Assessment Schedule – 2005

Science: Describe aspects of astronomy (90192)

Evidence Statement

Q	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	Requires all of: Mercury, Venus, Earth, Mars.		
1(b)	Ellipse / eccentric		
1(c)	Earth's tilt (23.5°) / angle **OR** different distances / positions of poles / hemispheres at different times (of year) **OR** diagram showing tilt of Earth's axis.	Earth's angle of tilt (23.5°) **:** different distances / positions of poles / hemispheres at different times (of year).	
1(d)	Moon spins / rotates	Moon spins / rotates **:** Moon orbits Earth. **OR** Diagram showing Moon spinning and orbiting.	Time for Moon to rotate equals the time for the Moon to orbit Earth **:** Has a relevant and accurate diagram.
2(a)	Solar eclipse / Eclipse of Sun.		
2(b)	The Moon is between the Earth and the Sun. / Moon's shadow is cast onto Earth (Moon blocks sunlight).	The Moon is between the Earth and the Sun **:** Moon's shadow is cast onto Earth (Moon blocks sunlight).	
2(c)	Part of the Moon's shadow strikes the Earth's surface / Moon blocks some of Sun's light / Moon doesn't quite cover the Sun's disk.	Moon doesn't quite cover Sun's disk **:** It is the Moon's (penumbral) outer shadow striking the Earth. **OR** relevant diagram (Moon tracking across part of Sun).	Moon doesn't quite cover Sun's disk **:** It is the Moon's (penumbral) outer shadow striking the Earth **:** Complete labelled diagram (Moon tracking across part of Sun and implication of distance) **OR** explanation of penumbra.

Q	Achievement	Achievement with Merit	Achievement with Excellence
3(a)	Refracting		
3(b)	**Has ONE correct and relevant statement for either advantage OR disadvantage.** Radio telescope **Advantages** include: • able to detect information from 'Deep space' (pulsars, quasars) • 'see' other parts of the Electromagnetic Spectrum • can operate 24/7 • can send out 'messages' • can measure speed of planet rotations • can map the surface of planets • can use array of, to give a network.	**ONE correct advantage AND ONE correct disadvantage.** Radio telescope **Disadvantages** include: • cost • size / are very large, need room • ionosphere shielding of some frequencies • radio interference • can't produce visual images directly.	**TWO correct advantages AND ONE correct disadvantage OR ONE correct advantage AND TWO correct disadvantages.** Light telescopes **Advantages** include: • able to gather lots of light via a large concave mirror, or lens • able to produce images of objects • the larger the mirrors / lenses, the more light gathered and greater the magnification. **Disadvantages** include: • site needs dry climate • site needs to be away from cities (light pollution) • mirrors / lenses require more maintenance • size limitation of lens for minimal distortion of light.
4(a)	They collect and transmit data back to Earth / easier than manned probe (safety/cost). Also HST and atmospheric distortion example.	Provides ONE specific example relating to data • Physical and chemical conditions (temperature, gravitational field etc) • Composition of stars and planets and space and surface features of planets in our solar system. • Search for extraterrestrial life. • Provide data on stars, 'dark matter', background radiation, galaxy and star formation and astronomical distances.	
4(b)	ONE potential difficulty related to • **take-off** (escape from Earth's gravity / enough fuel) **OR** • **flight** (navigation / communication / protection from radiation / magnetic storms) **OR** • **landing** (entry through atmosphere / parachuting to surface / surviving impact / collecting data / sending readable data back to Earth / power supplies).	TWO potential difficulties, **one** of which must relate to **landing**. • **take-off** (escape from Earth's gravity) • **flight** (navigation / communication / protection from radiation / magnetic storms) • **landing** (entry through atmosphere / parachuting to surface / surviving impact / collecting data / sending readable data back to Earth / power supplies).	TWO potential difficulties, ONE of which must relate to **landing**. **Discussion of BOTH must be in depth** • **take-off** (escape from Earth's gravity) • **flight** (navigation / communication / protection from radiation / magnetic storms) • **landing** (entry through atmosphere / parachuting to surface / surviving impact / collecting data /sending readable data back to Earth/power supplies).

Q	Achievement	Achievement with Merit	Achievement with Excellence
4(c)	Any TWO of: • supplies of food / water • supply / production of oxygen • removal of waste and carbon dioxide • motion sickness and loss of orientation / weightlessness • social interactions / loneliness / homesickness. • loss of sleep • lack of exercise / bone density / muscles / immune system. • temperature • radiation		

Judgement Statement

Achievement	Achievement of Merit	Achievement of Excellence
SIX opportunities answered at Achievement (or higher). (6 × A)	EIGHT opportunities answered with FOUR at Merit level (or higher) and FOUR at Achievement level. (4 × M) *plus* (4 × A)	TEN opportunities answered with TWO at Excellence level and FOUR at Merit level and FOUR at Achievement level. (2 × E) *plus* (4 × M) *plus* (4 × A)