The G4 KCFS Gazette

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Aqueducts
水道

Understanding Motion

During our initial phases of this project, students explored how objects move. We learned about the laws of motion and applied what we learned to make roller coasters. We then discussed how these laws could apply to the motion of water and experimented with different shapes of water transportation systems. The students had a lot of fun exploring gravitational, potential, and kinetic energy.

Designing Effective Waterways

After we learned about how water moves, the students talked about what they thought were important features of water transportation systems. The students applied their knowledge to the designs for their own aqueduct. Using detailed drawings, students were able to estimate the amount of supplies needed to complete their structures.

Testing the Aqueducts

Groups volunteered to test their aqueducts in front of the class and explained how it was made and the reasons for making those decisions like understanding the flow of water and how gravity effects it. Students had a lot of fun and learned so much about motion, gravity, design, and construction. Students finished the project by recording their observations into a report.

了解動機

學生於專題的開始便試著探究物體如何移動，並學習運動定律，運用所學的知識製作過山車。我們討論這些定律如何應用於水的流動，並嘗試不同形狀的水運輸系統。學生們透過探索引力、勢能和動能方面獲得很大的樂趣。

設計有效的水道

在我們了解水的流動方式之後，即著手討論水運輸系統的重要特點。學生將所學知識運用在自己的水道設計中，並繪製細節估計完成結構所需的物品數量。

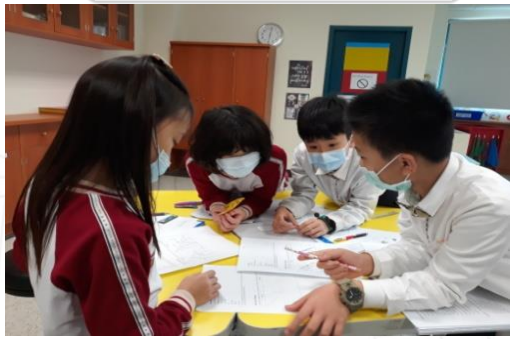
測試水道

各組在同學面前測試他們的水道，並解釋製作方法以及做出這些決定的原因，例如了解水的流動以及重力對水的影響。過程中除了享受樂趣外，也學到很多有關運動、重力、設計和結構的知識，並且將他們的觀察結果記錄下來完成報告。

1 ASK + IMAGINE 提問 + 創思 2

Students explored kinetic and potential energy by making roller coasters.
學生透過製作過山車來探索動能和勢能。

3 PLAN 計畫



Students worked together to develop a blueprint for their aqueducts.
學生合作繪製他們的水道藍圖。

4 CREATE 創造

Students constructed a functional model of an aqueduct.
學生建造了水道的模型。

5 IMPROVE 改進

Students tested their aqueducts and noted ways their designs did not meet expectations, and then made corrections.
學生測試水道，並指出了設計中未達預期的地方，接著進行修正。

6 PRESENT 展現

Students shared their hard work and creativity with the rest of the class.
學生向全班分享他們的工作過程和所創造的作品。