

KNOWLEDGE ORGANISER

BIG IDEA: GRAVITY AND UNIVERSE

TOPIC: GRAVITY AND UNIVERSE

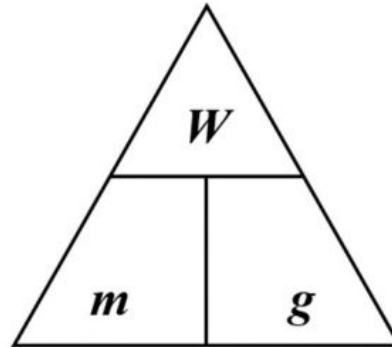
Key Word	Definition
galaxy	A grouping of billions of stars and their solar systems.
mass	How much matter an object contains.
orbit	A closed path.
universe	All of the galaxies.
weight	The force caused by gravity.

Mass and weight

Mass means how much matter an object contains, whereas weight is the force on an object due to gravity. Mass is measured in kg, whereas weight is measured in N. Mass is measured using a balance, whereas weight is measured using a newtonmeter. Mass does not vary depending on gravitational field strength, whereas weight does depend on gravitational field strength.

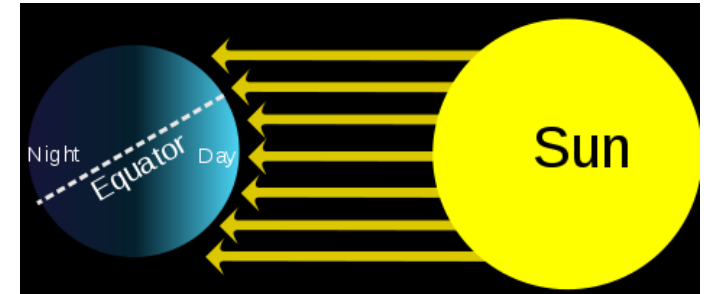
Gravity

Gravity is a force that acts between any two objects with mass. $W = mg$ is the equation that relates weight to mass and gravitational field strength. On Earth $g = 10 \text{ N/kg}$. Gravity is the force that holds objects in orbit.



Day and night

Day and night are caused by the Earth rotating on its axis. Whether it is day or night depends on where on the Earth's surface you are. Days are 'longer in summer in the UK because the Earth's axis is tilted towards the Sun.



Objects in space

Our Solar System contains the Sun, the planets and their moons. The Sun is a star. The planets in order from nearest to the Sun working outwards are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. A galaxy is a grouping of billions of star and their solar systems. The Universe means all of the galaxies.

