



# 探索行動樂於學習

三民高中圖書館  
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新北市立三民高級中學  
New Taipei Municipal San Min High School



# 大綱

01

學校資源概況

02

教學應用實例

03

心得與反思

04

目前困境



# 01 學校資源概況

衝上雲端的最佳利器

# 學校資源

## 範圍

- 高中英文、資訊、音樂
  - 圖書館活動

## 硬體

- iPad Air \*48 +USB同步充電車+Apple TV
  - Asus Pad \*50+環景投影
    - Asus Pad \*50

## 管理

- Apple Mac Mini -MDM
- GAM (Google Apps Manager)
- Google ClassroomMate

## 軟體

- Google Service
- Moodle
- Quizizz
- Holiyo
- Zuvio
- Kahoot
- Pear Deck
- APPs (GarageBand、DrumPad、RGB調色盤...)



# G-Service 使用概況

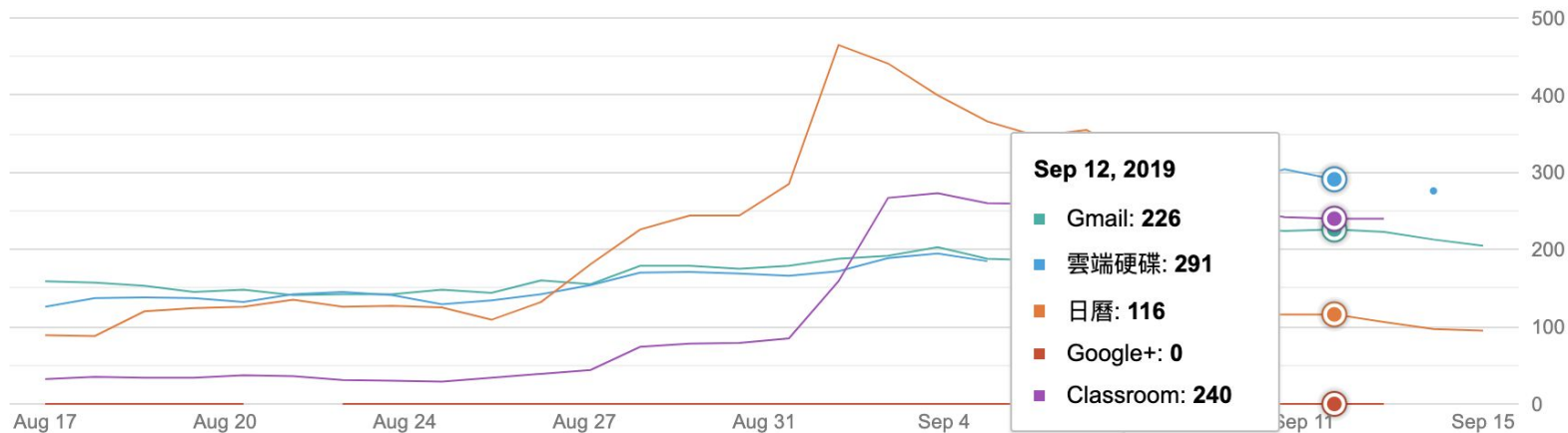
## 應用程式使用情況

2019年9月15日的最新資料

最近 1 個月

● Gmail ● 雲端硬碟 ● 日曆 ● Google+ ● Classroom

每週活躍使用者人數



**34,362** +957 (3%)  
電子郵件總數

**627,022** \* +519,005 (480%)  
新增的檔案數

**1** \* +1  
視訊 Hangouts

# G-Service 使用概況

有動態的課程 

● 14 天內有動態的課程



# G-Service使用概況

2019.03.21-2018.09.14

日期	新增的 Google 文件檔案數	新增的 Google 簡報檔案數	新增的 Google 表單檔案數
2019-09-04	1	2	0
2019-09-05	8	1	2
2019-09-07	8	2	1
2019-09-08	11	11	2
2019-09-09	5	1	0
2019-09-10	7	5	2
2019-09-11	3	1	2
2019-09-12	6	2	0
2019-09-14	8	3	0
total	3014	1124	142



# 02 教學應用實例

有限資源的創新應用



高中資訊

# Quizizz 知識王挑戰賽

- 即時診斷測驗



再玩一次



# Holiyo 密逃解題任務 - 合作學習

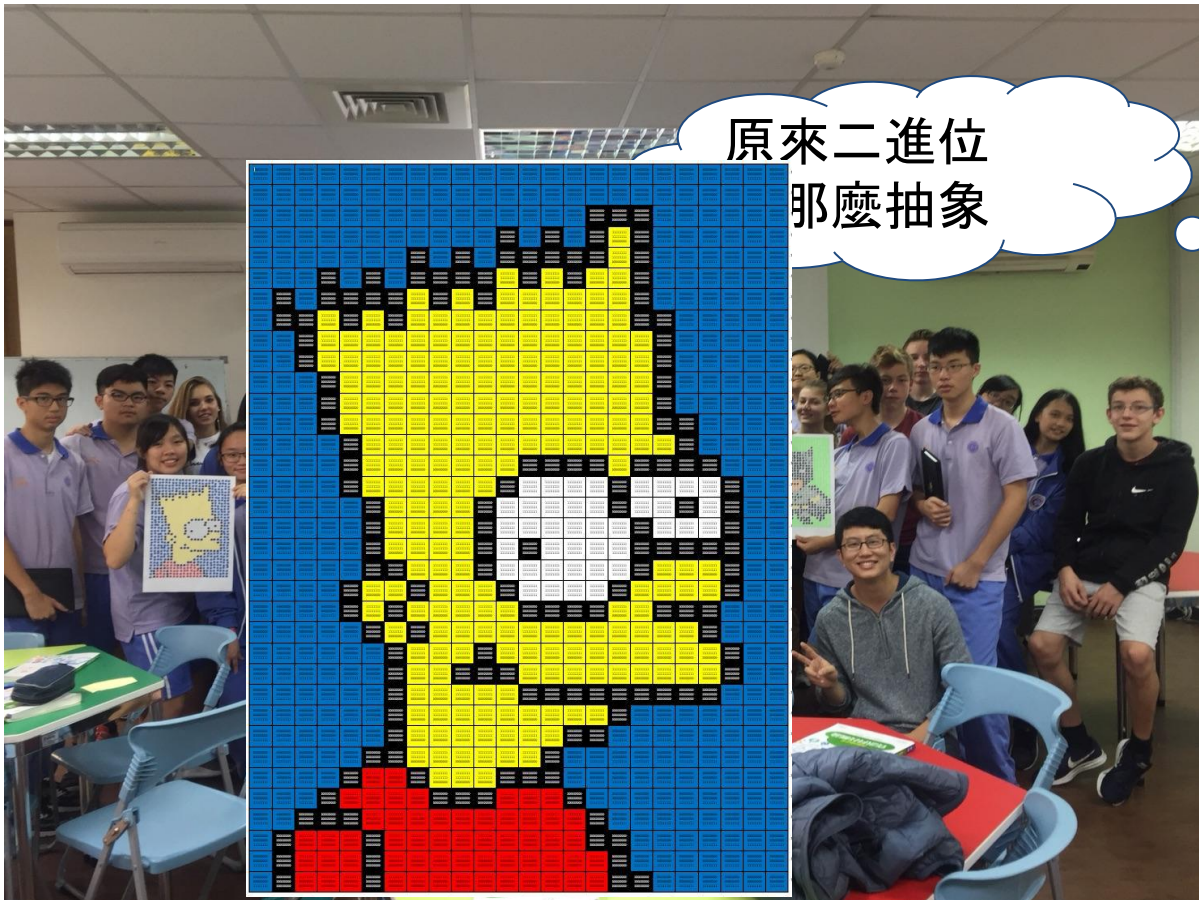
向邊緣人說掰掰



# RGB調色盤 召喚超級英雄 - 圖像數位化



原來二進位  
那麼抽象



# Cospaces 遊戲設計師

- 演算法與問題解決

遊戲規則  
我說了算

捨不得下課



# Cospaces 遊戲設計師 - 演算法與問題解決



# 其他相關 課程應用

CodingBar

此練習題開放功能與狀態：[題目已開放](#) [開放提示](#) [開放解答](#) [學生摘要](#) [拆解提示](#) [解題答案](#)

37 線上學生 0 [重點觀察](#) 1 [需要幫助](#) 37 [閒置狀態](#) 36 [完成練習](#) [相似度檢查](#)

10:11:58 [練習時間](#) 97% [完成率](#)

		##	測試者	00:39:29	0次	...
		##	01王洋	00:18:34	3次	...
		##	02王韋翔	00:18:59	2次	...
		##	03王通翔	00:18:15	2次	...
		##	04吳承恩	00:07:30	4次	...
		##	05吳承翰	00:12:00	1次	...
		##	06吳哲豪	00:25:31	2次	...
		##	07李林聰	00:24:28	7次	...

Py **smsh\_ex1.1\_交換變數值** [點我看詳細內容](#)

已查看的拆解提示: 0

最近執行的程式碼: 上週 [LIVE](#)

上一次執行的程式碼

字體大小 [16](#)

```

1 x=input('x=')
2 y=input('y=')
3 temp=x
4 x=y
5 y=temp
6 print(x,y)

```

# 其他相關 課程應用

102資訊科技概論 訊息串 課堂作業 成員

102資訊科技概論

關於  
選取主題  
上傳相片

接近截至日期的作業

沒有近期內要繳交的作業

向全班宣佈...

江天達張貼了新的資料：科技新知報告重點及範例  
9月14日

江天達張貼了新的資料：進位轉換小遊戲  
9月14日

江天達張貼了新的資料：密碼傳遞  
9月14日

106\_1\_資訊科技概論期末考(108班)

問題 回覆 38 100 總分

一般	中位數	範圍
59.05分 (總分: 100)	60分 (總分: 100)	28 - 84分

總分分佈

經常答錯的問題 ?

9.在電腦系統的 1 Byte = \_\_\_\_bits ? 答對數：9，作答總數：38

14.三民高中共有2903位學生，若要用二進位將所有學生加以編號，至少需要幾個位元才夠？ 答對數：16，作答總數：38

15.十六進位制的 1F 代表十進位的？ 答對數：18，作答總數：38

17.布林運算 NOT ((1 OR 0) AND 1) 的結果為何？ 答對數：10，作答總數：38

18.現今電腦的 CPU 通常包含那兩個基本單元？ 答對數：18，作答總數：38

# Garageband 我的行動band - 和弦應用及搭配

原來樂團演出  
要注意這些



體驗流行歌曲  
和弦應用



原來基本節奏  
是這樣組合

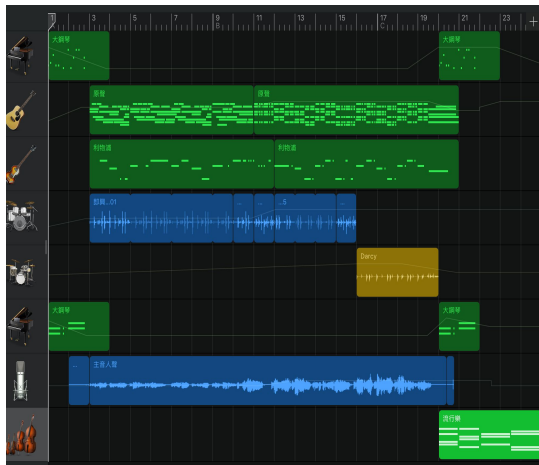




# Garageband 情境音樂

配樂創作

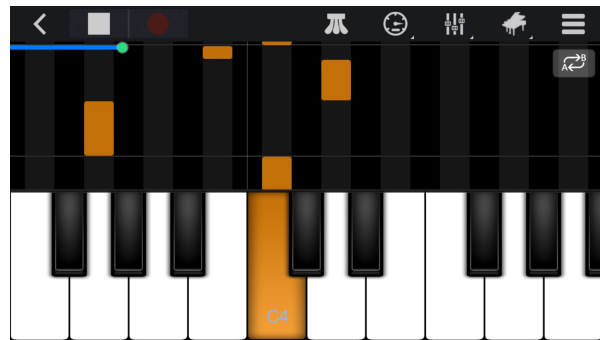
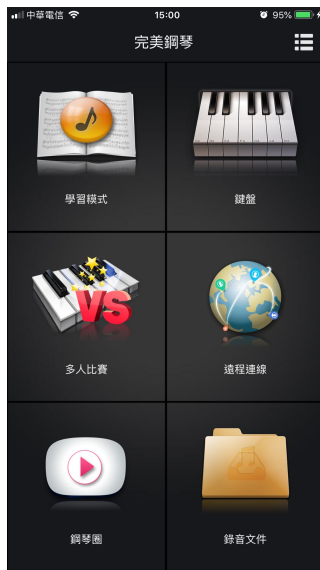
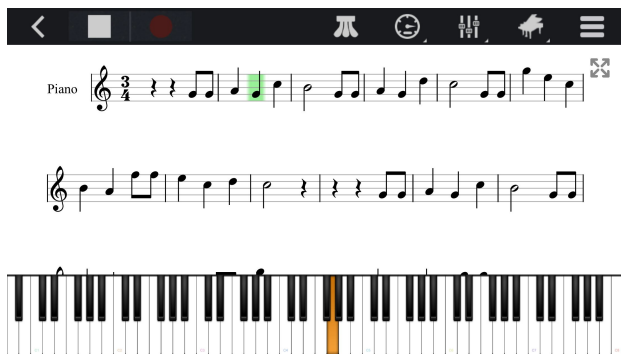
運用行動載具(GarageBand)裡的編曲功能，可以讓學生創作不同風格的音樂編排以及多元聲響的呈現，以此展現出屬於他們自己的音樂。



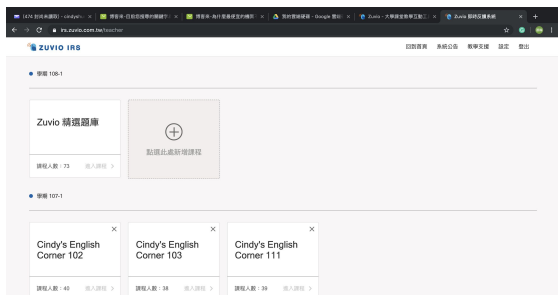
# 完美鋼琴 鋼琴彈奏



運用行動載具讓讓即使沒有基礎或是家中沒有樂器的學生，都可以有機會學習彈奏鍵盤樂器。



# zuvio 課堂即時互動工具



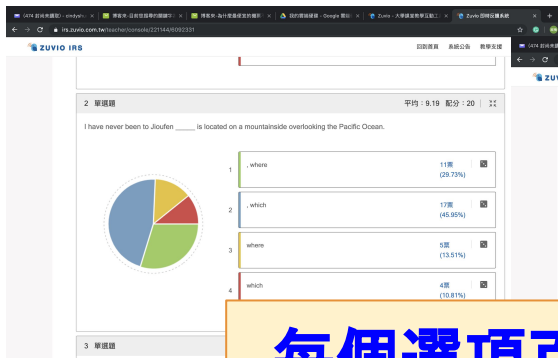
建立課程



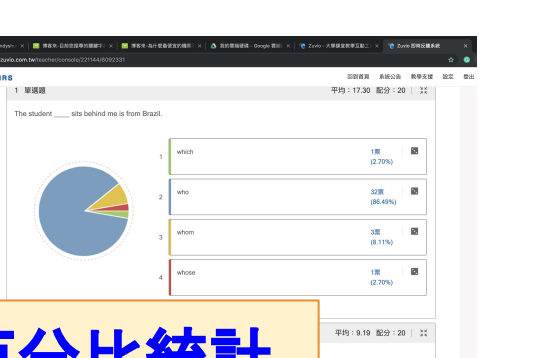
建立題庫



學生作答狀況



每個選項百分比統計



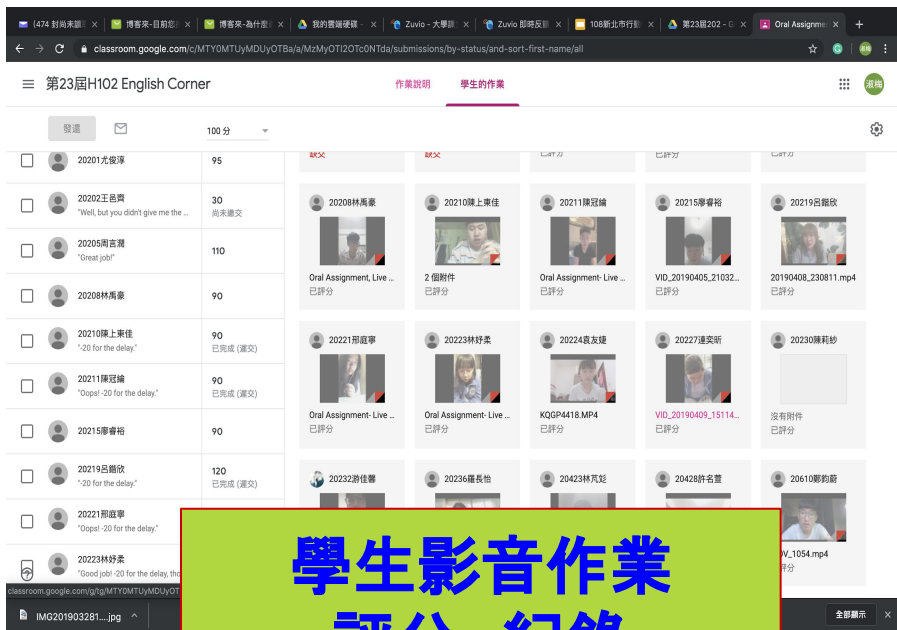
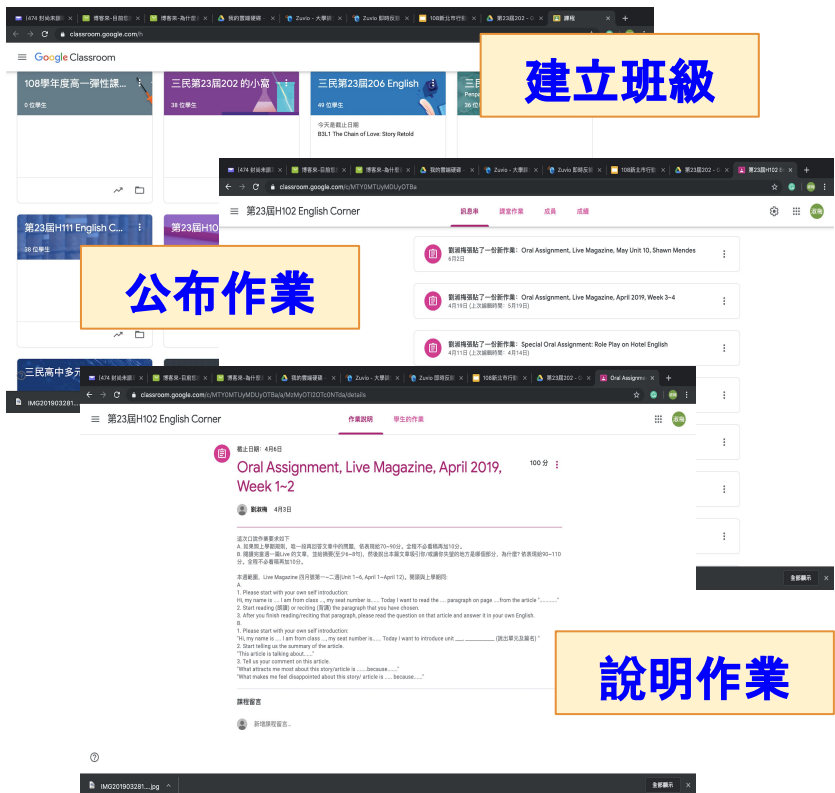
針對某題  
老師可利用zuvio隨  
選功能挑出學生  
請學生解釋說明

# Google Classroom 影音作業庫

建立班級

公布作業

說明作業



學生影音作業  
評分、紀錄  
空間無限制

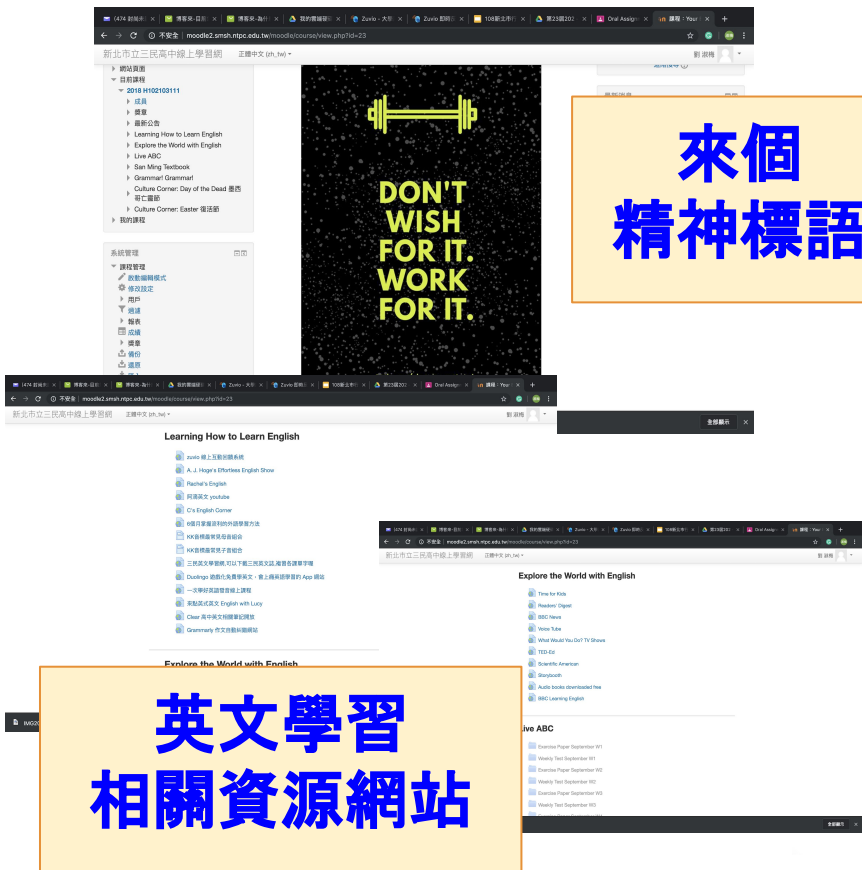
# Moodle 學習資源供應站

來個  
精神標語

Moodle  
真的很方便

影音輔助教材  
往上丟，上課  
時電子講桌打  
開，隨時可下  
載使用！

英文學習  
相關資源網站



# PaGamO 遊戲式學習



一定要贏過旁  
邊同學...



# Moodle 班級經營好幫手

Learn How to Learn 學習有訣竅

GrIT: Traits that Matter for So...

成長心態  
勇於挑戰難度

GrIT by Angela Duckworth | A...

Explore the World 伸出觸角，探索世

- IOH 開放個人經驗平台
- 文茜的世界周報 Youtube
- TED-Ed
- 104 資訊科技集團
- 高中生看世界Looking Beyond Borders SOS reader
- 高中生看世界Looking Beyond Borders FB
- 換日線 CROSSING: 大膽走出去，世界走進來
- udn國際新聞報
- 大學甄選入學委員會(繁星與申請)

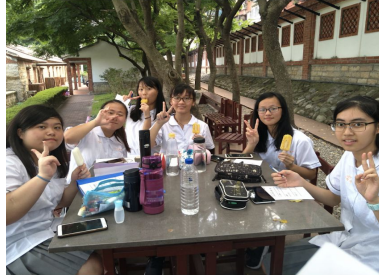
Adventures Abroad 勇闖異國，豐富生命

- 德對台三策略 台灣高中生也能直接考德國大學
- 在德國留學與研究
- 學測後不妨買張機票，前進德國大學
- 兩岸交流，前進中國大學
- 在申請香港的大學前你必須思考的五件事
- 香港學生在內地大學讀書是怎樣的一種體驗？
- 香港大學知多少？
- 高中生出國唸大學香港篇

**扣住精神指標  
提供成長滋養**

**勵志影音  
探索世界  
豐富生命**

**班級精神指標  
成長型心態**

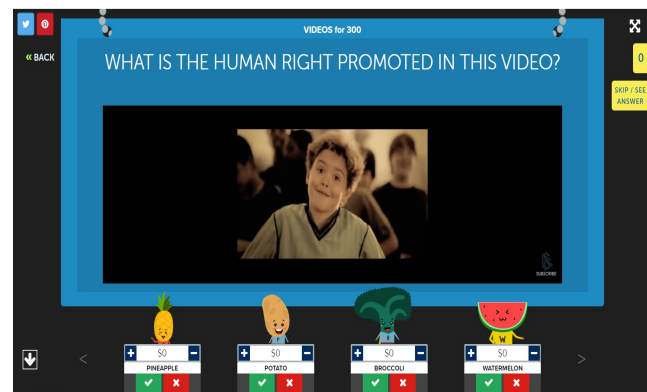


**紀錄班級  
國際活動**

# Factile 用以強化各項人權意涵

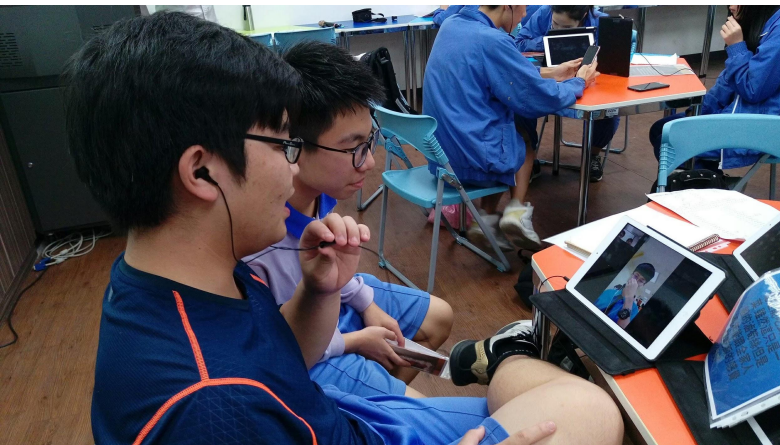
## Factile妙處

1. 百萬大富翁的設計機制，提高學生學習趣味！
2. 能結合網路影片，增加視覺資源！





# LINE 促成跨國視訊，擴展見聞



LINE

最生活的  
通訊軟體

+

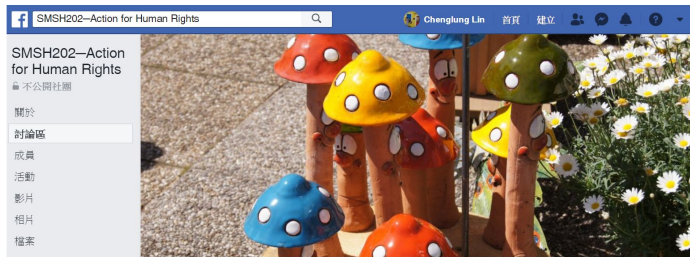
很國際的  
議題交流

+

糧食危機  
英文報告



# FB 課堂紀錄、心得作業 通通有



Chenglung Lin 覺得很有挑戰。

107.10.18

We began the class with a small activity where everyone chose the stance from his/her perspective. Actually, I used "Jack," "ChengLung," "ChengLung's friends," and "teachers" to represent some characters in the three video clips followed. I am wondering if I succeeded in making you guys more involved in discussions about the video clips and more empathizing with the people in those events. You are very welcome to tell me how you feel in person or through thi..... 更多



李庭瑾 (1) I saw a foreigner as soon as I entered the classroom, and I say hello to him, he say hello how are you, and I say I fine, haha, although it just a simple conversation, but it is my first impression of him. Although the content of the class is really all i..... 查看更多

大心 · 回覆 · 翻譯年糕 · 49週



威威陳 陳威君 (1) I saw which girls were deprived of the right to be taught because of the stereotype of the country. They can only care for children at home, but boys can go out to study and do whatever they want, but now, because of the rise of women's rights, ..... 查看更多

大心 · 回覆 · 翻譯年糕 · 48週



黃丞佑 (1) It was very exciting that a foreigner students had a speech for a us. He speech told us many human rights at foreign countries and make us know what happen in those countries. When he introduced his country, India. In India, some system we can't imagine. (2) In India, women's freedom are less. And in Taiwan, women is more free than India. That's thing in Taiwan is good thing for Women.

大心 · 回覆 · 翻譯年糕 · 48週



張好強 (1) It is the first time I listening to foreign speakers I think it was interesting. In his speech he say many people can't get their human right in his country. In the end he introduces Caste System even though he is the In the second level but he want..... 查看更多

大心 · 回覆 · 翻譯年糕 · 48週

## Facebook

### 完整記錄學習過程

+

### 互相觀摩心得

+

### 操作簡單

圖書館活動

# Quizizz 閱讀金佳讚-7年級閱讀競賽



Quizizz

建立題庫，亂數出題  
比速度，也比正確性

圖書館活動

# Kahoot 閱讀金佳讚-8年級閱讀競賽



Kahoot

音效 + 時限  
緊張刺激的搶答  
考驗熟悉度、反應力



# 03 | 心得與反思

# 心得與反思

課程包裝

**橫向聯繫**

各個學科卻不至於彼此犧牲

鼓勵創新

**刻意改變**

才有機會看到新的可能

建立信心

**有安全感**

才能增加教師們將資訊課技融入教學的動力

解決方案

**要多研習**

提供適當的資訊科技工具解決問題

教師需求

**要有時間**

去聆聽並了解教師在課堂上需要解決的問題



# 04 | 目前困境

# 目前 困境



## 友善環境

### 一般教室

手機帶入校園後禁止開機，教師統一保管、學生手機無法連學校WIFI、普通教室無友善行動學習環境

## 平板投影

### 有線/無線

投影平板或筆電需求增加，但教室內班級講桌規格不統一、外接視訊輸入穩定性因班級而異

## 管理機制

### Android系統

因不便大量管理，因此有兩間教室的平板處於放生狀態

## 教師負擔

### 能者過勞

願意創新教學的教師已參與過多計畫或課程設計





Right click  
- Replace image

# Our Services

Presentation Designed



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



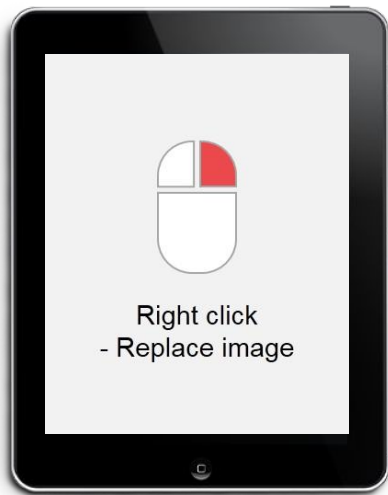
**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



# Section Break

This text can be replaced with your own text.



# Welcome!!

This PowerPoint Template has clean and neutral design that can be adapted to any content and meets various market segments.

With this many slides you are able to make a complete PowerPoint Presentation that best suit your needs.



Right click  
- Replace image

# Our Services

Presentation Designed



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.



**Your Text Here**

You can simply impress  
your audience and add  
a unique zing.

# Our **Team** Layout



Right click  
- Replace image

**Name Here**

---

Programmer

You can simply impress your audience and add a unique zing.



Right click  
- Replace image

**Name Here**

---

Programmer

You can simply impress your audience and add a unique zing.



Right click  
- Replace image

**Name Here**

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Programmer

You can simply impress your audience and add a unique zing.



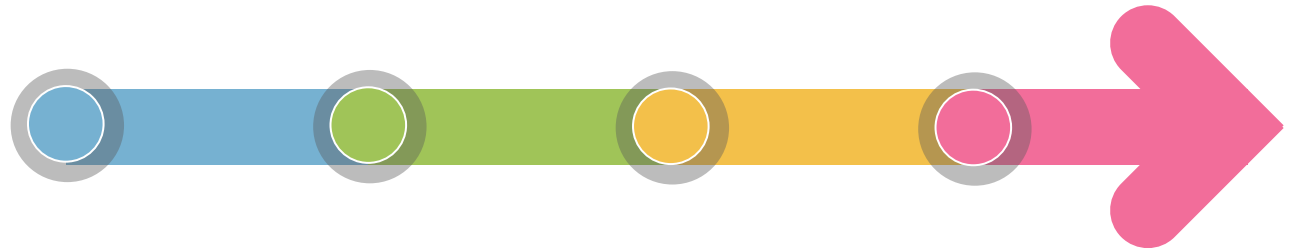
Right click  
- Replace image

**Name Here**

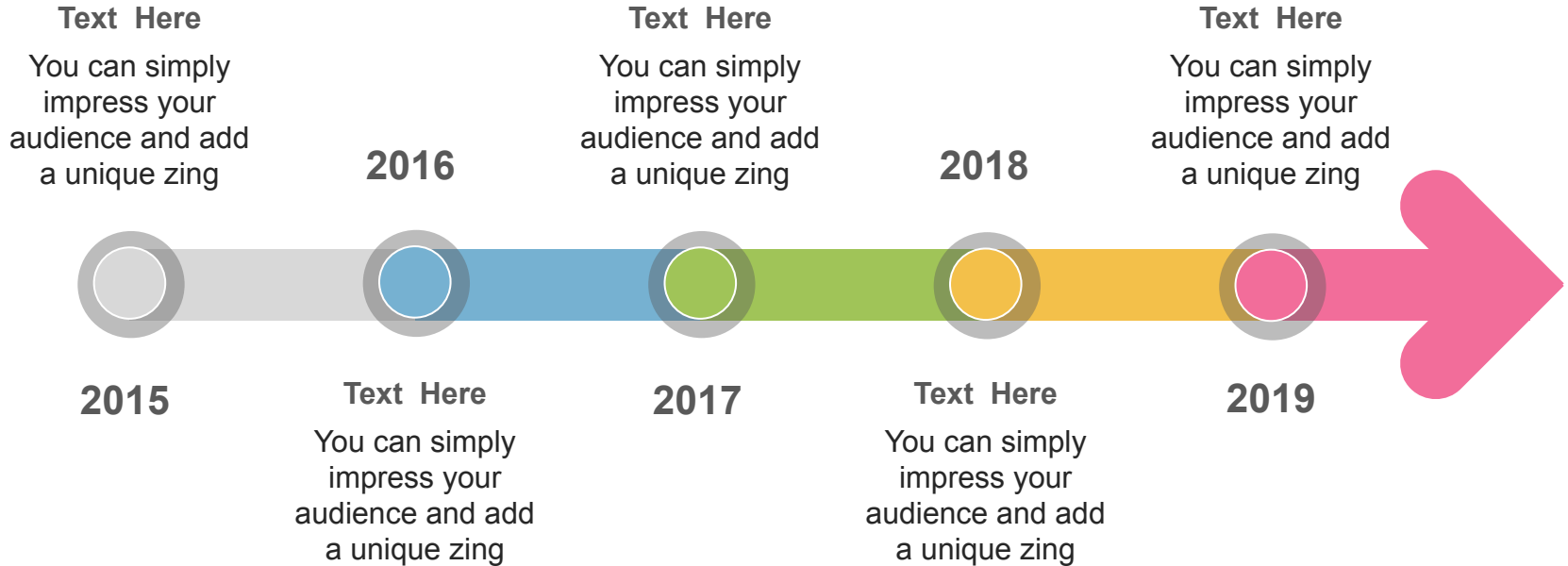
---

Programmer

You can simply impress your audience and add a unique zing.



# TimeLine Layout





Right click  
- Replace image



**Your Text Here**

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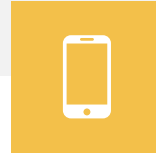
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**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

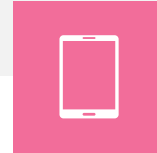
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**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

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**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

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Right click  
- Replace image



Right click  
- Replace image



Right click  
- Replace image

# Simple Portfolio Presentation

**Your Text Here**

You can simply impress  
your audience and add a  
unique zing.

01

**Your Text Here**

You can simply impress  
your audience and add a  
unique zing.

02

**Your Text Here**

You can simply impress  
your audience and add a  
unique zing.

03

# Infographic Layout



電池膨脹

平板投影

03

04

**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

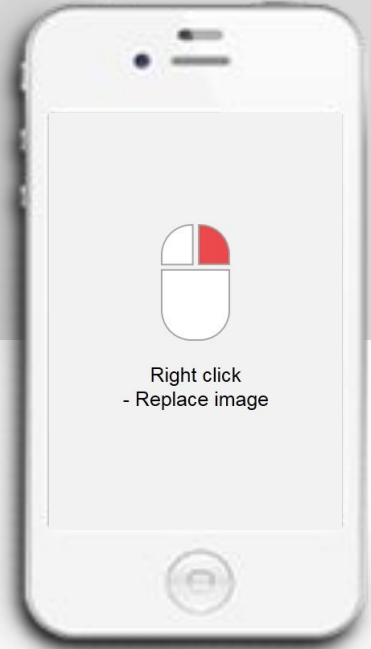
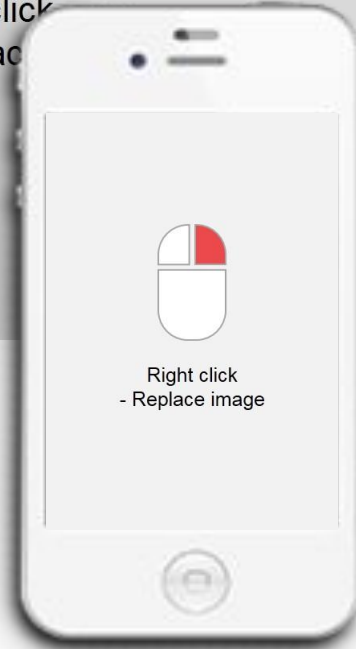
Presentation Designed

# Simple Portfolio Presentation

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Right click  
- Replace



**Your Text Here**

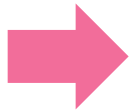
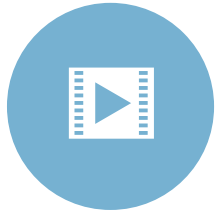
You can simply impress your audience and add a unique zing.



**Your Text Here**

You can simply impress your audience and add a unique zing.

# Infographic Layout



01

**Your Text Here**

You can simply impress your audience and add a unique zing.

02

**Your Text Here**

You can simply impress your audience and add a unique zing.

03

**Your Text Here**

You can simply impress your audience and add a unique zing.

04

**Your Text Here**

You can simply impress your audience and add a unique zing.

# Infographic Layout

**Your Text Here**

You can simply impress your audience  
and add a unique zing.



**Your Text Here**

You can simply impress your audience  
and add a unique zing.

**Your Text Here**

You can simply impress your audience  
and add a unique zing.

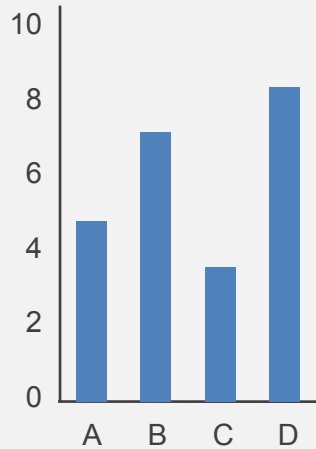
**Your Text Here**

You can simply impress your audience  
and add a unique zing.

# Chart Layout

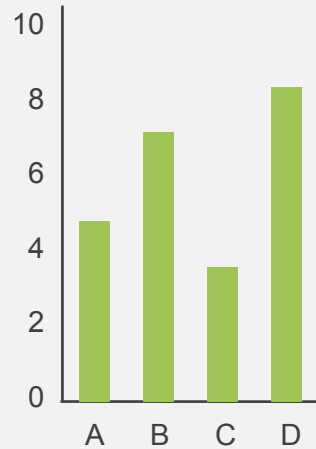
Content Here

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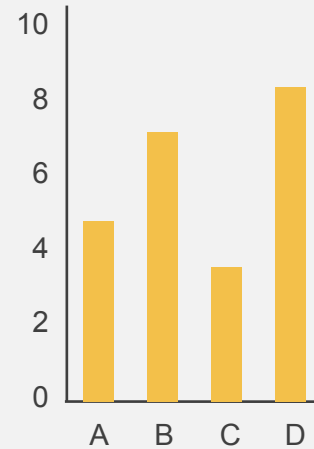
Content Here

You can simply impress your audience and add a unique zing.



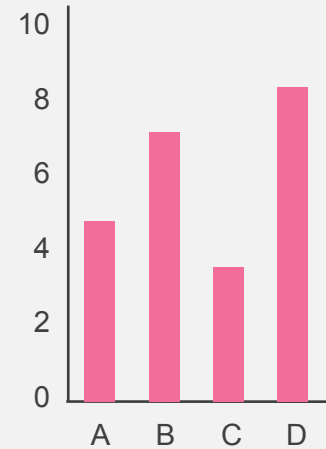
Content Here

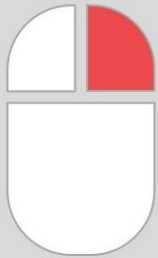
You can simply impress your audience and add a unique zing.



Content Here

You can simply impress your audience and add a unique zing.





**Right click  
- Replace image**

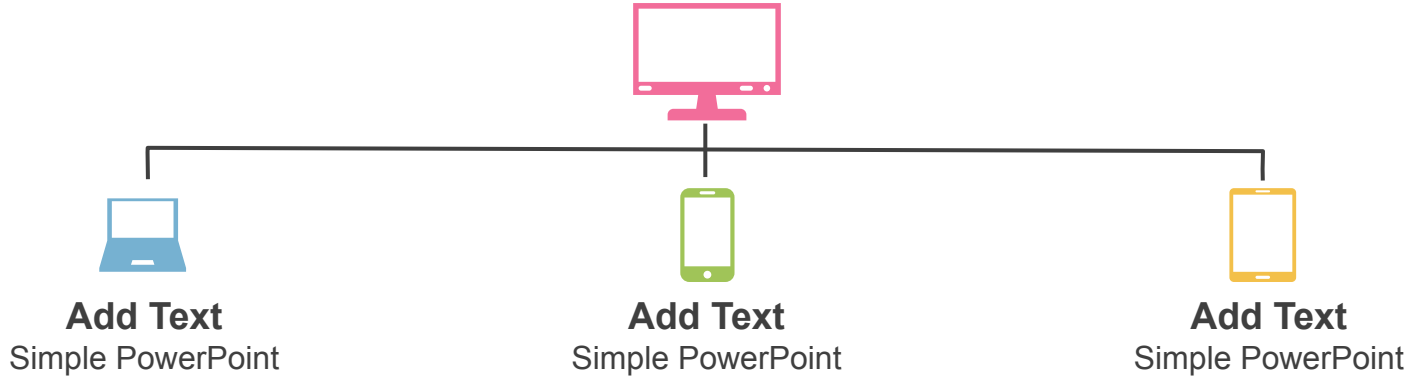


Presentation Designed

## **Simple Portfolio Presentation**

This PowerPoint Template has clean and neutral design that can be adapted to any content and meets various market segments.

# Infographic Layout



**Your Text Here**

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**Your Text Here**

You can simply impress your audience and add a unique zing and appeal to your Presentations.

**Your Text Here**

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# Infographic Layout

Option A

**Your Text Here**

You can simply impress your audience and add a unique zing

Option B

**Your Text Here**

You can simply impress your audience and add a unique zing

Option C

**Your Text Here**

You can simply impress your audience and add a unique zing

Option D

**Your Text Here**

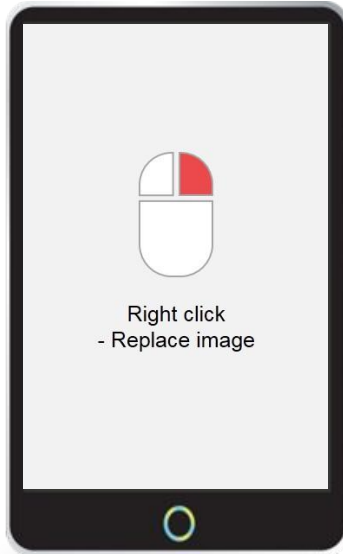
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Option E

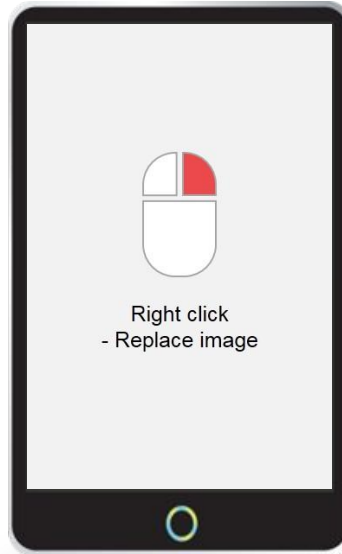
**Your Text Here**

You can simply impress your audience and add a unique zing

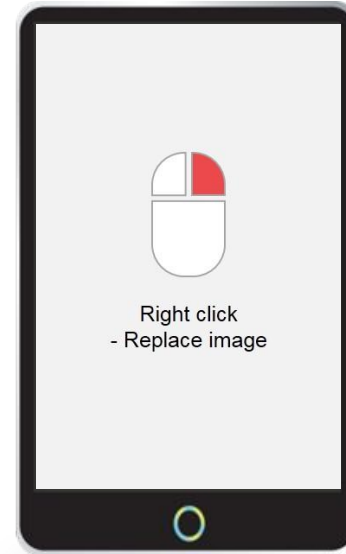
# Portfolio Presentation



**Add Text**  
Simple PowerPoint  
Presentation



**Add Text**  
Simple PowerPoint  
Presentation



**Add Text**  
Simple PowerPoint  
Presentation

# Portfolio Presentation



Right click  
- Replace image

**Add Text**  
Simple PowerPoint



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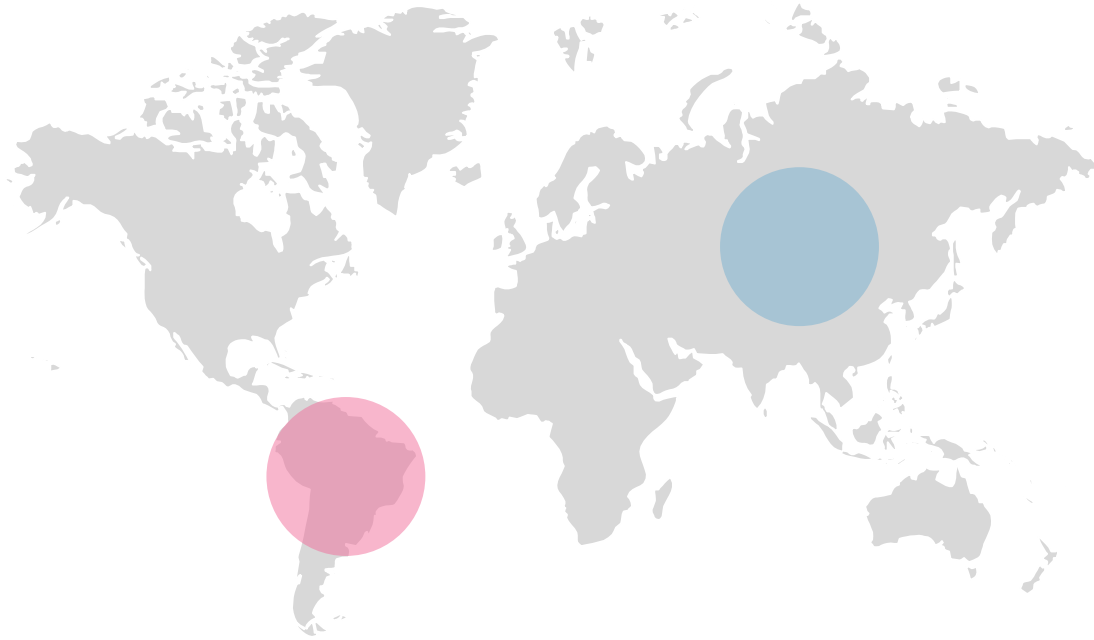
**Add Text**  
Simple PowerPoint



Right click  
- Replace image

**Add Text**  
Simple PowerPoint

# Worldmap Infographic



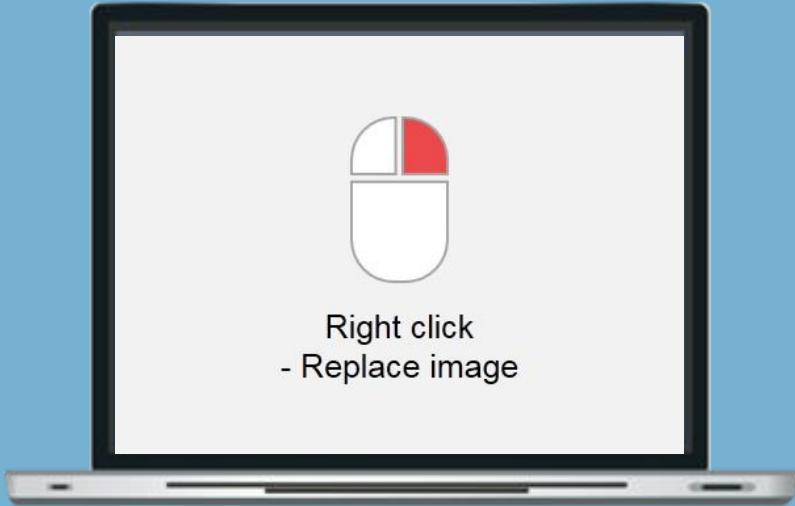
**\$600**

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**\$450**

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# Portfolio Presentation



**Your Text Here**

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**Your Text Here**

You can simply impress your audience and add a unique zing.



**Your Text Here**

You can simply impress your audience and add a unique zing.



**Your Text Here**

You can simply impress your audience and add a unique zing.

# Chart Layout



**Your Text Here**

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**80%**



**Your Text Here**

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**60%**



**Your Text Here**

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**40%**

# Portfolio Presentation



Right click  
- Replace image



## Simple Portfolio Presentation

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## Simple Portfolio Presentation

You can simply impress your audience and add a unique zing and appeal to your Presentations.



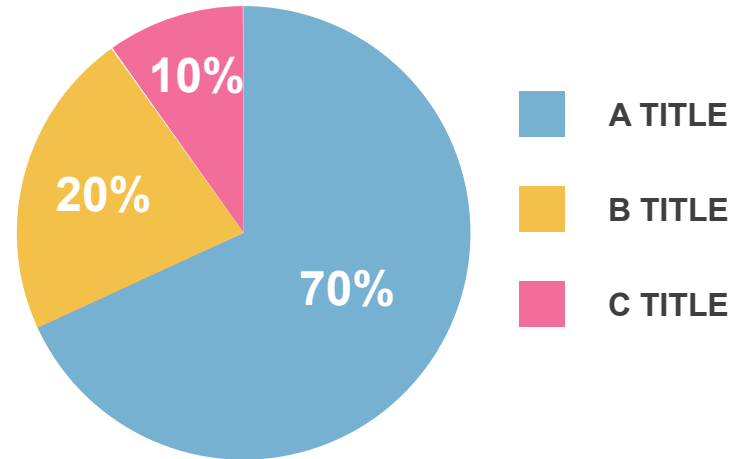
Right click  
- Replace image

# Table & Chart

TITLE	A TITLE	B TITLE	C TITLE
Content Here	Text Here	Text Here	Text Here
	Content	Content	Content
Content Here	Text Here	Text Here	Text Here
	Content H	Content	Content
Content Here	Text Here	Text Here	Text Here
	Content	Content	Content
Content Here	Text Here	Text Here	Text Here
	Content	Content	Content

## Content Here

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# Table Layout

Your Text Here
<b>\$25</b>
Text Here
Text Here
Text Here
Text Here
Your Text Here

Your Text Here
<b>\$25</b>
Text Here
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Your Text Here
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Your Text Here



學校背景資源



教學應用實例



反思

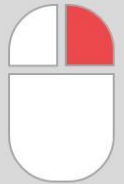


困境

Presentation Designed

# Simple Portfolio Presentation

This PowerPoint Template has clean and neutral design that can be adapted to any content and meets various market segments. With this many slides you are able to make a complete PowerPoint Presentation that best suit your needs. You can simply impress your audience and add a unique zing and appeal to your Presentations.



Right click  
- Replace image

# Worldmap Infographic

## Content Here

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34%



42%

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# Columns Layout



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# Columns Layout



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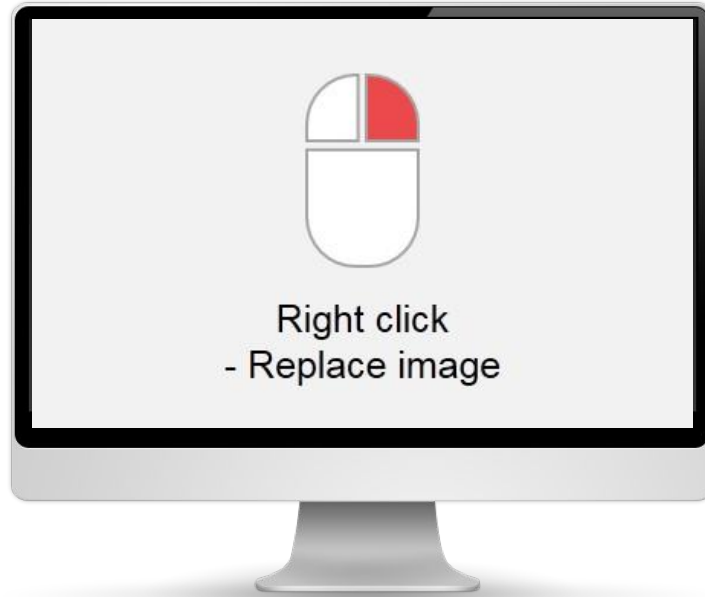
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**Thank you**

This text can be replaced with your own text

A vertical decorative bar on the left side of the slide, composed of numerous overlapping circles in various colors including blue, yellow, orange, pink, and green, arranged in a gradient from top to bottom.

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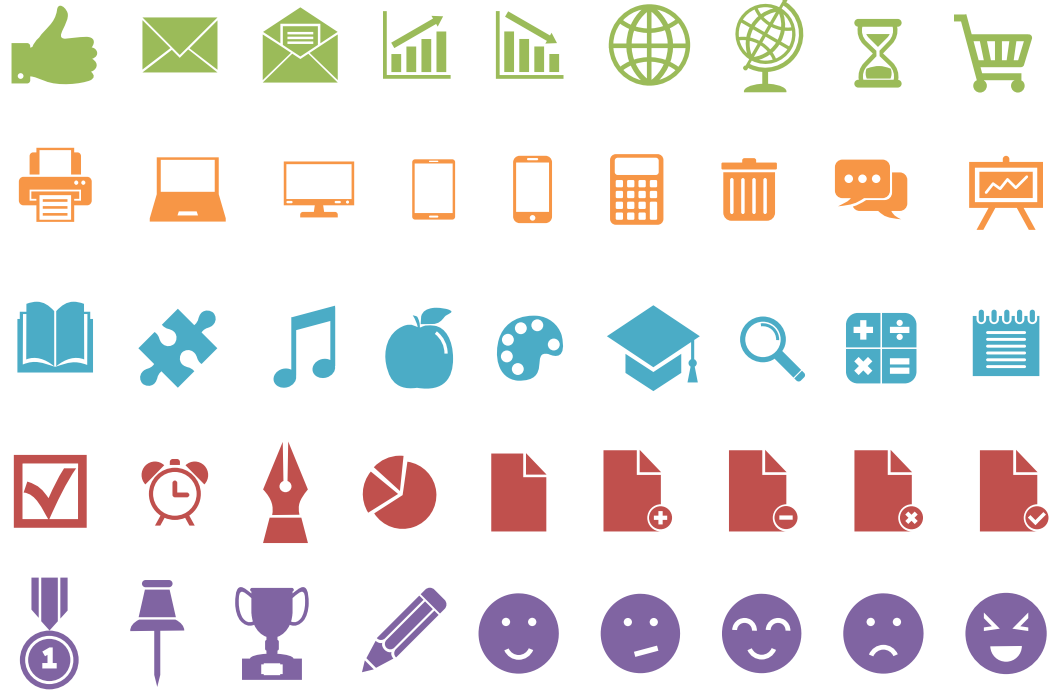
# Fully Editable Icon Sets : A

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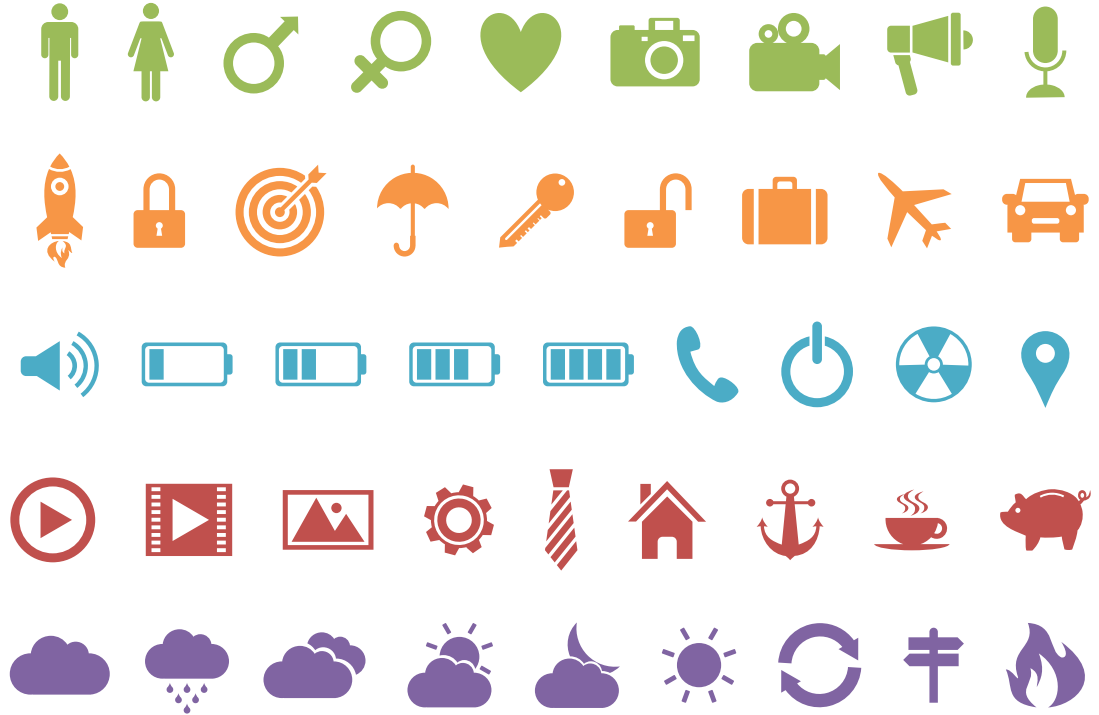
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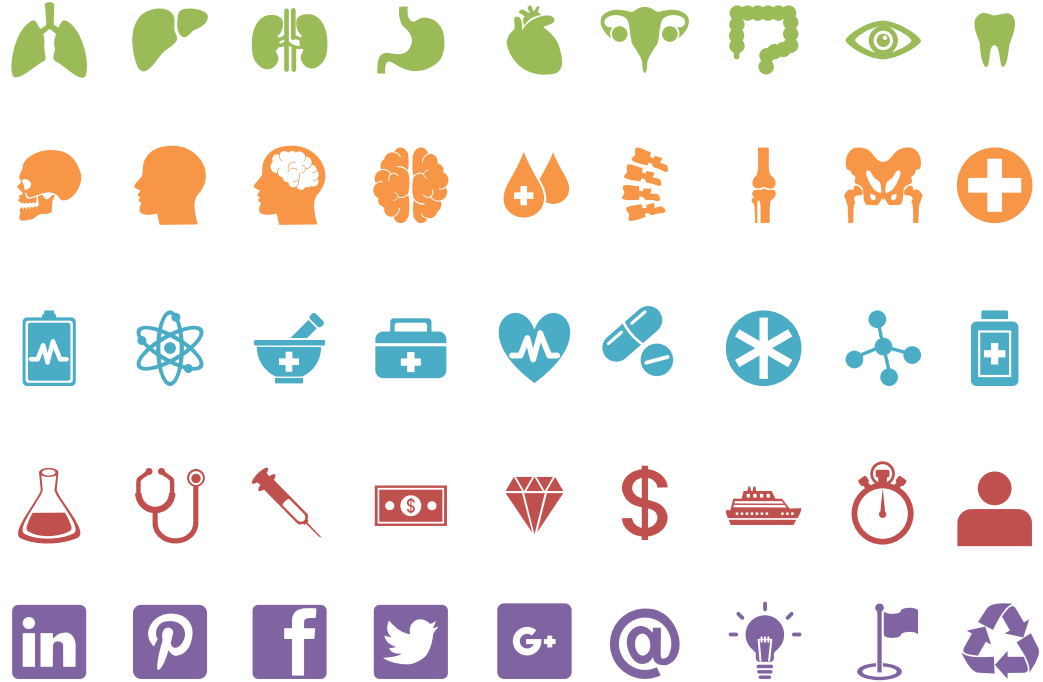
# Fully Editable Icon Sets : C

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losing quality

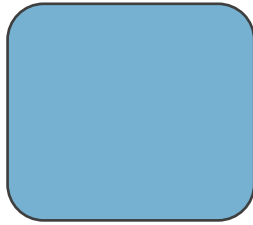
You can Change Fill Color &  
Line Color

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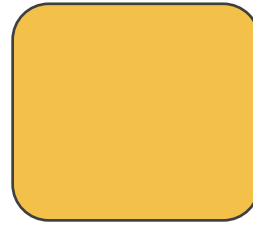
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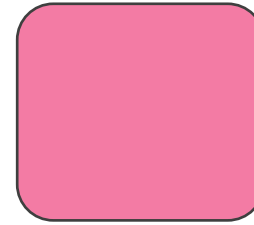
R : 118  
G : 177  
B : 209



R : 160  
G : 196  
B : 88



R : 243  
G : 192  
B : 74



R : 242  
G : 109  
B : 154