

Sail Cars 帆船車

Creative Challenge

Groups of students were engaged in creative thinking to design and construct their own sail cars. The challenge was that they had to go the furthest distance possible while only using wind power. They did some inquiries and came to the conclusion that the following factors: friction, wind, sails and the hulls, would influence the cars' performances.

Investigating the types of Friction

The students investigated the two types of friction that would affect the cars movement; fluid friction and rolling friction. They discovered that different surfaces and the shapes and sizes of objects affect motion. After exploring how the sails and hulls could affect their cars, they proceeded to brainstorm ideas on how to design and build their cars.

Testing the Cars

After designing and building their own sail cars, it was time to test the cars. The students collaborated during these processes, constantly trying new ideas to get to the best result. After testing their cars, they recorded each group's results in a data table so they could compare their car's performance against the other groups. It was fun watching all the interesting designs perform so well!

創意挑戰

學生分組進行創造性思維並設計及製造帆船車。他們面臨的挑戰是，在僅靠風力的情況下將帆船車移動到最遠的距離。他們做了一些研究，得出以下的結論：摩擦力、風力、風帆和船體等因素都會影響帆船車的「性能」。

研究摩擦的類型

學生研究兩種會影響車子移動的摩擦狀態：滾動摩擦及流體摩擦。他們發現不同的表面、物體的形狀及大小會影響動力。在探討風帆和船體如何影響他們的車子後，他們開始集思廣益地思考如何設計和製造他們的帆船車。

測試帆船

在設計並製造完帆船車後，就是測試的時候了！在這些過程中，學生們互相合作，不斷嘗試新想法，以取得最好的結果。在測試他們的帆船車後，他們將每個組的結果記錄在數據表中，以便可以與其他組相互比較帆船車的性能。看著有趣的設計表現得如此出色是非常有意思的！

1 ASK + IMAGINE 提問 + 創思



Students researched the different parts of the Sail Car.
學生研究帆船車的不同部分。

4 CREATE 創造



Making the prototype is hard work.
製作原型是一項困難的工作。

6 PRESENT 展現

Students collaborated on their final report, before presenting their findings to the class.

在學生向全班同學介紹他們的結論之前，他們先合力完成最終報告。

3 PLAN 計畫



Students planned on how to make the Sail Car.
學生計劃如何製造帆船車。

5 IMPROVE 改進



Students used what they have learned during the testing stage to make improvements on their Sail Cars.
學生利用他們在測試階段所學到的知識來改進他們的帆船。

