









# How to help your child with maths









## Year 3

At Orchard Primary School we follow the new mathematics curriculum. In addition to knowing and applying basic mathematics skills, students are required to reason, think independently, solve problems using different strategies, and effectively communicate their methods. Parents help at home is essential in helping children develop and strengthen these skills.

Here are some suggestions for parents helping at home:

-  Let your children know you believe they can be successful in math.
-  Encourage and support risk taking and celebrate perseverance.
-  Encourage your children to solve problems with you.
-  Help them identify different methods or strategies to use in finding solutions and resist the temptation to provide the answer or method. There is usually more than one way to solve a problem, and simpler strategies are often effective.
-  Provide opportunities for your children to explain and justify their thinking.
-  Connect mathematics to real life experiences. Emphasising the mathematics around us helps to make mathematics education relevant.
-  Ask good questions of your children about their homework and be good listeners when your children respond.
-  Encourage children to estimate answers before working out the answer.

Good questions, and equally important, good listening can help children make sense of mathematics, build their confidence, and encourage mathematical thinking and communication. A good question opens up a problem and supports different ways of thinking about it. Some questions to try while helping a child might include:

-  What do you already know about this?
-  What do you need to find out?
-  How might you begin?
-  How can you organise your information?
-  Can you draw a picture to explain your thinking?
-  Are there other possibilities?
-  What would happen if ...?
-  What do you need to do next?

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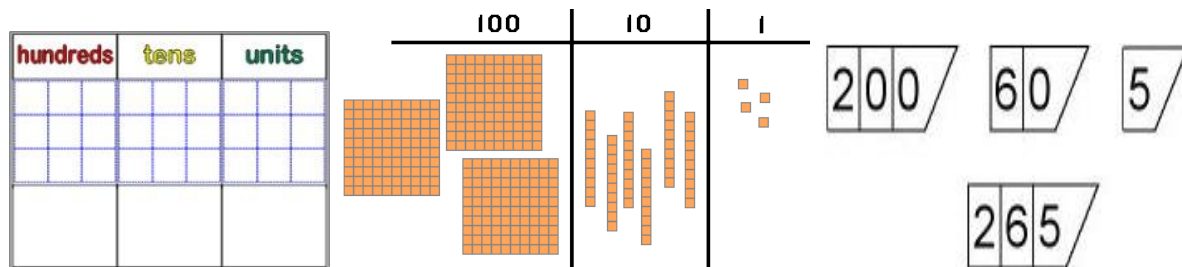
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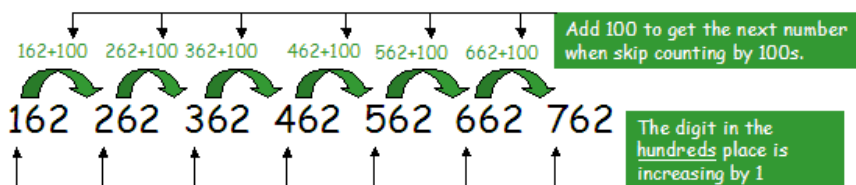
## Step 1

Recognise the place value of each digit in a three-digit number (hundreds, tens, ones):

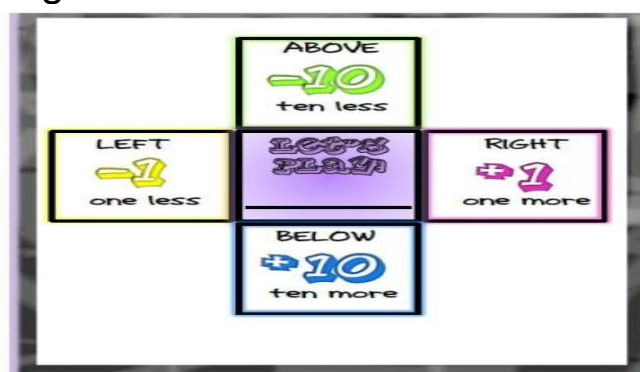


Help your child understand the idea that each time you move 1 column to the left, the number becomes 10 times bigger (you don't just add a zero! **It is important that this misconception doesn't occur, as it is not the case with decimals later on!**) Support your child in separating out the hundreds, tens and units (top right) and then recombine them.

Count from 0 in multiples of 100 and find 10 more or less than a given number:



Look at the pattern that is created when you add on 100. Discuss the fact that the tens and units stay the same, as we are only adding to the hundreds column.



Create more/less cards, which allow the children to use their knowledge of place value to add/take away 1 or 10 from any number.

Support your child's understanding that when we add/take away 10, it is only the number in the 10's column that will change.

When you add/take away 1 only the units column will change.

**Key words:** Place value, hundreds, tens, units, digit, increase, decrease

### **Count from 0 in multiples of 8 and 25:**



Create a counting hoop with a hula hoop.

As you go round the hoop, count up in jumps of 8/25

Write them down and get the children

## Find 50 more or less than any given multiple:



Discuss the value of each digit in the number

When adding/subtracting 50, talk about how many 10's they need to add/take away.

Support your child to add on 5 lots of 10 by changing the 10's column. Be sure to add 1 to the hundred column too, if you bridge 100 – e.g –  $462 + 50 = 512$

**Key words:** hundreds, tens, units, place value, more, less

## Write simple fractions for example, $\frac{1}{2}$ of 6 = 3:



Have even numbers of objects.

Discuss the idea you share them between 2 when halving.

The children can repeat activity with any even number

**Key words:** Half, quarter, share, fractions

## Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ :



Use cakes/pizza's. Cut them into halves, then into quarters. Look at how  $\frac{2}{4}$  is equal to  $\frac{1}{2}$  in size.

You could look at sharing counters into 2, and then into 4.

How many of the piles (when split into

**Key words:** equivalence, equal, share,

## Recognise that tenths arise from dividing an object into 10 equal parts:



Talk about the fact that:

100 can be split into 10 lots of 10.

10 can be split into 10 lots of 1.

Then explain that 1 can also be split into 10 pieces =  $\frac{1}{10}$ 's.

Have a stack of 10 blocks that represent 1

Break it into 10 pieces and show how these = 0.1 each.

**Key words:** Place value, divide, tenths

**Tell and write the time from an analogue clock:**

Use vocabulary such as o' clock, am/pm, morning, afternoon, noon and midday



Activity	Monday	Tuesday	Wednesday	Thursday	Friday
Wake up	7.35 am				
Brush teeth					
Leave for school					

This is a really easy one to practise at home.

Whenever you are doing something, asks your child to tell you what time it is.

You might have a chart where they can then record the time they: had breakfast, brushed their teeth, got home from school etc

You will need to focus on the 5 minute intervals and how we can count around in 5's to tell the time. Also make sure you encourage the use of AM and PM.

Key words: AM, PM, analogue, quarter to, quarter past, minute, hour, second, midday, midnight, morning, afternoon



## Identify and describe the properties of 2-D shapes:

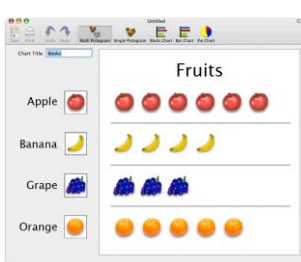
Create a 'shape hunt' game for your child. See where they can find them around the house/garden.

Challenge your children to find as many as they can. Once they have found them, they need to tell you about their properties

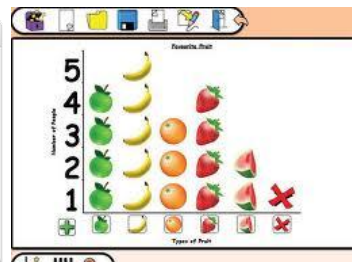


Key Words: Sides, corners, angles

## Interpret and present data using charts, pictograms and tables:



Pictograms



Bar charts

Fruit	Tally
Grapes	
Bananas	
Oranges	
Strawberries	
Apples	

Tally charts

Carry out simple surveys with your child – either with people you know around the house – and get them to create and talk about a range of ways of presenting the information

Key words: categories, groups, tally, record, axis,

## Step 2

### Read and write numerals and in words:

I mixed up my word and number signs  
can you help me match them up again?

Write the correct numbers next to the words.

Nine hundred and twenty three	923	Two hundred and one	
One hundred and thirty seven		Seven hundred and fifty three	
Two hundred and sixty nine		Six hundred and four	
Eight hundred and eleven	811	Nine hundred and twenty one	

~~923~~   269   137   ~~811~~   604   753   201   921

Create mix and match activities. Once they are confident, get your child to practise writing both numerals and word versions of the number.

### Add and subtract numbers with up to 3 digits:

By year 3, your child will need to be using formal written method to add and subtract numbers.

#### Addition

H	T	U
3	2	1
+	1	2
<hr/>		
<hr/>		

H	T	U
3	2	1
+	1	2
<hr/>		
		4
<hr/>		

H	T	U
3	2	1
+	1	2
<hr/>		
4	4	4
<hr/>		

You must always start from the right and work towards the left.

When your columns add up to more than 9, we need to start carrying 10's to the next column. The units of the column total go in the answer bar, and the 10 is carried to the next column to be added

E.g –  $7 + 4 = 11$ . Place the 1 in units column and carry the ten over to the tens column

H	T	U
3	6	4
+	2	2
<hr/>		
<hr/>		

H	T	U
	1	
3	6	4
+	2	2
<hr/>		
		1
<hr/>		

H	T	U
1	1	
2	7	6
+	5	4
<hr/>		
8	2	1
<hr/>		

This is then repeated should the next column add to more than 9.

## Subtraction

Children need to be able to subtract numbers from each other by placing the larger number on top of the smaller number in the correct columns.

654  
- 321  
3

Subtract the right-hand column of digits.

654  
- 321  
33

Subtract the next column of digits (moving left).

654  
- 321  
333

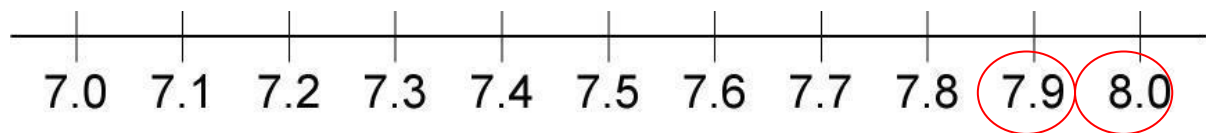
Subtract the final column of digits (moving left).

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Key words: Column, hundreds, tens, units, carry, total,

### Count up and down in tenths:


$$7.9 + 0.1 = 8.0, \text{ NOT } 7.10$$



When counting up in tenths, it's important for your child to understand that 10 tenths is the same as 1, so after reaching 9 tenths, the next tenth added will create another whole, therefore the unit number will increase by 1.

Key words: tenths, decimal, part of a whole

## Divide numbers or quantities by 10:

Th	H	T	U	.Tths	Thths
		3	2	.	
					
				3	2
$32 \div 10 =$					

When dividing by 10, your digits move 1 place to the right on a place value chart, as the number gets 10 times smaller. You don't just take off a zero!

**Key words:** Place value, decimal place, digits

**Tell and write the time from 12-hour and 24-hour clocks:**



When supporting your child read 12 and 24 hour clock, it is important they understand that 10pm is 22 hour after 0: 00 / midnight.

When converting from 12 to 24 hour time, we add an extra 12 hours to the time, to take into account the 12 hour that have past before midday. We only add 12 hours to the time when it is a PM time.

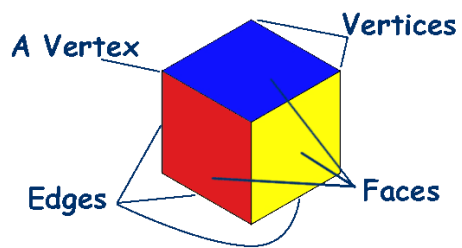
**Key words:** AM, PM, analogue, quarter to, quarter past, minute, hour, second, midday, midnight, morning, afternoon

**Using Roman numerals from I to XII:**

1	I
2	II
3	III
4	IV
5	V
6	VI
7	VII
8	VIII
9	IX
10	X
11	XI
12	XII
13	XIII

Your child is now required to know how to read and use Roman numerals from 1 – 12.

## Recognise 3-D shapes:



Your child will need to be able to describe common 3D shapes, using their properties.



Sphere



Cube



Cuboid



Cylinder



Hexagonal Prism



Cone



Square-based pyramid



Triangular-based pyramid



Triangular prism

### Step 3

#### **Four digit addition and subtraction:**

Add and subtract numbers with up to 4 digits using formal written methods of column addition and subtraction.

The method is the same as 3 digit numbers in the **Yellow** set.

#### **Use inverse operations to check answers:**

You need to encourage your children to check their answers by using the inverse operation. For example:

$$48 - 14 = 34 \quad \text{the inverse is} \quad 34 + 14 = 48$$

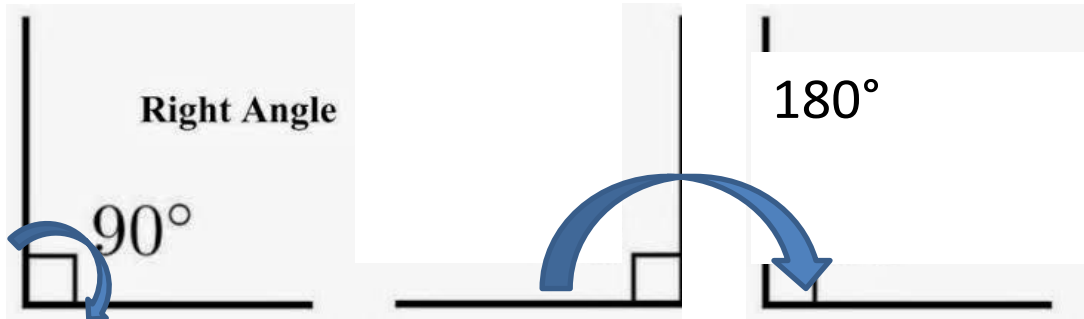
$$56 + 9 = 65 \quad \text{the inverse is} \quad 65 - 9 = 56$$

$$48 \div 8 = 6 \quad \text{the inverse is} \quad 8 \times 6 = 48$$

$$9 \times 7 = 63 \quad \text{the inverse is} \quad 63 \div 7 = 9$$
$$63 \div 9 = 7$$



**Identify right angles:**



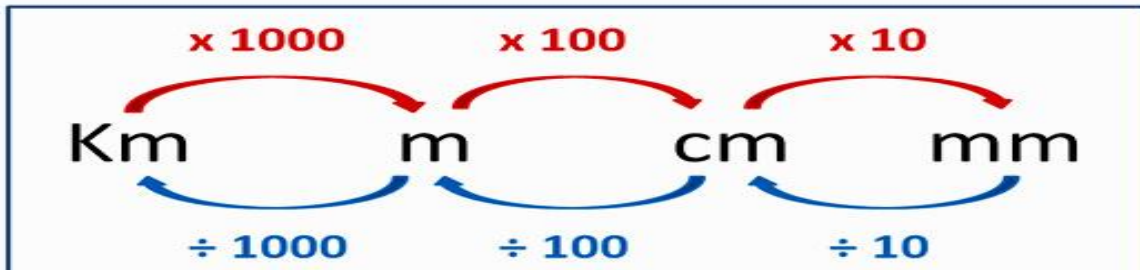
Your child needs to be able to identify right angles (90 degrees) and should know that 2 right angle turns make 180 degrees.

**Key words:** Turn, angle, right angle, straight line, degrees

## Convert between different units of measure:

### Converting LENGTH Units

It is easiest to use a conversion look-up diagram like the one below.



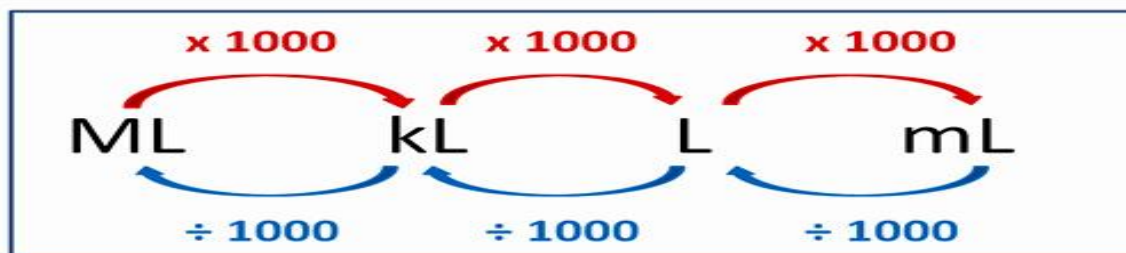
5km = ? m **Need to  $\times 1000$**   
120cm = ? m **Need to  $\div 100$**

5  $\times 1000$  = 5000m ✓  
120  $\div 100$  = 1.2m ✓

### Converting CAPACITY Units

The Volume of Liquids and Solids is usually measured as a "Capacity".

In the Metric System, Capacity is based on the Litre or "L" unit.



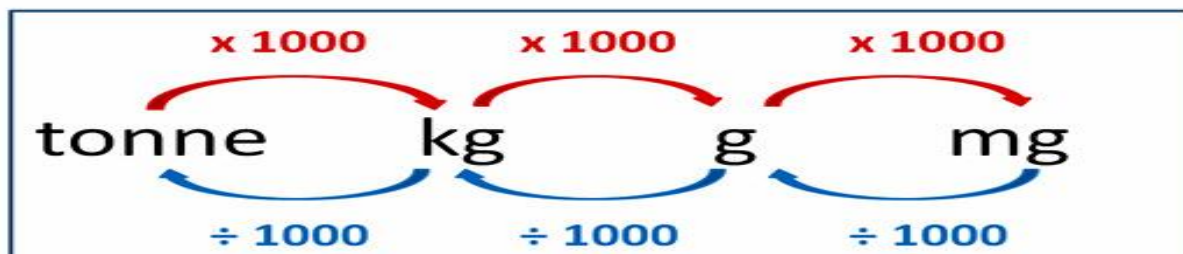
CAPACITY conversions use 1000's, and usually create fairly large results.

32ML = ? L **Need to  $\times 1000$  twice**    32  $\times 1000 \times 1000$  = 32 000 000 L ✓

### Converting MASS Units

The Mass for weighing objects in Metric Units is similar to Capacity for Volumes.

In the Metric System, Mass is based on the Gram or "g" unit.



Mass conversions use 1000's, and usually create fairly large results.

1.6 tonne = ? kg **Need to  $\times 1000$**     1.6  $\times 1000$  = 1600 kg ✓