

Science Focus: Forces and Magnets	Year Group: 3	Summer Term
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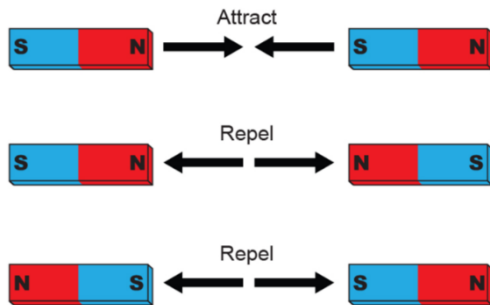
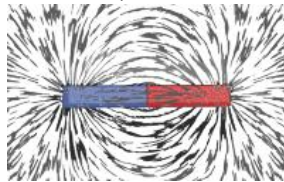
Key Knowledge:

Forces and Friction

- **Forces** are pushes and pulls.
- These **forces** change the motion of an object. They can make it start to move, speed up, slow down or stop.
- **Forces** act in opposite directions to each other.
- When an object moves across a **surface**, **friction** acts as an opposite **force**.
- **Friction** is a **force** that holds back the motion of an object.
- Some **surfaces** create more **friction** than others which means that objects move across them slower.
- On a ramp, the force that causes the object to move downwards is gravity.
- Objects move differently depending on the surface of the object itself and the **surface** of the ramp.

Magnets

- **Magnets** produce an area of **force** around them called a **magnetic field**.
- When objects enter this **magnetic field**, they will be **attracted** to or **repelled** from the **magnet**.
- Objects that are **magnetic**, are **attracted** to **magnets**.
- When **magnets repel**, they push each other away
- When **magnets attract**, they pull together.
- The ends of a **magnet** are called **poles**.
- One end is called the north **pole** and the other end is called the south **pole**.
- Opposite **poles attract**, similar **poles repel**.
- Iro
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Key Vocabulary:

- Forces**- Pushes or pulls.
- Surface** - The top layer of something.
- Magnetic** - Objects which are attracted to a magnet are magnetic. Objects containing iron, nickel or cobalt are magnetic.
- Magnet** - An object which produced a magnetic force that pulls certain objects towards it.
- Attract** - Attraction is a force that pulls objects together.
- Repel**- Attraction is a force that pulls objects together.
- Friction** - A force that acts between two surfaces or objects that are moving or trying to move, across each other.
- Poles** - North and South poles are found at different ends of a magnet.
- Magnetic Field** - The area around a magnet where there is a magnetic force which will pull magnetic objects towards a magnet.

Diagrams and Symbols:

Types of Forces



Friction Force



Gravity



Magnetic Force



Applied Force

Possible Experiments:

- Investigate the amount of friction created by different surfaces. Use measures to show how far or fast and object travels.
- Observe how a magnetic field attracts magnetic objects.
- Investigate how magnets are used in everyday life.
- Investigate which materials are magnetic and sort between objects that are magnetic and those that are non-magnetic.
- Investigate if the size of a magnet affects how strong it is (using chains of paper clips of varying lengths).
- Investigate if all metals are magnetic.
- Observe what happens when magnets with similar poles are placed next to each. Repeat this for when the poles are different.

