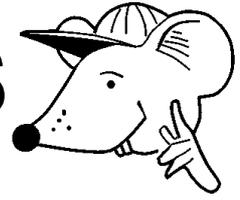


# MATHEMATICS



**N.S. Yr. 5 P.91**

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

## Equipment

Paper, pencil, ruler.

# 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, gallon*  
*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)*  
*cm<sup>2</sup> (square centimetre), m<sup>2</sup> (square metre), mm<sup>2</sup> (square millimetre)*

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 about 1 600m, a little more than 1.5km  
The pint is about 570 ml, a little more than half a litre  
The gallon is a little less than five litres.

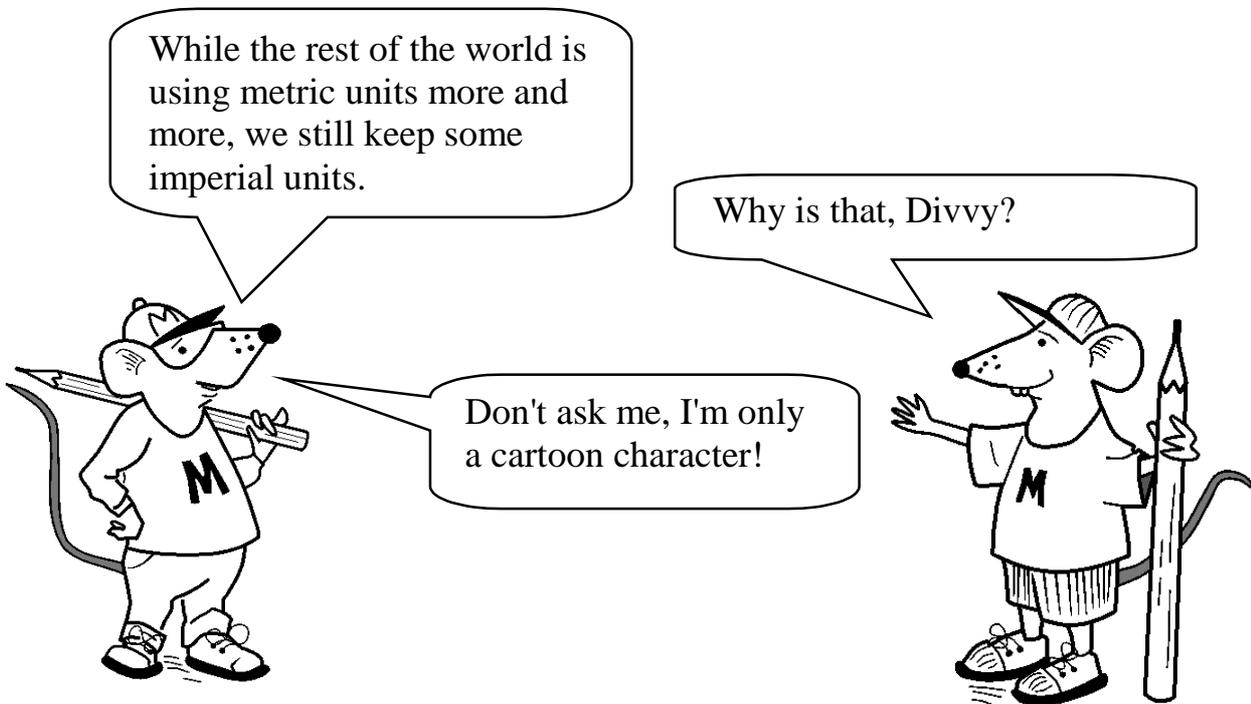
They should know the equivalent of one half, one quarter, three quarters, one tenth and one hundredth of 1km, 1m, 1 kg, 1 litre respectively in smaller units.  
Eg. know that one hundredth of a litre is 10 millilitres.

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

Eg. 7.5 km is 7 500 m  
2.58 m is 258 cm  
6 cm is 60 mm.

and vice versa.

## Imperial Units



These are the imperial units still in use:

### **Mile.**

A mile is a unit of distance and is about 1 600 metres long ( a little over 1.5 km).

### **Pint.**

A pint measures capacity (volume) and is about 570ml (a little over half a litre).

### **Gallon.**

A gallon is a unit of capacity and is a little less than 5 litres.

### **Foot.**

A foot is a unit of length and is about 30cm long.

### **Inch.**

An inch is a unit of length and is about  $2\frac{1}{2}$  cm long.

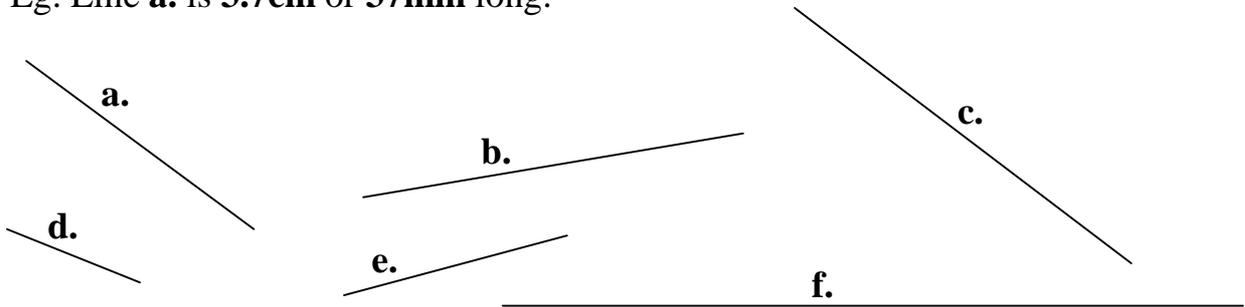
### **Pound.**

A pound is a unit of mass and is about half a kilogram.

Now you can answer questions like 'How many litres are there in 6 gallons?'

Seems crazy to me!

Measure these lines and write the answers in centimetres and millimetres.  
 Eg. Line **a.** is **3.7cm** or **37mm** long.



Line	Centimetres	Millimetres
a.	3.7	37
b.		
c.		
d.		
e.		
f.		

Here are some other things to measure.  
 Give your answers in large and small units  
 Eg. kilograms and grams.

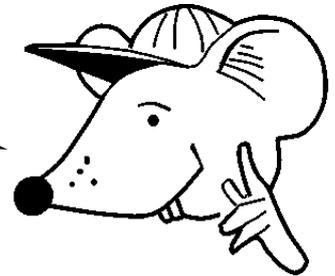
There is an example in the table.



Object	Large unit	Small unit
Mass of Encyclopaedia	3.2kg	3 200g
Mass of <b>you</b>	kg	g
Length of room	m	cm
Length of desk	cm	mm
Length of table	m	cm
Capacity of small bucket	l	ml
Capacity of plastic bottle	l	ml
Mass of packet of paper	kg	g
Mass of a large toy	kg	g
Length of a radiator	m	cm
Capacity of a mug	l	ml

You should now be able to write small units as large units and large units as small units.

Try this with the measurements in the table.

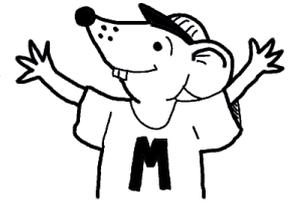


Small units	Large units
Eg. 3 000g	3kg
2 500g	_____kg
_____cm	5m
740cm	_____m
_____mm	3m
7 000ml	_____l
_____ml	4.5 l
_____g	3.8kg
583cm	_____m
45cm	_____m
_____cm	0.84m
2 450mm	_____m
_____m	6km
6 320m	_____km
670m	_____km



Here are some tables of statistics.

Can you re-write them with the largest measurement first.



<b>Mountains of the World</b>	<b>Height</b>
Lhotse	8 501m
K2	8 611m
Everest	8 846m
Dhaulagiri	8 172m
Makalu	8 470m
Kanchenjunga	8 598m

<b>Rivers of the World</b>	<b>Length</b>
Amazon	6 449km
Mississippi-Missouri	5 970km
Yangtze-Kiang	6 300km
Yenisey-Angara-Selenga	5 540km
Nile	6 680km
Yellow River	5 460km

<b>Largest turtles and tortoises</b>	<b>Mass</b>
Aldabra giant tortoise	408kg
Green Sea turtle	409kg
Pacific leatherback turtle	862kg
Elephant tortoise	384kg
Atlantic leatherback turtle	456kg
Loggerhead turtle	385kg

You should be familiar enough with the units of measurement now to answer these questions.



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. What is **one hundredth** of these units. Give your answer in smaller units.  
a. kilometre    b. metre    c. kilogram    d. litre

That's all for this unit folks!



## Answers

### Page 4

	Cm	mm
a.	3.7	37
b.	5.0	50
c.	5.6	56
d.	1.9	19
e.	3.0	30
f.	9.7	97

Second table: children's own measurements.

### Page 5

3 000g	3kg
2 500g	<b>2.5kg</b>
<b>500cm</b>	5m
740cm	<b>7.4m</b>
<b>3 000mm</b>	3m
7 000ml	<b>7 l</b>
<b>4 500ml</b>	4.5 l
<b>3 800g</b>	3.8kg
583cm	<b>5.83m</b>
45cm	<b>0.45m</b>
<b>84cm</b>	0.84m
2 450mm	<b>2.450m</b>
<b>6 000m</b>	6km
6 320m	<b>6.320km</b>
670m	<b>0.670km</b>

### Page 6

a. $6 \text{ cm}^2$	b. $8 \text{ cm}^2$	c. $12 \text{ cm}^2$	d. $7 \text{ cm}^2$	e. $16 \text{ cm}^2$	f. $22 \text{ cm}^2$
g. $18 \text{ cm}^2$	h. $10 \text{ cm}^2$	i. $20 \text{ cm}^2$			

**Answers (Contd)**

**Page 7**

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**Page 8**

- a.** 500m    **b.** 50cm    **c.** 500g    **d.** 500ml    **e.** 5mm
- a.** 250m    **b.** 25cm    **c.** 250g    **d.** 250ml
- a.** 750m    **b.** 75cm    **c.** 750g    **d.** 750ml
- a.** 100m    **b.** 10cm    **c.** 100g    **d.** 100ml    **e.** 1mm
- a.** 10m    **b.** 1cm    **c.** 10g    **d.** 10ml