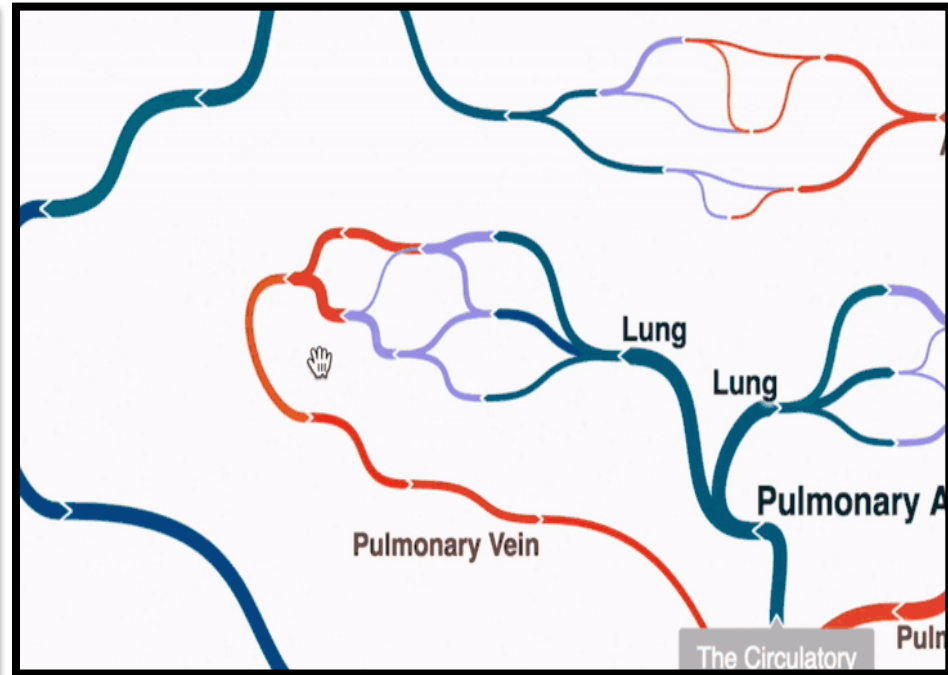
special confusing? who are you? what is the weather london informative rock climbing poor hot an answer place  
don't know flower great idea food a quick learning too future teacher toll meh yellow funny, optimistic thomas jefferson app  
don't know mindblowing jdk mysterious effective handy genial apple fish fun! hell  
weather awesome! something new beautiful terrific excellent what makes you happy brainstorming tool tool immediate  
swaggy awesome! not sure feedback hey wonderful easy to use hallo collaborative cat love stupid user friendly math  
website learning  
what? hard awesome i don't know musical : ) new lit 1 good super funny school powerful fast  
what is snow hej green strange different blue cool great test innovative fab a new tool innovation  
bello bad quick okay i don't know amazing nice hi hello ok fun easy new to me not an actual garden an old man  
lame back weird  
an app for feedback family something a tool  
mystery snow jesus empowering fabulous lol useful boring a interactive confusing fantastic exciting hai fine pretty cool snowflake  
hmm no idea what incredible unknown free yes no new for me unique sweet lovely a great tool not even waterproof diverse  
why teacher formative assessment smart brainstorming hula crazy an app brilliant red technology superb a mystery water decade

Create AnswerGarden

<https://answergarden.ch/>

## 2. Introduction and hands-on practices on free CPS Apps/Platforms

### Coggle (Collaborative concept map and graph)



<https://coggle.it/>

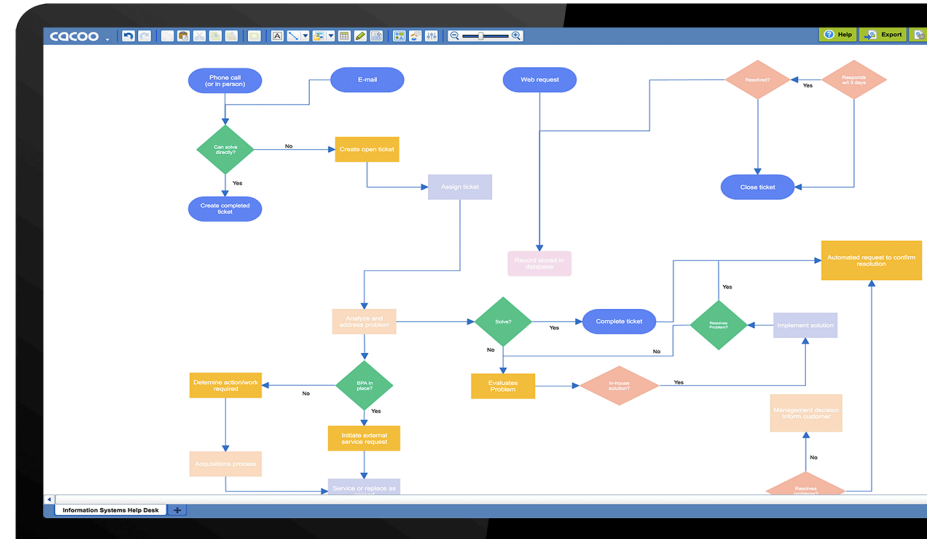
## 2. Introduction and hands-on practices on free CPS Apps/Platforms

### Cacoo.com (Collaborative flow chart)

[Features](#)[Pricing](#)[Templates](#)[For Teams](#)[Try It Free](#)[Log in](#)

**Cloud-based diagrams,  
the easy way.**

Diagram maker for companies, teams, and you

[Try It Free](#)

<https://cacoo.com/>

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



## 2. Introduction and hands-on practices on free CPS Apps/Platforms

Google Chrome's extensions

<https://chrome.google.com/webstore/category/extensions>

Chrome 線上應用程式商店

搜尋店內商品

擴充功能

主題

類別

全部

功能

☐ 可在離線狀態下執行

☐ Google 製作

☐ 免費

☐ 適用於 Android

☐ 支援 Google 雲端硬碟

評分


☐ ★★★★★

☐ ★★★★★ 以上


☐ ★★★★★ 以上

☐ ★★★★★ 以上

精選商品

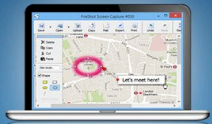


最近更新



EVERNOTE  
WEB CLIPPER

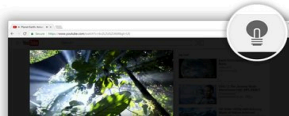
Evernote Web Clipper  
★★★★★ (133042) 免費




Full Page Screenshots  
Capture. Edit. Save.

捕捉網頁截圖 - FireShot的  
★★★★★ (19374) 免費

Turn Off the Lights™  
for YouTube



關燈看影片  
★★★★★ (32578) 免費



imTranslator  
Translator Dictionary TTS

ImTranslator: 翻譯, 字典, 聲音  
★★★★★ (3201) 免費

查看全部

# Trello

[登入](#)[登錄](#)

<https://trello.com/>



**Trello 不僅免費、使用上相當靈活，還可以視覺化的方式與他人共同管理所有事項。**

揚棄冗長的電子郵件對話串、過時表單、不太黏的便利貼和笨拙軟體，以免管理專案時節外生枝。Trello 可讓你一眼掌握專案的整體概況。

[立即註冊，免費使用。](#)

[登入...](#)



# Trello

How Trello Uses Trello to Collaborate, Plan, and Communicate as a Team

<https://zapier.com/blog/how-trello-uses-trello/>

How Teams At Trello Use Trello

<https://blog.trello.com/how-teams-at-trello-use-trello-pro-tips>



# Trello

一、每個專案都有一個「收件匣」列表

二、看板根據「工作流程」自由設計

以Trello在發佈新功能時使用的看板，採用了如下的工作進度列表設計：專案基本資料待辦事項處理中準備發布已經發布

三、利用卡片待辦清單，決定卡片是否移動到下個進度

四、利用空白卡片，建立可複製工作步驟模板

五、另外建立資源看板，和專案流程看板區隔

六、建立最佳流程後，隨時可以複製使用：

七、減少會議時間的技巧

八、減少通知噪音的技巧

### **3. Educational Social Network and Flipped Classroom**



### 3. Educational Social Network and Flipped Classroom

#### Introduction of Edmodo

- Teacher and Student connection
- Assessment tool and personalization
- Sending notes/ poll/ grouping/ resources posting
- Facilitation with Flipped Classroom Video

