



Year 5 - Autumn 2 - Science Knowledge Organiser

What I already know...

- What a force is and be able to explain that a push and pull are types of forces.
- That when forces are applied to an object they allow them to move or stop moving.
- The strength of the force determines how far and fast an object moves.
- Friction is the resistance of motion when there is contact between two surfaces
- The force that causes objects to move downwards towards the ground is gravity.
- That magnets have poles, and that opposite poles attract, while similar poles repel.

Making a difference at The Merton

In this topic we will learn about forces and machines. Starting with the force of gravity, we will then study friction forces, including air and water resistance, before investigating how simple machines work.

Making a difference at home

- Make a paper helicopter and investigate the effects of air resistance and gravity.
- Can you think of any time in our daily lives where we use forces?

Key Vocabulary

Forces	Pushes or pulls
Weight	The measure of the force of gravity on an object.
Air Resistance	A type of friction caused by air pushing against any moving object.
Streamline d	When an object is shaped to minimise the effects or air or water resistance.
Gravity	A pulling force exerted by Earth (or anything else which has mass)
Mass	A measure of how much matter (stuff) is inside an object.
Water Resistance	A type of friction caused by water pushing against any moving object.
Mechanism	Parts which work together in a machine e.g. pulleys, gears and levers.
Gravitational Pull	The pull that the Earth exerts on an object, pulling it towards the Earth's centre. Keeps us on the ground!
Friction	A force that acts between two surfaces or objects that are moving across each other.
Buoyancy	An upward force that a liquid applies to an object.



What I will learn...

- Gravity is an attractive, non-contact force and is measured in newtons (N). Any two objects have a force of gravity between them.
- The force of gravity on the Moon is less than that on the Earth.
- Galileo discovered that everything falls at the same speed.
- What makes objects fall to the Earth?
- How do levers, springs, pulleys and gears transmit force and motion?
- Sir Isaac Newton first set out the laws of gravity.
- Friction is a contact force caused by two objects rubbing together
- Air and water resistance are drag forces.

