小論文指導經驗分享

台中市私立弘文高中圖書館
陳俊穎

Hello!

109年教育部績優圖書館

國教署中區素養種子教師

台科大微翻轉種子教師

「對升學有幫助」

「對學習歷程有幫助」

「以後研究所也會用到」

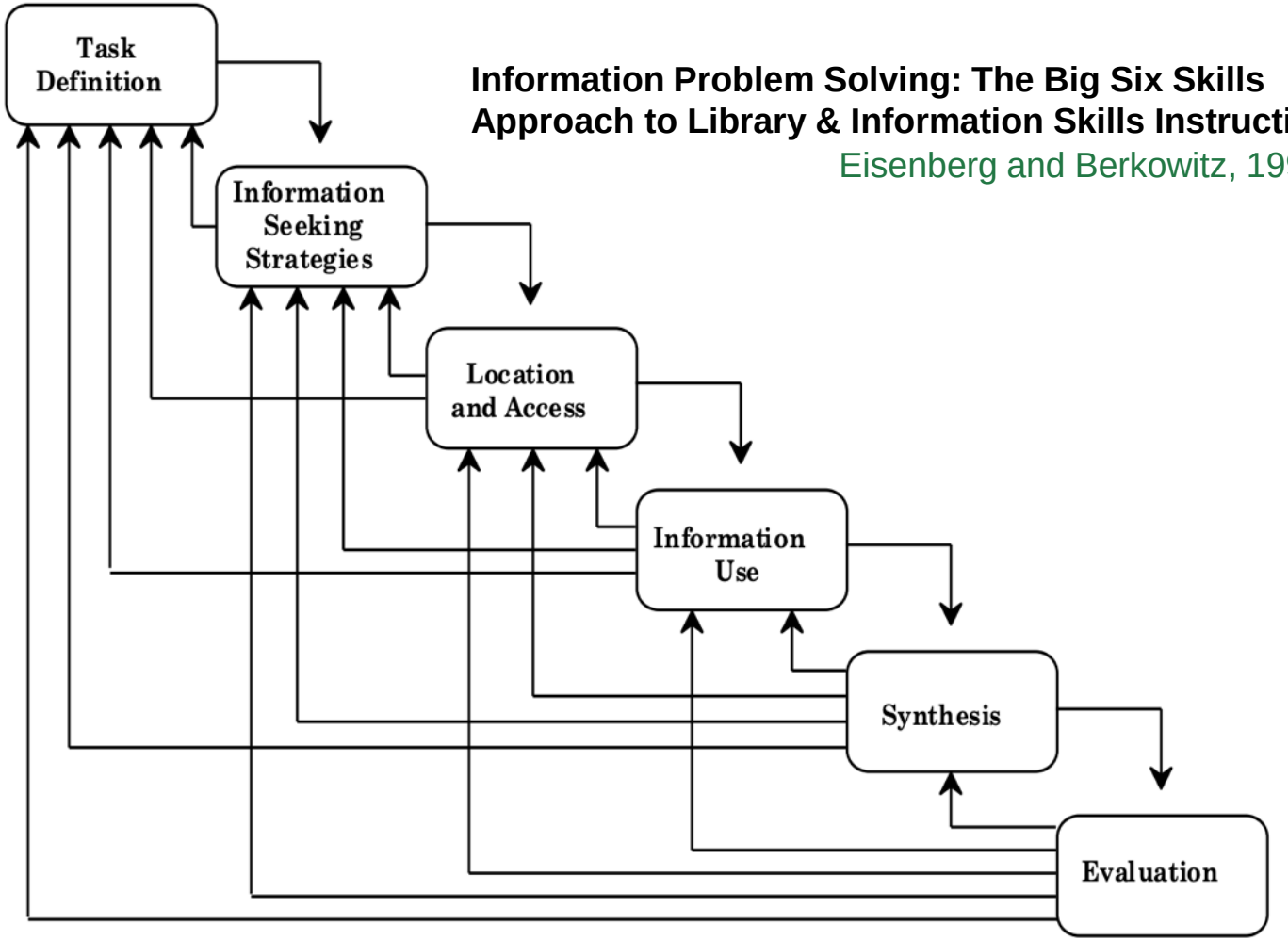
「這堂課要產出小論文」

你想知道什麼?

指導/做小論文前的釐清

- 小論文是學習 探究歷程？ 還是主題知識？
- 每個學生都可以做小論文？
- 小論文是上傳學習成果？還是多元表現？
- 小論文是探究能力的展現，探究能力的展現一定是小論文嗎？
- 得獎與沒得獎的價值一樣嗎？

資料來源：109第一學期10/31 優遊臺中學課程



Information Problem Solving: The Big Six Skills Approach to Library & Information Skills Instruction.

Eisenberg and Berkowitz, 1990

Big6簡介內容

https://www.basdk12.org/1/Content2/big6skills

1. Task Definition

https://www.basdk12.org/1/Content2/taskdefinition

2. Information Seeking Strategies

https://www.basdk12.org/1/Content2/infostrategies

3. Location and Access

https://www.basdk12.org/1/Content2/330

4. Information Use

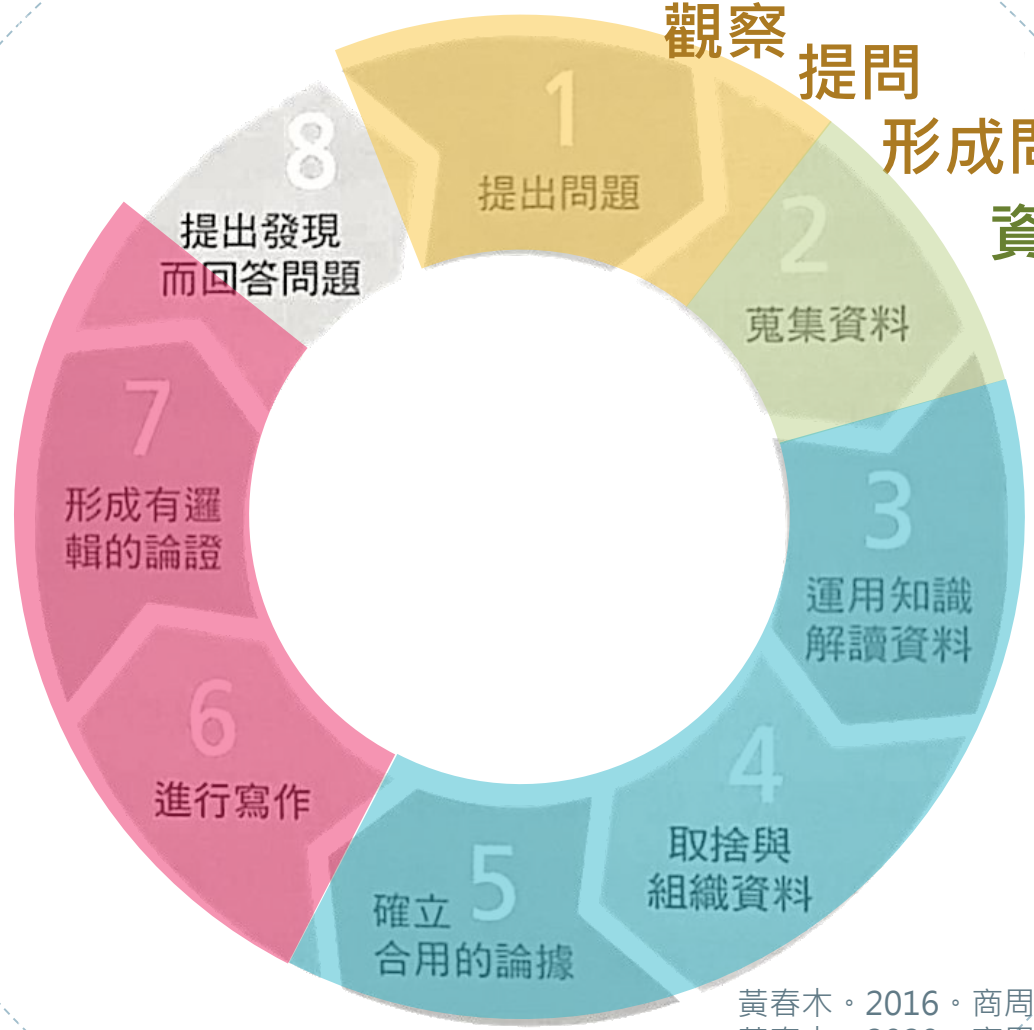
https://www.basdk12.org/content_page2.aspx?schoolid=1&cid=332

5. Synthesis

https://www.basdk12.org/1/Content2/Synthesis

6. Evaluation

https://www.basdk12.org/1/Content2/Evaluation



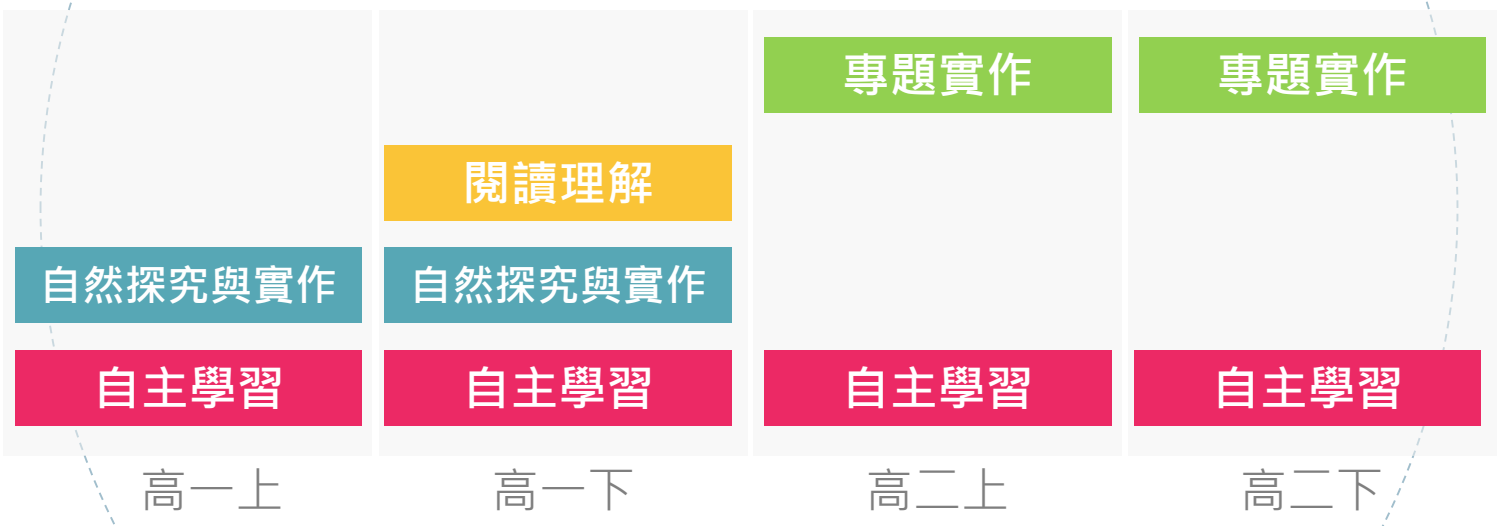
觀察
提問
形成問題意識
資料搜尋
研究工具
實驗設計

閱讀理解

論證
表達

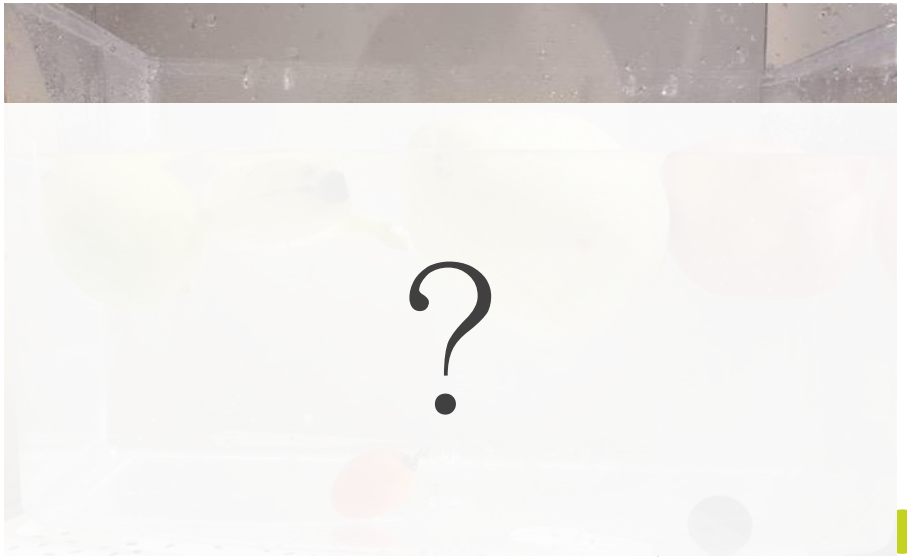
黃春木。2016。商周。我做專題研究學會獨立思考。
黃春木。2020。商周。中學專題研究實作指南。

弘文高中探究能力相關課程規劃

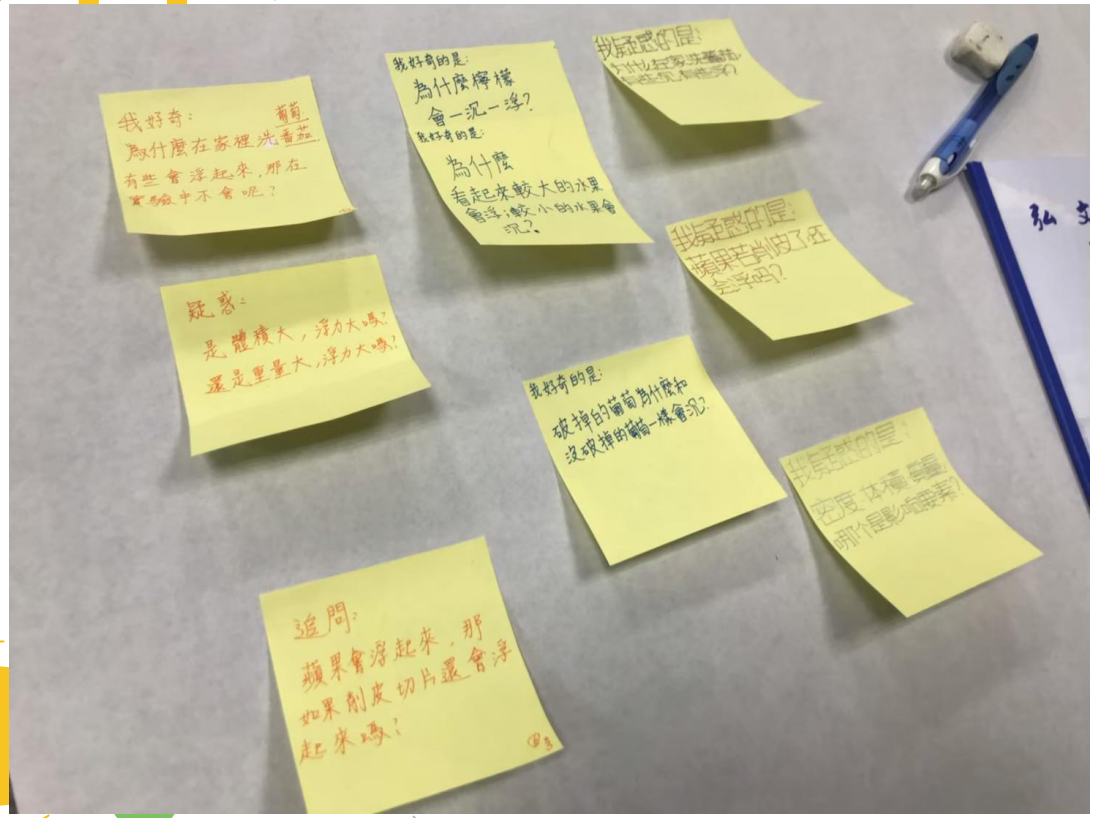


黃春木。2016。商周。我做專題研究學會獨立思考。
黃春木。2020。商周。中學專題研究實作指南。

針對現象預測/提問/判斷問題



針對現象預測/提問/判斷問題



我好奇：為什麼在家裡洗番茄有些會浮起來，但在實驗中不會?

我好奇：為什麼檸檬會一沉一浮?

我疑惑：密度、體積、質量哪個是影響要素?

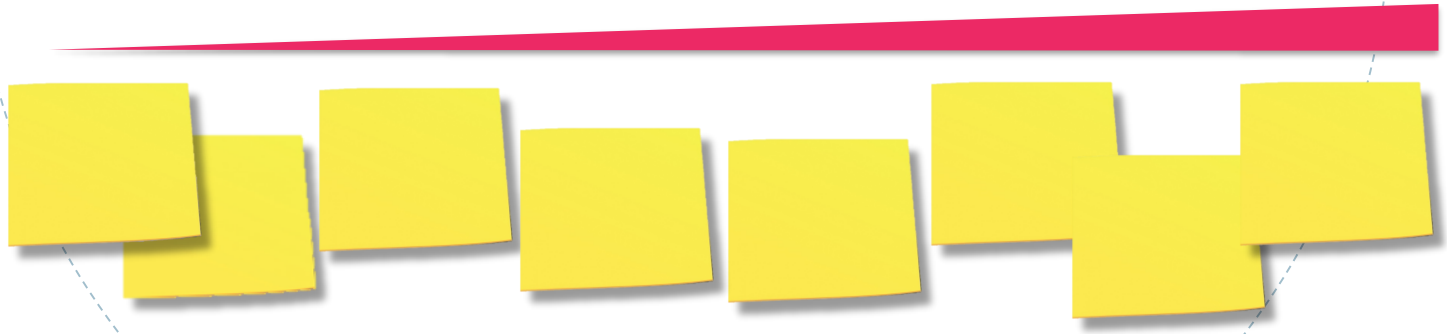
我疑惑：為何番茄體積小，卻沉下去?

我疑惑：是體積大浮力大?還是重量大浮力大

判斷問題的品質

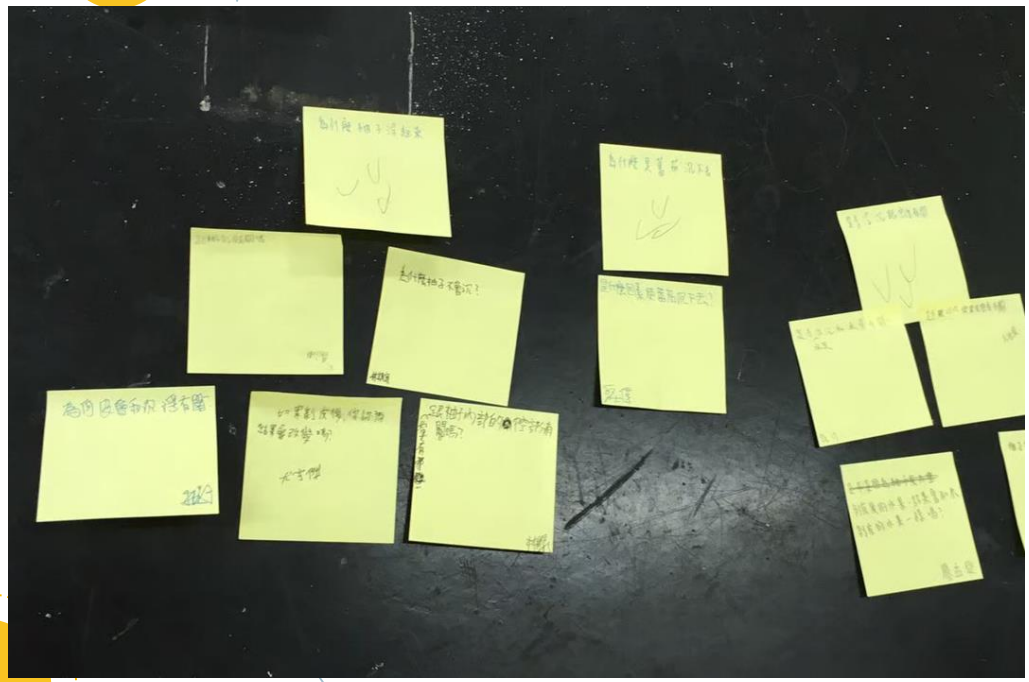
- 探究者感興趣的問題
- 填補知識的缺口
- 切合時代脈動
- 合理性和可行性（黃春木。中學專題研究實作指南。）

好問題



超級好問題

追問/判斷問題品質



為什麼柚子會浮?

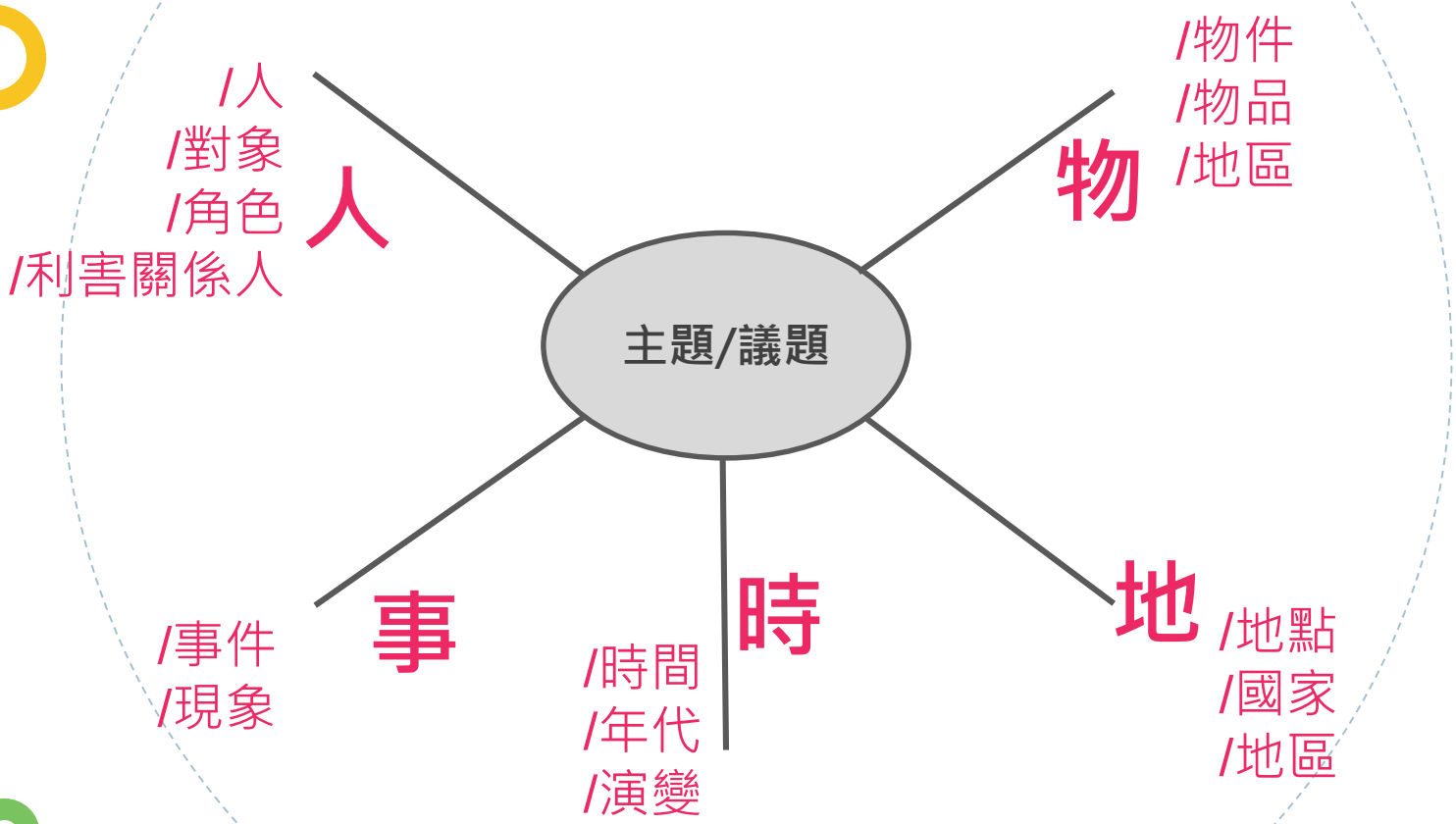
跟柚子內部空氣有關嗎？

是因為皮的關係嗎？

為什麼你認為是皮的關係？

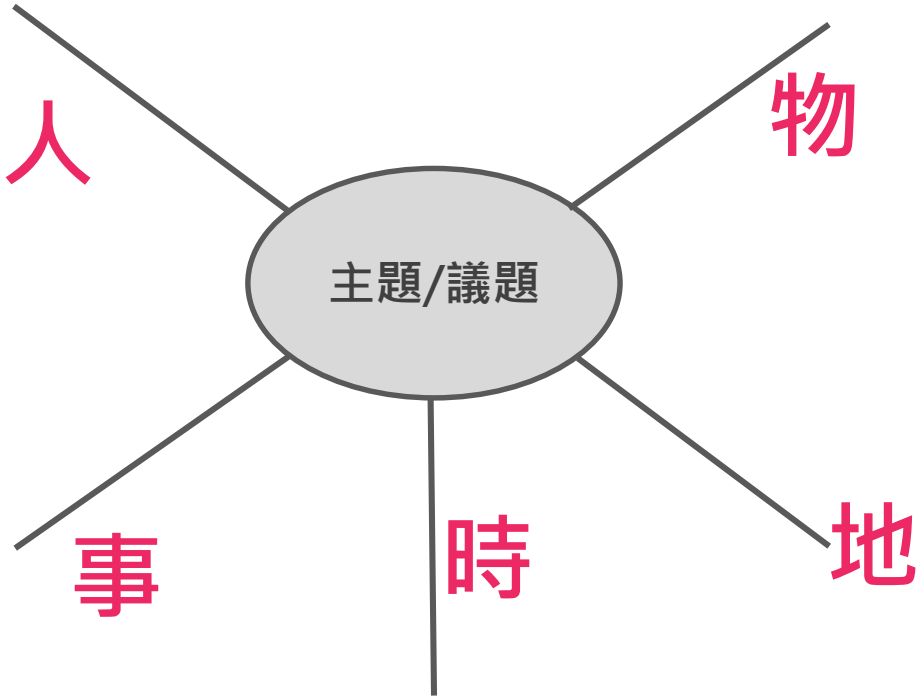
皮剝掉你認為結果會改變嗎？

開展想法與培養問題意識



Spider Mapping

針對人事時地物與5W1H提問



Spider Mapping

閱讀理解的讀寫素養的培育

班級：
座號：
姓名：

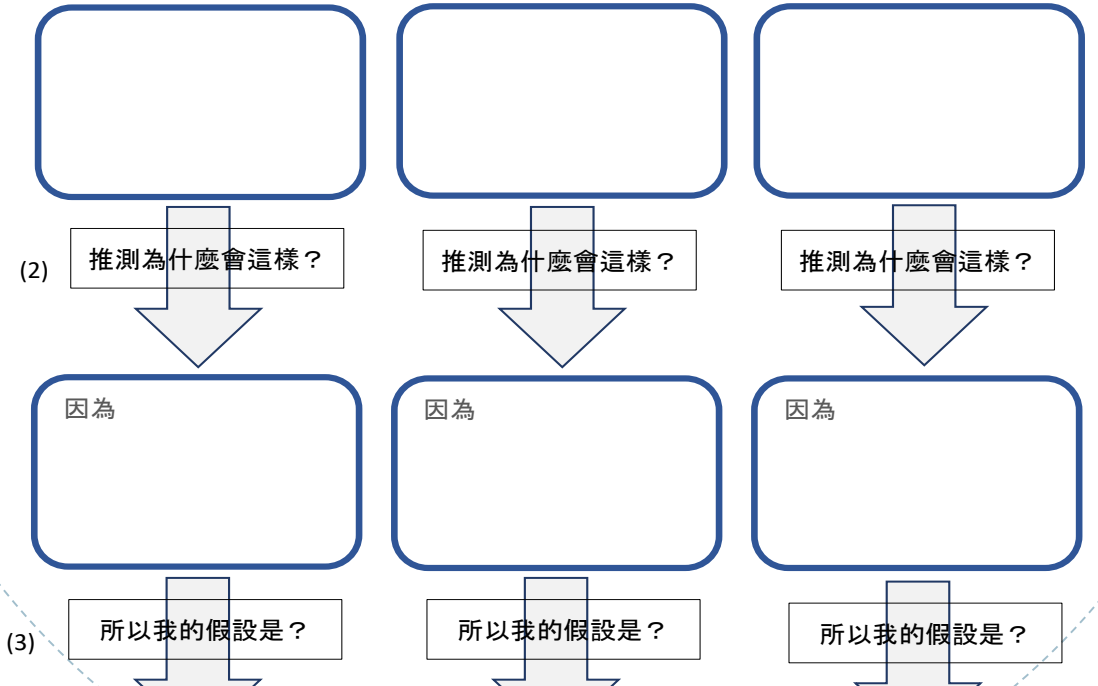
閱讀理解-機不可失

1. 文章標題為「機不可失」，預測可能的內容在談論什麼？

---

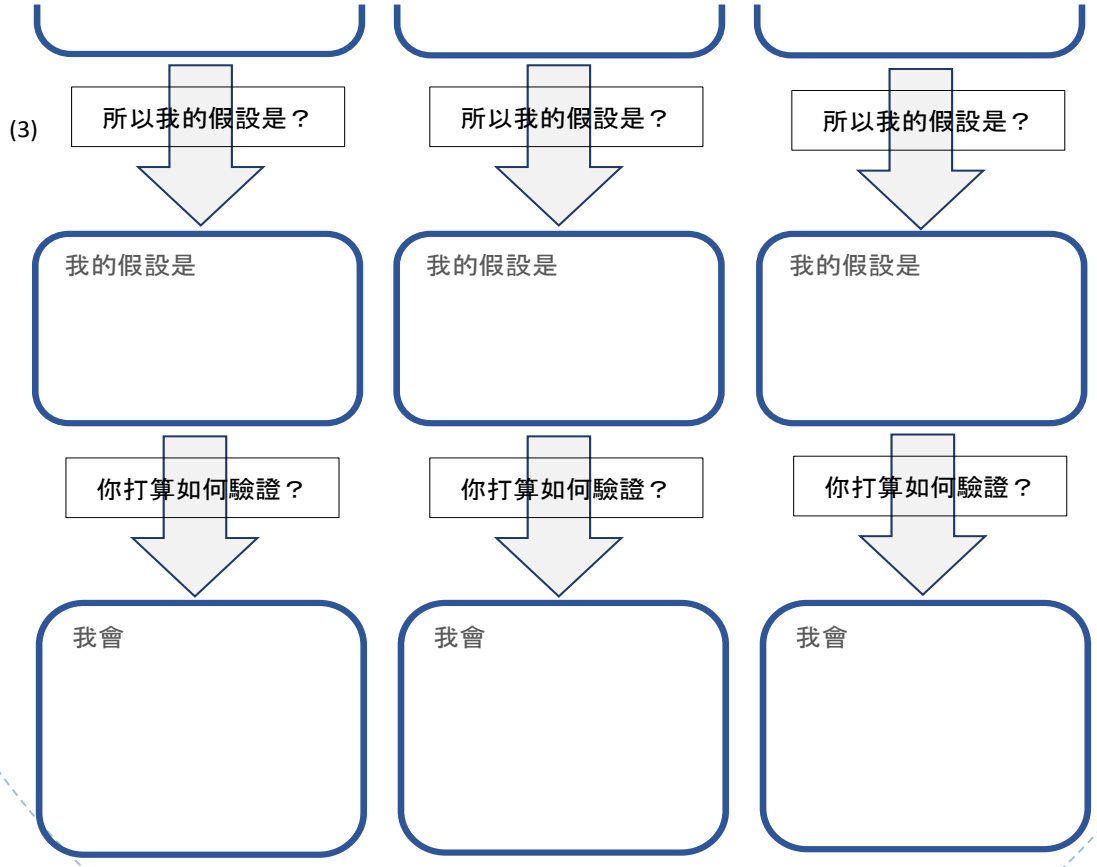
2. 讓數據說話-溯因推理

(1) 根據圖一的數據，你發現、注意到了什麼、想分享的？（個人）

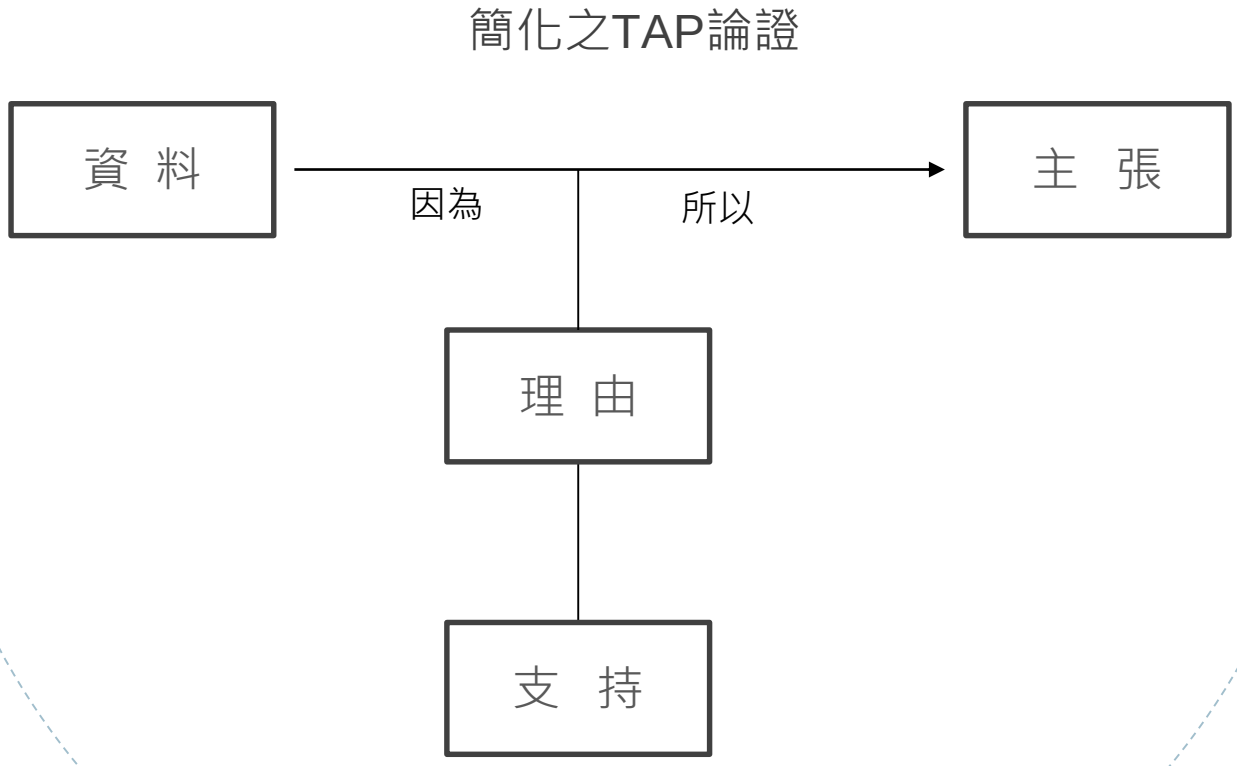


閱讀素養的培養-

(3)


所以我的假設是？
所以我的假設是？
所以我的假設是？
我的假設是
我的假設是
我的假設是
你打算如何驗證？
你打算如何驗證？
你打算如何驗證？
我會
我會
我會

培養論述



資料來源：邱美虹(2018)。以科學素養為導向的新課綱-從社會性科學議題融入課程談起

培養線上資源利用

下載手冊電子書
http://tinyurl.com/yaqxcjr5

培養線上資源利用

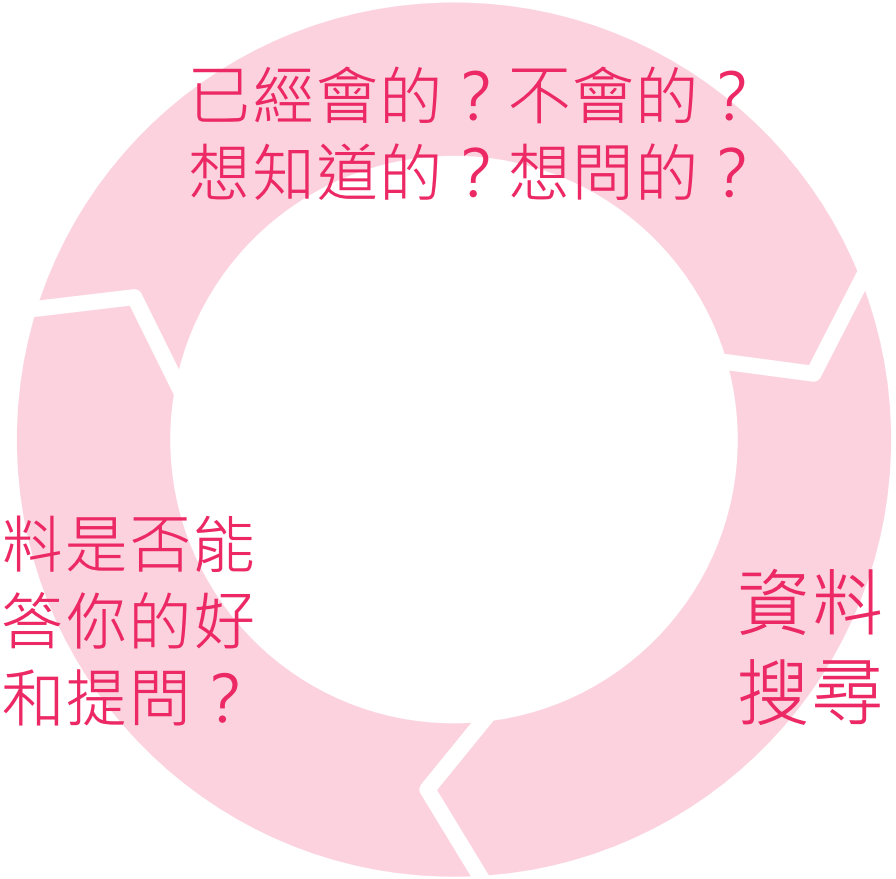
公共圖書館數位資源數位資源入口網

- 中文電子期刊服務(CEPS)(華藝)
- 臺灣博碩士論文加值系統
- 全國圖書書目資訊網
- NDDS全國文獻傳遞系統
- 科學人雜誌中英對照知識庫
- 天下雜誌群知識庫（七種刊物）
- 台灣新聞智慧網(台智網)
- 聯合知識庫原版報紙資料庫
- 電子書服務平台

下載手冊電子書
http://tinyurl.com/yaqxcjr5

資料來源：109第一學期10/31 優遊臺中學課程

培養搜尋與閱讀資料



培養研究工具與方法的思考

觀察法

觀察法是指研究者根據研究目的、研究提綱或觀察表，用自己的感官和輔助工具去直接觀察被研究對象，從而獲得資料的一種方法。科學的觀察具有目的性和計劃性、系統性和可重復性。成敗關鍵在於觀察後的資料記錄與分析，且觀察目標的定義要非常清楚。

訪談法

訪談法是用於理解受訪者對研究問題的看法，或陳述對生活、經驗或情況的觀點等所採用的方法。研究者以觀察者和參與者的身分，記錄與研究對象或研究對象間的言談互動，並由對話過程發現人們對社會事實的認知，或分享經驗與觀點的互動方式。

文獻分析法

文獻分析法是透過文獻的蒐集、分析、歸納來提取所需的資料，並對文獻做客觀而有系統描述的研究方法。可幫助研究者釐清研究的背景事實、理論的發展狀況、研究的具體方向、適當的研究設計方式。幫助了解過去、重建過去、解釋現在及推測未來。

實驗法

實驗法是在妥善控制的情境下，自變數（操縱變因）對依變數（應變變因）的因果關係，因此須設置實驗組與對照組。它可說是各種實証研究中最科學的方法。實驗的同時，亦要控制干擾變數（控制變因），適用於有因果關係之研究問題。

調查法

調查法亦稱抽樣調查研究，當科學家想蒐集可以描述一個母體的原始資料，卻因母體過於龐大，而無法直接觀察時，可嚴謹的機率抽樣，找出能反映大型母體特徵的受訪者，經由標準化過程，得以對母體從事推估或假設的驗證的方法。

個案研究法

個案研究法是運用技巧對特殊問題能有確切深入的認識，以確定問題所在，進而找出解決方法。針對的是其特殊事體之分析，所研究的單位可能是一個人、一個團體、一個地區或一個國家。需仰賴調查者的虛心，感受力、洞察力和整合力。

研究挑戰

格式檢查

小論文格式範例摘要整理

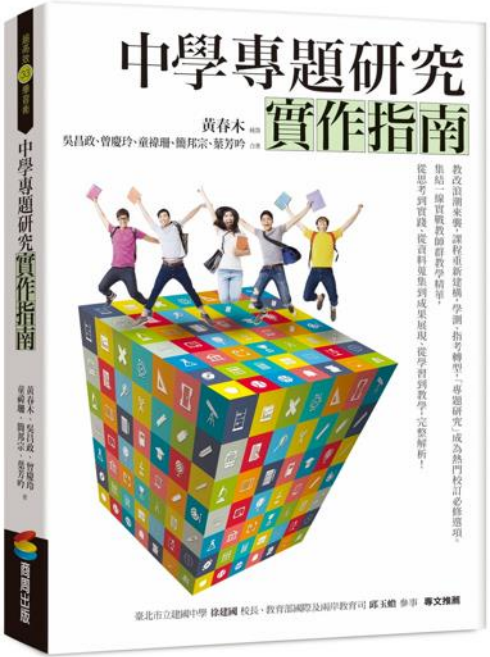
弘文高中圖書館整理．20200924

資料類型	格式組成		
中文書	作者（出版年）。	**書名。**	出版地：出版者。
英文書	last name, M. F. (Year)	*Book title.*	Publication information.
中文期刊	作者（出版年）。	論文篇名。	**期刊名，卷**（期），起訖頁碼。
英文期刊	last name, M. F. (Year)	Title of article	*Name of the Periodical,* Volume(Issue), Inclusive page numbers.
博碩士論文	作者（出版年）。	論文篇名。	學校研究所所名：碩（博）士論文。
報紙文章	作者（年月日）。	篇名。	報紙名，版次。
中文電子期刊	作者（出版年）。	文章名稱。	**期刊名，卷**，起訖頁碼。擷取日期，取自網址（可用短網址）
電子資料庫	作者（出版年）。	文章名稱。	期刊名，卷，起訖頁碼，擷取日期，取自電子資料庫名稱。
網站資料一	網站名稱。		擷取日期，取自網址（可用短網址）
網站資料二	作者（年代）。	文章名稱。	擷取日期，取自網址（可用短網址）
法規	法律名稱（公布年月日）。		

資料來源：全國高級中等學校小論文寫作比賽引註資料格式範例。民國 109 年 05 月 26 日修正。
網址：https://www.shs.edu.tw/essay/

小論文研究書籍

中學生
小論文寫作
完全指導
作者：董幸正
示範各種寫作原則與要訣，
教導您寫出一篇最出色的小論文！
三版


中學專題研究
實作指南
黃春木
吳昌政、曾慶玲、童禕珊、簡邦宗、葉芳吟
中學專題研究實作指南
教改浪潮來襲，課程重新建構，學測、指考轉型，「專題研究」成為熱門校訂必修選項。
集結一線實戰教師群教學精華，
從思考到實踐，從資料蒐集到成果展現，從學習到教學，完整解析！
臺北市立建國中學 徐建國 校長，教育部國際及兩岸教育司 邱玉蟾 參事 專文推薦

激起追求知識的熱情，開啓探索未來的渴望！
我做專題研究，學會獨立思考！
高中生的專題研究方法
黃春木

探究學生的思考

Project Zero's Thinking Routine Toolbox

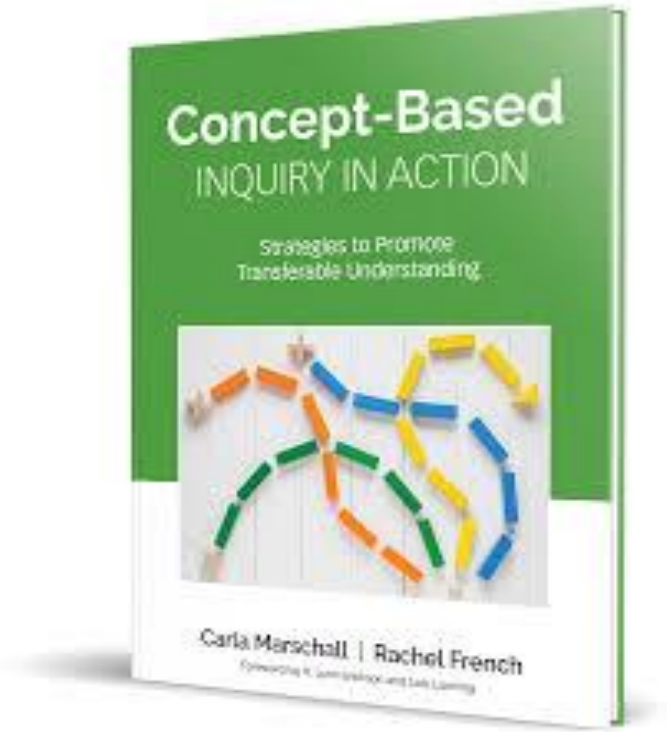
Welcome to **Project Zero's Thinking Routines Toolbox.** This toolbox highlights Thinking Routines developed across a number of research projects at PZ. A vast array of PZ's work has explored the development of thinking, the concept of thinking dispositions, and the many ways routines can be used to support student learning and thinking across age groups, disciplines, ideals, competencies, and populations. Thinking Routines originated in PZ's Visible Thinking research initiative. Over the years, researchers enhanced and expanded upon the original routines, and new projects developed new routines. Some of the larger PZ research projects focused on enhancing thinking include Artful Thinking, Cultures of Thinking, Agency by Design, PZ Connect, and Interdisciplinary & Global Studies. **To learn more about PZ Thinking Routines and their background, watch this video introduction and read more about PZ's initial Visible Thinking research.**

The Toolbox organizes the Thinking Routines into categories that describe the types of thinking the routines help to facilitate. Some routines appear in more than one category, and some routines have different versions that offer modifications for specific age groups or more specific conceptual challenges. When clicking on a routine in the Toolbox, a separate page opens with links to the downloadable PDF of the routine. All routines use a common PZ template describing the purpose of the routine, offering potential applications for the routine, and often providing suggestions for its use and tips for getting started. The PZ research project responsible for developing the routine is noted at the bottom of each page along with the copyright and licensing information and guidance about how to reference the routine. We invite and encourage educators to share their experiences using the routines! Each routine has a #hashtag listed just above the reference information. Jump in and get started!

https://reurl.cc/avzn07

哈佛大學教育學院是世界頂尖的教育研究中心，旗下「零點計畫」（Project Zero）一項歷時五年的「智慧創新」研究。

探究學生的思考



《探究策略55》匯聚許多教師的心血，實踐、內化後，在教學脈絡中再現策略的理解和應用，從投入、聚焦、組織、通則、遷移、反思六個階段撰寫55個策略示例，提供具體操作的方法與工具，讓學生的思考與理解在可視化的過程中得以深化並進行後設學習，也為教師帶來豐富的教學想像，從課程設計到教學實踐之間，搭起教師同儕對話和教與學相互增益的橋樑。

讓探究成為日常

Thank You

roachchen@hwhs.tc.edu.tw

04 -25340011 #137

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Transition headline

Let’ s start with the first set of slides

Quotations are commonly printed as a means of inspiration and to invoke philosophical thoughts from the reader.

This is a slide title

- Here you have a list of items
- And some text
- But remember not to overload your slides with content

You audience will listen to you or read the content, but won’ t do both.

Big concept

Bring the attention of your audience over a key concept using icons or illustrations

You can also split your content

White

Is the color of milk and fresh snow, the color produced by the combination of all the colors of the visible spectrum.

Black

Is the color of coal, ebony, and of outer space. It is the darkest color, the result of the absence of or complete absorption of light.

In two or three columns

Yellow

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

Blue

Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

Red

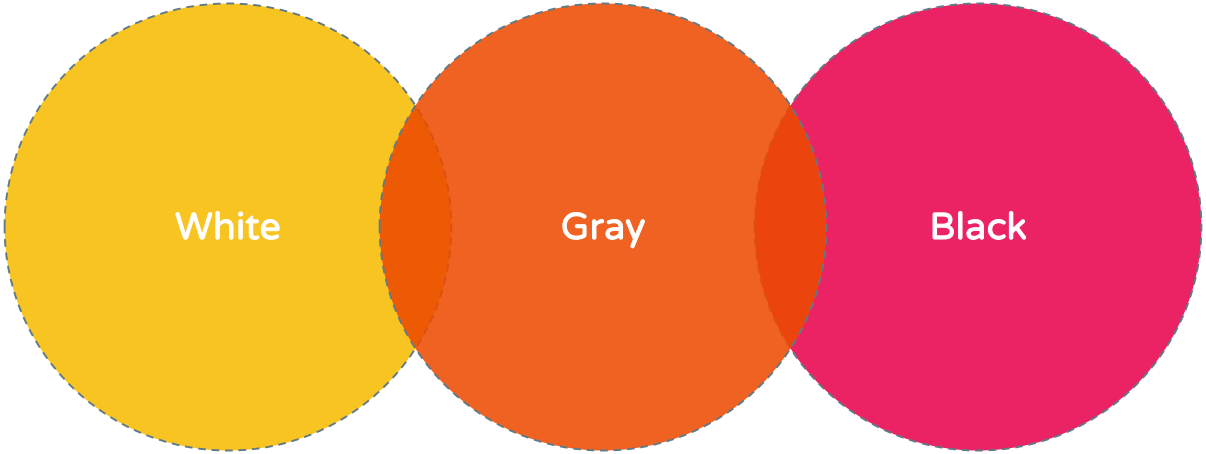
Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.

A picture is worth a thousand words

A complex idea can be conveyed with just a single still image, namely making it possible to absorb large amounts of data quickly.

Want big impact?
Use big image.

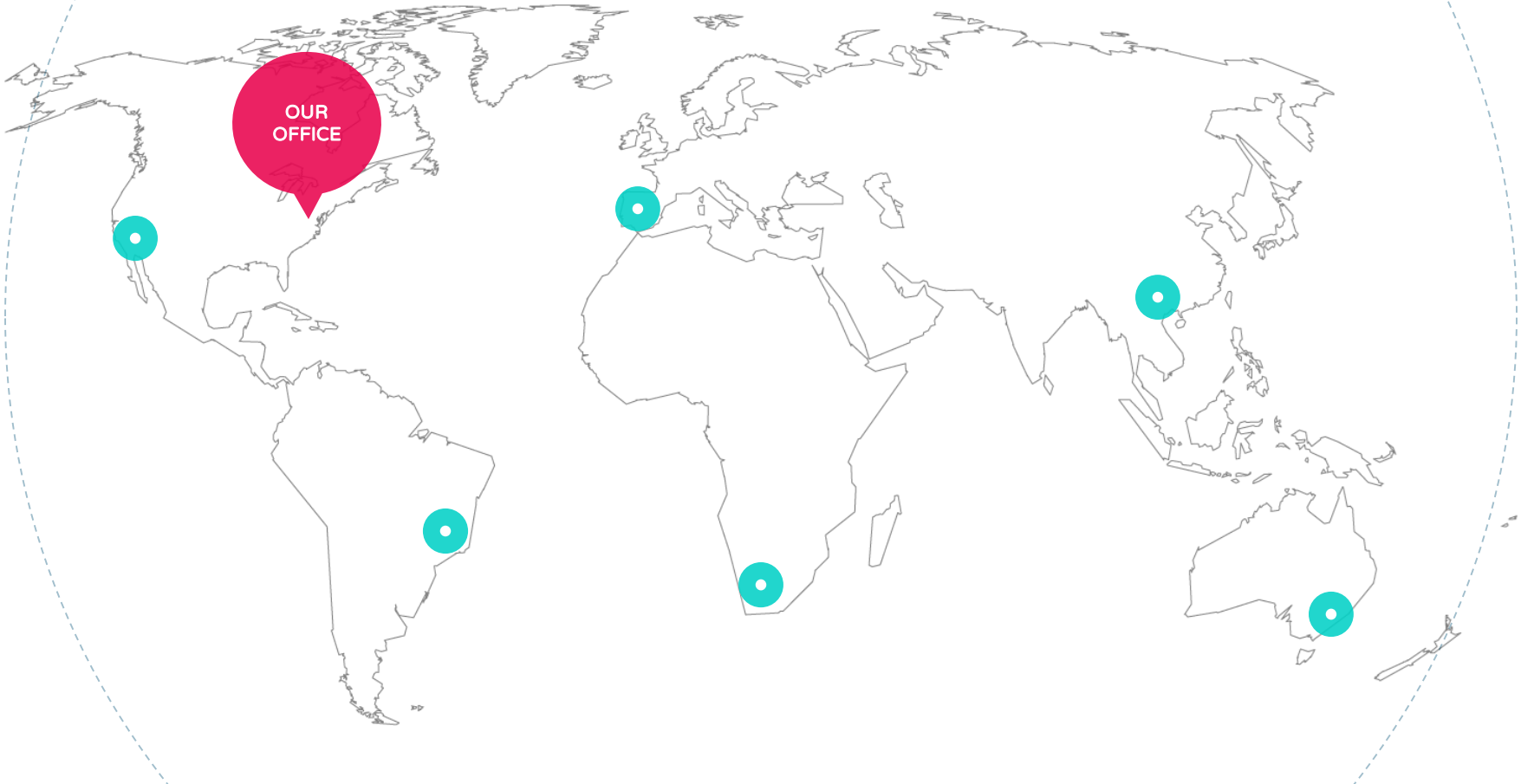
Use charts to explain your ideas



And tables to compare data

	A	B	C
Yellow	10	20	7
Blue	30	15	10
Orange	5	24	16

Maps



89,526,124

Whoa! That’s a big number, aren’t you proud?

89,526,124$

That’s a lot of money

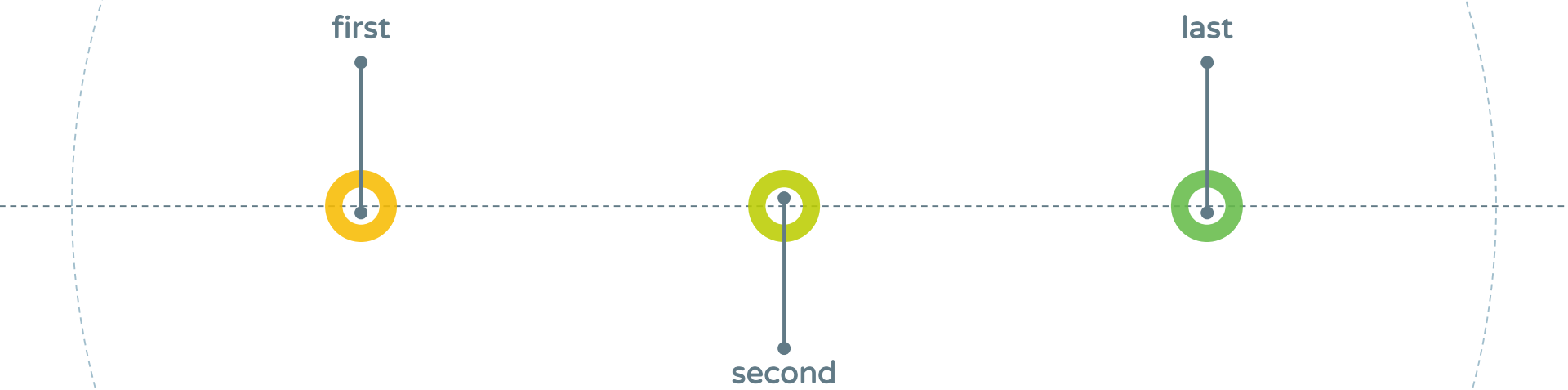
185,244 users

And a lot of users

100%

Total success!

Our process is easy



Let’ s review some concepts

Yellow

Is the color of gold, butter and ripe lemons. In the spectrum of visible light, yellow is found between green and orange.

Blue

Is the colour of the clear sky and the deep sea. It is located between violet and green on the optical spectrum.

Red

Is the color of blood, and because of this it has historically been associated with sacrifice, danger and courage.

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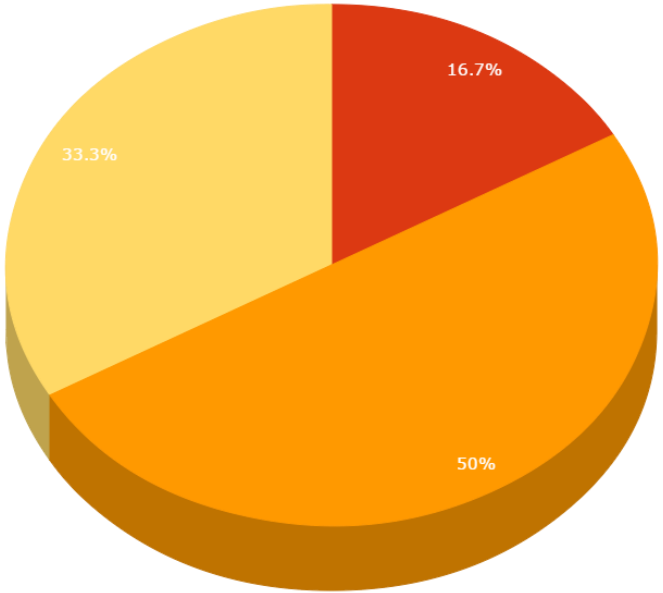
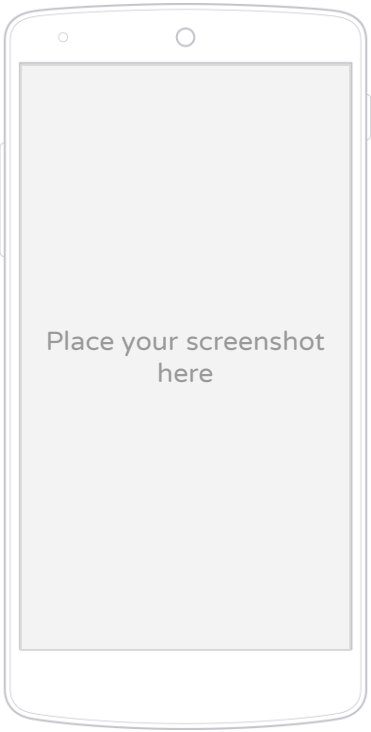


You can copy&paste graphs from Google Sheets



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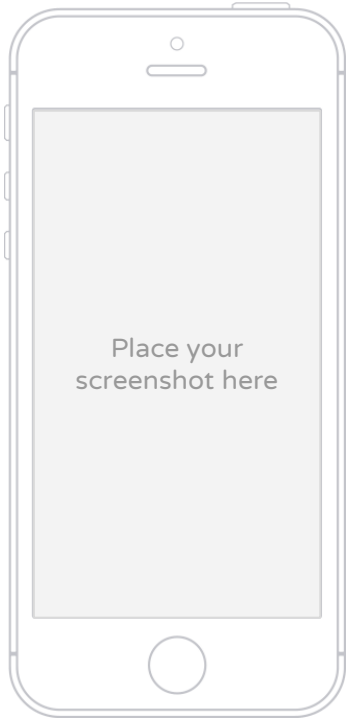

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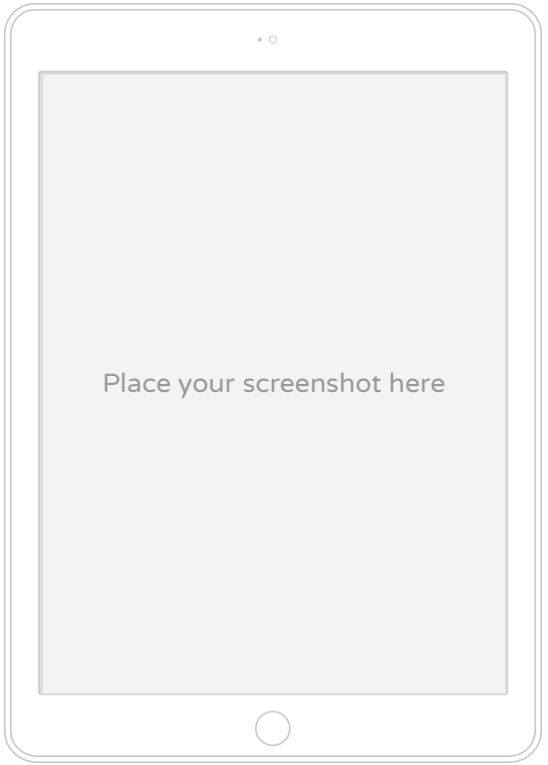

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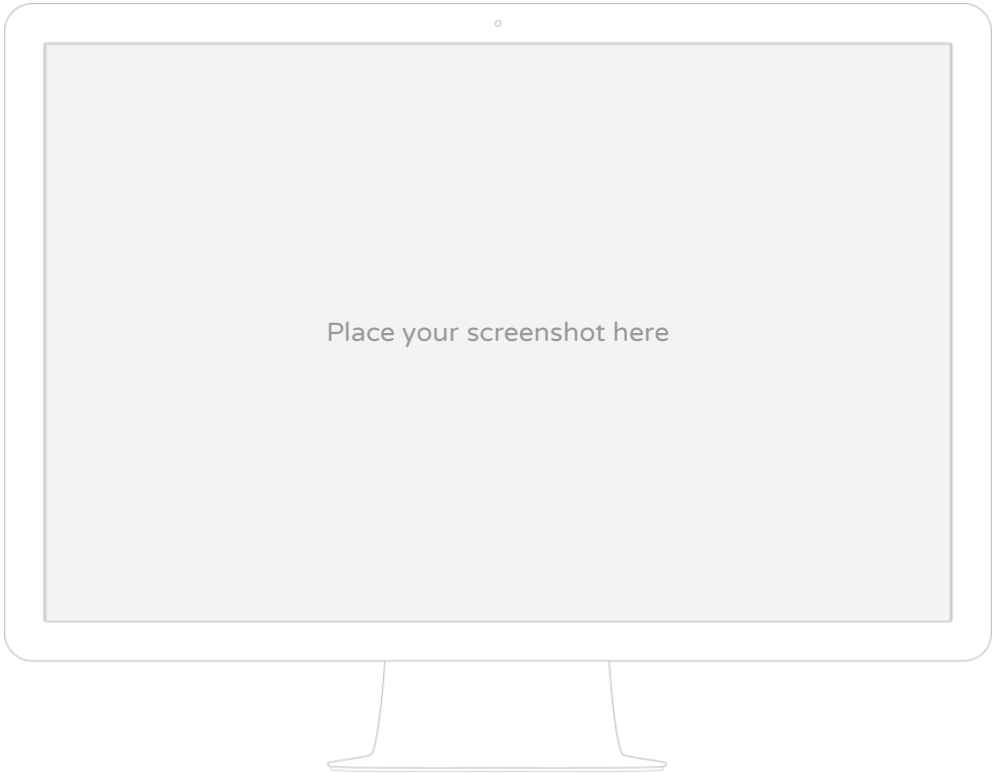

Desktop project

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Thanks!

Any questions?

You can find me at @username & user@mail.me

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