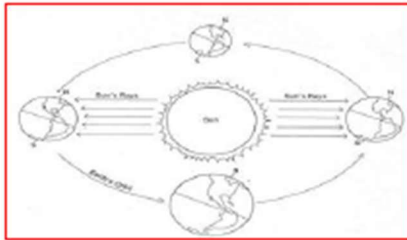
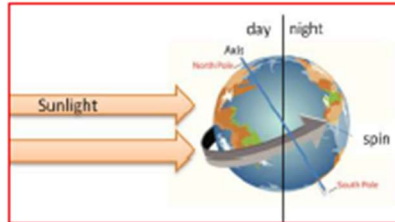


# KNOWLEDGE ORGANISER

## Day and Night

The Earth rotates (spins) round on its axis once in 24 hours. We spin into the light – day – and then back out again – night



The Earth orbits the Sun *once every 365 days*. Planets further out from the Sun travel more slowly and take longer to go round once. The Earth's axis is tipped over in space. In Britain we get different *seasons* because sometimes we are tilted towards the Sun and sometimes away.

## Weight and Mass

**Mass** is the amount of matter there is in something. It is measured in kilograms, kg. An object's mass is the same everywhere in the universe.

**Weight** is the force of gravity on an object. All forces including weight are measured in Newtons, N. Gravity is not the same everywhere. So, an object's weight depends on where in the universe it is.

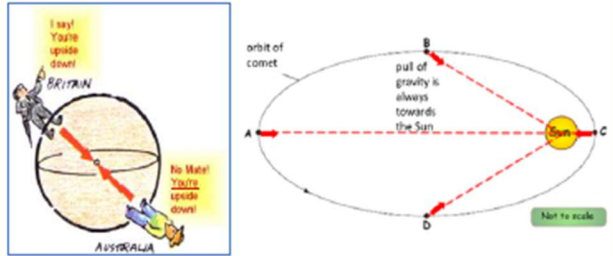
To work out the weight of an object we do some Maths. Weight (N) = mass (kg) x gravitational field strength (N/kg)

$$W = m \times g$$



## Gravity

The planets are held in their orbits by the force of the Sun's gravity. The Moon is held in its orbit round the Earth by the Earth's gravity.

The Sun's gravity also holds dwarf planets and asteroids in their orbits. Comets orbit the Sun too. The Sun's gravity pulls them in from beyond the orbit of Pluto. The closer they get to the Sun the stronger the force of gravity gets and the faster they go. Gravity always pulls things towards the centre of the mass making the gravity. So on Earth it pulls down to the centre of the Earth.



## The planets in order of distance from the sun

-  Mercury **My**
-  Venus **Very**
-  Earth **Easy**
-  Mars **Method**
-  Jupiter **Just**
-  Saturn **Speeds**
-  Uranus **Up**
-  Neptune **Naming**

Keyword	Definition
Attraction	When two or more things come together, eg the north pole of a magnet is attracted to the south pole of a magnet.
Gravity	The force of attraction between all objects. The more mass an object has, the larger the force of gravity it exerts.
Magnetic Field	Area surrounding a magnet that can exert a force on magnetic materials.
Mass	Amount of matter there is in something. Measured in kilograms, kg.
Orbit	An orbit is the path that an object takes in space when it goes around a star, a planet, or a moon.

Season	One of four times of the year (winter, spring, summer or autumn).
Solar System	The solar system consists of the Sun, with planets and smaller objects such as asteroids and comets in orbit around it.
Star	A large mass at the centre of a Solar System (if there are other bodies present) that produces heat and light, eg the star at the centre of our Solar System is called the Sun.
Weight	The force of gravity on an object. Measured in newtons, N.