TOPIC 8: SPACE PHYSICS (physics only)

Our Solar System

- Our solar system is located in the Milky Way Galaxy
- Stars fuse elements up to iron
- Inner planets are mostly rock, outer planets are mostly gas
- Dwarf planets orbit in the outer reaches of the Solar System
- Our solar system consists of the Sun and eight planets
- The planets orbit the sun, meaning the Solar System is heliocentric
- The Asteroid Belt lies Mars and Jupiter
- Pluto is not one of the planets of the Solar System

The Order of Planets (In order from the Sun outwards)

My	Mercury
Very	Venus
Easy	Earth
Method	Mars
Just	Jupiter
Speeds	Saturn
Up	Uranus
Naming	Neptune
(Planets)	(Pluto)

Orbits

- Objects orbit other objects due to gravity
- If the orbital radius decreases, the gravitational attraction increases
- For circular orbits, the objects move at the same speed, but velocity is changing, so the object accelerates
- Gravity acts towards the centre of the orbit
- For a stable orbit, orbital speed increases

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TOPIC 8: SPACE PHYSICS (physics only)

Red-shift

- Red-shift provides evidence for the expansion of the universe
- It is also used as evidence for the Big Bang Theory
- CMBR (Cosmic Microwave Background Radiation) is radiation from all directions in space

When a distant object moves away from the Earth, the light appears more red (Doppler Effect)

- The more distant the objects, the greater the red-shift and the faster they are moving away

Life Cycle of a Star

- Stars fuse elements up to iron
- Elements heavier than iron are made in a supernova

Nebula
cloud of gas and dust

Protostar

Main Sequence Star

Large Star:

- Red Supergiant
- Supernova
- Black Hole
- Neutron Star

Small, Sun-like Star:

- Red Giant
- White Dwarf
- Black Dwarf

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