



DEEPENING UNDERSTANDING ANSWER SHEET

YEAR 3 PIM – ADD AND SUBTRACT MASS

Fluency 1

First add the **kilograms**.

$$2\text{kg} + 3\text{kg} = 5\text{kg}$$

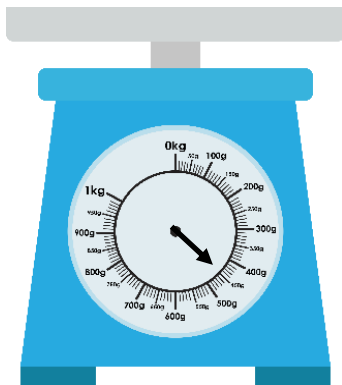
Then add the **grams**.

$$250\text{g} + 200\text{g} = 450\text{g}$$

Next add the **kilograms** and **grams**.

$$5\text{kg} + 450\text{g} = 5\text{kg and } 450\text{g}$$

Fluency 2



Fluency 3

5kg and 500g



Reasoning 1

Modelled DAB Reasoning Responses

D – Jerry is correct.

A – The mass will be greater than 5kg.

B – The total of the kg is 5kg so with the grams added as well, its total mass will be greater. The total mass is 5kg and 250g.

Reasoning 2

Modelled DAB Reasoning Response

D – Sometimes

A – The mass of the object sometimes changes when you subtract, but not always.

B – If you have 3 x 1kg bags of flour and you subtract 1kg, the mass of the individual bags does not change. If you had 3kg of flour in a bowl and subtract 1kg, the mass of the object (the flour) will decrease.

Reasoning 3

Modelled DAB Reasoning Response

D – I know what the next calculation could be.

A – One possibility is: 1kg + 100g + 2kg + 200g + 3kg and 300g = 6kg + 600g

B – Each time, 1kg and 100g is being added to the previous amount in the calculation. Alternatively, if only the last 2 weights were used, the next calculation could be 2kg and 200g + 3kg and 300g = 5kg and 500g.

Reasoning 4

1. It is not necessary to say 'and 0g' if there is a whole number of kg.
2. The answer is 5kg and 100g, not 6kg and 100g, because $8\text{kg} - 3\text{kg} = 5\text{kg}$.
3. Half a kg is 500g so $2\text{kg} - 500\text{g} = 1\text{kg and } 500\text{g}$, not 1kg.

Download our 'DAB' posters to support reasoning in your classroom:

<https://www.deepeningunderstanding.co.uk/product/dab-reasoning-posters/>



Problem Solving 1

All totals must equal 3kg.

$$1\text{kg} + 1\text{kg} + 1\text{kg} = 3\text{kg}$$

$$1\text{kg} + 500\text{g} + 500\text{g} + 500\text{g} + 500\text{g} = 3\text{kg}$$

$$500\text{g} + 500\text{g} + 500\text{g} + 500\text{g} + 500\text{g} + 500\text{g} = 3\text{kg}$$

$$1\text{kg} + 1\text{kg} + 200\text{g} + 200\text{g} + 200\text{g} + 200\text{g} + 200\text{g} = 3\text{kg}$$

Problem Solving 2

$$5\text{kg and } 500\text{g} - 2\text{kg and } 100\text{g} = 3\text{kg and } 400\text{g}$$

$$5\text{kg and } 500\text{g} - 2\text{kg and } 300\text{g} = 3\text{kg and } 200\text{g}$$

$$5\text{kg and } 500\text{g} - 2\text{kg and } 500\text{g} = 3\text{kg}$$

$$5\text{kg and } 500\text{g} - 4\text{kg and } 100\text{g} = 1\text{kg and } 400\text{g}$$

$$5\text{kg and } 500\text{g} - 4\text{kg and } 300\text{g} = 1\text{kg and } 200\text{g}$$

$$5\text{kg and } 500\text{g} - 4\text{kg and } 500\text{g} = 1\text{kg}$$

