Supporting Your Child with Maths at Home

Years 3 and 4

Introduction

This guide has been designed to explain how your child is taught to solve mathematical problems in school and show ways you can support them at home. These skills are taught alongside many other ideas including mental strategies, counting, singing, group activities, practical methods and maths in the outdoors.

Why do you need to know?

When looking through this guide, you may find that the children are taught to solve mathematical problems in ways that look different from the ways you may remember! Often children encounter frustration and difficulty when receiving mixed methods from home and school, and for this reason, we have produced a guide to help you fully support your child in a way that will match the methods their teachers are using in school.

What should you do?

Before any mental or written calculation is undertaken, children are encouraged to discuss which method of solving the problem would be best. And proceed through a number of steps whenever possible. In school the children will be asked to Read the question, identify the maths involved, estimate an answer, calculate and finally check work is correct.
At home…

Talk it through
How would *they* solve this and get your child to explain her thinking.

1. READ
Read the question carefully.

2. Identify
What is the maths? What is needed? + - x or ÷? Should I do it in my head or will I need a written strategy?

3. Estimate
Read the question carefully.

4. Calculate
Use their methods

5. Check
Ask, "Is it a sensible answer?"

Addition

Children are encouraged to use a wide variety of mental calculation strategies and also to select when they think a written strategy, as is detailed here, is appropriate.

Year 3

In Year 3 children are encouraged to solve problems either by **partitioning** the numbers
or...
By placing numbers on a **number line** to count up in comfortable sized steps.

Sarah has 52 stickers and is given another 37 by her brother Charly.

In total, how many does she have?

Partitioning

52 + 37 = 89

(50 + 30) + (2 + 7)
80 + 9

In this example, the children separate the numbers 52 and 37 into **TENS** and **ONES**.

The tens are added to make 80 and the ones are added to make 9.

80 and 9 are then recombined to find the final answer.

The Number Line

52 + 37

+10   +10   +10   +7

52   62   72   82   89

These steps should be taken in sizes the children feel comfortable with.
For example, a child may add 30 in one step followed by the 7.

Year 4

In Year 4 the children may continue to use the number line to add, but will quickly progress to the first stages of a vertical method.

> On Sunday there are 378 visitors to the Carriage Museum. On the following Sunday there are 487. What is the sum of the visitors on these two Sundays?

> Children should build on their knowledge of partitioning to split the numbers in to hundreds, tens and units.

> They should be encouraged to add up from the left (the units column) in preparation for later work with the standard method you may remember.

378 + 487

300 + 70 + 8
400 + 80 + 7

700 + 150 + 15 = 865

As Year 4 progresses, children will develop and refine their use of this method, attempting to solve problems in the following way.

47
+ 76

13
110

123

368
+ 493

11
150
700

861

> In this example, children should again work with the units first, adding first the 7 and 6 in the first example before the 70 and the 40.
>
> When adding up for the final answer, it is also important to begin adding the columns with the units.
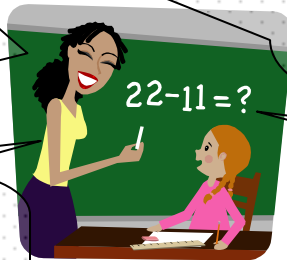
Subtraction

In Year 3 and 4, the children will be using the number line method for subtraction. It will be used to count backwards (subtract) and count on (to find the difference between two numbers)

Year 3 and 4

Crawley City have a match day attendance of 563. At half time they are loosing by six goals to nil!
*At the end only 281 fans remain. How many left before the end?*

Children must take care to place the smaller number to the left of the line if they are endeavouring to count up.

Equally, if they intend to count backwards, they must start at the right of the line placing the larger number here first.

22-11 = ?

Note in the example at the bottom of the page, how the child adds 19 to 281 to reach the next multiple of 100 (300). This helps children to be more successful. Always help them look for the next 10 or the next hundred.

As with addition, the steps in which the children choose to count on or back should be of their own choice, enabling them to solve problems their own way.

563 - 281 = **282** (Counting back from the highest number)

| -1 | -20 | -60 | - 200 |

| 282 | 283 | 303 | 363 | 563 |
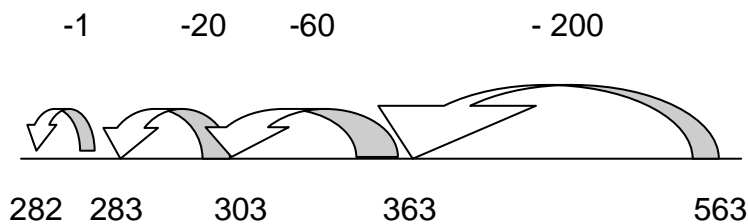
563 - 281 = **282** (Counting on from the lowest number)

| +19 | +200 | +63 |

| 281 | 300 | 500 | 563 |
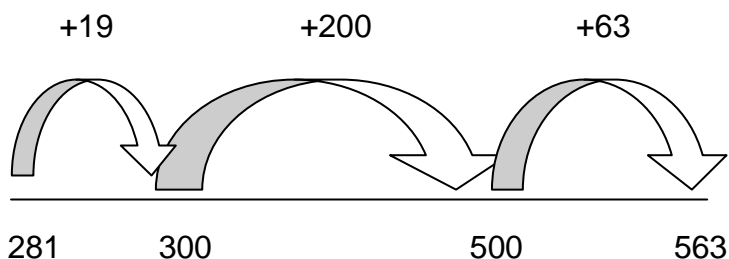
In the Summer Term the children in Year 4 will make their first steps toward the standard method of subtraction. They will not be expected to exchange (or borrow as you may have called it) numbers at this stage.

In the example below, as with addition, children should be encouraged to begin with the units in preparation fro the development of the full written method in year 5

56 – 23 = 33

	50	6		
-	20	3		
	30	3	=	**33**

Multiplication

The children will of course use their knowledge of times tables to help with simple multiplication and division questions. They will also progress to using the Grid Method in Year 4.

What is 37 multiplied by 7?

37 x 7

x	30	8	
7	210	56	266

The development of the children's times tables plays a key role in any written calculation method for multiplication. While lots of tables work is carried out in school, it is usually necessary for children to undertake some of their tables learning at home!

As the method develops, children will be asked to add a hundred. Typically children will multiply a 3-digit number by a 1-digit number:
136 x 4

Division

Division is a repeated subtraction problem. Seeing how many lots can be taken from a given amount. Children will first be supported in using their times tables knowledge to be successful in division and then move onto a simple form of the chunking method detailed in the Year 5 and 6 booklet.
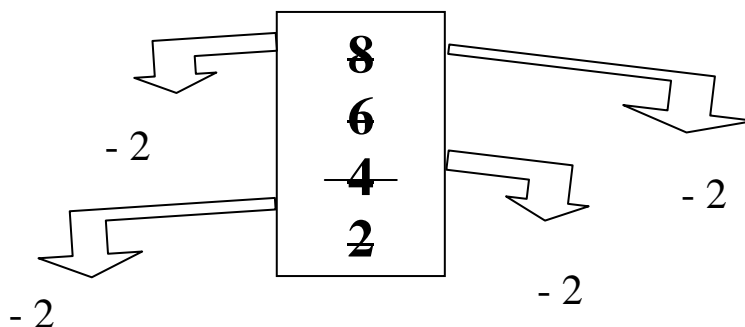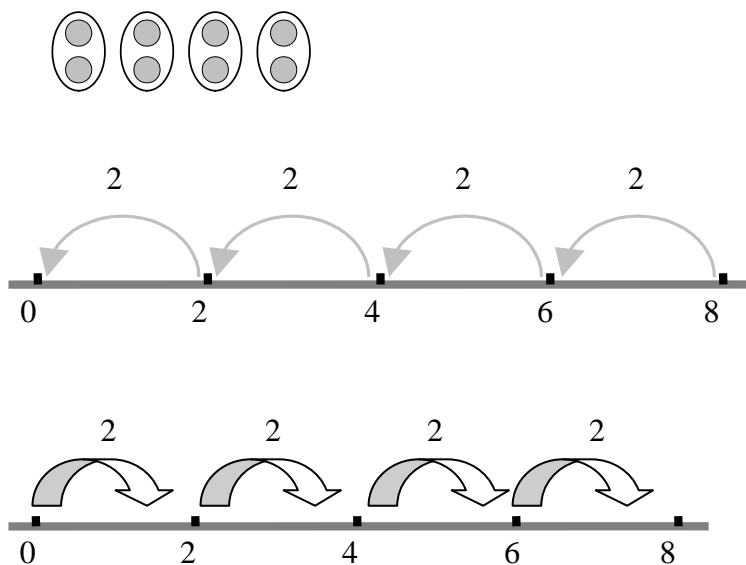
Year 3

What is eight divided by 2? (8 ÷ 2)

Division starts out in Year 3 using diagrams and repeated counting as well as times table knowledge. The knowledge that if 4 x 2 = 8 then 8 ÷ 2 = 4

$$8 ÷ 2 = 4$$

The examples hers (taken from our school calculation policy) show some of the ways your child will be shown how to divide.

In addition to this we will also use simple counting using fingers or beads and a variety of ICT based models will be utilised.

| 2 | 2 | 2 | 2 |

| 0 | 2 | 4 | 6 | 8 |

| 2 | 2 | 2 | 2 |

| 0 | 2 | 4 | 6 | 8 |

8
6
4
2

- 2

- 2

- 2

- 2

Year 4

In Year 4, the children make their first steps with the chunking method. They will begin by chunking up from 0. In the problem below (72 ÷ 5), ascertaining how many lots of 5 go into 72.

Chunking is a written calculation strategy that is based on finding how many chunks (or lots) of a number can be taken from (or put into) a given number.

For example, in 91 divided by 7, the children will calculate how many chunks of 7 go into 91

What is 72 divided by 5? Or perhaps I could ask, If a school has 72 children and the Head Teacher gives them 5 pencils each, how many packs of pencils will she need to purchase?

The r in the example below stands fro remainder

$72 \div 5 = 14 \text{ r } 2$

$$5 \overline{\smash{\big)}\ 7\ 2}$$

$$+50 \quad (10 \times 5)$$
$$+20 \quad (4 \times 5)$$
$$\overline{70}$$

In the example, the children are recording how many lots of 5 they have used as they chunk up.

It is the red number that they add together to get the answer.

They will be expected and taught to understand that once they have reached 70, they will be unable to add any further lots of 5 without exceeding 72.

Any difference between the bottom number (70) and the target number (72) forms the remainder.