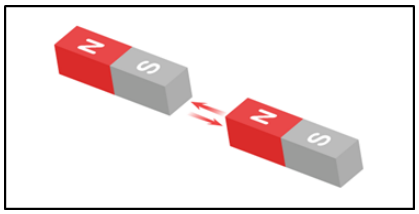
Princecroft
PRIMARY SCHOOL

Forces, Magnets and Isaac Newton Knowledge Organiser.

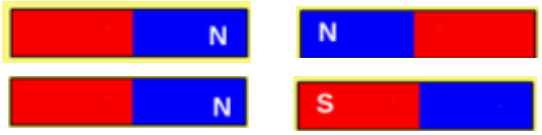
Magnets

A magnet is a material or object that has a **magnetic field** (invisible force). Magnets **attract** or **repel** other items. A magnet attracts an item that is made of iron, cobalt, steel or nickel.



Attraction and Repulsion

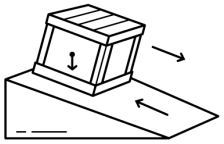
Every magnet has both a north and a south pole. When you place the north pole of one magnet near the south pole of another magnet, they are **attracted** to one another. When you place like poles of two magnets near each other (north to north or south to south), they will **repel** each other.



Forces

A force is a push or pull acting on an object as a result of the object's interaction with another object. **Forces can** cause **objects** to speed up, slow down, stop, start, change direction, change shape, or even turn.

Friction

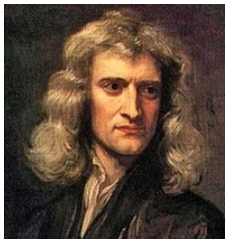


Friction is a force **between two surfaces** that are sliding, or trying to slide, across each other. For example, when you try to push a book along the floor, friction makes this difficult.

Friction always works in the direction **opposite** to the direction in which the object is moving, or trying to move. Friction always **slows** a moving object down.

The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced.

Isaac Newton



- **Occupation:** Scientist, mathematician and astronomer
- **Born:** January 4th, 1643 in Woolsthorpe, England
- **Died:** March 31st, 1727 in London, England

Best known for: Defining the three laws of motion and universal gravitation

Isaac Newton is considered one of the most important scientists in history. During his lifetime Newton developed many theories, for example the theory of gravity and the laws of motion.

Newton discovered gravity when an apple from a tree and landed on his head, this inspired him to wonder why it fell down, rather than up or across. **Newton** described **gravity** as a pulling force that keeps people on the ground rather than floating off. He also noted that **gravity** keeps the moon in orbit.