



# What Is In Our Solar System And How Did It Form

KS4 PHYSICS

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## What Is Our Solar System?

Our **solar system** is like a cosmic family that orbits around one giant star — the **Sun**. It contains eight planets, dozens of moons, millions of asteroids, and countless comets all held together by **gravity**. Everything in our solar system travels through space together, and the Sun's powerful pull keeps them all in their orbits.

The eight planets, in order from the Sun, are **Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune**. The first four are small and rocky, while the last four are much larger and made mostly of gas and liquid. Beyond Neptune lies the **Kuiper Belt**, a region filled with icy bodies and dwarf planets like **Pluto**.

Think of it like a merry-go-round with the Sun at the centre and all the planets spinning around it at different distances and speeds.

## How Did Our Solar System Form?

Around **4.6 billion years ago**, our solar system didn't exist. Instead, there was a giant cloud of dust and gas floating in space called a **nebula**. Something — maybe a nearby **supernova** explosion — disturbed this cloud and made it start to collapse and spin.

As the cloud spun faster and faster, material clumped together into larger and larger pieces. The centre became so hot and dense that the **Sun** was born, and its heat and light pushed leftover material outward. Closer to the Sun, rocky planets like Earth formed from smaller pieces. Further away, where it was colder, huge planets like Jupiter collected enormous amounts of gas around rocky cores.

Think of it like making a snowball by rolling a small ball of snow across a snowy field — it grows bigger and bigger as more snow sticks to it.

## Other Objects In Our Solar System

Beyond the planets are millions of **asteroids** — rocky objects mostly found between Mars and Jupiter in the **asteroid belt**. **Comets** are icy bodies that travel from the distant Kuiper Belt and sometimes pass near Earth, displaying beautiful tails of ice and dust. The **Moon** orbits Earth, and all eight planets have their own moons too.

Understanding our solar system helps us realise how special Earth is and how everything in space is connected by gravity.