

## Key Vocabulary:

**Gravity** – Gravity is a force that holds things to Earth's surface and prevents things from floating off into the atmosphere. It ensures that unsupported objects to fall back down to Earth. It is measured in Newtons (N)

**Friction** – When objects are pushed or pulled, an opposing force can be felt. This opposite force is called 'friction'.

**Air resistance** – Air resistance (sometimes referred to as drag) acts against gravity on falling or moving objects. Objects such as aeroplanes reduce air resistance because of their streamlined shape.

**Water resistance** – Water resistance is a type of friction which can slow things down in the water. Water acts upon objects making them harder to pass through.

**Streamlined** – designed or provided with a form that presents very little resistance to a flow of air or water, increasing speed and ease of movement.

**Force** – Force is the push or pull on an object with mass that causes it to change velocity (to accelerate)

**Lever** – A way to lift heavy weights using the least amount of effort. The longer the lever, the easier it is to lift.

**Pulley** – Used like levers to lift loads with less effort but for longer distances. Rope is passed through a pulley which is attached to an anchor point and returned back to the ground to be pulled.

**Gear** – Used to transmit power from one part of a machine to another. Connected gears can increase speed, increase force or cause a change in direction.



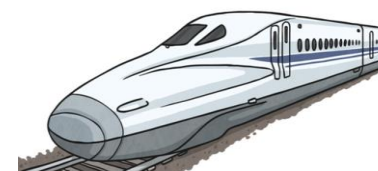
## Holy Family Halewood Year 5 & 6 Science Forces of Movement



## Learning Objectives:

- Understand the term gravity and how it acts upon objects
- Test a range of materials to identify which materials create the most friction
- Explore the effects of air resistance by investigating the best parachute to slow a person down
- Investigate the effects of water resistance by creating and racing streamlined boats
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect

## Streamlined examples:



## Gravity:

It is said that the famous scientist Isaac Newton was sitting under a tree when an apple fell on his head. He identified it was a force pulling the object down. We now measure gravity in Newtons (N) because of this.



There is gravity on the moon but it is much less than on Earth, so during the moon landings of 1969, astronauts could jump higher for longer due to the weaker pull of gravity.

## Water resistance:

Water acts upon objects making them harder to pass through. Up thrust is the name of the force which keeps things afloat in water. When gravity is greater than up thrust, the object sinks. When the two are the same, the object floats.

