



# Year 3 – Term 2 – Forces and magnets

## Key skills and investigation focus

Investigation focus	Comparative and fair testing Friction – How does the surface affect how far an object can roll? Which is the strongest magnet?
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## Vocabulary

forces	Pushes and pulls.
friction	A force that happens between two surfaces (such as your shoe and the floor). Friction slows things down.
surface	The top layer of something. It can be smooth or rough.
gravity	Gravity is a type of force that pulls things down. Gravity holds us to the Earth.
magnet	An object which produces a magnetic force that pulls certain objects towards it.
magnetic	Objects that are attracted to a magnet. Iron, nickel and cobalt are magnetic.
poles	The different ends of the magnets are called the north and south poles.
attract	Pull towards something.
repel	Push something away.

## Prior knowledge/key knowledge

Year 2 prior knowledge	Not taught in Key Stage 1.
Forces	Forces are invisible but you can see the affect they have on things. When you push or pull something you are exerting a force on that thing. You push something away from you, like when you push a swing and you pull something towards you (like in a game of tug-of-war). When you twist something you are exerting two forces – a push and a pull, ringing water from a cloth for example.  Forces will change the motion of an object (how something moves). They will either make it start to move, speed up, slow it down or even make it stop.
Friction	Friction can slow things down or stop them from moving in the first place. Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them. Friction acts in the opposite direction to the force of the object (see diagram).
Carl Friedrich Gauss (1777-1853)	invented an early type of <b>magnetometer</b> , which is a device capable of measuring the direction and strength of a magnetic field
Attract	Opposite ends of a magnet attract (a north pole and a south pole). This means they pull towards each other.
Repel	The same end of the magnets repel each other (a south pole and a south pole or a north pole and a north pole). This means they push each other away.

## Big Question/challenging perceptions:

How can magnets help the environment?  
What if there was no gravity?

