Converting between metric units of capacity

National Curriculum attainment target

 Convert between different units of metric measure (for example, litre and millilitre)

Lesson objective

• Use knowledge of place value, multiplication and division to convert between units of capacity (litre and millilitre)

Previous related lessons

None

Prerequisites for learning

Pupils need to:

• write measurements to one decimal place, e.g. 3.4*l*

 $\boxed{1}$

Vocabulary

litre (l), millilitre (ml), decimal point, decimal place, convert

Future related lesson

Unit 10, Week 3, Lesson 4

Success criteria

Pupils can:

• convert between litres and millilitres using knowledge of place value, multiplication and division



When working with litres, it is important that you write a serif letter 'el' (*l*) so that children do not muddle the unit with the digit 1.

Collins Connect
Year 5, Unit 10, Week 3

Teach

- Write on the board: 1 litre (l) = 1000 ml.
- Display: Slide 1.

Getting Started

• Ask: Who can point to the position of 100 ml on the number line?

• Choose an activity from Measurement (volume and capacity).

- Recall that 100 ml equals one-tenth of 1 litre. Ask: How do we write this as a decimal? (0.11)
- Ask: Who can point to the position of 0.4 litres/0.8 litres on the number line?
- Say: A bottle of water has a capacity of 500 ml. Tell your partner where 500 ml is positioned on the number line.
- Say: Four small cartons orange juice have a total capacity of 1 litre. What is the position on the number line for the capacity of one carton of orange juice? Can you explain to the class how you worked it out?
- Take feedback, eliciting that one carton has a capacity of $\frac{1}{4}$ litre or 250 ml. The position of 250 ml is halfway between 200 ml and 300 ml.
- Ask: What is the position on the number line for three cartons of juice? (750 ml)
- Write on the board: 6.81.
- Ask: Who can remember from Year 4 how we convert 6.8 litres to millilitres (multiply 6.8 by 1000)
- Write on the board: $6 \cdot 8l = 6l 800 \text{ ml}$ = 6800 ml
- Ask: How do we convert 6.08 litres to millilitres?
- Write on the board: 6.08 l = 6l 80 ml
 - = 6080 ml
- Write on the board: 3800 ml.
- Ask: How do we convert 3800 millilitres to litres? (divide 3800 by 1000)
- Write on the board: 3800 ml = 3000 ml + 800 ml

- Ask: How do we write 3080 millilitres in litres?
- Write on the board: 3080 ml = 3000 ml + 80 ml

- Ask: Who can explain why 3 litres 80 millilitres is written in decimal notation as 3.08 litres? $(\frac{8}{100} = 0.08 \text{ so } 80 \text{ ml} = \frac{8}{100} \text{ of } 1 l \text{ or } 0.08 l)$
- Display: Slide 2 showing the number line.
 - Ask: Who can point to the position for 1.8 litres on the number line?

• Say: The bottles of shampoo in a pack of 10 have a total capacity of 1.8 litres.



2

- Say: Tell your partner how to find the capacity of one bottle in litres and then in millilitres.
- Write on the board: $1.8l \div 10 = 0.18l$ and $1800 \text{ ml} \div 10 = 180 \text{ ml}$
- Say: A shop orders 10 packs of these bottles of shampoo.
- Ask: What is the total capacity of the shampoo bottle in their order? How did you find the answer? $(1.8 l \times 10 = 18 l)$

Individualised Learning

Pupil Book 5C: – Page 44: Converting capacities

Refer to Activity 1 from the Learning activities on page 406.

Plenary

- Write 7060 ml on the board. Ask: **How do we convert 7060 ml to litres?** (divide 7060 by 1000 to give 7.06*1*)
- Display: Slide 3 showing the four teapots from the Pupil Book page.
- Say: The labels show how much tea each teapot can hold when full.
- Point to teapot B and ask: **How do we convert 3·4 litres to millilitres?** (multiply 3·4 by 1000 to give 3400 millilitres)



3

- Point to teapot C and say: Tell your partner how many millilitres of tea this teapot can hold when it is full. (3240 ml)
- Ask: What is the difference between the capacities of teapots A and D in litres. (2.251)
- Ask pairs to make up a question about the teapots that they can ask the class to solve.