The Origins of Measurement

We believe the first people to standardise measurement were the ancient Egyptians, around 5,000 years ago. This was the cubit, based on the length of a man's forearm from elbow to fingertip. The cubit was divided into 28 small sections each about the width of a man's finger.

Reconstruction of a cubit rod from around 1300BC

The Metric System

Years ago we had many measurements, including the furlong, league, gill, peck, firkin, hogshead and scruple. Compared to this, the metric system is very simple. In the UK, our currency went decimal in 1971 but the target for full metrication is not until 2009.

LENGTH

10 mm	=	1 cm
100 cm	=	1 m
1000 m	=	1 km

1mm thick

Gloucester to Cheltenham 13.5 km

LIQUID CAPACITY

10 ml	=	1 cl
100 cl	=	1 l

medicine spoon 5 ml

25cl or ¼ litre

WEIGHT

1000 mg	=	1 g
1000 g	=	1 kg

paperclip 1 g

newborn about 3.5 kg

DID YOU KNOW? A litre of water weighs 1 kg

This resource kindly contributed by Janet Wilkins, Royal Forest of Dean College janet_w@rfdc.ac.uk

MSS1/L1.7 (L2.5) Convert (calculate with) units of measure in the same system. MSS1/L1.6 add and subtract common units of measure within the same system

Converting between metric units

Converting between metric units is always about multiplying or dividing by 10, 100 or 1,000

Examples: 400 cl written as l (litres)
You are going from small units to larger ones so the number will be less.
This means this is a divide sum.
Each l has 100 cl so 400 cl will be 400 ÷ 100 = 4 l

2.5 kg, written as g
You are going from large units to smaller ones so the number will be more. This is a multiply sum.
Each kg has 1,000 g so 2.5 kg will have 2.5 x 1000 = 2,500 g

Problems

1. A bucket holds 1300 cl of water. How many litres is this?

2. You have to post a Christmas parcel, it weighs 1.5 kg. How would you write this in g?

3. Complete the table

	Your workings	**Answer**
45 mm + 2 cm =	45 mm + 20 mm = 65 mm	6.5 cm
50 km – 1000 m =		km
10 cl – 5 ml =		cl
600 mg + 2 g =		g

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4. Which unit would you use to measure
   - the length of your nose?
   - your body weight?
   - the distance around the world?
   - water in a swimming pool?
   - sugar in a cake recipe?
   - a dose of liquid medicine?

5. Your window from rail to window sill is 2 m. The ready-made curtain is 180cm long.
   - Is the curtain too short or too long?
   - By how much?

6. Cheese costs £7 per kg, how many grams would you get for £3.50?

7. Does a 10kg sack of flour weigh the same as a 10kg sack of feathers?

8. You have made 5 litres of Jamie Oliver's pasta sauce for your child. Each child's serving is 30 cl of sauce.
   - You have enough sauce for how many lunches?
   - How much sauce will be left over?

9. Measure your height in cm, then write this as m.

Answers

1. A bucket holds 1300 cl of water. How many litres is this? 13 l

2. You have to post a Christmas parcel, it weighs 1.5 kg.
   How would you write this in g? 1,500 g

3.

45 mm + 2 cm =	45 mm + 20 mm = 65 mm	6.5 cm
50 km – 1000 m =	50 km – 1 km or 50000 m – 1000 m = 49000 m	49 km
10 cl – 5 ml =	10 cl – half a cl or 100 ml – 5 ml = 95 ml	9.5 cl
600 mg + 2 g =	600 mg + 2000mg = 2600 mg	2.6 g

4. Which unit would you use to measure
   - the length of your nose? cm
   - your body weight? kg
   - the distance around the world? km (it is 40,066 km at the equator)
   - water in a swimming pool? l
   - sugar in a cake recipe? g
   - a dose of liquid medicine? ml

5. Your window from rail to window sill is 2 m. The ready-made curtain is 180cm long.
   - Is the curtain too short or too long? too short
   - By how much? 20 cm

6. Cheese costs £7 per kg, how many grams would you get for £3.50?
   500 g

7. Does a 10kg sack of flour weigh the same as a 10kg sack of feathers?
   Yes

8. You have made 5 l of Jamie Oliver's pasta sauce for your child.
   Each child's serving is 30 cl of sauce.
   - You have enough sauce for how many lunches? 16
   - How much sauce will be left over? 20 cl

9. Measure your height in cm, then write this as m.

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