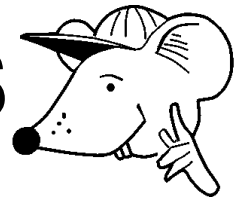


MATHEMATICS



N.S. Yr. 4 P.90

**Measures - vocabulary and relationships
between familiar units.**

Equipment

Paper, pencil, rulers, weighing balances, measuring cylinders or jugs etc.
Containers such as empty cans and bowls.

MathSphere

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Concepts

Children should know and use the following vocabulary: *unit, standard unit, metric unit, imperial unit*

kilometre, metre, centimetre, millimetre, kilogram, gram, litre, millimetre mile, pint

long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin

far, near, close, distance, perimeter, circumference

big, bigger, small, smaller, balances

heavy, light, weighs

full, empty, holds

longer, longest etc

Children should be developing a good working knowledge of units in common use, both metric and imperial.

They should know the following abbreviations:

mm (millimetre), cm (centimetre), m (metre), km (kilometre)

g (gram), kg (kilogram), ml (millilitre), l (litre)

cm² (square centimetre), m² (square metre)

They should know the following relationships between metric units:

1 kilometre = 1 000 metres

1 metre = 100 centimetres or 1 000 millimetres

1 centimetre = 10 millimetres

1 kilogram = 1 000 grams

1 litre = 1 000 millilitres

They should also know common imperial units:

The mile is more than one kilometre, but less than two kilometres.

The pint is roughly half a litre.

They should know the equivalent of one half, one quarter, three quarters and one tenth of 1km, 1m, 1 kg, 1 litre respectively in smaller units.

Eg. know that $\frac{3}{4}$ of a litre is 750 millilitres.

They should begin to write larger units in terms of smaller units.

Eg. 7 km is 7 000 m

2.5 m is 250 cm

6 cm is 60 mm.

and vice versa.

Can you fill in this table to show which was the biggest and smallest in each table on pages 4 to 7 ?



Units used	Biggest	Smallest
Centimetres		
Metres		
Kilometres		
Millimetres		
Grams		
Kilograms		
Litres		
Millilitres		

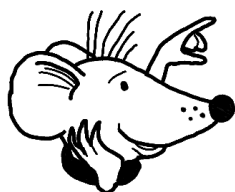
What are the abbreviations for the following units:
 (Eg. **cm** stands for **centimetres**)?

- centimetres
- metres
- kilometres
- millimetres
- grams
- kilograms
- litres
- millilitres

Did you know '**kilo**' means a '**thousand**' ?



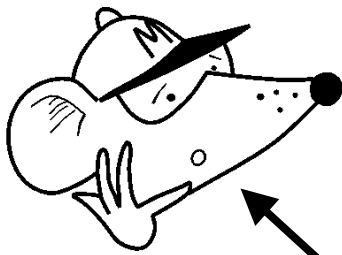
So what do we call a thousand whales?



Make sure you understand the units in the table.
Then you can answer the questions below.

1 kilometre equals 1 000 metres
1 metre equals 100 centimetres or 1 000 millimetres
1 centimetre equals 10 millimetres
1 kilogram = 1 000 grams
1 litre equals 1 000 millilitres

- a. How many metres are there in 4 kilometres?
- b. How many centimetres are there in 5 metres?
- c. How many millimetres are there in 7 metres?
- d. How many millimetres are there in 4 centimetres?
- e. How many grams are there in 3 kilograms?
- f. How many millilitres are there in 8 litres?
- g. How many grams are there 12 kilograms?
- h. How many kilometres are there in 8 000 metres?
- i. How many centimetres are there in 40 millimetres?
- j. How many kilograms are there in 4 000 grams?
- k. How many metres are there in 800 centimetres?



Here are some difficult questions about units. You will need to think hard for these!

Divvy thinking hard!

1. What is **one half** of these units. Give your answer in smaller units.
Eg. One **half** of a **kilometre** is **500 metres**.

a. kilometre b. metre c. kilogram d. litre e. centimetre

2. What is **one quarter** of these units. Give your answer in smaller units.

a. kilometre b. metre c. kilogram d. litre

3. What is **three quarters** of these units. Give your answer in smaller units.

a. kilometre b. metre c. kilogram d. litre

4. What is **one tenth** of these units. Give your answer in smaller units.

a. kilometre b. metre c. kilogram d. litre e. centimetre

5. Write the measurements in the units in brackets.
Eg. **2.5 metres** is **250 centimetres**.

a. 2.5 metres (centimetres) b. 6 litres (millilitres)
c. 1.7 metres (centimetres) d. 4 kilograms (grams)

Did you know that a mile is longer than a kilometre and less than two kilometres and a pint is about half a litre?

Yes, I did, thank you!
Is it any use?

Answers

Page 3

The idea of this page is to confirm that different results are obtained if different sized units are used. Try to ensure that different sized hands are used; perhaps an adult's, a child's and a toddler's as a minimum, if possible.

Pages 4 - 7

No clues are given here as to what to measure as everybody's situation is different. With the measurements in kilometres, it may be necessary to use a map with a kilometre grid. O.S. maps provide this. Whether you can measure in kilometres in a car depends on the car's odometer, but for most British cars this will be difficult. You may have to convert from miles!

Pacing is a good option, but takes a while and children need to be able to keep up a constant pace.

In the end, a good option is to use an atlas with the kilometre scale.

Page 8

a. cm b. m c. km d. mm e. g f. kg g. l h. ml

Page 9

a. 4 000 b. 500 c. 7 000 d. 40 e. 3 000 f. 8 000
g. 12 000 h. 8 i. 4 j. 4 k. 8

Page 10

- 1. a. 500m b. 50cm c. 500g d. 500ml e. 5mm**
- 2. a. 250m b. 25cm c. 250g d. 250ml**
- 3. a. 750m b. 75cm c. 750g d. 750ml**
- 4. a. 100m b. 10cm c. 100g d. 100ml e. 1mm**
- 5. a. 250cm b. 6 000ml c. 170cm d. 4 000g**