



# Forces and magnets

## Key Questions

- Are all materials magnetic?
- How do magnetic poles work?
- How do different surfaces affect the motion of an object?

## ESSENTIAL VOCABULARY

<b>Force</b>	A push, pull, twist or turn.
<b>Gravity</b>	A pushing force exerted by the Earth, it attracts objects towards the centre of the Earth.
<b>Friction</b>	The force between 2 moving surfaces.
<b>Magnetism</b>	The force of attraction and repelling caused by a magnet.
<b>Magnet</b>	A material or object that produces a magnetic field, it attracts or repels magnetic objects.
<b>Poles</b>	2 sides of a magnet where the magnetism is strongest
<b>Attract</b>	To pull towards (opposite of repel)
<b>Repel</b>	To push away (opposite of attract)

## Forces

**Gravity** – the force that pulls things to the ground, Gravity also holds Earth and other planets in their orbits around the sun.

**Friction** – friction is a force between 2 surfaces that are sliding or trying to slide across each other. Friction works in the opposite direction to which the object is moving. It slows down the moving object.

**Smooth** surfaces create **less** friction e.g. polished wood.

**Rough** surfaces create **more** friction e.g. carpets.

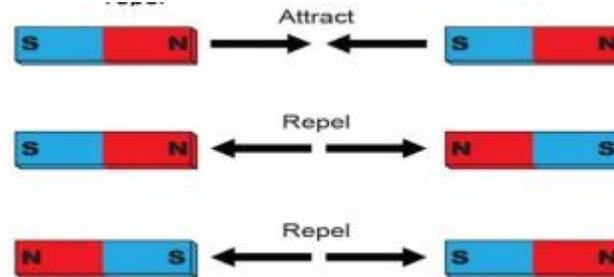
## Magnets

**MAGNETS** – are objects or materials that produce a magnetic field and attract or repel magnetic objects.

Magnets have 2 poles: North and South.

If you put magnets towards each other:

- 1 south pole and 1 north pole will attract
- 1 south pole and another south pole will repel
- 1 north pole and another north pole will repel



## Magnetic materials

Not all materials are magnetic. Some everyday materials which are magnetic are:

- Fridges
- Metal table legs at school
- Paper clips



## Outcomes

- Compare how things move on different surfaces.
- Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.
- Observe how magnets attract or repel each other.
- Compare and group everyday materials on the basis of whether they are attracted to a magnet.
- Describe magnets as having 2 poles.
- Predict whether 2 magnets will attract or repel each other.

## DIFFERENT TYPES OF MAGNETS

