



Topic: Forces

Year: 5

Strand: Physics

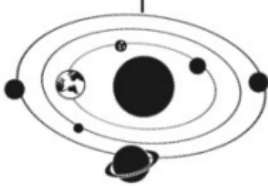
Gravity and weight



A **force** that pulls an object (or huge objects, such as the Moon) towards the centre of the Earth.



Earth's gravity pulls on the Moon and keeps it in orbit.



The Sun's gravity pulls on the Earth and other planets to keep them in orbit.

weight

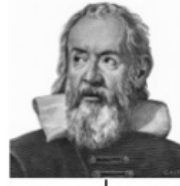
how much gravity pulls on an object
- measured in Newtons (N)

mass

amount of material in an object
- measured in grams (g) or kilograms (kg)



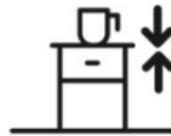
Sir Isaac Newton



Galileo Galilei

balanced forces

the effect of gravity is balanced by the table's upward force



the table pushes back with equal force and the cup is stationary

Forces

simple contact

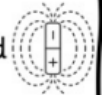
push and pull



magnetism

magnetic force field

attract and repel



friction

force that opposes movement

makes it difficult for something to start moving and continue moving



air resistance

form of friction

air pushes against object and slows them down



object affected by its surface area and speed

water resistance

push occurs when an object moves through water



upthrust

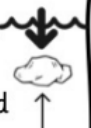
force acts upwards on objects in liquid or gas



floating is when an object's weight = upthrust of the liquid



sinking is when the weight of an object is greater than the upthrust of the liquid



lever

see-saw | scissors | wheelbarrow



arm

pivot

fulcrum

multiplies the force

gives you a **mechanical advantage**

a smaller force gives a greater effect

increase the force acting on the load

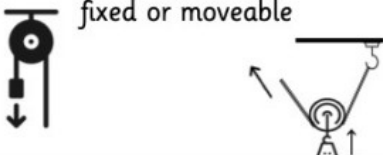
grooved wheel

axle

rope

pulley

fixed or moveable



gear

driver (8 teeth)

follower (16 teeth)

ratio 1:2



toothed wheel

driver gear
follower gear