AQA GCSE Physics
Student Checklist

P16 Space

Name ..... Class ..... Date .....

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
P16.1 Formation of the Solar System	I can describe a variety of objects within the Solar System.	☐	I can describe the formation of a protostar and planets.	☐	I can analyse data about the planets to compare them in terms of composition.	☐
	I can use simple data to compare objects in the Solar System.	☐	I can explain why a star radiates light in terms of nuclear fusion.	☐	I can explain why a star in its main sequence maintains a constant radius.	☐
	I can state that the material in a star is pulled together by gravitational forces.	☐	I can describe how evidence for the early solar system is gathered.	☐	I can discuss the methods used to gather evidence for the early solar system and formation of stars.	☐
P16.2 The life history of a star	I can identify the sequence of development for a small star such as the Sun from a diagram.	☐	I can compare the life cycle of small and large stars, identifying the names of the stages.	☐	I can describe changes in the wavelength (colour) and quantity (brightness) of light emitted by stars during various stages of their life-cycle.	☐
	I can state that changes in the fusion processes in a star result in changes in its appearance.	☐	I can describe the formation of 'light' elements by stars in their main sequence.	☐	I can explain, in terms of energy requirements, why elements heavier than iron are produced only in supernovae.	☐
	I can state that the Sun is in its main sequence and is stable.	☐	I can describe the forces that are acting when a star is in its main sequence.	☐	I can describe the features of neutron stars and black holes.	☐
P16.3 Planets, satellites, and orbits	I can compare the orbits of planets, moons, and artificial satellites.	☐	I can state that, for a greater radius of orbit, the object must travel at a slower speed and orbit in a longer period.	☐	I can explain why a centripetal force can change the velocity of an object without changing its speed.	☐
	I can state that, for an object to be moving in an orbit, there must be a gravitational force acting directed at the centre of the orbit.	☐	I can describe the forces acting on an object that cause it to travel in a circular path.	☐	I can explain why the force acting on an object travelling in a circle must be at right angles to the direction of motion and directed towards the centre of the circle.	☐
	I can list some uses of artificial satellites.	☐	I can describe the different orbits of a variety of satellites.	☐	I can explain why a geostationary satellite must be a specific distance from the centre of the Earth.	☐

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P16.4 The expanding universe	I can state that the wavelength of a wave is changed by the movement of the source.	☐	I can describe how the frequency or wavelength of a wave can be altered by the movement of the source through the Doppler effect.	☐	I can identify red-shift or blue-shift by comparing emission spectra of objects with those of a non-moving source.	☐
	I can state that a galaxy showing red-shift is moving away from us.	☐	I can compare galaxies in terms of their red-shift and distance from us.	☐	I can identify the relationship between the red-shift of a galaxy and its speed of recession from a data set or graph.	☐
	I can describe the structure of a galaxy as a collection of billions of stars many light years in diameter.	☐	I can state that all galaxies are moving away from each other and that this shows the universe is expanding.	☐	I can explain how red-shift data is used to show that the universe is expanding.	☐
P16.5 The beginning and future of the universe	I can state that the currently accepted model for the early universe is the Big Bang model.	☐	I can discuss why scientists were initially reluctant to accept the Big Bang model.	☐	I can outline recent discoveries that have led to changes in the theories of how the universe will develop.	☐
	I can describe how red-shift provides evidence for expansion of the universe and the Big Bang model.	☐	I can describe the origin of the cosmic microwave background radiation (CMBR).	☐	I can explain in detail how the CMBR supports the Big Bang model.	☐
	I can identify the cosmic microwave background radiation (CMBR) as evidence for the Big Bang model.	☐	I can describe changes in the universe from the time of the Big Bang to the present day.	☐	I can discuss how scientists using new evidence have changed their theories about how the universe has evolved over time and how it will change in the future.	☐