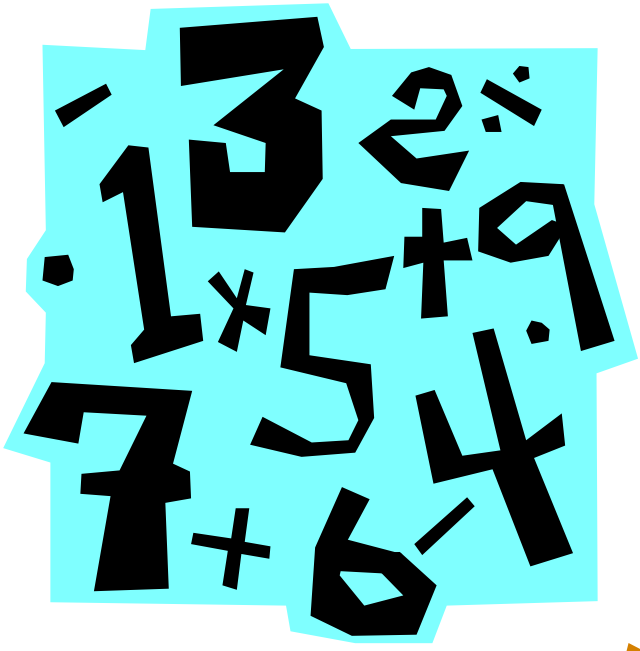
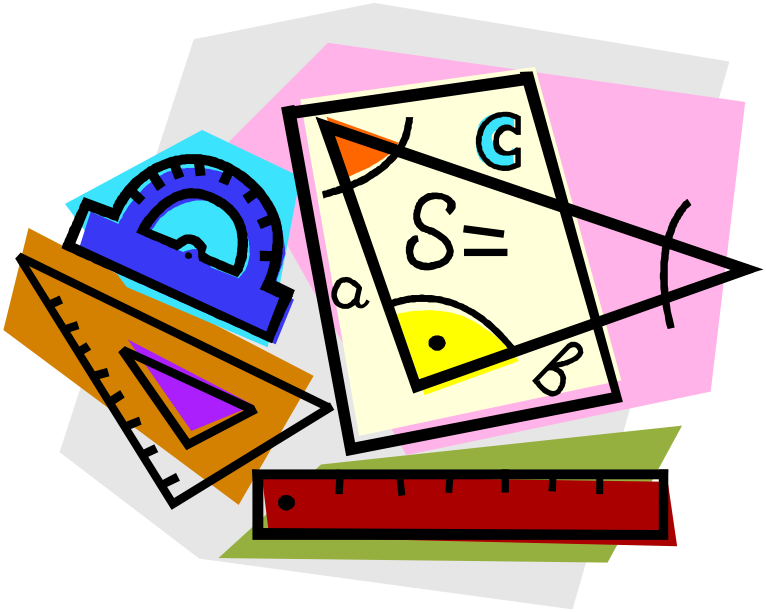
Maths at
Manor Park Primary Academy





How to help your child in Year 5

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)

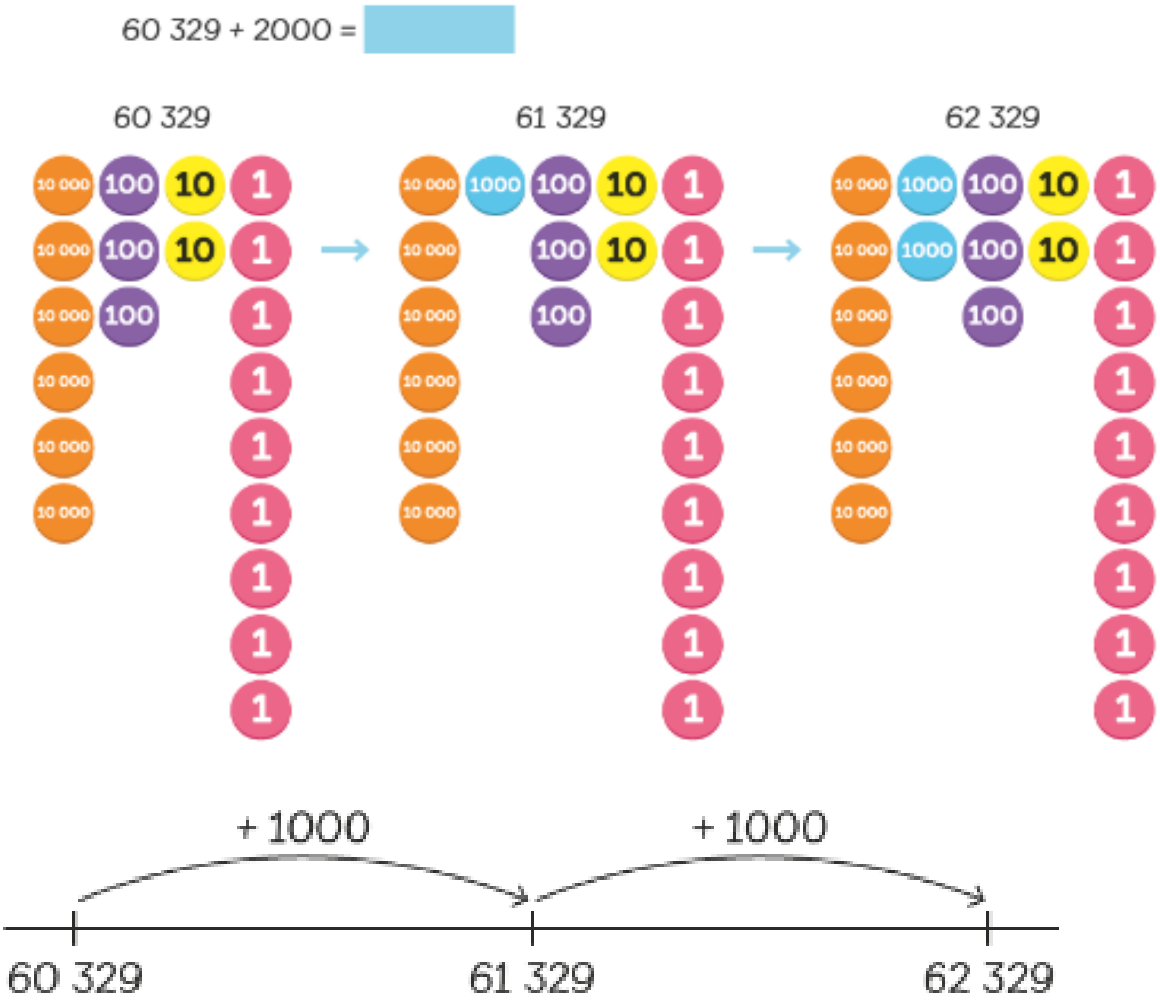
How we teach addition, subtraction, multiplication and division

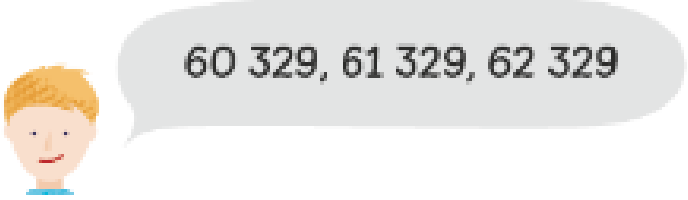
Addition

Mental Facts:

- Add numbers mentally with increasingly large numbers.

First children will add an amount using number discs to show how they can mentally solve these problems.

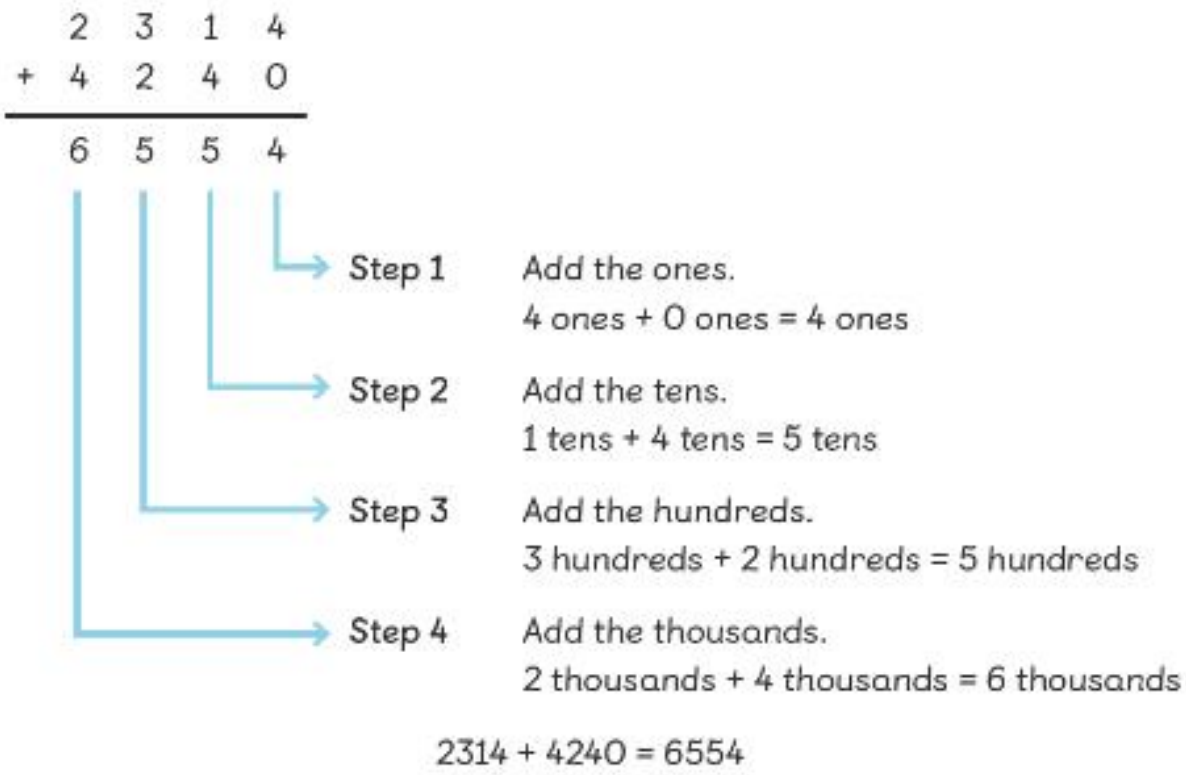




We also demonstrate this using a number line.

In Year 4, your child learnt to use the formal written addition method for 4 digit numbers with columns. They will continue this method in Year 5 with numbers up to 1,000,000. They will start with simple addition and then move onto adding with renaming, We use dienes and number discs alongside this to practically show the children how this works.

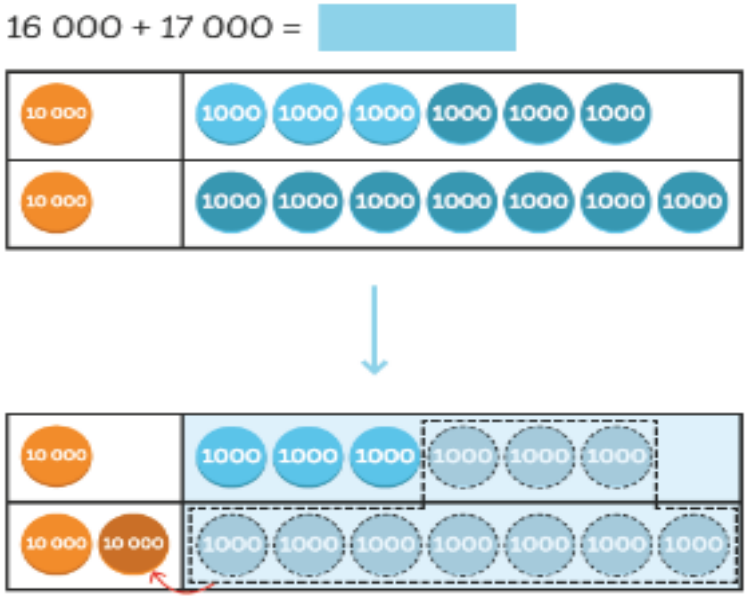
Adding without renaming



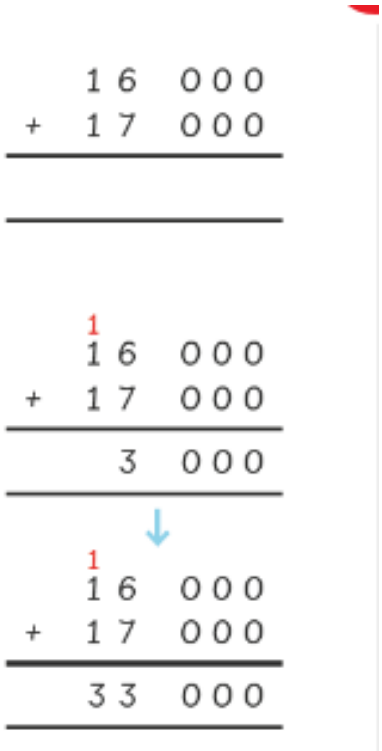
2314 + 4240 = 6554

Adding with renaming

First children are taught to use number discs to add larger numbers.



Children then move onto using the formal written method to solve problems with additon. E.g.



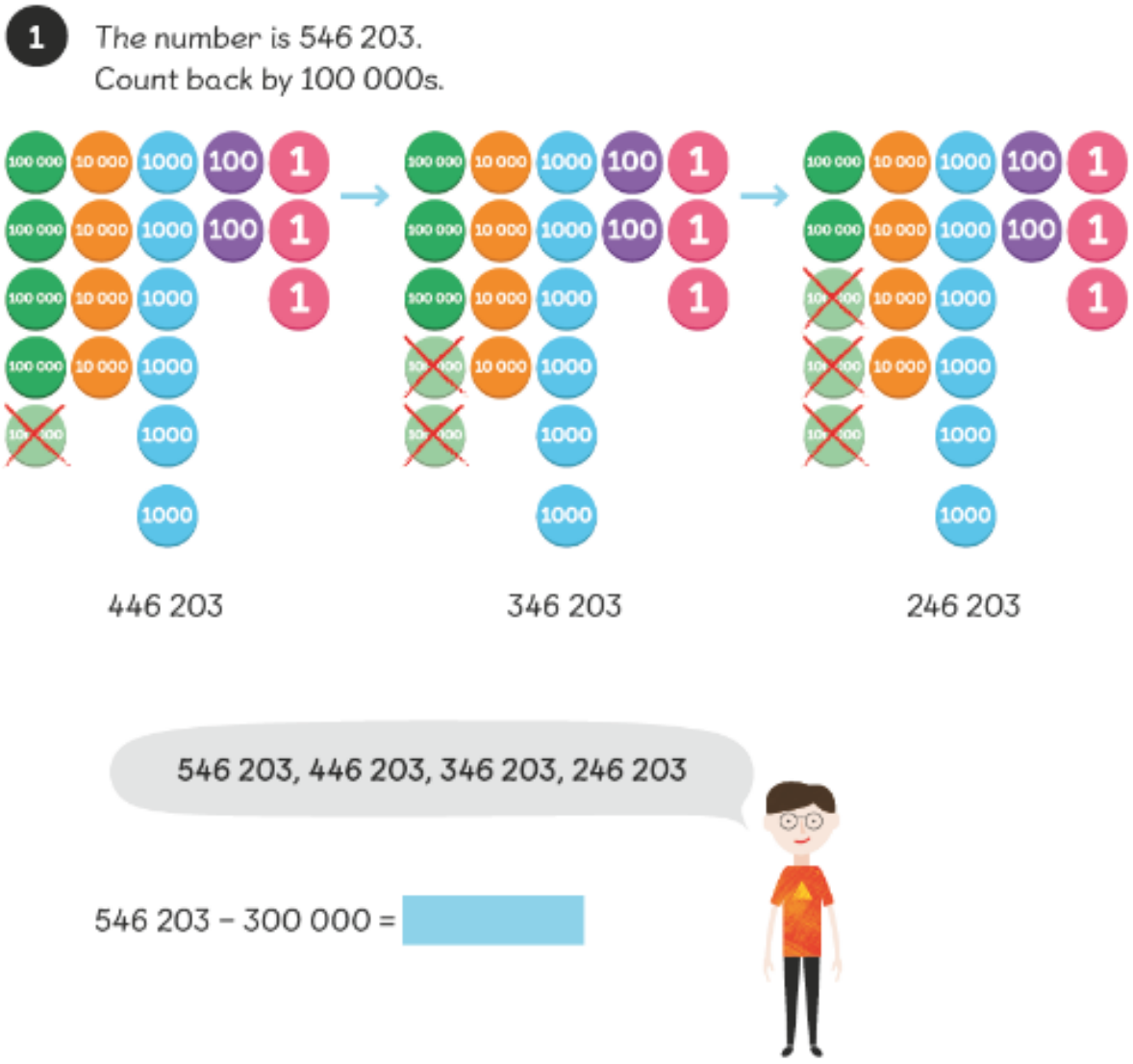
Addition vocabulary: plus, add, and, more than, more, sum.

Subtraction

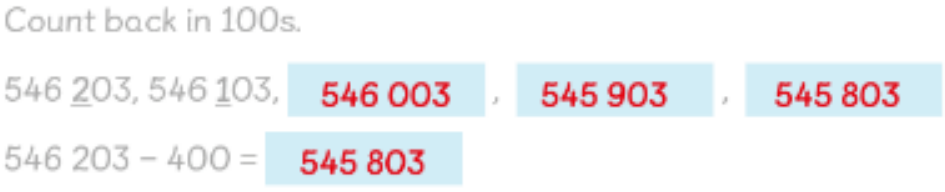
Mental Facts:

- Subtract numbers mentally with increasingly large numbers.

First children will subtract an amount using number discs to show how they can mentally solve these problems.

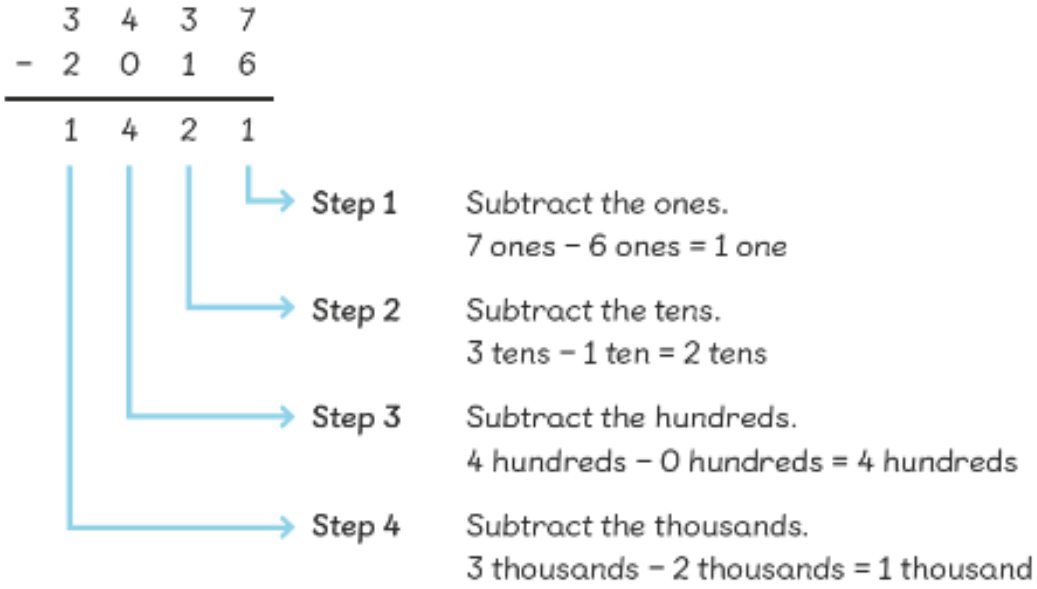


They will then practise this by counting back and when ready, solve mentally.



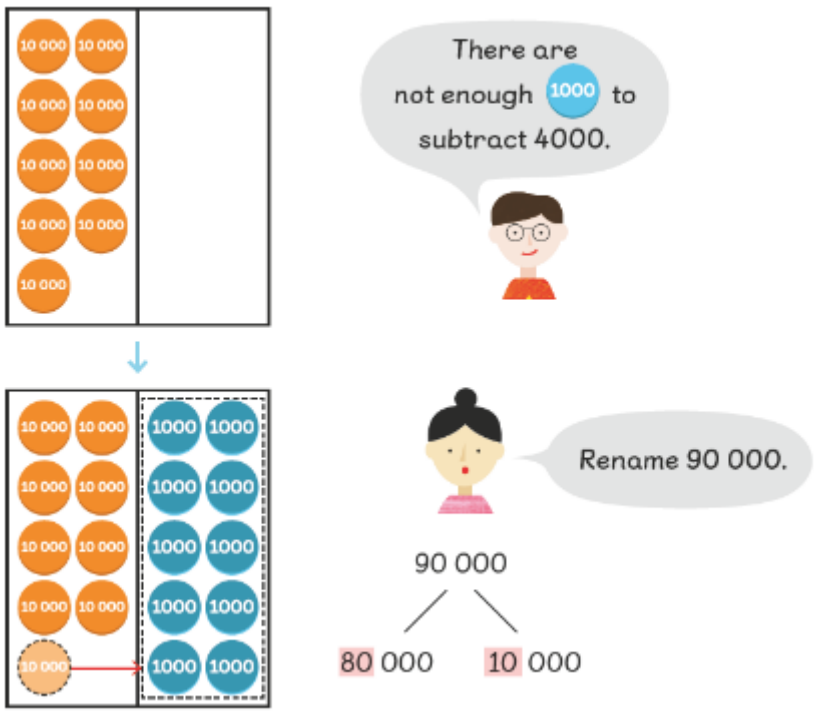
Subtraction vocabulary: subtract, minus, take away, less than, less, difference (e.g. What is the difference between 15 and 12? Answer=3)

Subtracting without renaming



Subtracting with renaming

First, children will solve subtraction problems where they need to regroup and rename using number discs.



They will then move onto using the formal method of subtraction with larger numbers using regrouping and renaming.

$$\begin{array}{r} {\scriptstyle 8\ 10} \\ \cancel{9}\,\cancel{0}\ 0\,0\,0 \\ -\ 5\,4\ 0\,0\,0 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} {\scriptstyle 8\ 10} \\ \cancel{9}\,\cancel{0}\ 0\,0\,0 \\ -\ 5\,4\ 0\,0\,0 \\ \hline 3\,6\ 0\,0\,0 \\ \hline \end{array}$$

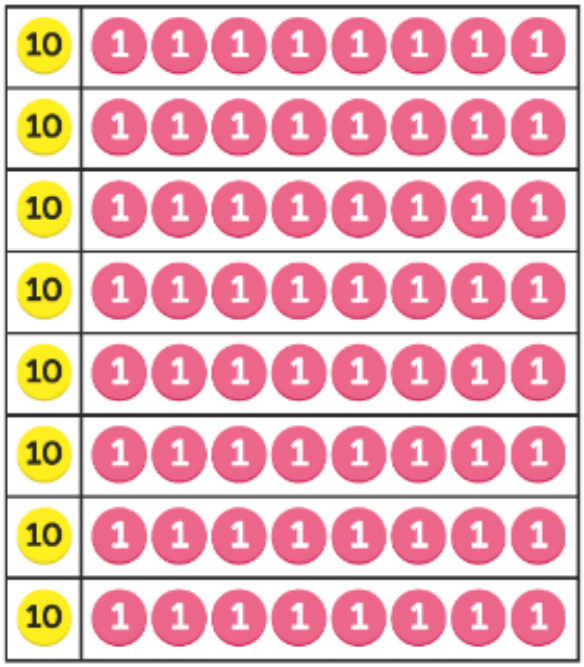
Multiplication

Mental Facts:
Pupils are expected to know all multiplication facts to 12x12.

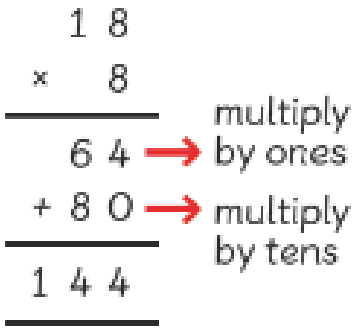
Your child may be working on one of the following methods:

Expanded Multiplication Method

Children begin by representing multiplication problems using number discs.



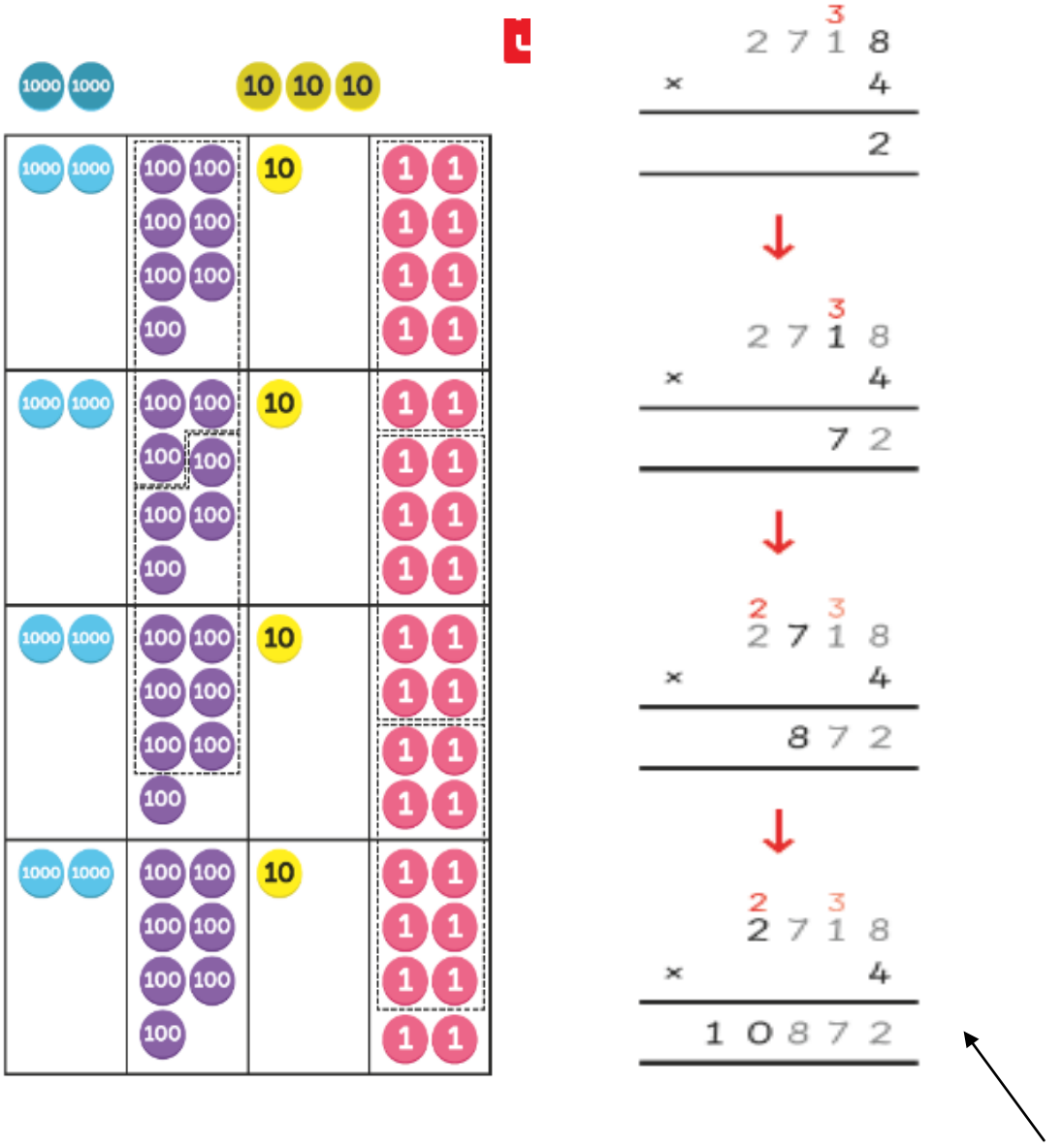
They then move onto the expanded multiplication method.



Short method for multiplication of 4 digit numbers by a 1 digit number

$2718 \times 4 =$ ☐

Children will begin by enhancing their understanding of multiplication by demonstrating a problem with number discs.



They will then demonstrate their understanding of what they have done with the discs by representing the same problem as a formal, written method.

Multiplying 2 digit numbers by 2 digit numbers

Children learn to multiply 2 digit numbers by 2 digit numbers by partitioning through partitioning.

14 × 12 = ☐

10	1 1

14 × 10
= 14 × 1 ten
= 14 tens

14 × 10 = 140
14 × 2 = 28
14 × 12 = 168

14 × 12 = 168

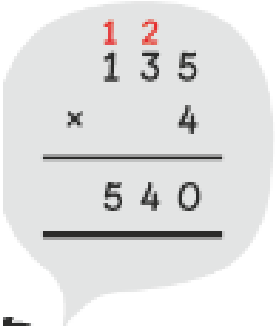
Multiplying 3 digit numbers by 2 digit numbers

	1	3	5
×		2	4

First children multiply by the tens.

135 × 10 = 1350
135 × 20 = 2700

They then multiply by the ones.



	1	2	
	1	3	5
×			4
	5	4	0

		1	3	5
×			2	4
		5	4	0
+	2	7	0	0
	3	2	4	0

Then finally add the answers together.

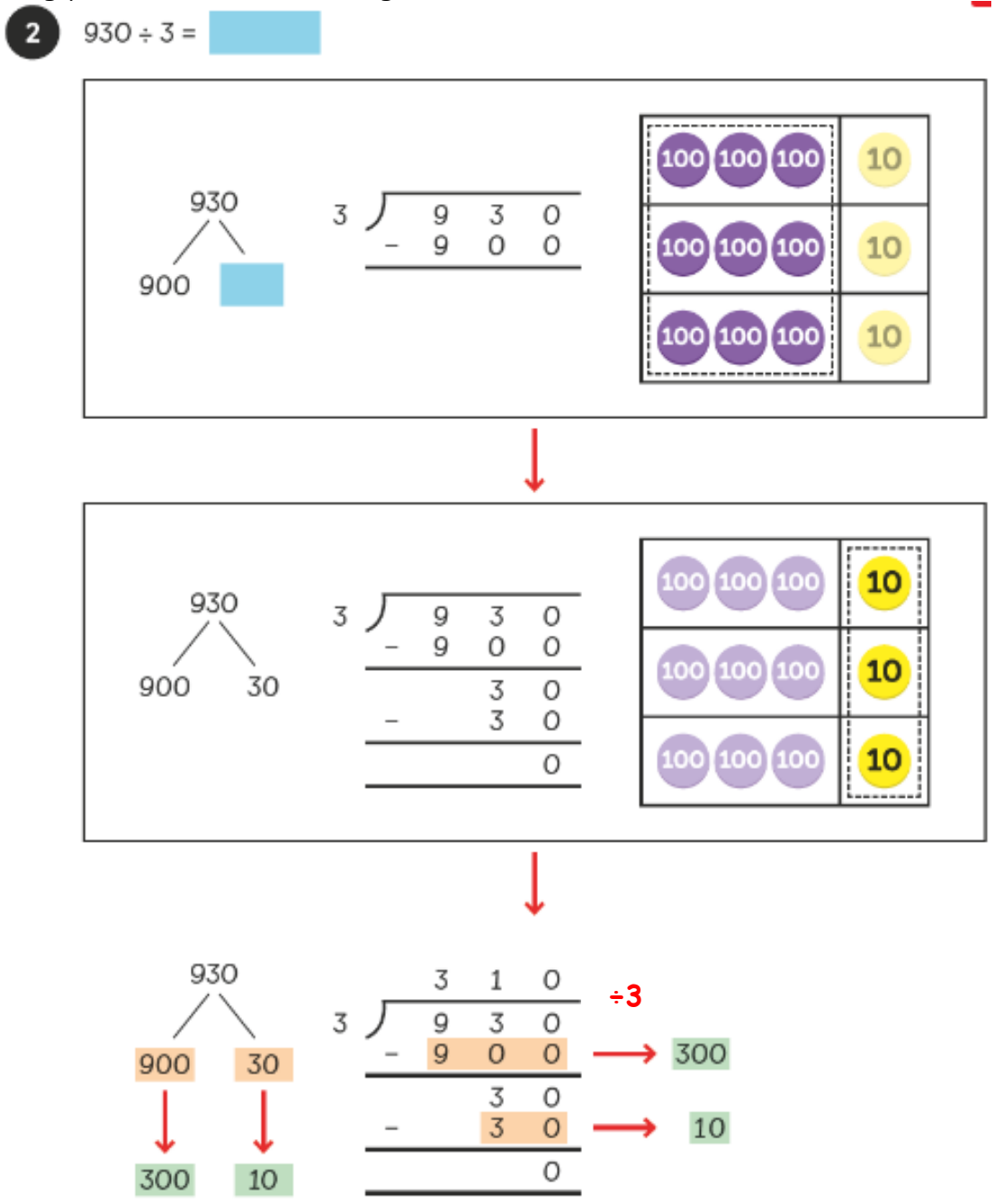
Multiplication Vocabulary: multiply, times, groups of, lots of, multiple, array, repeated addition.

Division

Mental Facts:
Pupils are expected to derive all division facts using knowledge of multiplication facts to 12x12.

Your child may be working on one of the following methods:

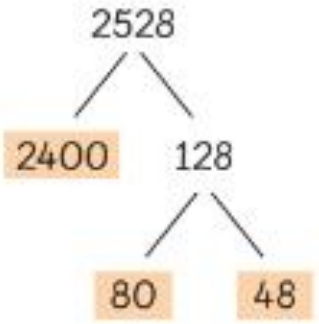
Children begin by using number discs for division and diving them into equal groups. Once comfortable with this, children move onto using the formal method for long division, demonstrating practical materials alongside this if needed.



First the children parrition their number to see what they can subtract. Children are shown that they can only subtract by a divisor of the number they are dividing by. Once they have subtracted what they can and are left with 0, they divide what they took away by the divisor, then add these together.

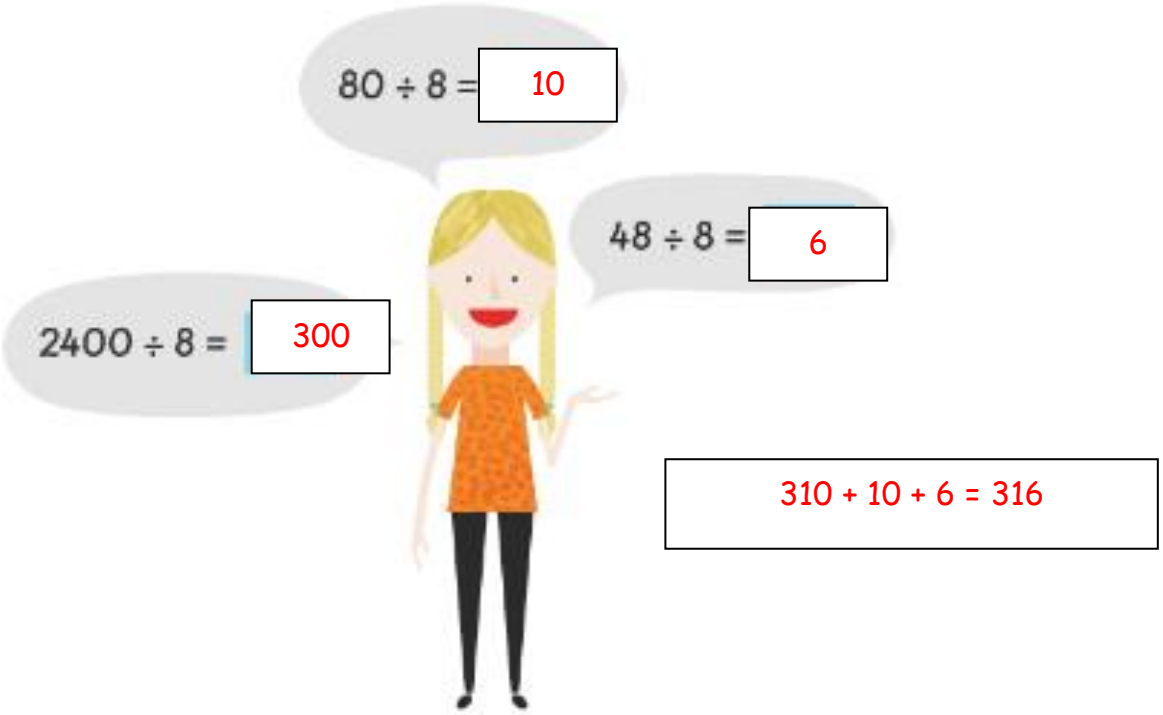
Another example..

2528 ml ÷ 8 = 316



316

$$
\begin{array}{r|l}
8 & 2528 \\
- & 2400 \\
\hline
 & 128 \\
- & 80 \\
\hline
 & 48 \\
- & 48 \\
\hline
 & 0
\end{array}
$$



Division vocabulary: divide, shared, how many groups of…, remainder

Ways to help your child at home.

Games

Play board games like Monopoly. Play darts and snooker, they are good ways to help children get faster at mental maths. Many card games and dice games encourage children to calculate mentally, such as: Yahtzee, Rummy, Whist, Pontoon, Newmarket, Cribbage

Number

- Count in 6s, 7s, 8s, 9s, 10s, 25s, 1000s and 10,000s.
- Count to 100 only stating prime numbers.
- Practice all times tables to 12x12
- Choose 5 items from a catalogue and use a calculator to work out how much they would cost if they were reduced by 10%, 20% etc.
- Play tables 'Millionaire'. Devise questions for each stage including tables backwards e.g. how many 8s in 56?
- Write fractions and decimals on different blank playing cards and match them.
- Make up word problems in different categories e.g. time, money.
- Read Roman numeral dates on buildings and statues.

Money

- Allow children to experience the use of real money
- Using different holiday brochures calculate how much it would cost for a holiday to different locations. Do different companies offer the same holiday? Which is cheaper? How much would it cost for families of different sizes?

- Use a catalogue like Argos and ask children to choose 5 items under £20. Calculate how much they cost and the change from £100.
- Give your child a budget for the week/month – encourage them to keep a record of spending
- Plan and cost a party within a given budget. Essentials? How many people can you cater for?

Measures and shape

- Allow children to redesign their bedroom. Measure the room. Look at dimensions of furniture in a catalogue. What will fit? Calculate cost and draw a plan. Children could then redesign their room using converted measures.

- Look at different recipes and calculate the quantities needed if you had twice as many people, half as many people, one more person, one less etc.
- Read maps. Work out distances using scale
- Involve children with everyday situations that involve time e.g. setting the video, looking at bus timetable, estimating journey times.
- Estimate the weight and volume of ingredients when cooking before measuring using equipment.
- Work out the area and perimeter of different rooms in the house or garden.