The G2 KCFS Gazette

Kang Chiao International School, Hsinchu Campus, International Department

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Simple Machines
簡易機械

Gathering Facts

Have you ever thought about how we can lift heavy objects or move large things with just a little push? That's the power of simple machines! These clever tools make our work much easier. A simple machine is a basic device that changes the direction or strength of a force to help us get things done. They work by giving us a mechanical advantage, often using very few or no moving parts. The six main types are: the wedge, screw, lever, pulley, inclined plane, and wheel and axle.

Making it Work

A pulley is a device consisting of a wheel that allows for the change in direction of force. When downward pressure is applied to one side of a lever, the opposite side rises. By positioning the narrow end of a wedge against a log, it becomes possible to strike it with a hammer. Transporting heavy objects uphill is easier with a ramp compared to lifting them directly without the assistance of a ramp. During the lessons, students explored different problems and got the chance to design and build simple machines to solve them. While exploring how these machines work and can be used, it was exciting to see the students working together and showing creativity as they designed and tested their own simple machines.

蒐集事實

你有沒有想過，我們如何用一點點力氣來搬動沉重的物體或是移動大型的東西？這就是簡易機械的力量！這些聰明的工具讓我們的工作變得輕鬆許多。簡易機械是一種基本裝置，能改變力的方向或大小，幫助我們完成任務。它們透過機械優勢來運作，通常只有少數或固定的零件。主要有六種簡單機械：楔子、螺絲、槓桿、滑輪、斜坡，以及輪軸。

動起來！

滑輪是一種由輪子組成的裝置，可以改變力的方向。當在槓桿的一側向下施力時，另一側就會向上升起。將楔子的狹窄端靠在原木上，就能用錘子敲擊楔子來劈開木頭。與直接抬起重物相比，利用斜坡把重物搬上坡更輕鬆。在課程中，學生探索不同的問題，並有機會設計和製作簡易機械來解決這些問題。在瞭解這些機械如何運作及其用途的過程中，可以看到學生合作並展現創意，設計和測試自己的簡易機械是件令人興奮的事情。
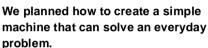
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1 ASK + IMAGINE 提問 + 創思 2

We learned about the six simple machines and how they help people.
我們學習六種簡易機械以及它們如何幫助人們。

3 PLAN 計畫

We planned how to create a simple machine that can solve an everyday problem.
我們計畫製作一個能解決日常問題的簡易機械。

4 CREATE 創造

We worked together to create working machines to lift a heavy bag of rice.
我們一起合作製作能夠提起一袋米的簡易機械。

5 IMPROVE 改進

We tested and made improvements to our designs where needed.
我們測試並進行必要的改善。