

Reasoning and Problem Solving

Mass, Capacity and Temperature – Year 2

About This Resource

This resource is aimed at Year 2 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in Summer Block 4 Measurement.

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

Compare mass
Measure mass in grams
Measure mass in kilograms
Compare capacity
Millilitres
Litres
Temperature

National Curriculum Objectives

Mathematics Year 2: (2M1) [Compare and order lengths, mass, volume/capacity and record the results using >, < and =](#)

Mathematics Year 2: (2M2) [Choose and use appropriate standard units to estimate and measure length/height in any direction \(m/cm\); mass \(kg/g\); temperature \(\$^{\circ}\$ C\); capacity \(litres/ml\) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels](#)

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Smooth Operators

Josie and Jamal are running smoothie stalls at the school fayre. Josie is selling ice cold fruit smoothies and Jamal is selling healthy vegetable smoothies.

Josie

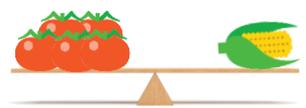


Jamal

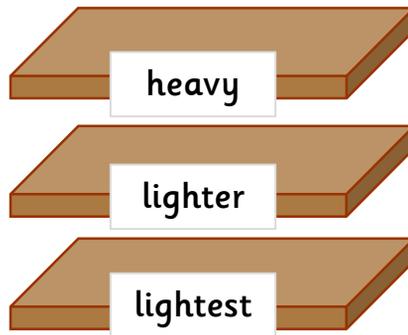


Time to set up their stalls. The children must decide which fruit or vegetable goes on each shelf. The top shelf holds the heavy food, the middle shelf holds the lighter food and the bottom shelf holds the lightest food.

Use the scales to help you decide which fruit goes on which shelf.



1. Draw a line from each food to show where it should be stored.

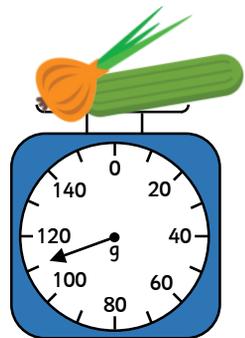
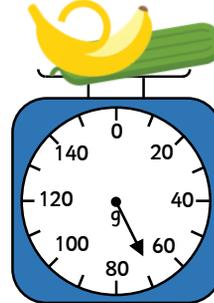
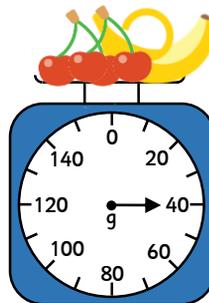


Josie and Jamal are planning their orders.

The cherries are lighter than the banana.



The onion weighs more than the banana.

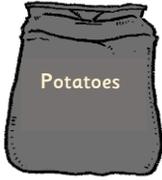


2. Who is correct? Explain your answer.



The children are arguing about who should have the kilogram weights and who should have the grams. Oh dear!
Miss Frootie suggests they sort which items would use grams and which use kilograms.

3. Circle the items you would weigh in kg.

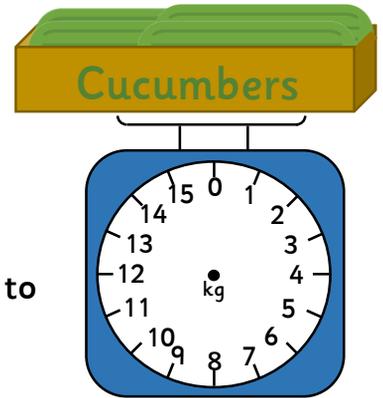


Jamal is weighing his ingredients.

The potatoes weigh 5kg more than 7kg.
The carrot sack weighs half of the potatoes and the cucumbers are 2kg less than this.



4. Draw an arrow on the scales to show how much the cucumbers weigh.



The cups for the smoothie stalls have arrived. Jamal and Josie are excited to see their designs in real life. Oh no! The box labels are all mixed up.

5. Draw a line to show which label each box should have.

small

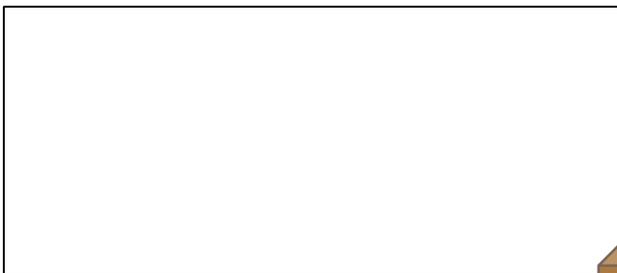
medium

large

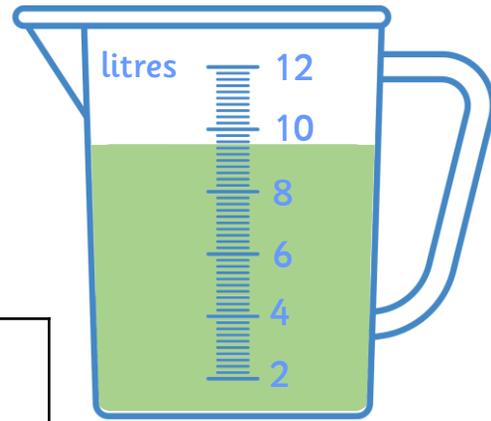


Time to make the smoothies. Josie's recipe makes 150ml of smoothie.

6. Which cups can she fill with one batch of smoothie? Is there more than one answer?



Jamal has made a few batches of smoothie before the stalls open and stored it in a large jug, ready for when the fayre opens.

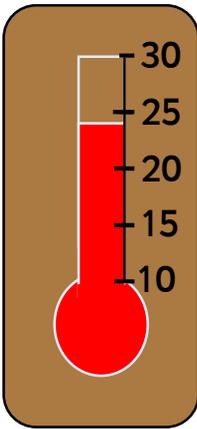


The smoothie mix doesn't quite reach the number on the scales.

7. What is a good approximation of the volume of smoothie he has made?



The day of the fayre arrives, and the sun is shining. People are very thirsty so the stalls are busy!



Josie's iced smoothies are selling very fast. Miss Frootie comes past with her thermometer to make sure the food is safe to eat.

Here is Josie's thermometer, Jamal's is 5° higher.

8. How hot is it in Jamal's stall?

9. Does the thermometer give a clue why Josie's smoothies are selling faster? Explain your answer.

Josie and Jamal are so proud of themselves and their stalls won the fundraising prize!

Well done for helping out!



1. heavy: pineapple, pumpkin
lighter: sweetcorn, lemon
lightest: strawberries, tomatoes
2. Jamal is correct. The onion plus the cucumber weigh 110 grams, while the banana and the cucumber weigh only 70 grams. As the cucumber's weight will be the same, the difference must be the banana and onion, so the onion must weigh more than the banana.
Josie is incorrect. She cannot know the weight of the cherries as she is comparing cherries and a banana, but the scales show cherries and banana and banana and cucumber. If the scales showed each of banana and cherries with one other item we could compare, but we haven't got those comparisons on scales.
3. Children should circle potatoes, pumpkin, watermelon
4. Arrow should point to 4kg.
5. Boxes labelled left to right should be medium, small, large.
6. There is more than one possible answer she could fill: 100ml plus 50ml or one 150ml cup.
7. 9 litres (or possible 9 and a half litres) is a good approximation.
8. Jamal's stall is 29° (you may decide to accept 30° as an approximation).
9. It is a hot day and Josie's smoothies are iced so they will help people feel cooler.