



Dunholme St Chad's Year 5 Term 3 Science Knowledge Organiser

Forces

What should I already know?

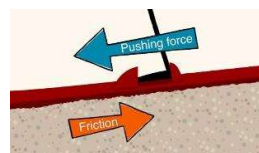
- compare how things move on different surfaces.
- notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- observe how magnets attract or repel each other and attract some materials and not others.
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- describe magnets as having two poles.
- predict whether two magnets will attract or repel each other, depending on which poles are facing.

Key vocabulary I need to know

Force	A push or pull on an object. A force can cause an object to accelerate, slow down, remain in place, or change shape
Gravity	A force of attraction that pulls together all matter (anything you can physically touch). The more matter something has, the greater the force of its gravity. That means really big objects like planets and stars have a stronger gravitational pull
Air resistance	A type of friction between air and another material. For example, when an aeroplane flies through the air, air particles hit the aeroplane making it more difficult for it to move through the air.
Water resistance	A type of friction between water and another material. For example, when you go swimming, water particles hit your body, making it more difficult for it to move through the water.
Friction	The resistance of motion when one object rubs against another. Anytime two objects rub against each other, they cause friction
Mechanisms	Any tool used to control motion.
Simple machines	A basic tool that makes work easier.
Levers	A rigid rod that can be pivoted at a fixed hinge.
Pulleys	A wheel on an axle or shaft that enables a cable or belt to pass over the wheel.

What I will know by the end of the term

- A force causes an object to start moving, stop moving, speed up, slow down or change direction.
- Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall.
- Air resistance, water resistance and friction are contact forces that act between moving surfaces. The object may be moving through the air or water, or the air and water may be moving over a stationary object.



- A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover.

Simple Machines

Simple machines have few working parts. They make our work easier and help us move things. These are a few simple machines.

Pulley



Lever



Gears



Key facts

- **Isaac Newton** developed the **theory of gravity**, the laws of motion (which became the basis for physics). He was born in Lincolnshire, in Woolsthorpe in 1643.
- A Newton metre measures a force acting upon an object and this force is measured in Newtons.