

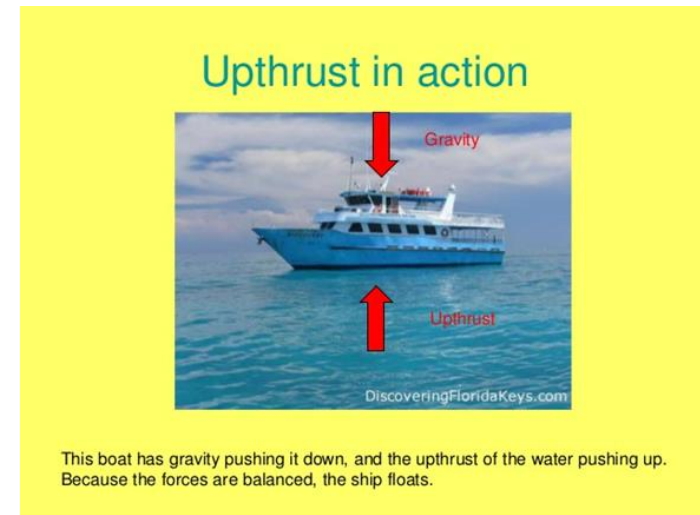
Year Five Knowledge Organiser – Forces (Physics)

Key Vocabulary

Vocabulary	Definition
air resistance	A type of friction between air and another material.
force	A push or a pull.
friction	Friction is a force between two surfaces that are sliding, or trying to slide, across each other. Friction always slows a moving object down. The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced.
gear	A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (such as the engine of a vehicle) and the speed of the driven parts (the wheels).
gravity	The force that attracts a body towards the centre of the earth, or towards any other physical body having mass.
lever	A rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.
mechanisms	A system of parts working together in a machine; a piece of machinery.
pulley	A wheel with a grooved rim around which a cord passes, which acts to change the direction of a force applied to the cord and is used to raise heavy weights.
water resistance	A type of force that uses friction to slow things down that are moving through water. It is often called drag.

Content

This half term's Science topic is Physical Processes. By the end of this unit, children 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; be able to identify the effects of **air resistance**, **water resistance** and **friction**, that act between moving surfaces and recognise that some **mechanisms**, including **levers**, **pulleys** and **gears**, allow a smaller force to have a greater effect.



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Famous Scientist- Sir Isaac Newton


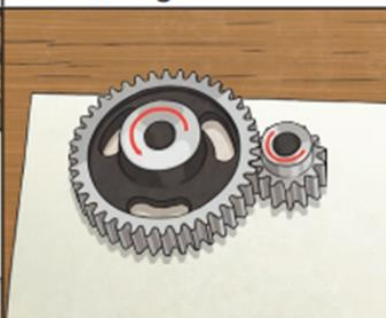



Sir Isaac Newton was born on January 4, 1643. He is considered to be one of the most important scientists in history. During his lifetime, Newton developed the theory of gravity, the laws of motion (which became the basis for physics), a new type of mathematics called calculus, and made breakthroughs in the area of optics such as the reflecting telescope. He died on March 31, 1727.

Examples of **forces** in action:



Water resistance and **air resistance** are forms of **friction**. **Friction** is sometimes helpful and sometimes unhelpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. **Friction** on a bike chain can make the bike harder to pedal so it is unhelpful.

Pulleys	Gears/Cogs	Levers
		
Pulleys can be used to make a small force lift a lighter load. The more wheels in a pulley, the	Gears or cogs can be used to change the speed, force or direction of a motion. When two	Levers can be used to make a small force lift a lighter load. A lever always rests on a pivot.