

WA5MMGNS1

Non-spatial measurement

Core + Challenge

NAPLAN-style

Mass — Marking Key

I can choose g, kg or t, estimate mass, and read and draw pointers on scales.

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.

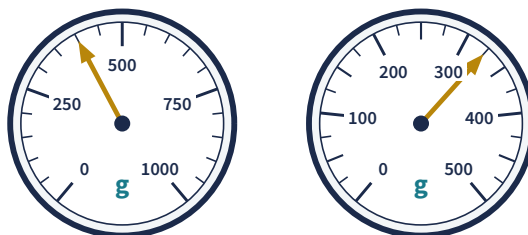
A

Warm up answers

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	g	A pencil is very light: a few grams.	1
2	kg	A school bag is a few kilograms.	1
3	t	Very heavy things like trucks are measured in tonnes.	1
4	kg	A watermelon is several kilograms.	1
5	150 g	An apple is much less than 1 kg; 15 g is about a sultana box.	1
6	2 t	A car is very heavy: about 1–2 tonnes (1000–2000 kg).	1
7	40 kg	4 kg is a newborn baby; 400 kg is more than five adults.	1
8	700 g	A loaf is a bit less than 1 kg.	1
9	750 g	4 steps between 200 g labels, so each step is 50 g. 3 steps past 600: 750 g.	1
10	3.5 kg	2 steps between 1 kg labels, so each step is half a kilogram. Halfway between 3 and 4: 3.5 kg. Accept $3\frac{1}{2}$ kg or 3500 g.	1
11	260 g	5 steps between 100 g labels, so each step is 20 g. 3 steps past 200: 260 g.	1
12	37 kg	5 steps between labels 35 and 40, so each step is 1 kg. 2 steps past 35: 37 kg.	1

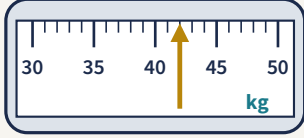
13 Pointer at 400 g



1

5 steps between 250 g labels, so each step is 50 g. 400 g is 3 steps past 250. Items 13 and 14 are drawn here (accept within half a step).

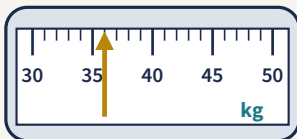
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Q	Answer	Model answer / notes	Marks
14	Pointer at 325 g	4 steps between 100 g labels, so each step is 25 g. 325 g is 1 step past 300.	1
15	Pointer at 42 kg	  Each step is 1 kg. 42 kg is 2 steps past 40. Items 15 and 16 are drawn here.	1
16	Pointer at 2.5 kg	This scale is in kilograms. 2500 g = 2 kg 500 g = $2\frac{1}{2}$ kg, halfway between 2 and 3.	1

B

Practise *answers and working*

/ 21 marks

Q	Answer	Working / sample response	Marks
1	banana, apple, mango, pineapple	Balance 1: the mango is heavier than the apple. Balance 2: the pineapple is heavier than the mango. Balance 3: the apple is heavier than the banana. So: banana, apple, mango, pineapple. <i>1 mark: reads at least two balances correctly.</i> <i>2 marks: correct order.</i>	2
2	a) 350 g b) 450 g	 a) Each small step is 50 g. The pointer is 3 steps past 200: 350 g. b) $800 - 350 = 450$ g more. c) Pointer on the 800 label. <i>1 mark for each part.</i>	3
3	a) A 1.3 kg, B 900 g b) A, by 400 g	a) Scale A: 5 steps between 0.5 kg labels, so each step is 0.1 kg; 3 steps past 1: 1.3 kg (= 1 kg 300 g = 1300 g). Scale B: each step is 100 g; 4 steps past 500: 900 g. b) $1300 \text{ g} - 900 \text{ g} = 400 \text{ g}$, so parcel A is heavier by 400 g. <i>1 mark: 1.3 kg (or 1300 g).</i> <i>1 mark: 900 g.</i> <i>1 mark: A by 400 g.</i>	3
4	b) 5 kg	 The first scale shows 41 kg (each step is 1 kg). a) Pointer 1 step past 35. b) $41 - 36 = 5$ kg. <i>1 mark: pointer at 36 kg.</i> <i>1 mark: 5 kg.</i>	2

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Q	Answer	Working / sample response	Marks															
5	a) 3600 kg b) 1400 kg	a) $3 \times 1200 = 3600$ kg. b) $5 \text{ t} = 5000$ kg. $5000 - 3600 = 1400$ kg (1 t 400 kg). 1 mark: 3600 kg. 1 mark: 1400 kg.	2															
6	g, g, t, kg (estimates vary)	<table border="1"><thead><tr><th>Object</th><th>Unit</th><th>Estimate</th></tr></thead><tbody><tr><td>slice of bread</td><td>g</td><td>about 30 g</td></tr><tr><td>netball</td><td>g</td><td>about 400 g</td></tr><tr><td>elephant</td><td>t</td><td>about 5 t</td></tr><tr><td>potatoes</td><td>kg</td><td>about 5 kg</td></tr></tbody></table> Slice of bread: g (accept 20–60 g). Netball: g (accept 300–700 g; it is about 420 g). Adult elephant: t (accept 2–8 t). Bag of potatoes: kg (accept 1–10 kg). 1 mark: all four units correct. 1 mark: at least three sensible estimates.	Object	Unit	Estimate	slice of bread	g	about 30 g	netball	g	about 400 g	elephant	t	about 5 t	potatoes	kg	about 5 kg	2
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slice of bread	g	about 30 g																
netball	g	about 400 g																
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7	a) 1350 g c) \$16.40	 a) $3 \times 450 = 1350$ g (1 kg 350 g). b) Each step is 50 g; 7 steps past 1000. c) 1350 g is over 1 kg and up to 3 kg: \$16.40. 1 mark for each part.	3															
8	1 kg = 1000 g, half a kg = 500 g, 2 t = 2000 kg, a quarter kg = 250 g, 1 kg 500 g = 1500 g	<table><tbody><tr><td>1 kg</td><td>2000 kg</td></tr><tr><td>half a kilogram</td><td>1500 g</td></tr><tr><td>2 t</td><td>250 g</td></tr><tr><td>a quarter of a kilogram</td><td>1000 g</td></tr><tr><td>1 kg 500 g</td><td>500 g</td></tr></tbody></table> 1 kg = 1000 g, so half a kilogram = 500 g and a quarter of a kilogram = 250 g. $2 \text{ t} = 2 \times 1000 = 2000$ kg. $1 \text{ kg } 500 \text{ g} = 1000 + 500 = 1500$ g. 2 marks: all five correct. 1 mark: three or four correct.	1 kg	2000 kg	half a kilogram	1500 g	2 t	250 g	a quarter of a kilogram	1000 g	1 kg 500 g	500 g	2					
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1 kg 500 g	500 g																	
9	4 kg	$8 \times 450 = 3600$ g of footballs. $3600 + 400 = 4000$ g = 4 kg. 1 mark: 3600 g (or 4000 g). 1 mark: 4 kg.	2															

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No	The small box is on the side that has gone down, so the small box is heavier. Size does not tell you mass: a big box of pillows can be lighter than a small box of rocks. <i>1 mark: No, the small box is heavier.</i> <i>1 mark: explains using the balance (heavier side goes down) or that size is not mass.</i>	2
2	No: 700 g	There are 4 steps between 600 g and 800 g, so each step is $200 \div 4 = 50$ g, not 10 g. The pointer is 2 steps past 600: $600 + 100 = 700$ g (halfway between 600 and 800). Priya counted each step as 10 g. <i>1 mark: No, 700 g.</i> <i>1 mark: explains each step is 50 g.</i>	2
3	False	Both have a mass of 1 kg, so they are the same mass. The feathers take up much more space, but they are not lighter. <i>1 mark: False.</i> <i>1 mark: explains both are 1 kg (the same mass).</i>	2
4	Sometimes	Always Sometimes Never 500 g is lighter than 2 kg, so it can be true. 3000 g is heavier than 2 kg (2000 g), so it is not always true. <i>1 mark: Sometimes.</i> <i>1 mark: one example each way.</i>	2
5	250 g	$2\frac{1}{2}$ kg = $2000 + 500 = 2500$ g, and 2 kg 500 g = 2500 g. 250 g is only one tenth of 2500 g. <i>1 mark: 250 g.</i> <i>1 mark: shows the other three are all 2500 g.</i>	2

D

Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	a) 1200 g, 400 g b) 6 apples	a) 2 pineapples = 2400 g, so 1 pineapple = $2400 \div 2 = 1200$ g. 3 apples = 1200 g, so 1 apple = $1200 \div 3 = 400$ g. b) $2400 \div 400 = 6$ apples (or 2 pineapples $\times$ 3 apples each = 6). <i>1 mark: 1200 g.</i> <i>1 mark: 400 g.</i> <i>1 mark: 6 apples.</i>	3

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Q	Answer	Working / sample response	Marks
2	a) 100, 200, 300, 500, 600, 700, 800 g b) 500 g against 100 g + flour	a) One mass: 100, 200, 500 g. Two: 300, 600, 700 g. All three: 800 g. That is 7 masses (400 g is not possible this way). b) Put 500 g on one pan and 100 g with the flour on the other pan. When it balances, the flour is $500 - 100 = 400$ g. (Also correct: 500 g + 100 g on one pan, 200 g with the flour on the other: $600 - 200 = 400$ g.) <i>2 marks: all seven masses (1 mark for five or six).</i> <i>1 mark: a correct way to measure 400 g.</i>	3
3	68 boxes	Mr Lee and his trolley: $85 + 35 = 120$ kg. Mass left for boxes: $600 - 120 = 480$ kg. $480 \div 7 = 68$ remainder 4. 68 boxes = 476 kg, which fits (total 596 kg). 69 boxes = 483 kg would be too heavy, so 68 boxes. <i>1 mark: 480 kg.</i> <i>1 mark: $480 \div 7 = 68$ r 4.</i> <i>1 mark: 68 boxes (not 69), with a reason.</i>	3