Technology · Grade 7

Memorandum · Term 1–2

TOTAL
60
MARKS

Marking guidelines

1. Award the full mark for a correct answer, even if the learner words it differently.
2. For a sketch, award the mark for a clear, labelled drawing - not for artistic skill.
3. For design questions, accept any solution that meets the specifications and is explained.
4. Where a question asks for two or more items, award one mark per correct item.
5. Do not deduct marks for spelling unless a technical term is entirely wrong.

Question	Answer	Marks	Marking note
QUESTION 1 · Multiple choice · 6 marks			
1.1	c. evaluate	**1**	
1.2	b. frame structure	**1**	
1.3	b. air can be squashed (compressed), but water cannot	**1**	
1.4	b. second class	**1**	
1.5	a. a bird's nest	**1**	
1.6	c. rigid	**1**	
QUESTION 2 · Design process · 12 marks			
2.1	Investigate → design → make → evaluate → communicate	**5**	*1 mark per point.*
2.2	A specification says what the design must do or have. A constraint is something that limits you — money, time, material or space. Example: specification — the bicycle rack must hold ten bicycles; constraint — the budget is R500.	**3**	*1 mark for each definition (2) and 1 mark for a correct example of either a specification or a constraint.*
2.3	Dimensions; a scale; labels; the material; different views.	**4**	*1 mark per point.*

Question	Answer	Marks	Marking note
QUESTION 3 · Structures · 9 marks			
3.1	A = frame structure; B = shell structure; C = solid structure	**3**	*1 mark each.*
3.2	Any three: rolling it into a tube; folding or corrugating it; adding a strut or a brace; triangulating the frame; using a thicker or stronger material; laminating layers together.	**3**	*1 mark per point.*
3.3	A triangle cannot deform without a side changing length, so it is rigid. A square can skew into a rhombus without any side getting longer.	**3**	*1 mark per point.*
QUESTION 4 · Mechanisms · 15 marks			
4.1	A: MA = 1; B: MA greater than 1; C: MA less than 1 (3). B: the effort is much farther from the fulcrum than the load, so a small effort can lift a bigger load (1).	**4**	*1 mark per lever; 1 mark for the explanation (distance of effort vs. load from the fulcrum). No calculation is required.*
4.2	A mechanism that changes direction makes the force act the other way, e.g. a first-class lever such as a seesaw (push down, the load goes up) or a fixed pulley (1). One that changes size lets a small effort move a big load, e.g. a second-class lever such as a wheelbarrow or a bottle opener (1). Both examples correct (1).	**3**	*Do not award a mark for 'gear' (Grade 8).*
4.3	Any two, 1 mark for the tool and 1 for the class: scissors, pliers or hedge shears — first class; a nutcracker or an office punch — second class; tweezers, tongs or an office stapler — third class.	**4**	
4.4	wheelbarrow = second class; seesaw = first class; fishing rod = third class; bottle opener = second class. 1 mark each.	**4**	
QUESTION 5 · Design brief · 10 marks			
5.1	The school needs a safe place where ten bicycles can be stored upright and apart.	**2**	*1 mark per point.*
5.2	It must hold ten bicycles; each must stand upright; the bicycles must not scratch each other; there must be a locking point; it must stand outside.	**3**	*1 mark per point.*
5.3	The budget; the available space; the material; the time; the skills of whoever builds it.	**2**	*1 mark per point.*

Question	Answer	Marks	Marking note
5.4	Any clear sketch with at least four labelled parts and one realistic dimension.	**3**	*1 mark for a clear sketch; 1 mark for at least FOUR labelled parts; 1 mark for ONE realistic dimension.*
QUESTION 6 · Perspective: the basics · 4 marks			
6.1	The point on the horizon where lines moving away from the viewer appear to meet.	**2**	*1 mark for 'on the horizon', 1 for 'lines meet'.*
6.2	One-point perspective. It makes a flat drawing look deep, as if you are looking into the picture.	**2**	*1 mark for the name, 1 for the depth.*
QUESTION 7 · Perspective: drawing · 3 marks			
7.1	A square in front, a horizon line with a vanishing point, lines from the corners to that point, and a smaller square closing the back.	**3**	*1 mark for the cube, 1 for the horizon line and point, 1 for the lines.*
QUESTION 8 · Perspective: why it matters · 1 mark			
8.1	It shows how the object will really look, with depth and three sides at once, so that a client who cannot read drawings understands it at once.	**1**	*1 mark for a sensible reason.*

Total **60 marks**



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