Year 5 : Forces

Blackshaw Primary School

Prior Learning

Year 3

Know how some forces require contact and some do not, giving examples

Know about and explain how magnets attract and repel Predict whether magnets will attract or repel and give a reason.

Know about and describe how objects move on different surfaces

Vocabulary

Air resistance – A force that is caused by air with the force acting in the opposite direction to an object moving through the air

Force – A push or pull upon an object resulting from its interaction with another object

Friction – The resistance that one surface or object encounters when moving over another

Gears – A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (e.g. engine) and the speed of the driven parts (e.g. the wheels)

Gravity – The force that attracts a body towards the centre of the earth

Levers – A rigid bar resting on a pivot that is used to move a heavy or firmly fixed load

Mass – The weight measured by an objects acceleration under a given force or by the force exerted on it by gravity

Pull force – To draw or haul towards oneself or itself, in a particular direction

Pulleys – A wheel with a grooved rim around that changes the direction of a force applied to the cord

Push force – To move something in a specific way by exerting force

Water resistance - A force that is caused by water with the force acting in the opposite direction to an object moving through the water

Key Facts

Forces are often referred to as **pushes** and **pulls**.

Gravity is a **pulling** force exerted by the Earth. The gravitational force pulls in the direction towards the centre of the Earth.

Frictional force is any force that is caused due to friction. An example of this might be when you put on the brakes on your bike.

Surface resistance is the force on objects moving across a surface, such as an ice-skater skating on ice.

Air resistance is the force on an object moving through air, such as a plane moving through the sky. Air resistance affects how fast or slowly objects move through the air

Water resistance is the force on objects floating on or moving in water.

Magnetic force is an invisible force created by electrons. Magnetic force controls magnetism and electricity.

Know who **Isaac Newton** and **Galileo** were

Levers, pulleys and gears allow a smaller force to have a greater effect

Homework Challenges

Investigate the effects of air resistance, water resistance and friction, that act between moving surfaces

Investigate how streamlining affects sporting excellence

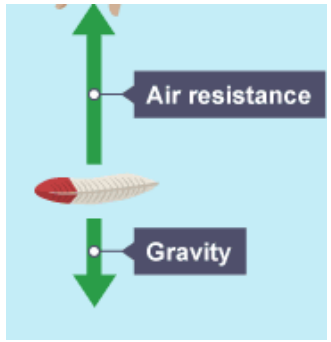
Identify things which have a lever, pulley or gear mechanism

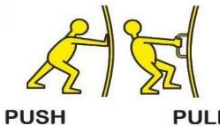
Design and make something with one of the mechanisms

Write a fact file about Sir Isaac Newton or Galileo

Complete the paper helicopter investigation

Diagrams, Maps or Timelines





Balanced and unbalanced forces



