Ivy Chimneys Primary School

Helping your child with maths

Calculation

With any problem, the first questions to encourage your child to ask are…

- What do I estimate the answer to be?
- Could I do this in my head?
- Could I do this in my head if I jotted something down on paper to help?
- Do I need to use a written method?

When they arrive at an answer, encourage them to ask…

- Does my answer seem sensible?
- How does it compare with my estimate?
- How can I check my answer?

Your child's teacher will welcome your support and always be happy to explain any methods children have been learning in school.

Talking about their maths will help children to understand what they are doing.

How did you work that out?

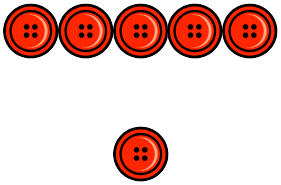
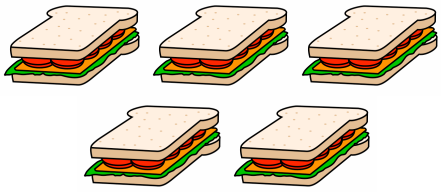
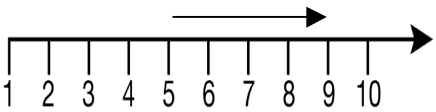
I can explain what I did.



This booklet explains some of the calculation main methods used in school.

Addition

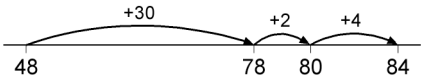
Children are taught to understand addition as combining two groups and as counting on.

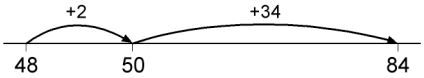
Adding 1 Use buttons, beads, spoons, cakes… Count the group. Add one more. How many have you got?	5 + 1 = 6 
Combining two groups I've got 3 sandwiches and you've got 2. How many have we got altogether?	 3 + 2 = 5
Counting on There are 5 people on the bus. 4 more get on at the next stop. How many are there on the bus now?	Children could draw a picture, or use tally marks, IIIII IIII or use a numberline to count on 4 jumps from 5.  5 + 4 = 9

<table>
<tr>
<td><u>Number bonds</u>
Know all the ways to make 10, and to make numbers below ten – having facts at their finger tips will be useful later on.</td>
<td>9 + 1
8 + 2
7 + 3
6 + 4
5 + 5

To make 7
6 + 1
5 + 2
4 + 3</td>
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<td><u>Number lines</u>

Use an empty number line to record different ways of adding.</td>
<td>Count on units
e.g. 8 + 7 = 15

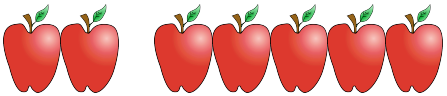
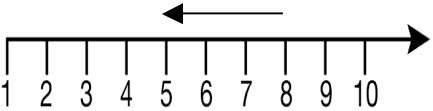

Count on, tens first
e.g 48 + 36 = 84


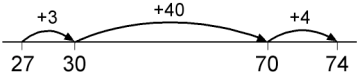
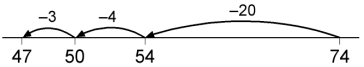
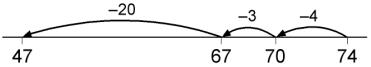
Count on to the next ten
e.g. 48 + 36 = 84

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<td><u>Column addition</u>

A more formal written method.</td>
<td>Children begin where no “carrying” is needed.
23
+ 12
35
Then move to sums where they need to carry from the units to the tens.
27
+ 18
45
1</td>
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<tr>
<td colspan="2">Children then move on to work with larger numbers, carrying from tens to hundreds and hundreds to thousands, and to work with decimals.</td>
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Subtraction

Children are taught to understand subtraction as taking away and finding the difference.

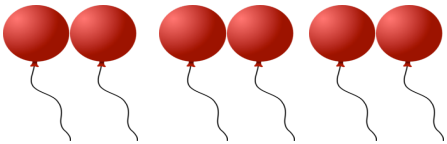
<u>One less</u> Use buttons, beads, spoons, cakes… Count the group. Eat one. How many have you got? 6 – 1 = 5	
<u>Taking away</u> If you have 7 apples and I take five away, How many have you got left? 7 - 2 = 5	Children could draw a picture,  or use tally marks, I I 𝍸 I
<u>Counting back</u> What is eight take away three?	Children use a numberline to count back 3 jumps from 8.  8 – 3 = 5
<u>Find the difference</u> If I have 6 sweets and you have 10, how many more do you have?	Children could directly compare sets of objects to find the difference…  10 – 6 = 4

If Sarah is 27 years old and her father is 74, what is the difference in their ages? 74 – 27 = 47	…or count on (perhaps using a numberline) 
<u>Number bonds</u> Know all the subtraction pairs for 10, and for numbers below ten – having facts at their finger tips will be useful later on.	10 - 1 = 9 10 - 2 = 8 10 - 3 = 7 …and so on. To make 4 10 - 6 = 4 9 – 5 = 4 ...and so on
<u>Number lines</u> Use an empty number line to record different ways of subtracting. Use addition to check the answer.	15 – 7 = Count back in units  74 – 27 = Count back, tens first  Count back to the previous ten 
<u>Column subtraction</u> A more formal written method.	Children begin where no “exchanging” is needed. 35 - 12 23 Then move to sums where they need to change a ten or change a hundred. $2^{1}7$ $\quad$ $^{1}\cancel{2}^{1}36$ -18 $\quad$ -174 9 $\quad$ 62
Children then move on to work with larger numbers and decimals, but are also encouraged to consider which method works best. For example, 2003 – 1897 would be best solved mentally or with a number line rather than as a written calculation.	

Multiplication

Learning times tables is vital!

Children are taught to understand multiplication as repeated addition or "groups of".

Multiplying by 2 Understand that this is the same as doubling. A ladybird has six legs. How many legs do two ladybirds have?	 6 x 2 = 12
Count in 2s, 5s or 10s If a child has 2 balloons, how many balloons do three children have? If there are 5 biscuits in a pack, how many are there in four packs?	 2 + 2 + 2 = 6 or 3 x 2 = 6 IIIII IIIII IIIII IIIII 5 + 5 + 5 + 5 = 20 or 4 x 5 = 20
Representing multiplication in an array Turning the array on its side helps the children realise that 5 x 3 = 3 x 5	XXX XXX XXX XXX XXX 5 x 3 = 15 XXXXX XXXXX XXXXX 3 x 5 = 15

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<td><u>Using arrays with larger numbers</u>

If I have three boxes of a dozen eggs, how many eggs is that altogether?</td>
<td>3 x 12 = 36

3 x 10 3 x 2
XXXXXXXXXX XX
XXXXXXXXXX XX
XXXXXXXXXX XX
30 + 6 = 36</td>
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<tr>
<td><u>Partitioning</u>

This can also be recorded as...</td>
<td>3 x 12 3 x 10 = 30
2 x 3 = 6
36</td>
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<tr>
<td><u>The Grid Method</u>

If plant pots cost 42p each, and I want to buy 6, how much will that cost me?

6 x 42p = £ 2.52</td>
<td>40 2
6 | 240 | 12

240
+ 12
252</td>
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<tr>
<td><u>Short multiplication</u></td>
<td>Beginning with an ‘expanded’ method, and then moving on to a standard method.
38 38
x 7 x 7
56 (7 x 8) 266
210 (7 x 30) 5
266</td>
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<td colspan="2">These methods can then be extended for use with two and three digit numbers, or with decimals. Having instant recall of times tables facts is an invaluable skill which will help children with many different aspects of maths.</td>
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Division

Children are taught to understand division as sharing and grouping.

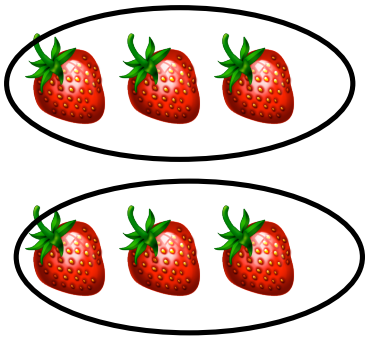
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<u>Sharing equally</u>

If I have 6 strawberries and the two of us share them equally, how many will we get each?

6 ÷ 2 = 3

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<u>Grouping objects into equal sets</u>

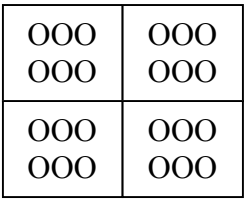
If we have 8 mittens and put them in groups of 2, how many pairs is this?

If I need 6 eggs to fill a box, how many boxes can I fill with 24 eggs?

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8 ÷ 2 = 4



24 ÷ 6 = 4

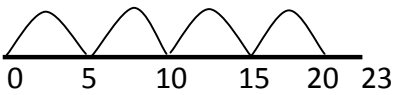
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<u>Understanding remainders</u>

If a fudge costs 5p, How many can I buy with 23p?

</td>
<td>

This could be recorded as jumps on a numberline:-



23 ÷ 5 = 4 r 3

</td>
</tr>
</table>

Interpreting remainders

Know what a remainder means in the context of a particular problem.



e.g. If I have 13 biscuits to share between 5 children, how many can they have each?

$$13 \div 5 = 2 \text{ r } 3$$

Each child can have 2 and there are 3 left in the packet.

If 13 children go on a trip and I can fit 5 children in each car, how many cars do I need?

$$13 \div 5 = 2 \text{ r } 3$$

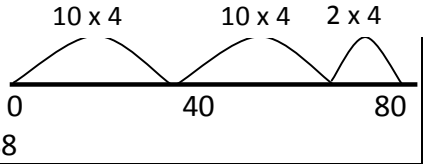
I will fill 2 cars, and need a third car for the other 3 children.

Showing grouping on a numberline

If 4 pencils fit in a pack, how many packs can be filled with 88 pencils?

$$88 \div 4 = 22$$

I know that 10 groups of 4 will get me to 40 on the numberline. Another 10 groups of 4 will get me to 80 on the numberline. We have 8 left – that's 2 groups of 4, so altogether there are 22 groups of 4 in 88.



Chunking

Beginning with dividing 2-digit numbers by a single digit, this can then be extended to three digit numbers and decimals.

If I have 52 apples and put them in packs of four, how many packs will I have?

$$52 \div 4 = 13$$

$$\begin{array}{rl} & 13 \\ \hline 4 \,) & 52 \\ (10 \times 4) & \underline{40} \\ & 12 \\ (\ 3 \times 4) & \underline{12} \\ & 0 \end{array}$$

<u>Short division</u> This is an alternative, more compact method.	0 9 5 e.g. 3) ~~2~~ ^{2}8 ^{1}5

Early Counting Activities

- Look for numbers all around you. Looking at door numbers, for example, is an opportunity to practise counting in twos.

- Count real objects, encouraging your child to touch each object as they count it.

- Sing number songs and rhymes together.

- Play games that involve counting such as Snakes and Ladders, Frustration and other dice games.

- Go shopping for two or three small items. Work out the total cost, how to make this amount with different coins and how much change is due.

- Encourage children to use their maths skills when helping with cooking at home.

- Practise times tables.

Always give plenty of praise and encouragement.
Make maths fun!