

Knowledge Organiser – Science: **Year 3 Forces and Magnets**

Key ideas and information

Forces are pushes and pulls caused by an object's interaction with another object.

Objects move differently on different surfaces.

Friction is a force which acts between two surfaces and can slow a moving object down.

Friction acts against a pushing force which is causing motion.

Different surfaces create different amounts of frictions. Smooth, flat and shiny surfaces create the least friction.

Some forces (e.g. friction) need contact between two objects, but magnetic forces can act at a distance. The space around a magnet is called the magnetic field.

Magnets attract or repel each other.

Magnets attract some materials and not others.

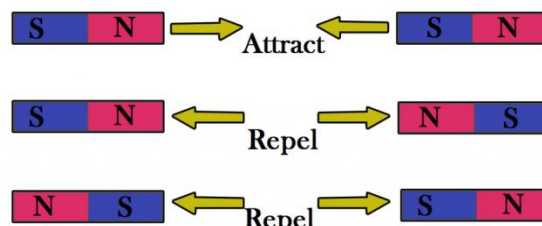
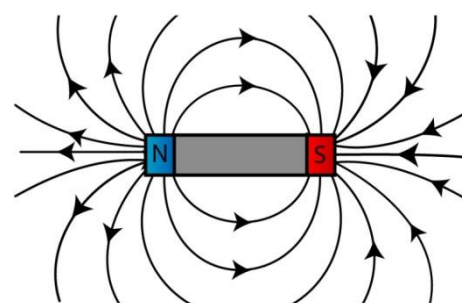
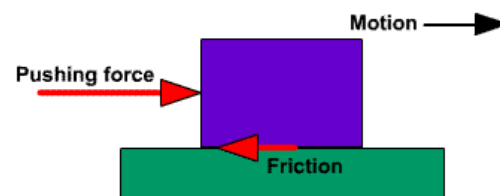
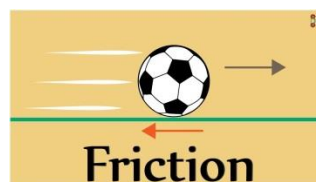
Magnetic materials contain iron, cobalt, or nickel.

Materials can be sorted and grouped together according to whether they are magnetic or not.

Every magnet has a north and a south pole.

Opposite poles attract, while like poles repel.

Magnets can be used for everyday purposes e.g. fastenings, sorting materials at a scrapyards etc.



Scientific Vocabulary

Force – A force is a push or pull acting on an object as a result of the object's interaction with another object.

Magnetic – Objects that are magnetic are attracted to objects containing iron, cobalt or nickel.

Non-magnetic – Objects that are non-magnetic are not attracted to objects containing iron, cobalt or nickel.

Attract - If one object attracts another object, it causes the second object to move towards it.

Magnetic field - A magnetic field is the space around a magnet where a magnetic force can be detected.

Magnet – A magnet is a material or object that produces a magnetic field.

Poles – The ends of a magnet are called its poles. The north-seeking pole of a magnet is called a north magnetic pole. The south-seeking pole is called a south magnetic pole.

Repel - If one object repels another object, it causes the second object to move away from it.

Friction - Friction is a force which acts between two surfaces and can slow a moving object down.

Working scientifically and scientific enquiry questions

Are all metals magnetic? Complete a comparative test to classify metals into magnetic and non-magnetic.

The smoother the surface the greater the amount of friction. Use a comparative test to explore this statement.

All magnets are the same strength. Discuss. Use a comparative test to explore this statement.