Natural Sciences and Technology · Grade 6

Memorandum · Term 4

TOTAL
48
MARKS

Marking guidelines

1. Award the full mark for a correct answer, even if the learner words it differently.
2. Accept any scientifically correct answer, including one not given in the memorandum.
3. Where a question asks for two or more items, award one mark per correct item.
4. For diagrams, award the mark if the label points at the correct part, even with a spelling error.
5. Do not deduct marks for spelling unless the word takes on a different scientific meaning.

Question	Answer	Marks	Marking note
QUESTION 1 · Multiple choice · 4 marks			
1.1	a. The Sun	**1**	
1.2	b. About 365 days	**1**	
1.3	c. Mars	**1**	
1.4	a. To look at distant objects in space	**1**	
QUESTION 2 · Matching · 4 marks			
2.1	1 = B (orbit); 2 = D (asteroid); 3 = E (rover); 4 = A (dwarf planet)	**4**	*1 mark each. C is left over.*
QUESTION 3 · The Solar System · 11 marks			
3.1	A = the Earth; B = Jupiter; C = Neptune	**3**	*1 mark each.*
3.2	The Sun = a star; The Earth = a planet; Our Moon = a moon	**3**	*1 mark each.*
3.3	Light from the Sun shines on the Moon's surface (1) and is reflected to the Earth (to our eyes); the Moon does not make its own light (1).	**2**	

Question	Answer	Marks	Marking note
3.4	Orbit: the Earth moves (revolves) around the Sun in its own path; one orbit takes about $365\frac{1}{4}$ days and gives us a year. Rotation: the Earth spins on its own axis; one rotation takes about 24 hours and gives us day and night.	**3**	*1 mark: orbit = moving around the Sun; 1 mark: rotation = spinning on its own axis; 1 mark: both results correct (orbit → a year; rotation → day and night). Do not require seasons.*
QUESTION 4 · The Moon and space exploration · 9 marks			
4.1	a. The Earth. b. About 28 days (about a month).	**2**	*1 mark each. Accept 27 to $29\frac{1}{2}$ days for b.*
4.2	Mountains (highlands).	**1**	
4.3	It collects much more light than our eyes, and it magnifies distant objects.	**2**	*1 mark for more light, 1 for magnifies.*
4.4	SALT (near Sutherland); the SKA (Square Kilometre Array) or its first part, MeerKAT, in the Karoo.	**1**	
4.5	Mars is very far away and the journey takes months; there is no air to breathe; it is dangerous and very expensive to send people and bring them back.	**2**	*1 mark per reason.*
4.6	Water; signs of life; rock and soil samples.	**1**	
QUESTION 5 · The planets · 10 marks			
5.1	Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune	**4**	*1 mark for every two planets in the correct position (max. 4).*
5.2	The inner four are smaller and made of rock; the outer four are much larger and made mostly of gas. The outer planets are also further from the Sun, colder, and have rings and many moons.	**3**	*1 mark for rock versus gas, 1 for size, 1 for distance/temperature.*
5.3	Earth is the right distance from the Sun, so not too hot or too cold; it has liquid water; it has an atmosphere with oxygen; the atmosphere protects us from harmful rays.	**3**	*1 mark each.*
QUESTION 6 · Rovers, the Sun, the Earth and the Moon · 10 marks			
6.1	Cameras = take photos of the surface and help steer the rover; Arm = pick up, dig and test rock and soil samples; Solar panels = change sunlight into electricity to power the rover	**3**	*1 mark each. Some newer rovers use a nuclear power source; still accept the solar-panel answer.*
6.2	Sun; Earth; Moon; Sun	**4**	*1 mark each.*

Question	Answer	Marks	Marking note
6.3	Mars is much further — the journey takes months instead of days; the spacecraft must carry enough food, water and oxygen for the whole trip; the astronauts are exposed to radiation for a long time; there is no help nearby if something goes wrong.	**3**	*1 mark each.*

Total **48 marks**



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