

WA5MMGTW2

Two-dimensional space and structures

Core + Challenge

NAPLAN-style

Measuring Length — Marking Key

I can choose metric units, estimate, and measure lengths in mm and cm, like $12.5 \text{ cm} = 125 \text{ mm}$.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

A Warm up: 16 B Practise: 21 C Think it through: 10 D Challenge: 9 **Total: 56**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

A

Warm up *answers*

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	7.6 cm = 76 mm	Starts at 0; ends at 7.6 cm. Length $7.6 \text{ cm} = 76 \text{ mm}$. Both units for the mark; accept $\pm 1 \text{ mm}$.	1
2	3.5 cm = 35 mm	Starts at 0; ends at 3.5 cm. Length $3.5 \text{ cm} = 35 \text{ mm}$. Both units for the mark; accept $\pm 1 \text{ mm}$.	1
3	5.8 cm = 58 mm	Starts at 2 cm, so $7.8 - 2$; ends at 7.8 cm. Length $5.8 \text{ cm} = 58 \text{ mm}$. Both units for the mark; accept $\pm 1 \text{ mm}$.	1
4	5.2 cm = 52 mm	Starts at 1.5 cm, so $6.7 - 1.5$; ends at 6.7 cm. Length $5.2 \text{ cm} = 52 \text{ mm}$. Both units for the mark; accept $\pm 1 \text{ mm}$.	1
5	34 mm	$3 \text{ cm} = 30 \text{ mm}$, and $30 + 4 = 34 \text{ mm}$.	1
6	5.8 cm	$10 \text{ mm} = 1 \text{ cm}$, so $58 \text{ mm} = 5 \text{ cm } 8 \text{ mm} = 5.8 \text{ cm}$.	1
7	150 cm	$1 \text{ m} = 100 \text{ cm}$, so $1.5 \text{ m} = 100 + 50 = 150 \text{ cm}$.	1
8	3 km	$1000 \text{ m} = 1 \text{ km}$, so $3000 \text{ m} = 3 \text{ km}$.	1
9	4.3 cm = 43 mm	Any sensible estimate. Measurement: accept $\pm 1 \text{ mm}$.	1
10	6.8 cm = 68 mm	Any sensible estimate. Measurement: accept $\pm 1 \text{ mm}$.	1
11	2.5 cm = 25 mm	Any sensible estimate. Measurement: accept $\pm 1 \text{ mm}$.	1
12	7.9 cm = 79 mm	Any sensible estimate. Measurement: accept $\pm 1 \text{ mm}$.	1
13	cm	mm cm m km 18 mm is far too short and 18 m is longer than a classroom. A pencil is about 18 cm.	1

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Q	Answer	Model answer / notes	Marks
14	mm	mm cm m km 5 cm is as long as a finger; an ant is about 5 mm.	1
15	m	mm cm m km A netball court is about 30 m (30.5 m) long.	1
16	km	mm cm m km Rottneest is about 18 km from Fremantle; long distances are measured in km.	1

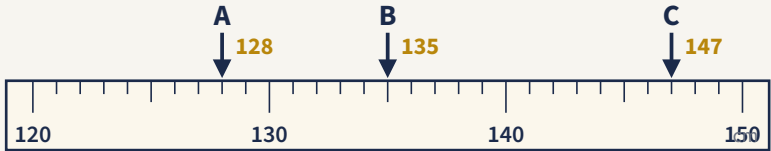
B

Practise *answers and working*

/ 21 marks

Q	Answer	Working / sample response	Marks
1	a) 65 mm b) 48 mm c) 115 mm	a)  65 mm b)  48 mm c)  115 mm a) 6.5 cm = 65 mm. b) 48 mm = 4.8 cm. c) 11 cm 5 mm = 11.5 cm = 115 mm. <i>1 mark for each line (accept ±2 mm).</i>	3
2	11 mm = 1.1 cm	Ribbon A: 0 to 8.3 cm = 83 mm. Ribbon B starts at 2.5 cm and ends at 9.7 cm: $9.7 - 2.5 = 7.2$ cm. $83 - 72 = 11$ mm = 1.1 cm. <i>1 mark: both ribbons measured (83 mm and 72 mm).</i> <i>1 mark: 11 mm = 1.1 cm.</i>	2
3	13.5 cm = 135 mm	A to B = 42 mm, B to C = 35 mm, C to D = 58 mm. $42 + 35 + 58 = 135$ mm = 13.5 cm. <i>1 mark: at least two parts measured correctly (±1 mm).</i> <i>1 mark: adds all three parts.</i> <i>1 mark: 13.5 cm = 135 mm (allow ±3 mm).</i>	3
4	Leo, by 5 cm	Change both to cm: 2 m 35 cm = 235 cm and 2.4 m = 240 cm. $240 - 235 = 5$ cm, so Leo jumped 5 cm further. <i>1 mark: both lengths in the same unit.</i> <i>1 mark: Leo, by 5 cm.</i>	2

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Q	Answer	Working / sample response	Marks
5	coin 3 mm, ruler 30 cm, student 1.4 m, bus 12 m, train trip 70 km	thickness of a \$1 coin length of a school ruler height of a Year 5 student length of a Transperth bus Perth to Mandurah by train 1.4 m 70 km 3 mm 30 cm 12 m Tiny things are measured in mm, small things in cm, people and buses in m, and trips in km. 2 marks: all five correct. 1 mark: three or four correct.	2
6	A 128 cm = 1.28 m B 135 cm = 1.35 m C 147 cm = 1.47 m	 Each small mark is 1 cm; the longer marks halfway are 5 cm. A: 8 marks past 120 = 128 cm = 1.28 m. B: 135 cm = 1.35 m. C: 147 cm = 1.47 m. 1 mark for each height given in both units.	3
7	15 km = 15 000 m	Each day: $1.5 + 1.5 = 3$ km. 5 days: $5 \times 3 = 15$ km = $15 \times 1000 = 15\,000$ m. 1 mark: 15 km. 1 mark: 15 000 m.	2
8	a) 360 cm b) 2050 m	36 cm 306 cm 360 cm 3600 cm 250 m 2050 m 2500 m 20 050 m a) 1 m = 100 cm, so $3.6\text{ m} = 3.6 \times 100 = 360$ cm. b) 2 km = 2000 m, and $2000 + 50 = 2050$ m. 1 mark each.	2
9	8.2 cm = 82 mm	The pencil starts at 3 cm and ends at 11.2 cm. $11.2 - 3 = 8.2$ cm (82 mm). Or count the whole centimetres from 3 to 11 (8 cm) and add the 2 mm. 1 mark: 8.2 cm (or 82 mm). 1 mark: explains subtracting the starting number (or counting on from 3).	2

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No, it is 6 cm	The pencil does not start at 0. It starts at 1 cm. $7 - 1 = 6$ cm, so it is 6 cm (60 mm) long. <i>1 mark: No, 6 cm.</i> <i>1 mark: explains the pencil starts at 1, not 0.</i>	2
2	False	0.5 m is half a metre. $1 \text{ m} = 100 \text{ cm}$, so $0.5 \text{ m} = 50 \text{ cm}$. 50 cm is longer than 45 cm, so the statement is false. <i>1 mark: False.</i> <i>1 mark: changes 0.5 m to 50 cm (or 45 cm to 0.45 m) to compare.</i>	2
Always Sometimes Never			
3	Always	Every 1 cm is 10 mm, so the number of mm is 10 times the number of cm. Example: $4.2 \text{ cm} = 42 \text{ mm}$ and $30 \text{ cm} = 300 \text{ mm}$. The mm number is always bigger. <i>1 mark: Always.</i> <i>1 mark: explains there are 10 mm in each cm ($\times 10$), with an example.</i>	2
4	12 cm	$1.2 \text{ m} = 120 \text{ cm} = 1200 \text{ mm}$. These three are the same length. 12 cm is only 120 mm, so it is 10 times shorter. <i>1 mark: 12 cm.</i> <i>1 mark: shows the other three are all the same length.</i>	2
5	No, 1000 mm	Each of the 100 centimetres has 10 mm in it. $100 \times 10 = 1000$, so $1 \text{ m} = 1000 \text{ mm}$. Priya added instead of multiplying. <i>1 mark: No, 1000 mm.</i> <i>1 mark: explains 100 lots of 10 (multiply, not add).</i>	2

D

Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	Can: 2, 3, 4, 5, 6, 7, 9 cm Cannot: 1, 8, 10 cm	$2 = 9 - 7$, $3 = 7 - 4$, $4, 5 = 9 - 4$, $6 = 4 + 9 - 7$, 7, 9. 1, 8 and 10 cm cannot be made. (Other lengths she can make: 11, 12, 13, 16, 20.) <i>2 marks: all seven lengths with a way for each (1 mark for five or six).</i> <i>1 mark: 1, 8 and 10 cm cannot be made.</i>	3
2	a) 27 m b) 54 steps c) 9 more	a) $45 \times 60 = 2700 \text{ cm}$. $100 \text{ cm} = 1 \text{ m}$, so $2700 \text{ cm} = 27 \text{ m}$. b) Two 50 cm steps make 1 m, so 27 m takes $27 \times 2 = 54$ steps (or $2700 \div 50 = 54$). c) $54 - 45 = 9$ more steps. <i>1 mark for each part.</i>	3

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Q	Answer	Working / sample response	Marks
3	a) 10 m b) 25 m c) 17 posts	a) 5 posts have 4 gaps: $4 \times 2.5 = 10$ m. b) 11 posts have 10 gaps: $10 \times 2.5 = 25$ m. c) 4 gaps make 10 m ($2.5 + 2.5 + 2.5 + 2.5$), so 40 m has $4 \times 4 = 16$ gaps. 16 gaps need 17 posts. <i>1 mark for each part (c needs 17, not 16).</i>	3