

# fs4u

## Using Decimal Fractions

### ‘How To’ Booklet

# Using Decimal Fractions

**For this booklet you will need (in addition to pen and paper):-**

a calculator  
a ruler  
a strip of graph paper  
a litre measure jug

By the end of this booklet you should be able to:-

Use decimals for measurement, e.g. be able to say 3.15 metres instead of 3 metre 15 cms.

Staff, please note, a brief visit to a supermarket is required. That part could be done as homework.

RULE		
<b>10mm = 1cm</b> <b>100 cm = 1m</b> <b>1000m = 1km</b>	<b>1000 ml = 1 litre</b> <b>100 cl = 1 litre</b>	<b>1000 g = 1 kg</b>

On the strip of graph paper draw a line 5 cms long and mark it in cms.

0    1    2    3    4    5    —————

- 1 How many small squares are there to each cm?
- 2 How long is each small square?

This will help you write millimetres (mm) as decimals of a centimetre (cm)

- 3 Mark these measurements on your line, measuring from 0
  - a at 6mm
  - b at 1 cm 3mm
  - c at 2 cm 7 mm
  - d at 3 cm 1 mm
  - e at 4cm 5 mm

Check the answers

To write as a decimal fraction using cm just put a . between the cm and mm

e.g. A is 0 cm 6 mm or 0.6cm

**4** Write the measurement for b, c, d and e as decimals.

You could use a calculator to change mm into decimal fractions using cm.

If you have 76mm you divide by 10. That is 7.6 cm

You divide by 10 because there are 10 mm in a cm.

## **RULE**

**To change mm to cm divide by 10**

**To change cm to m divide by 100**

**To change m to km divide by 1000**

**To change ml to litre divide by 1000**

**To change g to kg divide by 1000**

**5** Change the following to cm

a) 25mm      b) 176mm      c) 3mm      d) 3721 mm      e) 96mm

**6** Change these cm to m

a) 732620 cm      b) 190cm      c) 1759 cm      d) 81cm      e) 10234cm

**7** Change these metres (m) to kilometres (km)

a) 3620 m      b) 927 m      c) 1362 m      d) 25 m      e) 3m

**8** Change these millilitres (ml) to litres

a) 1000 ml      b) 5276 ml      c) 2320 ml      d) 11 ml      e) 8 ml

**9** Change these grams to kilograms (kg)

a) 3892 g      b) 500 g      c) 12 g      d) 6g      e) 2g

Check your answers

Now look at the measure jug

**10** If the jug is half full, how many ml does it contain?

**11** Write / express that as a decimal fraction of a litre

**12** How many mls are there if the jug is  $\frac{1}{4}$  full?

**13** Write / express that as a decimal fraction of a litre.

NOW FOR SOME PRACTICAL MATHS

**Measure this page in mm and cm.**

**14** How long is it in mm?

**15** How wide is it in mm?

**16** Write / express both measurements as decimal fractions, using cm.

Check this with your measurements

**17** Write the cm measurements as decimal fractions of a metre. (Check the 'rule' if you've forgotten how.)

Time to get out of the classroom !

Visit a local supermarket. (It might be a good idea to contact the manager and explain why you are taking notes, in case it looks suspicious).

Note down the following:-

- a** The price of any bar of chocolate that is less than £1
- b** The price of any packet of biscuits that is less than £1
- c** The quantities in various size bottles – some large, some medium and some small.

Enjoy the break? Now for the work

**18** Write/express the price in pence as a decimal fraction of £1  
e.g. 89p = £0.89.

**19** Write / express the quantities in the bottles as litres

Remember if it is in ml divide by 1000

if it is in cl divide by 100

if it is in fluid ounces, forget it!!

Ask your support teacher to check the answers to 18 and 19

# Self Assessment Test

Check the 'rules' if you need help)

You are having a party.



- 1 Write 700 ml as a decimal fraction of a litre
- 2 Multiply 700 ml by 10 and write the answer as a decimal fraction, using litres.

**You need enough ribbon to decorate the hall which measures 13 m 29 cm by 10 m 15 cm.**

- 3 Write 13 m 29 cm as a decimal fraction, using metres, then multiply by 2
- 4 Write 10 m 15 cm as a decimal fraction, using metres, then multiply by 2.
- 5 Add the answers of 3 and 4 and express the result as a decimal fraction of a kilometre.

**You will be buying party poppers at 99p each and balloons at 67p for a packet.**

- 6 Express 99p as a decimal fraction of a pound.
- 7 Express 67p as a decimal fraction of a pound.
- 8 Work out the cost of one party popper and one packet of balloons and write the answer as a decimal fraction, using £.