SP7a The Solar System

Word	Pronunciation	Meaning
asteroid	***ass**-ter-oyd*	A small lump of rock orbiting the Sun.
comet		A small lump of dirty ice orbiting the Sun
dwarf planet		A rocky body orbiting the Sun that is not quite big enough to be called a planet (e.g. Pluto).
elliptical		A shape like a squashed circle.
geocentric		Earth-centred
heliocentric		Sun-centred
moon		A natural satellite of a planet.
natural satellite		Anything that orbits a planet and has not been made by humans.
orbit		The path taken by a planet around the Sun or a satellite around a planet.
planet		A large body in space that orbits a star. The Earth is a planet.
star		A huge ball of gas that radiates energy.
telescope		An instrument that is used to gather light from distant objects and make them look bigger.

SP7b Gravity and orbits

Word	Pronunciation	Meaning
artificial satellite		A satellite made by humans.
gravitational field strength (*g*)		A measure of how strong the force of gravity is somewhere. The units are newtons per kilogram.
vector quantity		A quantity that has both a size and a direction.
velocity		The speed of an object in a particular direction. Usually measured in metres per second (m/s). Velocity is a vector quantity, speed is not.
weight		The force pulling an object downwards. It depends on the mass of the object and the gravitational field strength. The units are newtons (N). Weight is a vector quantity.

SP7c Life cycles of stars

Word	Pronunciation	Meaning
black hole		Core of a red supergiant that has collapsed. Black holes are formed if the remaining core has a mass more than three or four times the mass of the Sun.
electromagnetic radiation		A form of energy transfer, including radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays.
fusion reaction		The reaction when the nuclei of light atoms, such as hydrogen, combine to make the nucleus of a heavier atom.

main sequence star		A star during the main part of its life cycle, when it is using hydrogen fuel.
nebula		A cloud of gas in space. Some objects that look like nebulae are actually clusters of stars or other galaxies. The plural is nebulae.
neutron star		Core of a red supergiant that has collapsed. Neutron stars are formed if the remaining core has a mass less than three or four times the mass of the Sun.
protostar		A cloud of gas drawn together by gravity that has not yet started to produce its own energy.
red giant		A star that has used up all the hydrogen in its core and is now using helium as a fuel. It is bigger than a normal star.
red supergiant		A star that has used up all the hydrogen in its core and is now using helium as a fuel. It has a mass much higher than the Sun.
supernova		An explosion produced when the core of a red supergiant collapses. The plural is supernovae.
white dwarf		A very dense star that is not very bright. A red giant turns into a white dwarf.

SP7d Red-shift

Word	Pronunciation	Meaning
Doppler effect		The change in the pitch of a sound heard when the source of sound is moving relative to the observer.
pitch		Whether a sound is low or high.
red-shift		Waves emitted by something moving away from an observer have their wavelength increased and frequency decreased compared to waves from a stationary object.
Universe		All the stars, galaxies and space itself.

SP7e Origin of the Universe

Word	Pronunciation	Meaning
Big Bang theory		The theory that the Universe began from a tiny point with huge energy, and has been expanding ever since.
cosmic microwave background (CMB) radiation		Microwave radiation received from all over the sky, originating at the Big Bang.
Steady State theory		The theory that the Universe is expanding but new matter is continually being created, so the Universe will always appear the same.