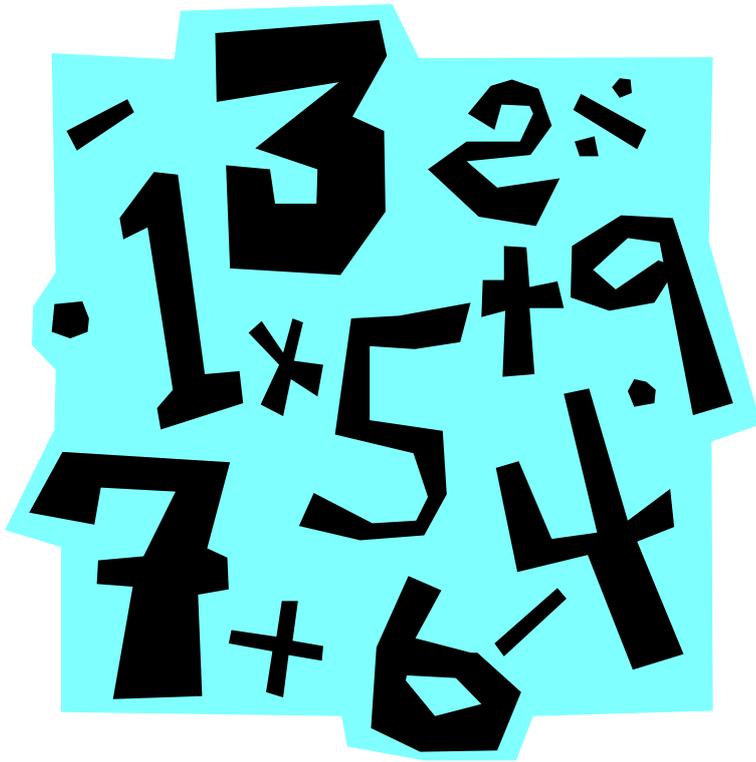# Maths at
Manor Park Primary Academy

How to help your child in
Year 3

At Manor Park School we use the principles of Singapore Maths to teach maths; which incorporates the use of practical resources and then moving on to written methods, problem solving and group work. New concepts are introduced through a concrete – pictorial – abstract approach (C-P-A)

How we teach addition, subtraction, multiplication and division

Addition

<u>Mental addition</u>

Mentally add ones to any 3 digit number E.g. 345+1=

Mentally add tens to any 3 digit number E.g. 678+10=

Mentally add hundreds to any 3 digit number E.g. 762+100=

<u>Written methods</u>

In Year 2, your child learnt to use the formal written addition method for 2 digit numbers with columns. They will continue to use this method in year 3 with 3 digit numbers. They will start with simple adding and then move onto adding with renaming. We use Dienes alongside this to practically show the children how this works.

<u>Adding using the extended column method</u>

Simple adding:

Add 432 and 521.

Step 1   Add the ones.
2 ones + 1 one = 3 ones

	h	t	o
	4	3	2
+	5	2	1
			3

Step 2   Add the tens.
3 tens + 2 tens = 5 tens

	h	t	o
	4	3	2
+	5	2	1
		5	3

Step 3   Add the hundreds.
4 hundreds + 5 hundreds = 9 hundreds

	h	t	o
	4	3	2
+	5	2	1
	9	5	3

Adding with renaming:

Add 278 and 349.

Step 1   Add the ones.
8 ones + 9 ones = 17 ones
Regroup the ones.
17 ones = 1 ten + 7 ones

The **sum** is the the total of 278 and 349.
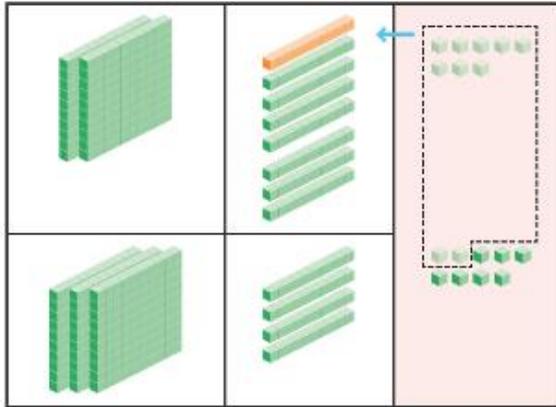
	h	t	o
	2	$\overset{1}{7}$	8
+	3	4	9
			7

Step 2   Add the tens.
1 ten + 7 tens + 4 tens = 12 tens
Regroup the tens.
12 tens = 1 hundred + 2 tens
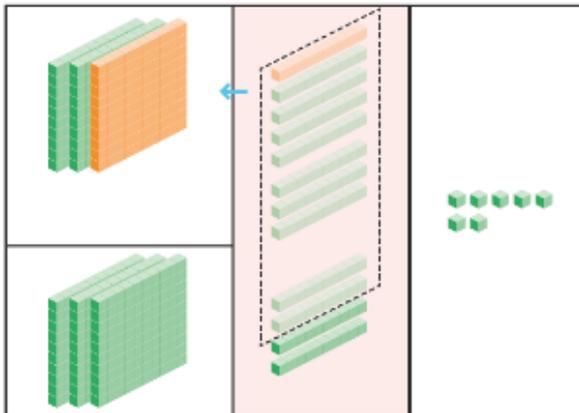
	h	t	o
	$\overset{1}{2}$	$\overset{1}{7}$	8
+	3	4	9
		2	7

Step 3   Add the hundreds.
1 hundred + 2 hundreds + 3 hundreds = 6 hundreds
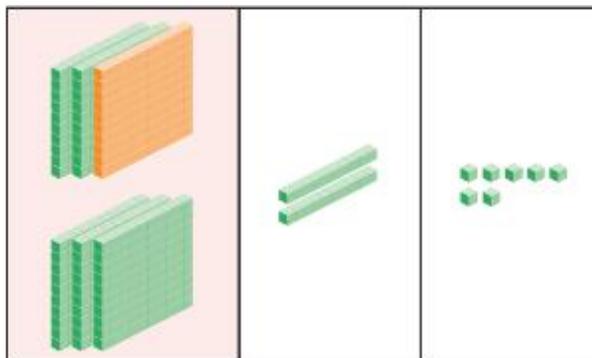
	h	t	o
	$\overset{1}{2}$	$\overset{1}{7}$	8
+	3	4	9
	6	2	7

278 + 349 = 627

Addition vocabulary: plus, add, and, more than, more, sum, renaming, altogether, total

Subtraction

Mental Subtraction
Mentally subtract ones from any 3 digit number E.g. 345-1=
Mentally subtract tens from any 3 digit number E.g. 678-10=
Mentally subtract hundreds from any 3 digit number E.g. 762-100=

Written methods
In Year 2, your child learnt to use the formal written subtraction method for 2 digit numbers with columns. They will continue to use this method in Year 3 with 3 digit numbers. They will start with simple subtracting and then move onto subtracting with renaming. We use this alongside Dienes to practically show the children how this works.

Subtraction using the extended column method
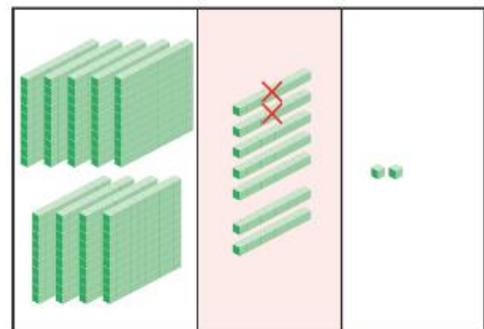
Simple subtracting:

Subtract 723 from 975.
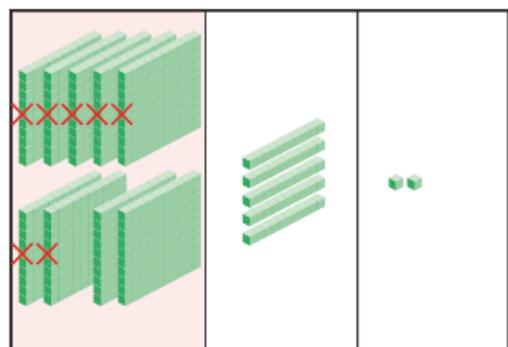
Step 1 Subtract the ones.
5 ones − 3 ones = 2 ones
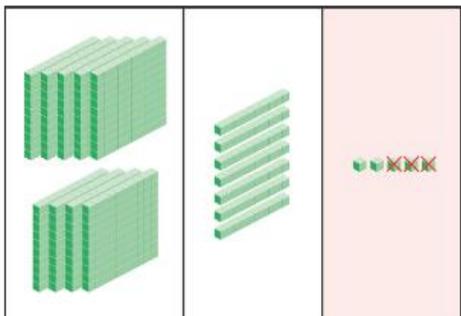
Step 2 Subtract the tens.
7 tens − 2 tens = 5 tens

Step 3 Subtract the hundreds.
9 hundreds − 7 hundreds = 2 hundreds

975 − 723 = 252

Subtracting with renaming:

Subtract 135 from 608.

608

500 100 8

Step 1 Subtract the ones.
8 ones − 5 ones = 3 ones
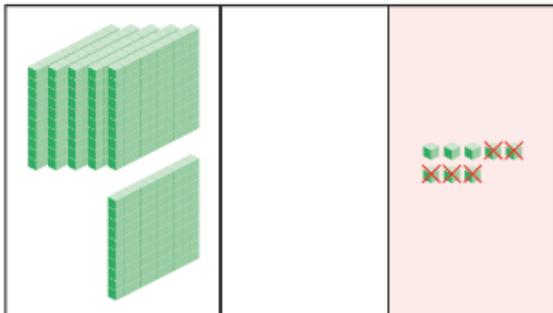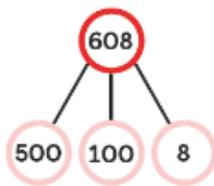
h	t	o
6	0	8
− 1	3	5
		3

Step 2 Regroup 1 hundred into 10 tens.
Subtract the tens.
10 tens − 3 tens = 7 tens
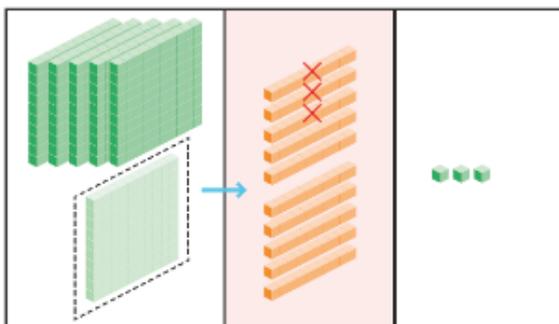
h	t	o
$^5\!6$	$^{10}\!0$	8
− 1	3	5
	7	3

Step 3 Subtract the hundreds.
5 hundreds − 1 hundred = 4 hundreds
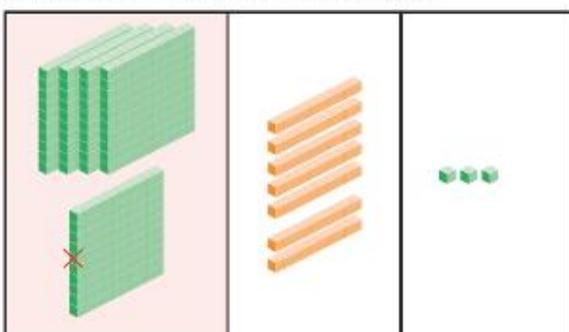
h	t	o
$^5\!6$	$^{10}\!0$	8
− 1	3	5
4	7	3

608 − 135 = 473

Subtraction vocabulary: subtract, minus, take away, less than, less, difference (e.g. What is the difference between 15 and 12? Answer=3), renaming, exchanging, regrouping

Multiplication

<u>Mental Multiplication</u>

In year 2, the children learnt multiplication facts for the 2s, 5s and 10s multiplication tables. In year 3, children are expected to learn multiplication facts for the 3s, 4s and 8s multiplication tables.

<u>Written Methods</u>

In year 3, your child will begin to multiply 2 digit numbers by a 1 digit number. They will start with simple multiplication of 2 digit numbers, then begin to multiply with regrouping.

<u>Simple Multiplying</u>

	t	o
	2	3
×		2
		6
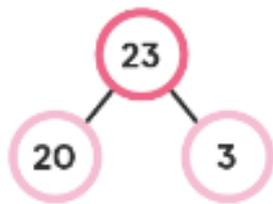
Step 1   Multiply the ones by 2.

3 ones × 2 = 6 ones

	t	o
	2	3
×		2
		6
	4	0

Step 2   Multiply the tens by 2.

2 tens × 2 = 4 tens

Step 3   Add the products.

6 + 40 = 46

	t	o
	2	3
×		2
		6
+	4	0
	4	6

23 × 2 = 46

There are 46 children in the 2 classes.

Multiplying with regrouping

There are 4 groups of 23 fish.
How do we multiply 23 by 4?
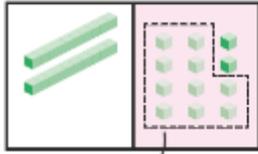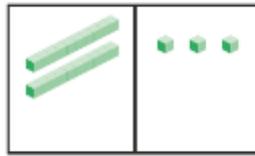
4 ones × 3 = 12 ones
12 ones = 1 ten 2 ones
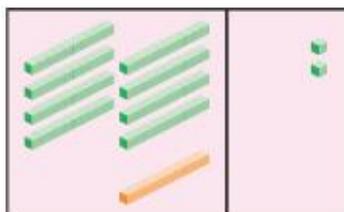
Step 1   Multiply the ones by 4.

	t	o
	2	3
×		4
	1	2
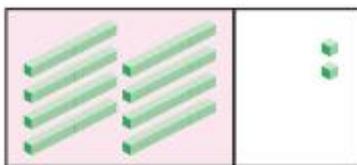
Step 2   Multiply the tens by 4.

2 tens × 4 = 8 tens

	t	o
	2	3
×		4
	1	2
	8	0

Step 3   Add the products.

12 + 80 = 92

	t	o
	2	3
×		4
	1	2
+	8	0
	9	2

23 × 4 = 92

Multiplication Vocabulary: multiply, times, groups of, lots of, multiple, array, repeated addition, regrouping

Division

Mental Division

In year 2, the children learnt division facts for the 2s, 5s and 10s multiplication tables. In year 3, children are expected to learn division facts for the 3s, 4s and 8s multiplication tables. This means your child will learn how to divide by these numbers, as well as those they learnt in year 2.
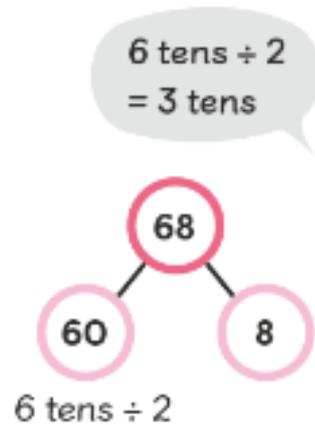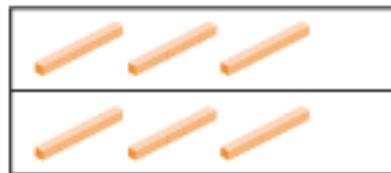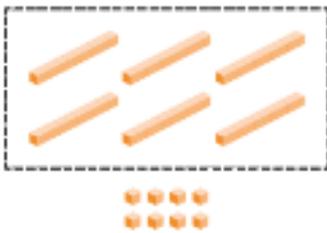
Written methods

In year 3, your child will learn to divide 2 digit numbers by 1 digit numbers, beginning with simple dividing, then move onto dividing with regrouping.

Simple Dividing

To find the number of sweets each person gets, divide 68 by 2.

$68 \div 2 = \boxed{}$

Step 1   Divide 6 tens by 2.

6 tens ÷ 2
= 3 tens

68
60   8

6 tens ÷ 2

Step 2   Divide 8 ones by 2.

8 ones ÷ 2
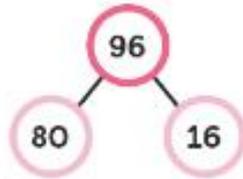= 4 ones

68
60   8

6 tens ÷ 2   8 ones ÷ 2
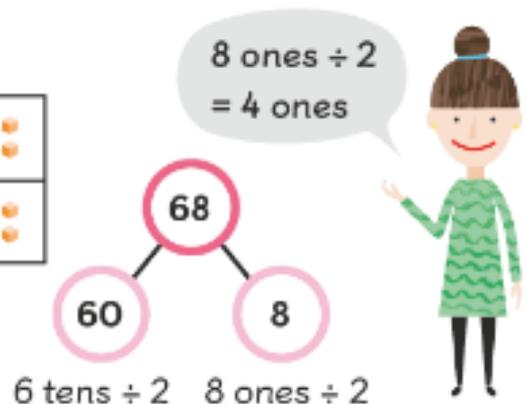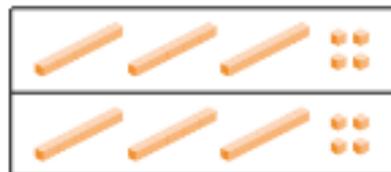
Step 3   Add the results.
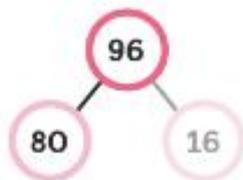
$68 \div 2 = 30 + 4 = 34$
Each person gets 34 sweets.

Dividing with regrouping

96

80   16

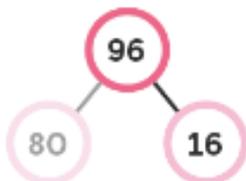First, I take 80 from 96. Then, I take 16 from the remaining 16.

$$\begin{array}{r} 1\ \ 2 \\ 8\ \overline{\smash{\big)}\ 9\ \ 6} \\ -\ 8\ \ 0 \\ \hline 1\ \ 6 \\ -\ 1\ \ 6 \\ \hline 0 \end{array}$$

96

80   16

1 ten

$$\begin{array}{r} 1\ \ 2 \\ 8\ \overline{\smash{\big)}\ 9\ \ 6} \\ -\ 8\ \ 0 \\ \hline 1\ \ 6 \\ -\ 1\ \ 6 \\ \hline 0 \end{array}$$

8 tens ÷ 8 = 1 ten

96

80   16

2 ones

$$\begin{array}{r} 1\ \ 2 \\ 8\ \overline{\smash{\big)}\ 9\ \ 6} \\ -\ 8\ \ 0 \\ \hline 1\ \ 6 \\ -\ 1\ \ 6 \\ \hline 0 \end{array}$$

16 ones ÷ 8 = 2 ones

1 ten + 2 ones = [12]

96 ÷ 8 = 12

$$\begin{array}{r} 1\ \ 2 \\ 8\ \overline{\smash{\big)}\ 9\ \ 6} \\ -\ 8\ \ 0 \\ \hline 1\ \ 6 \\ -\ 1\ \ 6 \\ \hline 0 \end{array}$$

Division vocabulary: divide, shared, how many groups of, regrouping, partitioning

Ways to help your child at home

<u>Games</u>

Play games like snakes and ladders that involve counting, addition and subtraction. Play card games that require and practise mental agility like Pontoon – making numbers to 20.

<u>Number</u>

Practice:

- Counting in 2's, 3's, 4's, 5's, 8's, 10's and 100's (while out walking count on or back in steps of 10,100 etc).
- Number bonds to 20 (e.g. 18+2, 3+17 etc)
- Doubles and halves of numbers to 30 (Double 15 and Half of 30)
- Addition and subtraction facts to 20 (Also in worded questions such as: There were 19 sweets, I ate 15 how many are there left?)
- x2, x3, x4, x5, x8 and x10 times tables
- Make a card game (multiplication table on one card, answer on another. Match them up-like in snap or matching pairs).
- Writing and reading numbers to 1000 (Throw three dice or choose three playing cards write down in words and figures the three digit number)
- Draw and colour in a half, a quarter and three quarters of different shapes. Allow children to carry out practical activities such as cutting cakes, pizzas, pies etc into different fractions

<u>Money</u>

- Ask children to recognise the different coins/notes
- Ask which combinations of coins could be used to make different amounts of money
- Ask children to add sums of money and work out change
- Allow children to experience the use of real money

<u>Measures and shape</u>

- Point out the time at different times of the day e.g. lunch, bedtime. Ask questions such as: What time will it be in …. ? How long is it until ….
- Can children tell the time? Link to TV programmes and programming the video/DVD. Can they estimate a length of time?
- Use a mirror to see whether shapes are symmetrical
- Look for right angles (square corners) around the house. See if they can identify 10 right angles in each room.
- Play shape bingo. At home or on a journey, how many circles, squares etc. can they spot? Give them different point values.
- When cooking encourage to children estimate different measures? Do they know what 10 grams/10 ml/1 kilogram looks/feels like?