The G6 KCFS Gazette
Kang Chiao International School, Hsinchu Campus, International Department
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Rocket Power
火箭的力量

Understanding Forces

The grade six students explored Newton's third law of motion and how forces always have an equal and opposite reaction. Students explored how this law of motion explains how our water rockets are able to fly. They noticed when they pump air into the rocket, it causes air pressure to build up inside of the bottle. When this pressure is released, it pushes out the water with a powerful force. This downward force creates an upward reaction force that launches the rocket.

Designing and Creating the Water Rockets

After investigating forces and learning how they work together, the students had to apply their knowledge in designing and creating their water rockets. They researched parts of a rocket and possible design options to be implemented. They then designed a water rocket that would go as high as possible. Using detailed designs, they were able to create very accurate, aerodynamic rockets.

Testing the Water Rockets

The students had a lot of fun testing their water rockets. They launched them while measuring how long they stayed airborne and how straight the flight path was. After an initial round of testing, they used their results and observations to improve their water rockets and test them again.

了解力的作用

六年級學生探究牛頓第三定律以及力如何無時無刻具有相等及相反的作用。學生探索這項運動規律如解釋水火箭的飛行能力。他們發現當把空氣注入火箭時，會使空氣壓力聚集在瓶子裡；當壓力被釋放時，它以強大的力量將水推出。這種向下的力則會產生向上的反作用力，讓火箭順利發射。

設計及建造水火箭

在調查各種力並學習其如何相互作用後，學生將知識運用於設計及建造水火箭。他們研究火箭的零件，及可能實行的設計方案。接著，他們設計一枚可以飛得高的水火箭。利用詳細的設計，他們能夠製造出非常精確的空氣動力火箭。

水火箭測試

學生們於測試水火箭時玩得非常開心。發射水火箭的同時，也量測水火箭在空中的時間及直線飛行的路徑。經過一輪初步測試後，學生利用結果以及觀察加以改進水火箭並再次進行測試。

1 ASK + IMAGINE 2 提問 + 創思

Students researched how forces work together to make a rocket launch.
學生們研究力如何相互作用使火箭發射。

3 PLAN 計畫

They used their research to start designing the water rockets.
他們利用研究結果開始設計水火箭。

4 CREATE 創造

Students brought their designs to life and got creative with building their water rockets.
學生們將他們的設計帶入生活，並於建造水火箭時發揮創造性。

5 IMPROVE 改進

After testing, students reflected on their results to make improvements to their water rockets.
測試後，學生們反思他們的結果，以改進他們的水火箭。

6 PRESENT 展現

Each group presented their findings to the class before writing a report.
每個小組在寫報告之前向全班展示他們的發現。