Year 5 Science Autumn 1

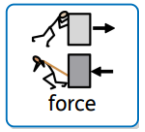
Forces and Motion

Links to prior learning:

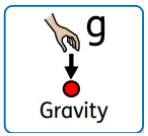
Year 3 learning: To compare how things move on different surfaces, To notice that some forces need contact between two objects, but magnetic forces can act at a distance

By the end of this unit I will be able to:
Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
Identify the effects of air resistance, water resistance and friction, that act between moving
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a

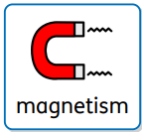
Types of Forces



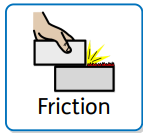
A **force** is the a push or a pull that makes an object change speed, direction or shape.



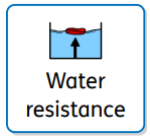
Gravity is the force that pulls objects and people towards the Earth's core.



Magnetism is the force that occurs when a magnet pulls a magnet or another magnet towards itself.



Friction is a push against a moving object. Friction is the force that stops or slows down a person or object when it is trying to move.



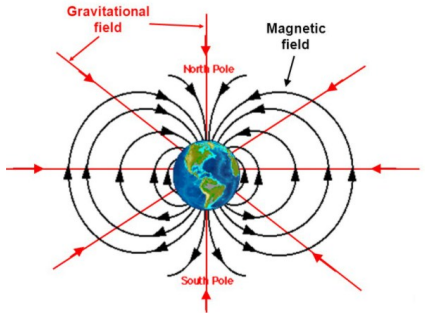
Water resistance is a type of friction that occurs between the water and another material. Whilst swimming, there is friction between your skin and the water particles.



Air resistance is a type of friction that occurs between the air and another material. Air resistance is the force that acts in parachutes to slow down their descent to the ground.

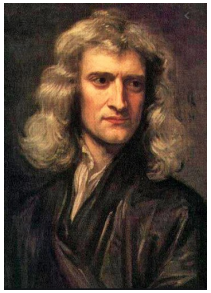
Planet Earth's forces

The Earth's magnetic field is created by the rotation of the Earth and Earth's core. It shields the Earth against harmful particles in space. Gravitational pull: the force acting on an object causing it to accelerate towards the centre of the planet.



Newtons

Forces are pushes and pulls. An object will not move unless a force acts upon in. Forces are measured in newtons (N). This is named after Sir Isaac Newton.



Mechanisms

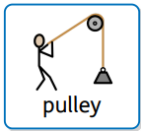
These mechanisms that allow a smaller force that allows a smaller force to have a greater effect which can make a task easier to complete



A **lever** is a mechanism which makes it easier to move or open an object by applying a force to that object



Gears are different sized cogs which lock together to turn each other. Turning one gear will cause the other gear to move either faster or slower.



Pulleys are wheels and ropes that work together to lift heavy objects.

