

# Reasoning and Problem Solving

## Mass and Capacity – Year 3

### About This Resource

This resource is aimed at Year 3 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in the White Rose Maths Guidance and Examples Summer Block 4 – Mass and Capacity.

The questions are based on a selection of the same ‘small steps’ that are addressed in the block, but are presented in a different way so children can work through the pack independently and demonstrate their understanding and skills.

### Small Steps

Measure mass (1)

Measure mass (2)

Compare mass

Add and subtract mass

Measure capacity (1)

Measure capacity (2)

Compare capacity

Add and subtract capacity

### National Curriculum Objectives

Mathematics Year 3: (3M2b) [Measure mass \(kg/g\)](#)

Mathematics Year 3: (3M1b) [Compare mass \(kg/g\)](#)

Mathematics Year 3: (3M2c) [Measure volume/capacity \(l/ml\)](#)

Mathematics Year 3: (3M1c) [Compare volume/capacity \(l/ml\)](#)

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# Reasoning and Problem Solving – Mass and Capacity – Year 3

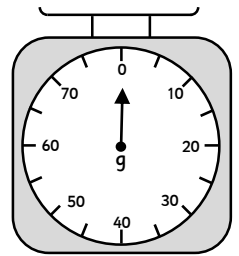
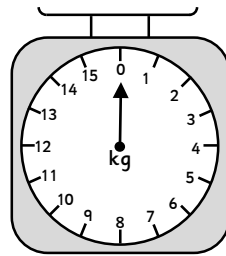
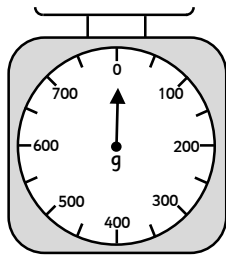
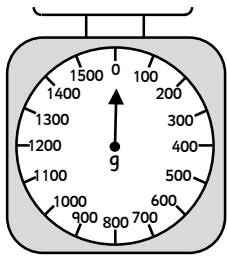


Theo and Safiya are helping at their community centre charity day. They are running a healthy food and drink stall.

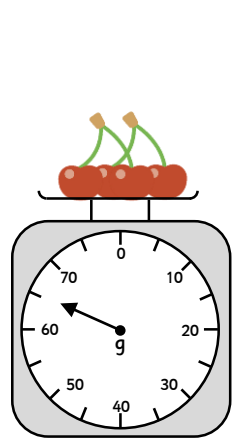
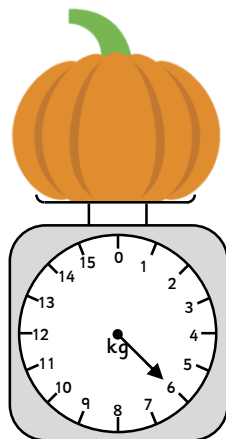
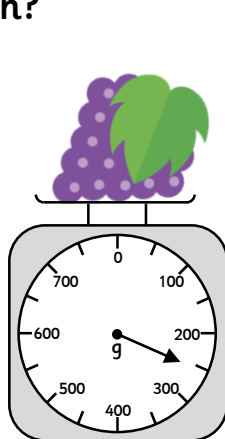
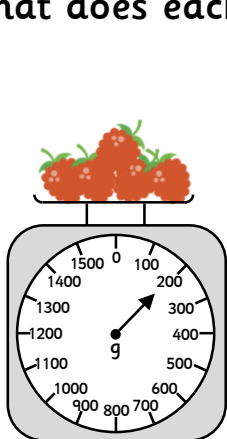
The children understand how important it is for everyone to eat lots of colourful fruit and vegetables and they are hoping that they can get more people to eat them too.

The children are going to be using different scales to weigh the fruit and vegetables.

1a. What increment is each of the scales going up in?

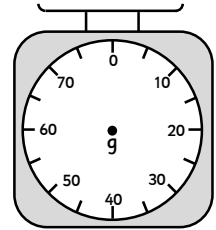
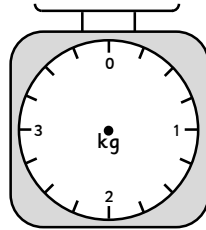
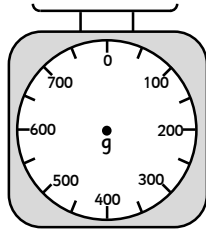
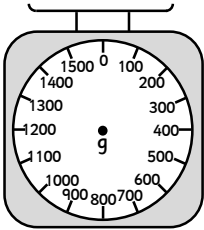


1b. Then they use the scales to weigh the various fruits and vegetables. What does each weigh?



2a. Safiya says that 1kg is equivalent to 100g. Is she correct? Explain why.

2b. Theo is weighing some potatoes for Mrs Smith. She wants 1kg and 500g of potatoes. Circle the scales he could use.



2c. On the scales you have chosen, draw an arrow showing the mass of the potatoes.

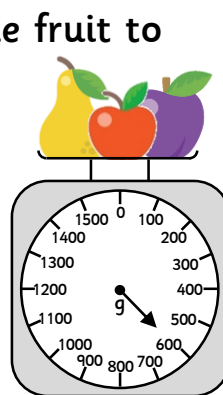
Safiya is using a balance.

2d. What is the weight of the carrots?

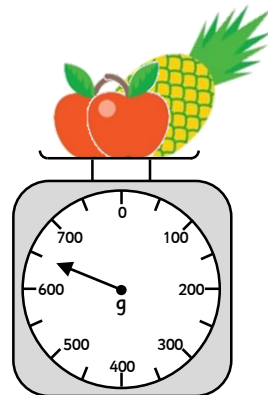


3a. Theo and Safiya are both weighing some fruit to make fruit smoothies.

Whose fruit weighs the most?



Theo



Safiya

Theo has bagged some vegetables to make his 'souper' healthy soup.  
3b. Put them in order from lightest to heaviest so that he can price them up.



A



B



C



D

3c. Theo has a punnet of strawberries that weigh half a kilogram. He says that it weighs less than a bag of apples. The apples weigh 600g. Is he correct? Explain your answer.

4a. Theo has weighed 2 oranges and 3 apples. Their combined weight is 900g.

The weight of each orange is 150g.

What is the weight of 1 apple?



150g



150g

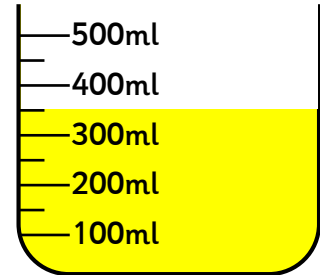


4b. At the start of the day, Theo and Safiya had 3kg of lemons. They used 1kg to make lemonade and they sold 800g to Mr Spencer. How many kg of lemons do they have left?

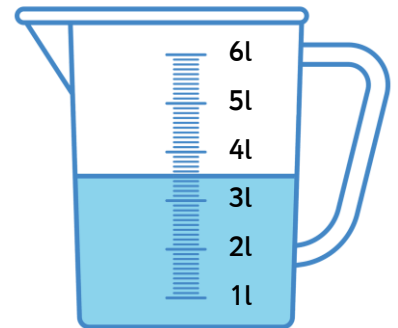


5a. Theo is making the lemonade with the 1kg of lemons. He has juiced the lemons to get the lemon juice.

How much lemon juice does he have?

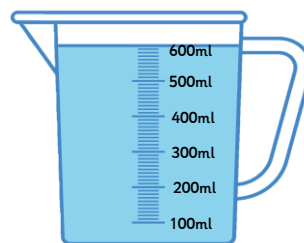
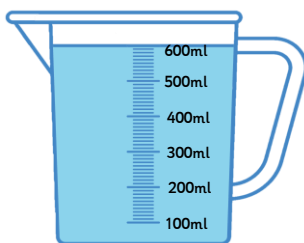


5b. He adds the water to the lemon juice using this jug. How much water has he added?



5c. How much lemonade has he made with the water and lemon juice?

5d. Safiya pours the bucket of fresh water into 2 containers. How much did the bucket hold?



## Reasoning and Problem Solving – Mass and Capacity – Year 3

6a. Theo fills up various bottles with the lemonade. Circle the bottle which has the largest capacity.



6b. Use the symbols  $>$ ,  $<$  and  $=$ , to compare these amounts of capacity.

1l and 300ml		2l
100ml		1l
2,200ml		2l
6,000ml		6l

7a. Safiya has 1l and 300ml of orange juice left over. She is sharing the liquid out into 300ml cups.

How many full cups will she have?

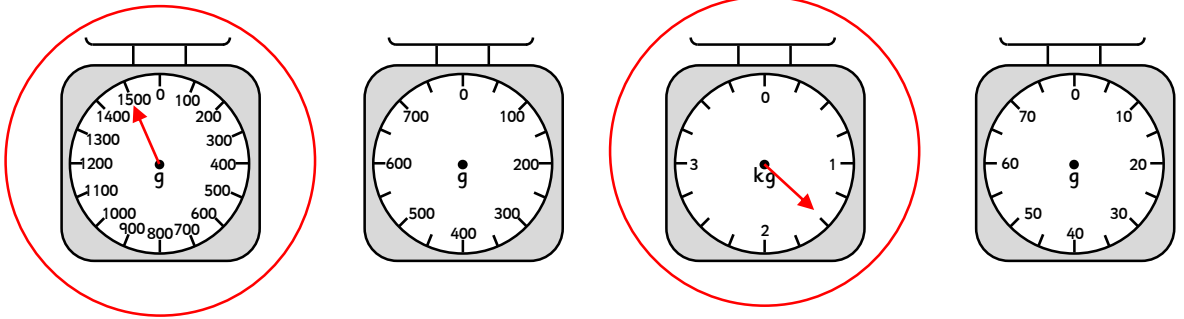
7b. How much liquid will she have left over?

7c. Safiya and Theo have sold 10 cups of tea and 3 cups of coffee. They have used 30ml of milk per cup. How much milk have they used in total?

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- 1a. 100g; 50g; 1kg; 5g  
1b. 200g; 250g; 6kg; 65g  
2a. She is incorrect.  $1\text{kg} = 1,000\text{g}$

2b and 2c.



- 2d. 1kg and 150g or 1,150g  
3a. Safiya has the largest weight of 650g.  
3b. B,D,C,A  
3c. Yes he is correct. Half a kilogram is equal to 500g which is less than 600g.  
4a. 200g  
4b. 1kg and 200g or 1,200g  
5a. 350ml  
5b. 3l and 500ml or 3,500ml  
5c. 3l and 850ml or 3,850ml  
5d. 1l and 200ml or 1,200ml  
6a. 2l bottle  
6b.  $<$ ,  $<$ ,  $>$ ,  $=$   
7a. 4  
7b. 100ml  
7c. 390ml