

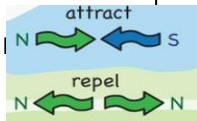
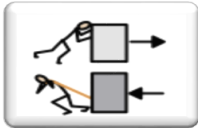
Mighty Metals



To know what forces are and notice that some forces need contact between two objects.	To compare how things move on different surfaces.	To know how magnetic forces work.	To be able to identify magnetic materials.	To investigate uses for magnets.	To learn about the work of inspirational scientists.
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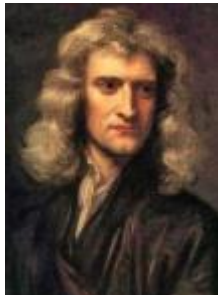
Key Vocabulary

- move
- movement
- surfaces
- friction
- forces
- push
- pull
- contact
- distance
- magnet
- bar magnet
- ring magnet
- horseshoe magnet
- attract
- repel
- poles (of magnets)
- magnetic materials

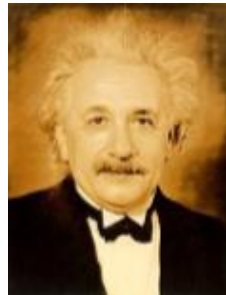


Forces

A force is a push or a pull. Forces cannot be seen, but it is possible to see what forces do. When a force is applied to an object, it can change speed, direction of movement or shape. Some forces are **contact forces**. This is where objects must be **touching** each other to apply a force. **Non-contact forces**, such as gravity and magnetism, act between two objects that are **not touching** each other. Some forces can be measured in newtons (N) using a force meter.



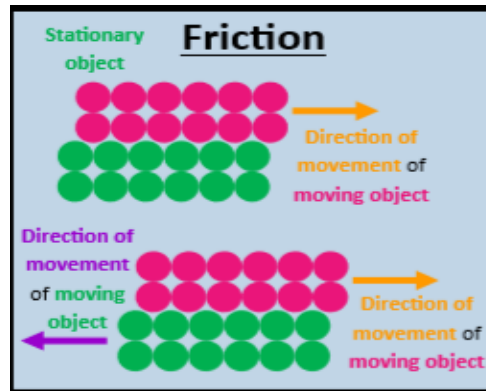
Isaac Newton



Albert Einstein

Friction

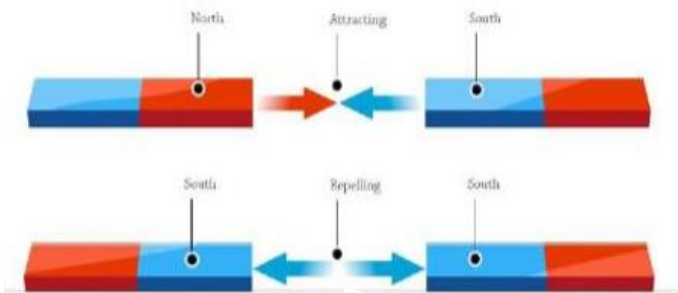
Friction is the force between two surfaces moving across each other. It acts in the opposite direction to movement and always slows down a moving object. Friction is in all places where two surfaces meet, but its force depends on the materials. Normally smooth surfaces have less friction than rough surfaces. Friction can be a useful force.



Magnetism

A magnet is a material or object that produces an invisible magnetic field. A magnetic field causes the force of magnetism that pulls on magnetic materials and attracts or repels other magnets. The two ends of the magnet are where the force is strongest. These are called the north and south poles.

Magnets have north and south poles. These attract each other but two north or two south poles repel each other.



Newton's Three Laws of Motion	
First law	An object will continue in the state it is in (rest or motion) unless a force acts on it.
Second law	Acceleration depends on the magnitude of the force applied and the mass of the object.
Third law	"For every action, there is an equal and opposite re-action."

