

Science Focus:

Forces and Magnets

Year Group:

3

Summer Term

Key Knowledge:

Forces and Friction

- Forces are pushes and pulls.
- These forces change the motion of an object. They can make it start ton move, speed u, 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.



- Objects that are magnetic, are attracted to magnets.
- When magnets repel, the 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.

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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.

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