

Gunthorpe Primary School – Knowledge Organiser

Science Focus:

Forces

Year 5:

Summer 1

Key Knowledge

Contact Forces:

Air Resistance	<ul style="list-style-type: none"> Air resistance is a type of friction that occurs between the air and another material – for instance air resistance is acting and slowing down a parachute
Water resistance	<ul style="list-style-type: none"> Water resistance is a type of friction that occurs between water and another material
Friction	<ul style="list-style-type: none"> Friction is the force that slows or pushes against a moving object.
Buoyancy	<ul style="list-style-type: none"> Buoyancy (upthrust) is the force that pushes an object upwards in a fluid. If the weight is equal to or less than the upthrust, the object will float.

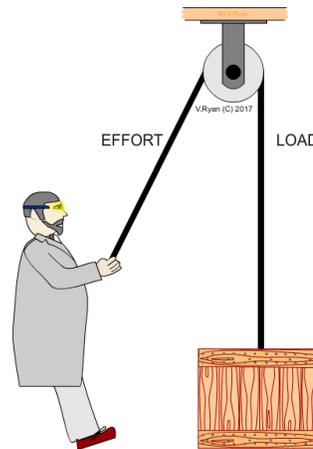
Non-contact Forces:

Gravity	<ul style="list-style-type: none"> Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
Magnetism	<ul style="list-style-type: none"> Magnetism is the force that occurs when a magnet pulls a metal object/ magnet towards itself

Key Vocabulary

Spelling	Definition
Force	A force is a pushing or pulling motion towards an object. There are many different types of forces.
Accelerate	When an object begins to move or move at a faster rate.
Deaccelerate	When an object begins to slow down. It will deaccelerate before stopping.
Surface	Different surfaces will have greater and lesser levels of friction. For instance, ice is very slippery, so this surface has less friction.

Levers, Pulleys and Gears



Some mechanisms, including levers, pulleys and gears, allow smaller forces to have a greater effect. In this diagram, the pulley is being used to lift a heavy crate.

Force Diagram:

Situation	Force Diagram
Car traveling at constant speed	
Car accelerating	
Car slowing down	

Force diagrams can be used to show different levels of force. For instance, if a car is accelerating (and moving forward) the thrust will be greater.

In Year 3 you investigated magnets and learned...

- Some forces need contact between 2 objects, but magnetic forces can act at a distance.
- Magnets attract or repel each other and attract some materials and not others
- We can group materials based on whether they are magnetic or non-magnetic
- Magnetic materials include: metals found on everyday objects such as paper clips, scissors & screws
- Non-Magnetic materials include: wood, plastic, cloth, paper
- Magnets have 2 poles. Magnets will attract (pull together) each other or repel each (push apart) other depending on which poles are facing.

Important scientist:

Sir Isaac Newton



(1643-1727). Sir Isaac Newton was an English mathematician, physicist, astronomer and author. Newton was born in England and attended university in Cambridge where he studied mathematics. He is most well-known for his work towards identifying the laws of motion and his most famous discovery is known as the Law of Universal Gravitation. This discovery came about when he saw an apple falling from a tree. Forces are measured in Newtons after Sir Isaac Newton.