

Gravity

1. Gravity can also be called **gravitational force**.
2. Gravitational forces act on and between *all* objects.
3. Gravity is a **non-contact** force.
4. Non-contact forces have a force field that **weakens** with **distance**.
5. The gravitational field strength decreases with distance.
6. The gravitational field strength increases with mass.

Weight and mass

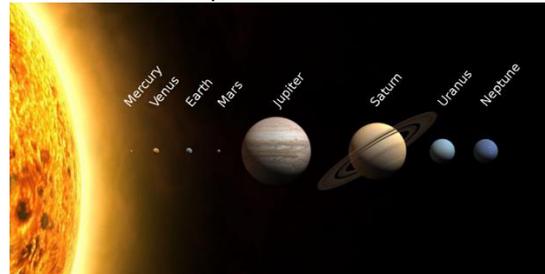
7. **Mass** is the amount of matter contained in an object.
8. The unit of mass is kilograms, kg.
9. Mass stays the same everywhere.
10. **Weight** is the force of gravity acting on a mass.
11. The unit of weight is Newtons, N.
12. $\text{Weight (N)} = \text{mass (kg)} \times \text{gravitational field strength (N/kg)}$

Space and Gravity

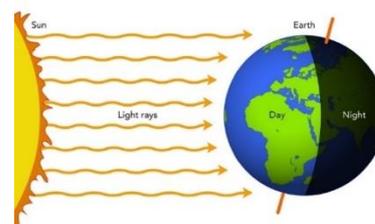
13. Gravity is the force that holds objects in **orbit**.
14. An orbit is the curved path of an object in space around another object in space.
15. There are many billions of **galaxies** in the universe.
16. Our solar system is a tiny part of one galaxy.

The Solar System

17. Our solar system contains lots of objects including the sun, planets, satellites, asteroid belts and comets.
18. The **sun** is the star at the centre of our solar system.
19. The **planets** orbit the sun.
20. The planets are in the order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.



21. The **satellites** orbit planets, asteroid belts and comets.
22. A natural satellite is the moon which orbits the Earth.
23. Artificial satellites include those that orbit the Earth for communication.
24. It takes the Earth 365 days to orbit the sun once. This is a year.
25. Planets rotate on their axis which produces day and night.
26. The Earth rotates once every 24 hours.
27. The seasons are caused because the Earth rotated on an axis of 23.5° .



28. An **eclipse** is caused when an object in space obscures the light from another object in space.
29. A solar eclipse happens when light from the sun is blocked from reaching parts of Earth. This happens when the moon comes between the sun and the Earth.
30. A lunar eclipse happens when light from the Sun is blocked from reaching the moon by the Earth.