



# MATHEMATICS



**N.S. Yr. 6 P.87**

**Use all four operations to solve word problems involving length, mass or capacity.**

## Equipment

Paper, pencil.

# MathSphere

© MathSphere P.O. Box 1234 Worthing BN13 2UJ [www.mathsphere.co.uk](http://www.mathsphere.co.uk)

### **Concepts**

Children should be familiar with the units concerned with length, mass and capacity:

Kilometres, metres, centimetres and millimetres

Kilograms, grams, newtons

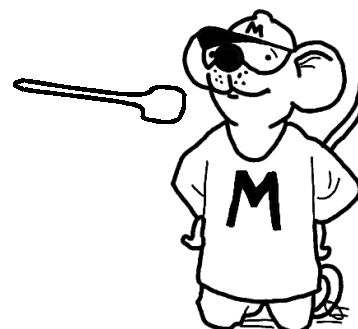
Litres, millilitres, centilitres

Miles, gallons, pints, pounds, ounces.

If they do not have a good working knowledge of these units, they will find the problems in this module difficult and should do more practical work before proceeding.

They should be able to understand the language used in problems and be able to extract the essential information. They should then be able to solve the problems and say how they solved them.

1. Karina had a roll of ribbon 4.6 m long. She cut off a piece 58 cm long. How much was left. Give your answer in cm and in metres.
2. A cup holds 0.2 litres. How many times can it be filled from a 4.2 litre pot of drink.
3. A tablespoon holds 22 ml of liquid. How many tablespoons can be filled from a one litre bottle of medicine?
4. An inch is approximately 2.54 cm. How many centimetres are there in one foot (12 inches) ?
5. A kilogram is approximately 2.2 pounds. Which is heavier, 10 pounds or 5 kilograms?
6. A small swimming pool holds 70 000 litres of water. The pool is filled with a hosepipe that supplies 1 750 litres an hour. How long does it take to fill the pool?
7. Change this list of ingredients to metric units:  
4 oz sugar  
12 oz flour  
2 oz margarine  
3 eggs  
2 teaspoons of orange juice.
8. A model car has a volume of 60 millilitres. Another car is five and a quarter times as big. What is the volume of the big car?
9. Josephine cycled 6.83 kilometres, then ran 4.2 kilometres and finally walked 2 000 metres. How far did she travel altogether. Give your answer in kilometres and metres.
10. How many millilitres of soup needs to be added to 4.56 litres to make 6 litres?



Divvy is about to have his medicine!

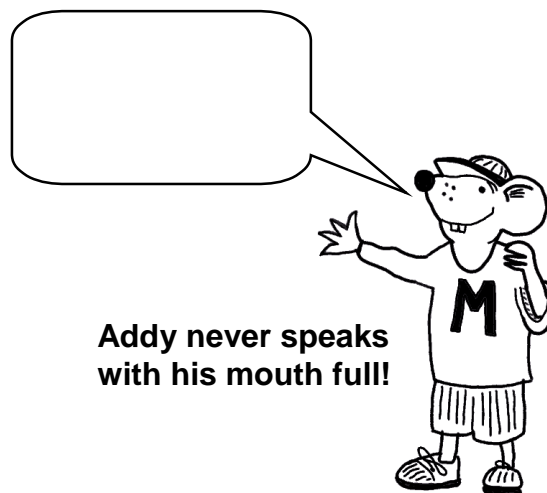
What does that recipe make?

It's a kind of sugary, floury, margariney, eggy type of thing that tastes of orange.



1. Monica had a container of orange juice. It held 7 litres of orange.  
She used 16 centilitres of orange at her party.  
How much was left in the container?

2. Addy makes some fruit scones.  
Each scone weighs 80 grams.  
He has one kilogram of mixture.  
How much mixture does he have left after making eight scones?



3. Andrew supplies small jugs of milk with the tea and coffee in his cafe.  
Each jug holds 25 ml of milk.  
How many jugs can he fill with two litres of milk?

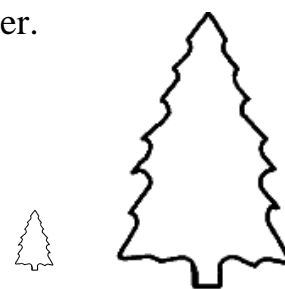
4. An ounce is approximately 28 grams. A block of chocolate weighs 4 oz.  
What is this in grams?

5. A 100g apple is placed on a table. What is the force in newtons of the apple on the table?

6. A storage container has a volume of 32 000 litres. What is the maximum number of boxes that can be put in the container if each box has a volume of 1.5 litres?

7. A model is made from 18 oz plaster powder and 5 oz water.  
What are these quantities in metric units?

8. A tree weighed 45 grams when it was planted in 1990.  
By the year 2000 it was 650 times as big.  
How much did it weigh in the year 2000?



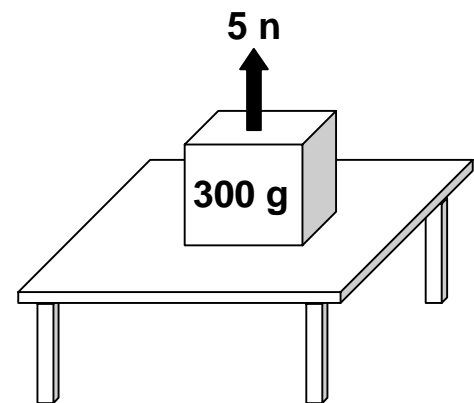
9. Subby bought 4.35 kilograms of cake in May, 5.7 kilograms of cake in June and 2 000 grams of cake in July.  
How much did he buy altogether?
10. How many grams of clay must be added to 3.563 kilograms to make exactly 4 kilograms?

1. A roll of wire 5 km long has a piece 369 m cut off. How much is left on the roll? Give your answer in kilometres.
2. 'Desktop Utilities' is a company that produces toy plastic paper weights. Each paper weight weighs 245 g. How many paper weights can the company make from 10 kg of plastic?



3. CD booklets are made from a piece of paper that weighs 2.5 g. A company is going to use 40 kg of paper to make the booklets. How many can they make from the paper?
4. If one kilometre is approximately 0.625 miles, how many miles are there in 120 km?
5. Oranges weigh approximately 120 g. Five oranges are put on a newton balance. How many newtons are shown on the balance?
6. Sardines are squashed together in large tins for a restaurant. If one sardine has a volume of 13.5 ml, how many sardines will fit into a tin with a volume of 2.7 litres?
7. If a foot is approximately 30cm, how many feet are there in 60 metres?
8. A baby is 52 cm tall. His father is three and half times as tall. How tall is the father?
9. David drank 0.75 litres of Whacky Cola on Monday, 600 ml on Tuesday and 1.3 litres on Wednesday. How much did he drink altogether. Give your answer in litres.
10. How much longer does a 483 mm piece of string need to be to stretch for two metres?

1. A milk container holds 2.5 litres of milk.  
How many centilitres is this? How many millilitres is it?
2. If 40 pairs of scissors weigh one kilogram, how much does one pair of scissors weigh? How much would 480 pairs of scissors weigh?
3. Paper clips are made from pieces of wire 6.2 cm long.  
How many can be made from a 2 metre piece of wire?
4. If an ounce is approximately 28 grams and there are 16 ounces in a pound, how many grams make a pound? If a parcel weighs four and a half pounds, how many grams does it weigh?
5. A block of wood weighing 300g is put on a table. A force pulling upwards of 5 newtons is used to lift the block. Is the force strong enough to lift the block off the table? Explain your answer.
6. A small packet of sugar contains 4.5 g of sugar. How many packets can be filled from a box containing 5 kg of sugar?
7. For Christmas, Simon receives a plastic mould for making model aeroplanes. Each mould needs 160 g of powder and 20 ml of water. He also has a 2 kg bag of powder. How many models can he make? How much water will he need to make the models?
8. A small rabbit weighs 560 g. A larger rabbit weighs two and three quarter times as much. How much does the larger rabbit weigh?
9. In a triathlon athletes first swam 2.5 km, then cycled 32 000 m and finally ran ten thousand metres. How long was the race? Give your answer in kilometres and in metres.
10. A machine paints white lines along the middle of the road. 20 km need to be painted in one day. So far 15 560 m have been painted. How much further does the machine have to paint?



Lucky Simon!  
Still, I did get a large  
cake for Christmas.



## Answers

**Page 3**

1. 402 cm 4.02 m      2. 21      3. 45      4. 30.48 cm      5. 5 kg (11 pounds)  
6. 40 hours  
7. 112 g (120 g) sugar, 336 g (360 g) flour, 56 g (60 g) margarine, 3 eggs, 10 ml orange juice (first number is converted as 28 g = 1 oz, number in brackets is 30 g = 1 oz)  
8. 315 ml      9. 13.03 km 13 030 m      10. 1 440 ml

**Page 4**

1. 6.84 litres      2. 360 g      3. 80      4. 112 g      5. 1 n (actually 0.981 n, but 1n is normally accepted as the gravitational force on 100g for children).  
6. 21 333      7. 504 g (540 g) powder 140 g (150 g) water  
8. 29.250 kg      9. 12.05 kg      10. 437 g

**Page 5**

1. 4.631 km      2. 40      3. 16 000      4. 75 miles  
5. 6 n (or just under)      6. 200  
7. 200      8. 182 cm      9. 2.65 litres      10. 1 517 mm or 1.517 m

**Page 6**

1. 250 cl 2 500 ml      2. 25 g 12 000g or 12 kg      3. 32  
4. 448 g 2 016 g      5. Yes, 3 n is enough to lift the block.      6. 1 111  
7. 12 240 ml      8. 1 540 g or 1.540 kg  
9. 44.5 km or 44 500 m      10. 4 440 m or 4.440 km