

Magnets

磁鐵

The power of Magnets

A magnet is a material or object that produces a magnetic field. This magnetic field is invisible but is responsible for the most notable property of a magnet: a force that pulls on other ferromagnetic materials, such as iron, and attracts or repels other magnets.

Attract and Repel

Students were given the opportunity to investigate and draw conclusions about what magnets can do or can't do. During the first two stages of the project, they used magnets of different strengths to learn about and understand key concepts such as attract and repel. The students came up with creative ideas on how to test the strength of a magnet by placing iron powder in a jar filled with water and using a magnet to move the powder in the jar. One of the most exciting activities was using the magnets to repel each other causing magnets to levitate.

Magnetic Tool

It is important to ensure that through all these activities students were able to hit certain goals and objectives, one of those was to predict which magnets were the strongest. This was enabled through the main activity when they were asked to create a tool that could collect as many metal objects at one time as possible. Students went back and forth trying and testing different magnets to see which ones gave them the best results.

磁鐵的力量

磁鐵是產生磁場的素材或物品。磁場雖然看不見，但卻是磁鐵最顯著的特性：拉動其他具磁性的材料(例如鐵)並吸引或排斥其他磁鐵的力。

吸引和排斥

學生有機會觀察可使用磁鐵做到哪些事，並得出結論。在專題的前兩個階段，他們使用了不同強度的磁鐵來學習和理解吸引和排斥的關鍵概念。學生提出測試磁鐵強度的創意，透過將鐵粉放入裝有水的瓶中，並使用磁鐵讓鐵粉在瓶中移動。最有趣的活動之一是使用磁鐵相互排斥，導致磁鐵懸浮。

磁性工具

本單元重要的是確保學生能夠透過許多實作達到學習目標和目的，其中之一是預測哪些磁鐵的磁力最強，並製作可以同時吸引最多金屬物品的工具。學生來回嘗試並測試不同的磁鐵，看看哪些磁鐵能達到最好的效果。

1

ASK + IMAGINE
提問 + 創思

2



3

PLAN
計畫



We used metal shavings to discover the magnetic field around a magnet.
我們使用金屬屑觀察磁鐵周圍的磁場。

4

CREATE
創造



Creative thinking was required to make our tool as strong as possible.
我們發揮創意提升工具的效能。

5

IMPROVE
改進



Trying different magnets and material allowed us to test and improve our tools.
我們使用不同的磁鐵和材料測試並改良工具。