The G4 KCFS Gazette
Kang Chiao International School, Hsinchu Campus, International Department
April 2026

Sail Car
帆船車

Designing with Wind Energy

This term, Grade 4 students designed, built, and tested wind-powered cars to explore how wind can be used to create motion. They investigated how kinetic energy from moving air is transferred to a sail and turned into movement across the ground.

Exploring Friction and Performance

Through hands-on testing, students compared different wheel and sail shapes and sizes, measuring how rolling friction and air resistance affected performance. They learned that small design changes could make a big difference, but also that reducing friction often mattered just as much as increasing sail size.

Putting the Cars to the Test

Groups pitted their cars against one another in the classroom, gathering data to improve and refine their designs based on evidence from their results.

風力設計

本學期四年級學生設計、建造並測試風力小車，以探索如何利用風產生運動。他們研究空氣中流動的動能如何傳遞到帆上，並轉化為車輛在地面上的移動。

探究摩擦的類型

透過手作測試，學生比較不同形狀與大小的輪子和帆，測量滾動摩擦與空氣阻力如何影響動力的表現。他們瞭解到，微小的設計變化可能帶來很大的差異，如同降低摩擦往往和增加帆的大小同樣重要。

測試帆船車

各組在教室中進行風力小車比賽，並根據實驗結果收集數據，作為改良與優化設計的依據，讓作品持續進步。

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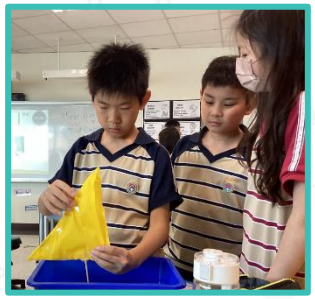
1 2 ASK + IMAGINE 提問 + 創思

Students researched how friction affects the motion of objects.
學生研究摩擦力如何影響物體的運動。

3 PLAN 計畫

Teams brainstormed the best way to create their prototype.
經過小組集思廣益，討論能夠製造出原型的最佳方法。

4 CREATE 創造



Team members collaborated to build their prototypes.
小組成員互相合作，建立他們的原型。

5 IMPROVE 改進

After testing, students used what they learned from the test results to improve their designs.
測試後，小組利用從中得到的結果來改善他們的設計。

6 PRESENT 展現

Students collaborated on their final report, before presenting their findings to the class.
向全班同學介紹他們的結論之前，小組先合力完成最終報告。