THE SOLAR SYSTEM · PART 8 OF 9 · AGES 11–16

Solar System Key Terms

Sixteen words for describing the Solar System precisely, each with a short definition.

Distance and time

Astronomical unit (AU)	Earth's average distance from the Sun, about 149.6 million km. Used for distances inside the Solar System: Neptune is about 30 AU away.
Light-year	The distance light travels in one year: about 9.46 trillion km. It measures distance, not time, and is used for distances to stars.
Orbital period	The time a body takes to go once around what it orbits: a planet's year. Earth's orbital period is 365.26 days.
Rotation period	The time a body takes to spin once on its axis. Earth's is about 23.9 hours; Jupiter's is under 10 hours.

Orbits and motion

Gravity	The pull between any two masses. It is stronger for bigger masses and weaker with distance. The Sun's gravity holds the planets in orbit.
Orbit	The curved path of one body around another, held by gravity. Planet orbits are ellipses: slightly stretched circles.
Perihelion and aphelion	The points in an orbit closest to and farthest from the Sun. Earth reaches perihelion in early January, about 147.1 million km away.
Axial tilt	The angle a planet's spin axis leans from upright relative to its orbit. Earth's 23.4° tilt causes the seasons; Uranus leans about 98°.

The Sun and its influence

Star	A huge ball of hot gas that makes its own light and heat. The Sun is our star; the nearest star system to ours, Alpha Centauri, is about 4.4 light-years away.
Nuclear fusion	Light atomic nuclei joining to make heavier ones, releasing energy. In the Sun's core, at about 15 million °C, hydrogen fuses into helium.
Solar wind	A stream of charged particles, mainly protons and electrons, blowing out from the Sun in all directions, at about 400 km/s near the planets.
Heliosphere	The vast bubble around the Solar System blown by the solar wind. Beyond its edge lies interstellar space, which both Voyager probes have reached.

Describing worlds

Planet (IAU, 2006)	A body that orbits the Sun, is massive enough to be nearly round and has cleared the neighbourhood around its orbit. There are eight.
Terrestrial planet	A rocky planet with a solid surface and a metal core, like Earth. Mercury, Venus, Earth and Mars are the terrestrial planets.
Natural satellite	A natural body that orbits a planet, dwarf planet or asteroid: a moon. Satellites built by people are artificial satellites.
Tidal locking	When a body spins exactly once per orbit, so the same face always points at the body it orbits. Our Moon is tidally locked to Earth.

AU or light-year?
Use AU inside the Solar System and light-years for stars. 1 light-year ≈ 63,000 AU, so even Neptune, at 30 AU, is only about 4 light-hours from the Sun.

NEXT IN THE SERIES
9. Solar System Quiz: Test Yourself

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