The G6 KCFS Gazette
Kang Chiao International School, Hsinchu Campus, International Department

Harnessing Wind Power
風力發電

The Problem to be Solved

In this project, the students were tasked with the question, “How can you design a prototype of a wind turbine that could lift a load of weight in the quickest amount of time, using only the power of wind?” Students then researched various turbine blade designs to discover the ideal shape, number, size, and angle for the turbine blades. They used this research to draw a detailed design for the prototype that they thought would be best to solve the problem at hand.

Designing and Creating the Turbines

After completing the designs, the students used the design to create their prototypes. They had a lot of fun working together in their groups and it was great to see them working so well together, assigning tasks, listening to each other’s ideas, and offering input for improvement along the way.

Testing the Prototypes

After the students completed their model turbines, it was time to test them using a strong fan as the wind. The team that could lift all the required amount of weight in the fastest time was the winner. The students had a lot of fun testing their turbines and making observations of how to improve them moving forward.

解決問題

在這個專題中，學生要思考的問題是:「如何設計出一個風力渦輪，可以只藉由風力快速舉起重物?」學生研究各種渦輪葉片的設計，來找到最理想的渦輪葉片形狀、數量、大小和角度，並藉由研究資料繪製詳細的設計圖來解決手邊的問題。

設計和創造風力渦輪

完成設計圖後，學生開始照設計圖製作渦輪。小組合作得很愉快，學生們一起分配任務、傾聽彼此意見並提供改進方法。

測試風力渦輪

當渦輪模型完成後，就可以用風扇當作風力進行測試，能夠最快將需要的重量舉起的組別就是贏家。學生很享受測試的過程，並在其中觀察如何改進他們的風力渦輪。

1 ASK + IMAGINE 提問 + 創思 2

Students used their newly found knowledge to start solving the problem.
學生用新學到的知識來解決問題。

3 PLAN 計畫

Students used the research on wind turbines to draw detailed designs.
學生用研究風力發電的資料來畫詳細的設計圖。

4 CREATE 創造

Students used their designs to bring their wind turbines to life.
學生用他們的設計賦予風力發電生命。

5 IMPROVE 改進

After testing, students reflected on their results to make improvements to their designs.
測試後，學生反思他們的結果，並改進他們的設計。

6 PRESENT 展現

Each group presented their findings to the class and complied a report of their findings.
每組向全班同學介紹研究結果並編寫報告。