

# Year 4/5 Science Knowledge Organiser – Forces and Magnetism

## Vocabulary

**1 force**



A force is a push or a pull. A force can be measured in Newtons (N).

**7 magnet**



a piece of metal that can pull objects containing certain types of metal towards itself

**2 gravity**



the force by which a planet, for example, pulls objects toward its centre

**8 iron**



A type of metal. Iron, nickel and cobalt are the three metals most strongly attracted to magnets.

**3 friction**



a force that acts between two touching surfaces when one is moving over the other

**9 pole**



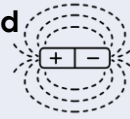
A magnet has two poles and, on a school magnet, these are at opposite ends. They are known as the north and the south pole

**4 air resistance**



air resistance is a force that acts against the direction of movement

**10 magnetic field**



an area around a magnet where there is a magnetic force

**5 water resistance**



a force which slows things down when they are moving through water

**11 attract**



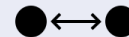
pulling together

**6 upthrust**



an upwards force that acts on an object in water

**12 repel**



pushing away

## Key people and knowledge

### Galileo Galilei

It is reported that Galileo dropped two objects from the Leaning Tower of Pisa, Italy, in 1589 to show that the pull of gravity on an object is the same, regardless of their different masses.

### Isaac Newton

Many know the story of Newton being inspired to think about gravity after seeing an apple fall from a tree. Born in 1643, Newton was a scientist and a mathematician. He described gravity as a "pulling force". He understood that it was gravity that kept the Moon in orbit.

There are two main types of force:

**Contact forces** – these act between two objects that are physically touching e.g. friction, air resistance, upthrust

**Non-contact forces** – these act between two objects that are not physically touching e.g. gravity, magnetic force

On a magnet, like poles repel (for example, a north pole will push away another north pole) and unlike poles attract (for example a south pole and a north pole will pull towards one another).