

Measurement of volume and capacity

HERE'S THE MATHS

The capacity of containers is measured in litres and millilitres. There are 1000 millilitres (ml) in 1 litre (l). Encourage your child to help you measure liquids when you use a measuring jug, helping to interpret the scale if necessary. Practising handling real quantities of liquid (usually water) allows your child to get a feel for the capacity of containers.

ACTIVITY

What to do

- Collect a selection of small containers (less than 1 l) of different capacities.
- Try to put them in decreasing order of their capacity.
- Starting with the largest container, both estimate its capacity.
- Using the measuring jug, find its actual capacity.
- The person who is closer scores one point.
- The winner is the person who has the highest score.

You will need:

- 1 measuring jug marked in ml
- selection of containers

Variation

- Use a selection of containers of similar capacity, e.g. mugs.

QUESTIONS TO ASK

How many millilitres are there in a $\frac{1}{4}$ ($\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{10}$) of a litre?

What fraction of a litre is 300 ml?

How many 250 ml glasses can be filled from a 2-litre bottle of lemonade?

How many $\frac{1}{2}$ litre jugs can be filled from a 5-litre bottle of water?

Put these in order of volume:
 $\frac{1}{4}$ litre, 270 ml, $\frac{2}{10}$ litre.



Year 3 Maths Newsletter 10



Date: _____

Name: _____

MATHS TOPICS

These are the maths topics your child will be working on during the next three weeks:

- Multiplication and division
- Fractions
- Measurement of volume and capacity

KEY MATHEMATICAL IDEAS

During these three weeks your child will be learning to:

- multiply a 2-digit number by 2, 3, 4, 5, 8 or 10, using appropriate mental and written methods
- count up and down in tenths; know that when an object or number is divided into ten equal parts, these are tenths
- measure, compare, add and subtract volume and capacity using litres and millilitres.

TIPS FOR GOOD HOMEWORK HABITS

If your child is struggling, don't give them the answer in order to finish the homework quickly. Instead, talk through the task together and help them to arrive at the solution themselves.

Multiplication and division

HERE'S THE MATHS

This week your child is learning to multiply a 2-digit number by a single digit in a variety of ways. These are described as partitioning, grid method and expanded written method. The reason for using different methods is to deepen understanding. Encourage them to be open-minded and to embrace all methods. They are working towards the formal written method, which is probably the one that you would use.

ACTIVITY

Partitioning method	Grid method, using partitioning	Expanded written method						
Example 83×4 $= (80 \times 4) + (3 \times 4)$ $= 320 + 12$ $= 332$	Example 83×4 <table border="1" style="margin-left: 20px;"> <tr> <td>x</td> <td>80</td> <td>3</td> </tr> <tr> <td>4</td> <td>320</td> <td>12</td> </tr> </table> $= 332$	x	80	3	4	320	12	Example H T O 83 $\times \underline{4}$ $12 \ (3 \times 4)$ $\underline{320} \ (80 \times 4)$ $\underline{332}$
x	80	3						
4	320	12						

What to do

- Choose three cards to make a 2-digit number and a single number, e.g. 5, 4, 8 to give 54×8 .
- Carry out the calculation using all three methods.
- Play for eight minutes and discuss the different methods for two minutes.

You will need:

- 5 cards with 2, 3, 4, 5 and 8 written on them
- pencil and paper

Variation

- Each person chooses a different method. Check that your answers are the same.

QUESTIONS TO ASK

Partition 67 into tens and ones.

What is 60×4 ?

Explain the partitioning method (grid method, expanded written method) of multiplying.

Fractions

HERE'S THE MATHS

To find a fraction of a quantity, divide by the denominator, e.g. $\frac{1}{4}$ of 48 is $48 \div 4 = 12$. To find a non-unit fraction of a quantity, e.g. $\frac{3}{4}$ of 48, first divide by the denominator to find the unit fraction and then multiply by the numerator. $\frac{1}{4}$ of 48 is $48 \div 4 = 12$. To find $\frac{3}{4}$, multiply $12 \times 3 = 36$. Drawing a diagram often helps understanding.

ACTIVITY

What to do

60	90	100
120	40	160
80	200	20

You will need

- 1–6 dice

- Take turns to say the value of $\frac{1}{10}$ of each of the numbers.
- Roll the dice and now say the value of that number of tenths, e.g. if a 3 is rolled, work out the value of $\frac{3}{10}$ of each of the numbers.
- Play for 10 minutes.

Variations

- Find $\frac{1}{2}$ of the numbers.
- Find $\frac{1}{4}$ of the numbers and then $\frac{3}{4}$.

QUESTIONS TO ASK

What is $\frac{1}{10}$ of 360?

Add $\frac{3}{10}$ to $\frac{4}{10}$.

How do you find $\frac{1}{5}$ of a number?
What about finding $\frac{2}{5}$?