

## Hot or Cold 熱或冷

### Understanding Temperature

Temperature is a measurement of how hot something is. Water freezes at 0°C (degrees Celsius) and boils at 100°C. As a basis for understanding temperature and how it is measured we did basic research into various weather conditions. How do they occur and why is there such a big difference in temperature from winter to summer? During the early stages of the project students had the opportunity to study various different thermometers and how these assist us in our daily lives especially now when we have our own temperatures measured wherever we go.

### Creating a Thermometer

Initially the students were introduced to the material that they would need to create their own thermometer. They had to figure it out on their own, therefore the design process took a little more time as the students had to collaborate, discuss, and put a plan together. We were amazed at the variety and quality of some of the designs, several groups even managed to figure out the exact design.

Once everyone had an opportunity to showcase their designs we put the thermometers together step by step. The students were amazed as they observed the water inside the straw move up with warmer temperatures and down with cooler temperatures.

### 理解溫度

溫度是一種量測物體有多熱的方法。水在攝氏 0 度時結冰，100 度時沸騰。作為理解溫度和如何量測溫度的基礎，我們對各種天氣條件進行基本研究。它們如何發生？為什麼冬季及夏季的溫差大？在專題的開始，學生學習各式各樣的溫度計以及溫度計如何在日常生活中幫助我們，尤其是現在無論我們去哪裡，都要量測體溫。

### 製作溫度計

一開始，老師介紹製作溫度計所需的材料。學生必須合作、討論及制定計畫來製作溫度計，因此設計過程花了一點時間。老師對學生所設計的溫度計的多樣性和品質感到驚訝，有些小組甚至思考出精準的設計。

每位學生都有機會展示他們的設計，並按步驟組裝溫度計。學生意外地發現吸管裡的水會隨著溫度上升及下降。

1

ASK + IMAGINE  
提問 + 創思

2

We did research and examined the material provided for the thermometer.

我們用提供的溫度計材料研究及實驗。



3

PLAN  
計畫

4

We were tasked to plan and design a thermometer to effectively gauge the temperature.

我們的任務是計畫及設計溫度計來有效地量測溫度。



It looked easy but it was tricky to piece the thermometer together.

溫度計組裝看似簡單，但其實很有挑戰性。

4

CREATE  
創造

5



5

IMPROVE  
改進

6

We did several tests to see if our thermometers could effectively gauge hot and cold temperatures.

我們做了幾次測試，看看溫度計是否可以有效地測量冷熱溫度。

