

Reasoning and Problem Solving Millimetres and Millilitres

Developing

1a. $2,000\text{mm} + 3\text{m} = 5\text{m}$

2a. No, $5,000\text{ml} \div 1,000 = 5\text{L}$. 5L is less than 55L.

3a. No, Kit is incorrect because he has 6,000ml of water ($4,000\text{ml} + 2,000\text{ml}$). Billy has 4L ($3\text{L} + 1\text{L}$). $4\text{L} \times 1,000 = 4,000\text{ml}$ of water. 6,000ml is more than 4,000ml.

Expected

4a. $2,500\text{mm} + 0.3\text{m} + 1,500\text{mm} = 4.3\text{m}$

5a. No, $\frac{50}{1000}\text{L} = 50\text{ml} < 0.5\text{L}$.

$0.5\text{L} \times 1,000 = 500\text{ml}$. 500ml is more than 50ml.

6a. No, Jack is incorrect because he has 3,000ml ($4,600\text{ml} \div 2$ and $2,300\text{ml} + 700\text{ml}$). Peter has 3,100ml ($5.2\text{L} \div 2$ and $2.6\text{L} + 500\text{ml}$). Peter has 100ml of water more than Jack.

Greater Depth

7a. $5,000\text{mm} + 0.02\text{m} + 1\frac{1}{4}\text{m} = 6.27\text{m}$

8a. No, $0.06\text{L} \times 1,000 = 60\text{ml}$.

$\frac{600}{1000}\text{L} = 600\text{ml}$. 60ml is not greater than 600ml.

9a. No, Logan is incorrect because he has 3,500ml ($5,500\text{ml} \div 2$ and $2,750\text{ml} + 750\text{ml}$). Noah has 2,750ml (two thirds of 3L is 2L and $2\text{L} + 750\text{ml}$). Logan has 750ml of water more than Noah.

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Developing

1b. $2\text{L} + 4,000\text{ml} = 6\text{L}$

2b. Yes, $6\text{m} \times 1,000 = 6,000\text{mm}$. 6,000mm is greater than 5,000mm.

3b. Yes, Jess is correct because Phoebe has 7L of water ($4\text{L} + 3\text{L}$). Jess has 6,000ml ($5,000\text{ml} + 1,000\text{ml}$). $6,000\text{ml} \div 1,000 = 6\text{L}$ of water. 6L is less than 7L.

Expected

4b. $0.5\text{L} + 3,700\text{ml} + 1,500\text{ml} = 5.7\text{L}$

5b. No, $\frac{900}{1000}\text{L} = 900\text{ml} = 0.9\text{L}$.

$0.9\text{L} \times 1,000 = 900\text{ml}$, so all are equal.

6b. Yes, Lily is correct because Brooke has 1,900ml ($2,800\text{ml} \div 2$ and $1,400\text{ml} + 500\text{ml}$). Lily has 800ml ($1.2\text{L} \div 2$ and $0.6\text{L} + 200\text{ml}$). Lily has 1,100ml of water less than Brooke.

Greater Depth

7b. $2\frac{3}{4}\text{L} + 1.75\text{L} + 1,250\text{ml} = 5.75\text{L}$

8b. Yes, $0.15\text{L} \times 1,000 = 150\text{ml}$. $\frac{15}{1000}\text{L} = 15\text{ml}$. 150ml is greater than 15ml.

9b. Yes, Olivia is correct because Ava has 2,350ml ($6.3\text{L} \div 3$ and $2.1\text{L} + 250\text{ml}$). Olivia has 2,350ml ($3,800\text{ml} \div 2$ and $1,900\text{ml} + 450\text{ml}$). They each have 2,350ml of water in their buckets.