

「綠火焰計劃 – 環保智
慧能源大賽」
創意結合科研，打開新能源之門
– 網上研討會
2022年7月21日（四）



聖公會聖本德中學 S.K.H. St. Benedict's School

孔任熙助理校長
Hung Yam Hei, Assistant Principal


聖公會聖本德中學的助理校長及IT部主管，領導多個教師團隊通過IT及STEM支持和促進教與學，他的目標是與教育工作者和學生一起創造有意義和有趣的學習體驗。

他是Google認證訓練講師、資訊科技教育領袖協會 (AiTLE) 的執行委員會從屬委員。從2017年開始，與香港其他Google Educator Group (GEG) 教師合作，分享教學和學習的想法以激勵其他教師。



Google
for Education

Reference
School

The background features a decorative graphic consisting of various colored circles and dashed lines. In the top-left corner, there is a large teal circle with a white center, a smaller teal circle, and a dashed teal circle. In the top-right corner, there is a large lime green circle, a smaller green circle, and a dashed green circle. In the bottom-left corner, there is a large green circle with a white center, a smaller orange circle, and a dashed yellow circle. In the bottom-right corner, there is a large yellow circle, a smaller orange circle, and a small pink circle. A large dashed blue line curves around the central text.

透過科學探究
激發創新意念



科學探究

激發



創新意念



什麼是創新意念？

<https://www.menti.com/esb44wt8wd>



<https://www.mentimeter.com/app/presentation/2d06496c1ffd3c9957c1aabf019bc2b0/8b5b8708619b/edit>

「製作一些新意念，這些意念既要新穎，又要**有價值**」

-博登-

「一個創新意念既要原創的，也要**符合當時情境**」

-馬丁代爾-

「從西方的觀點看，創意被定義為**製造產物的能力**，該產品必須是**新穎和符合所需的**」

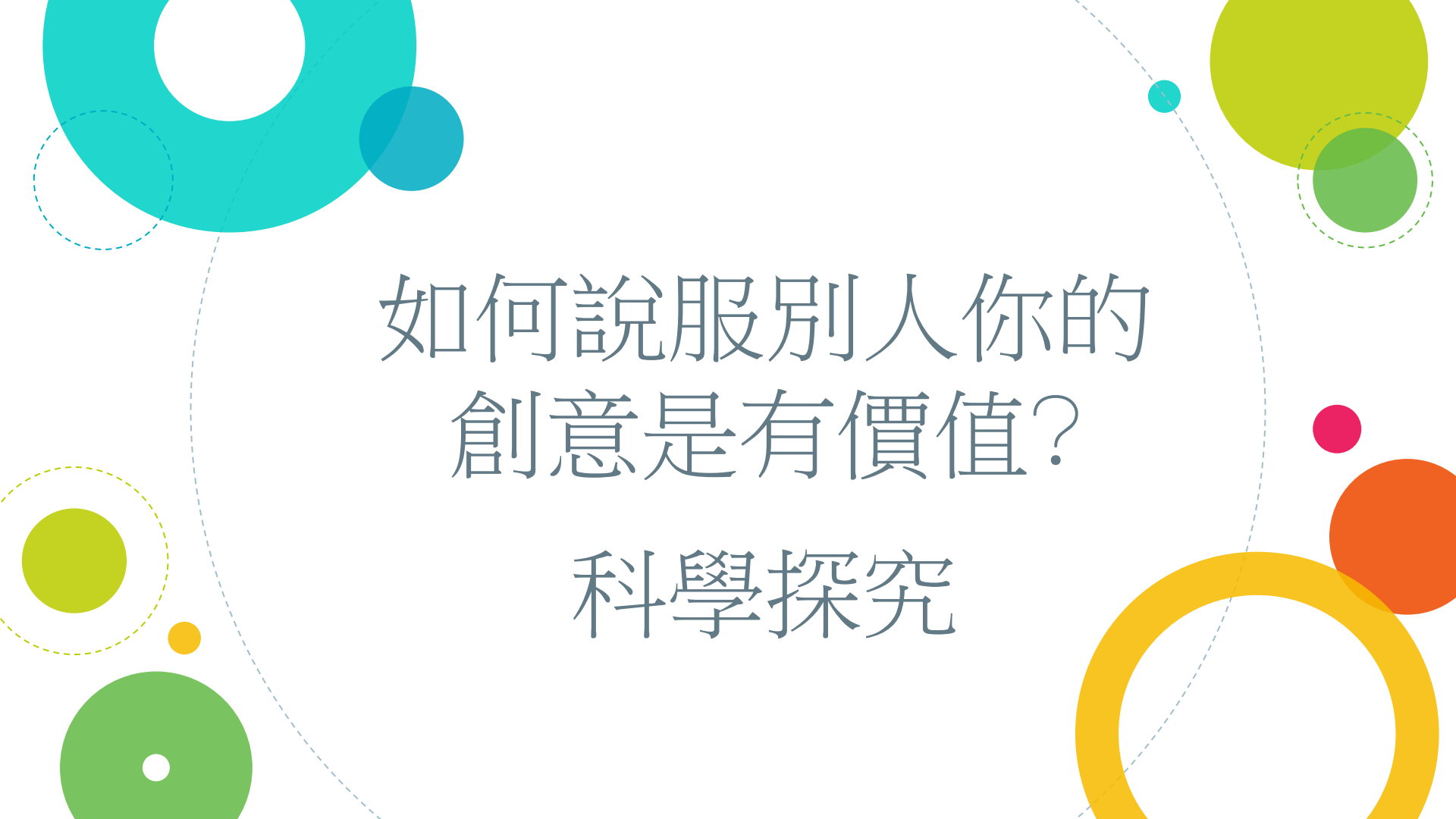
-盧伯-

透過常識科的探究式學習發展學生的批判性思考及創造力



創新意念

1. 新穎
 2. 說服到人是**有價值**
- 

The background features a white space with several colorful circles and dashed lines. In the top left, there is a large teal circle with a white center, a smaller teal circle, and a dashed teal circle. In the top right, there is a large lime green circle, a smaller green circle, and a dashed green circle. In the bottom left, there is a large green circle with a white center, a smaller orange circle, and a dashed yellow circle. In the bottom right, there is a large yellow circle, a smaller orange circle, and a small pink circle. A large dashed grey circle is also present, partially enclosing the text.

如何說服別人你的
創意是有價值？

科學探究

The background features a white space with a large, light blue dashed line forming a partial circle. Various colorful shapes are scattered around: a large teal ring in the top left, a smaller teal circle below it, a large lime green circle in the top right, a smaller green circle below it, a large orange ring in the bottom right, a smaller orange circle above it, a large green circle in the bottom left, a smaller green circle above it, a small yellow circle in the bottom left, and a small pink circle in the middle right.

什麼是科學探究？

科學方法

https://emm.edcity.hk/media/%E7%A7%91%E5%AD%B8%E6%96%B9%E6%B3%95/0_14enpwsk

0:00 - 4:16





科學探究

觀察→發現有沉積物

假設→檸檬茶和奶混合會產生沉積物

實驗→用不同的酸(檸檬)、茶和奶混合

分析→把得出的數據進行分析及歸納酸和奶混合

結論→酸和奶混合會產生沉積物



科學探究(實驗)

糖、檸檬茶、奶混合會產生沉積物

糖、檸檬茶不會產生沉積物

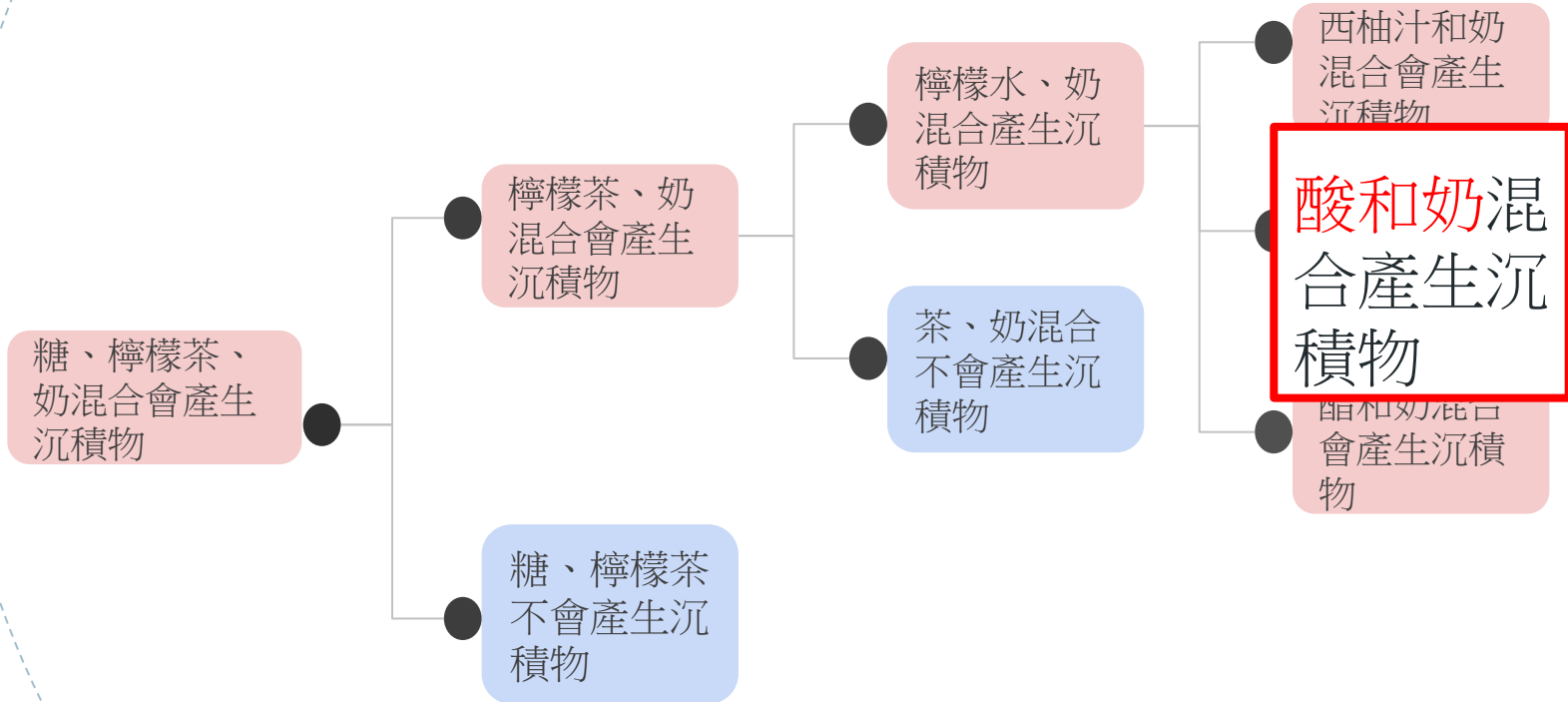
檸檬茶、奶混合會產生沉積物

茶、奶混合不會產生沉積物

檸檬水、奶混合產生沉積物

酸和奶混合產生沉積物

科學探究(分析)



<https://www.menti.com/914ermar5p>

科學探究中那些步驟能說服別人？

觀察

假設

實驗

分析

結論



<https://www.mentimeter.com/app/presentation/c4f3464ea78a5723c4dc833d22f786ea/d01049182610/edit>

<https://www.menti.com/914ermar5p>

科學探究中那些步驟能說服別人？

觀察

假設

實驗

分析

結論



<https://www.mentimeter.com/app/presentation/c4f3464ea78a5723c4dc833d22f786ea/d01049182610/edit>



全新智慧能源創新方案

三大主題分別為

(1) 綜合能源解決方案

善用多種能源，提供綜合能源解決方案，例如天然氣、太陽能光伏板、儲能、氫能、轉廢為能等、

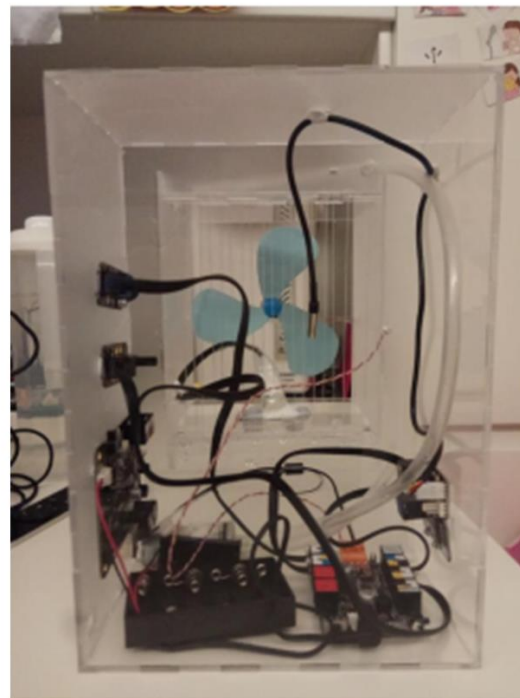
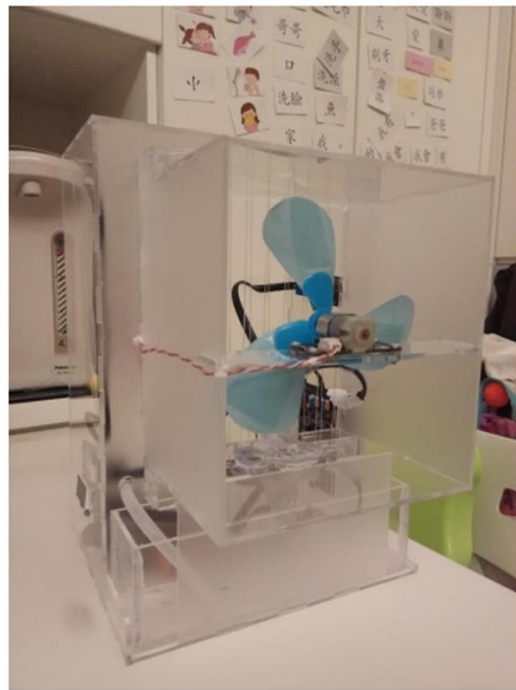
(2) 數碼化

善用數碼科技，如人工智能、大數據、手機應用程式等

(3) 去碳化

以減碳為目標，完善碳管理服務，改善環境

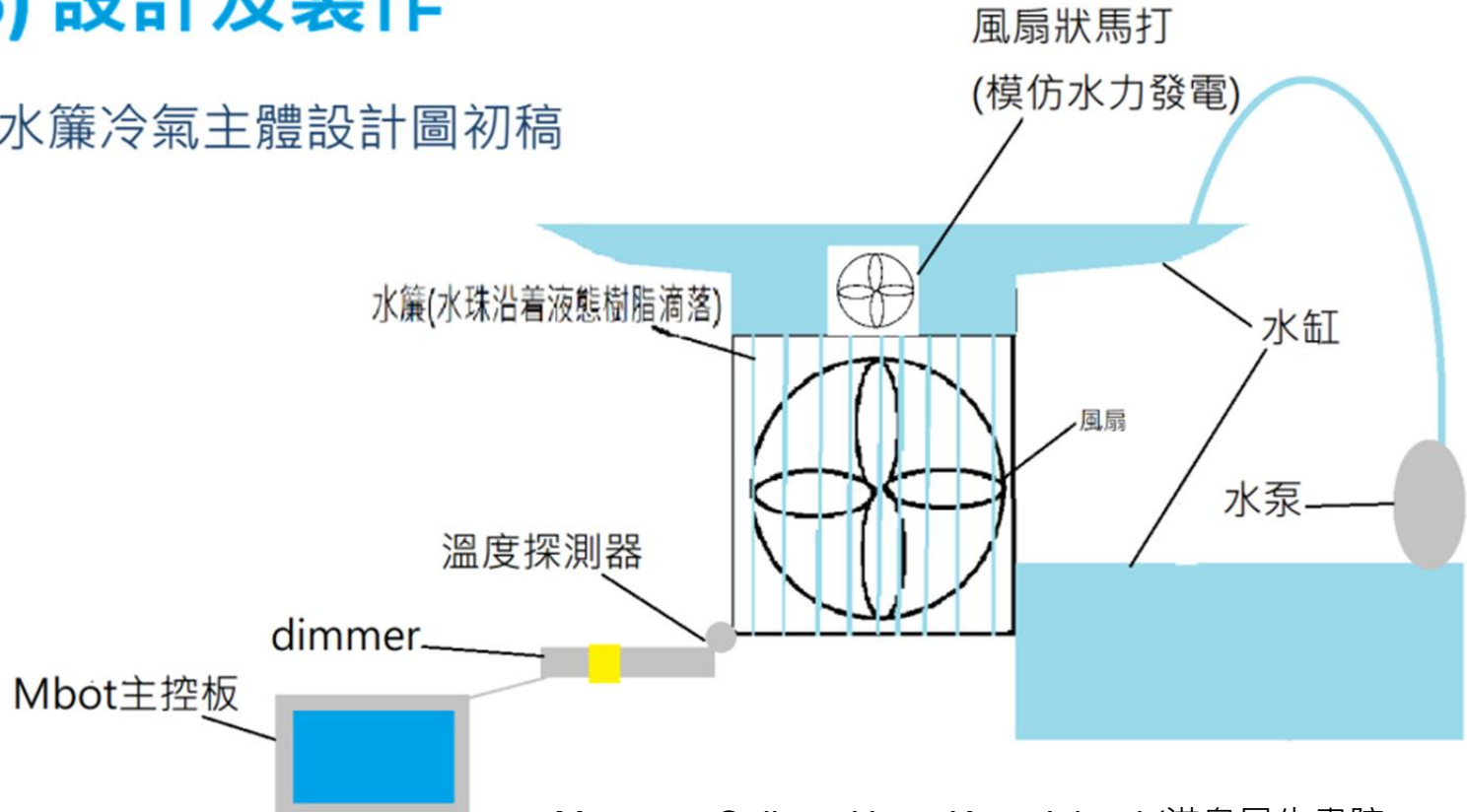
主題：水簾冷氣



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(5) 設計及製作

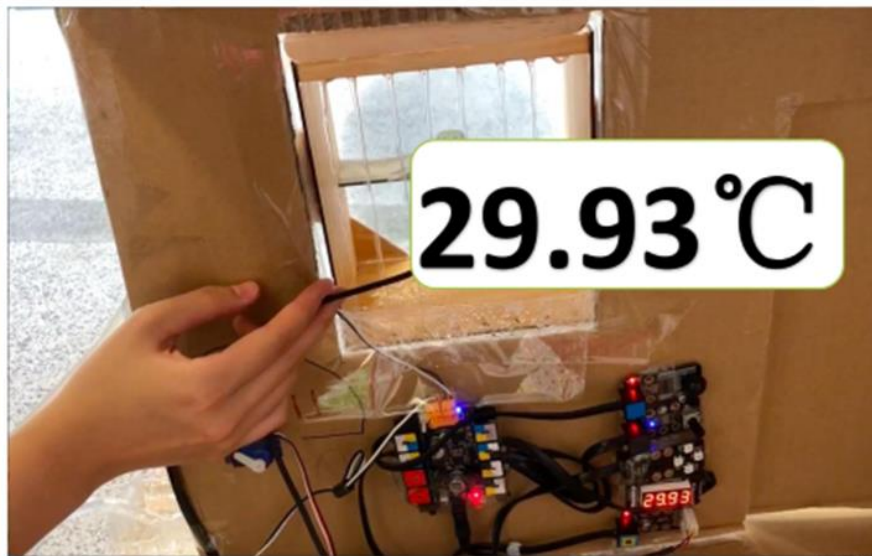
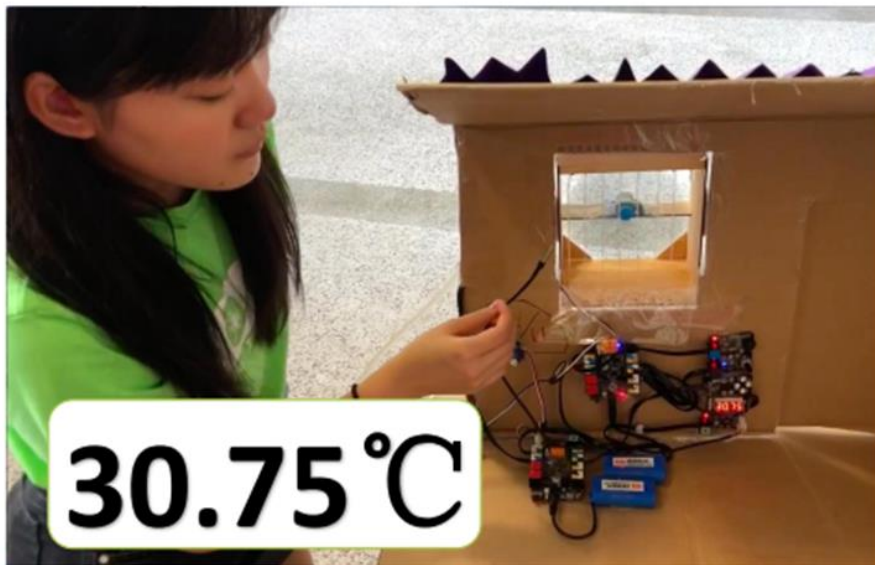
- 水簾冷氣主體設計圖初稿



(6) 測試及評估

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- 水簾冷氣的降溫作用
- 以溫度探測器量度開啟前後



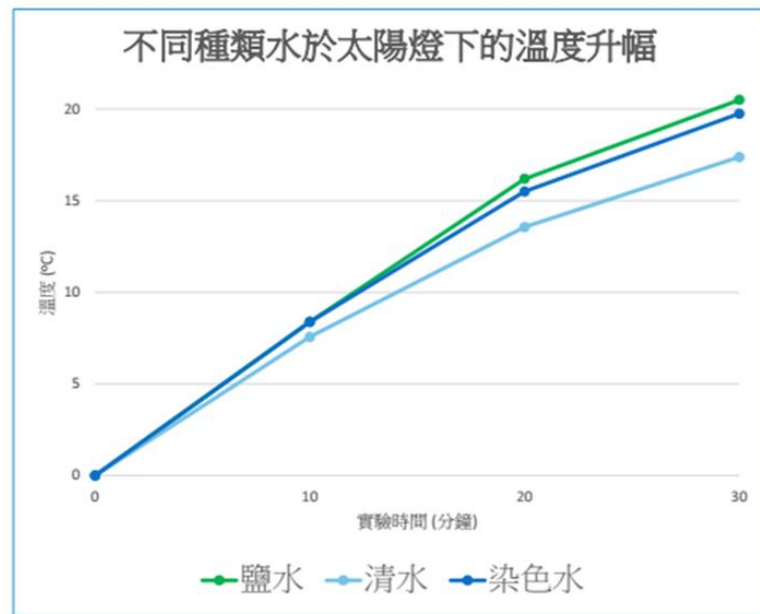
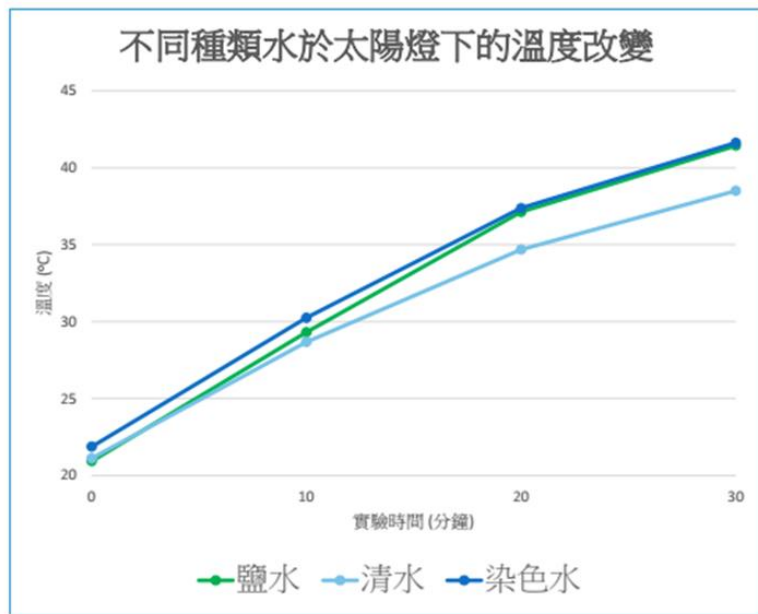
(6) 測試及評估

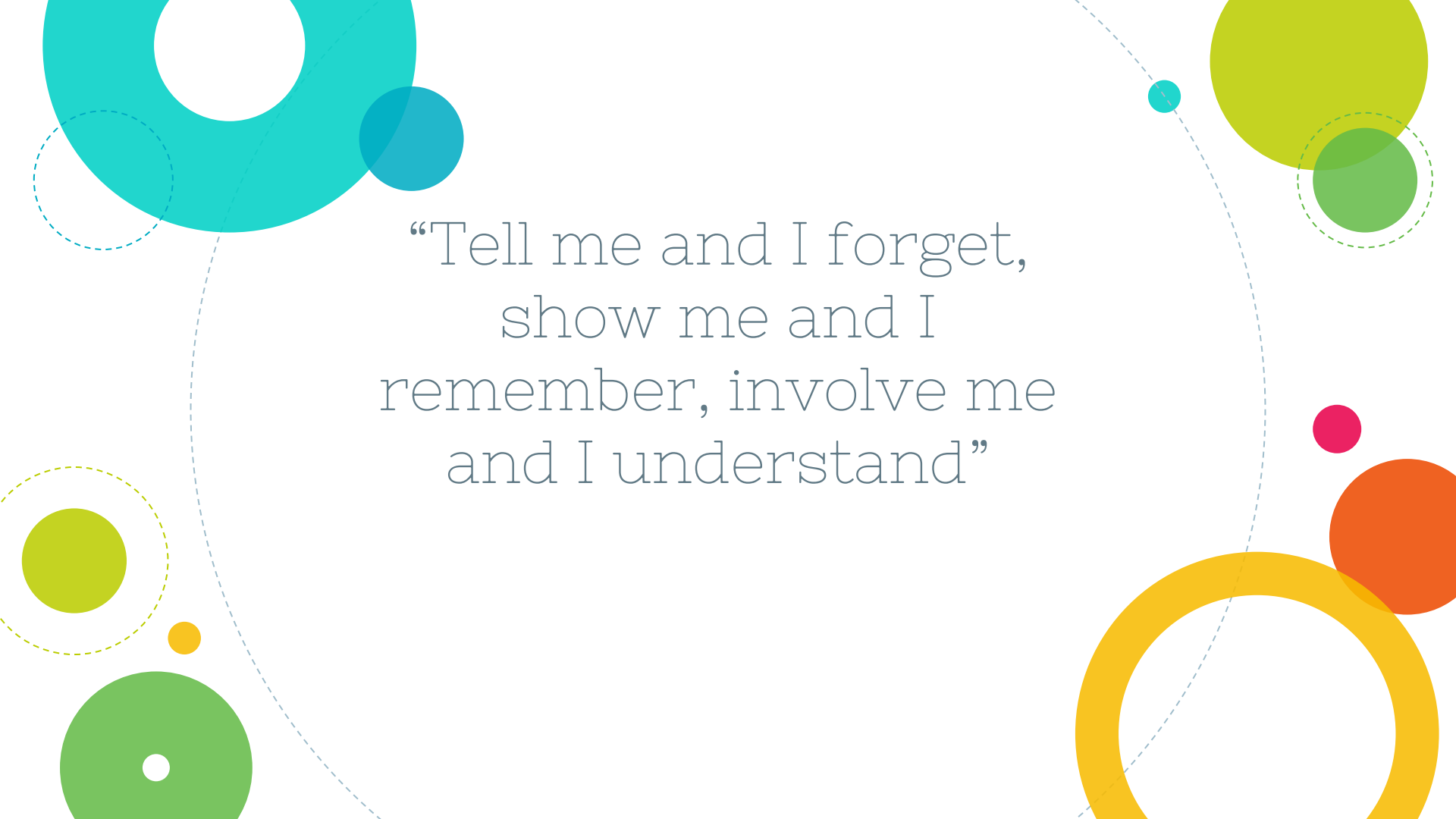
- 鹽水、清水及染色水降溫作用的差別
- 放在太陽燈下照射
- 每10分鐘記錄一次溫度



| 實驗時間 (分鐘) | 鹽水溫度 (°C) | 清水溫度 (°C) | 染色水溫度 (°C) |
|--------------|--------------|--------------|---------------|
| 0 | 20.93 | 21.12 | 21.87 |
| 10 | 29.31 | 28.68 | 30.25 |
| 20 | 37.12 | 34.68 | 37.37 |
| 30 | 41.43 | 38.50 | 41.62 |

(6) 測試及評估



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“Tell me and I forget,
show me and I
remember, involve me
and I understand”

A decorative background featuring a large dashed white circle. Inside and outside this circle are various colored shapes: a large green circle at the top left, a large cyan circle at the top center, a large yellow circle at the top right, a large orange circle at the bottom left, and a large yellow circle at the bottom right. Smaller circles in green, blue, red, and cyan are scattered throughout. A large cyan circle at the top center contains the white text "“".

“

1. 讓中、小學生綜合STEM知識及實作技巧
1. 加深學生對智慧能源及創新科技的認識
1. 鼓勵學生通過思考和發揮創意，實踐節能低碳生活

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Thank you
Q&A