

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.
17. The Universe is so large that distances are described in lightyears
18. A **lightyear** is the **distance** that **light** can travel in 1 year

The Solar System

19. Our solar system contains lots of objects including the sun, planets, satellites, asteroid belts, and comets.
20. The **sun** is the star at the centre of our solar system.
21. The **planets** orbit the sun.
22. The planets are in the order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
23. The **satellites** orbit planets, asteroid belts and comets.
24. A natural satellite is a moon which orbits a planet.
25. Artificial satellites include those that orbit the Earth for communication.
26. It takes the Earth **365 days** to orbit the sun once. This is a **year**.
27. Planets rotate on their axis which produces day and night.
28. The Earth rotates once every 24 hours.
29. The seasons are caused because the Earth is tilted on an axis at 23.5°.



30. An **eclipse** is caused when an object in space obscures the light from another object in space.
31. 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.
32. A **lunar eclipse** happens when light from the Sun is blocked from reaching the moon by the Earth when the **Earth comes between** the moon and the sun.