

Games to Play

You can use **anything** as counters to play games eg lego/ buttons/pasta etc. Use dice, playing cards or spinners to make random numbers. Ask your child to explain how they worked their answer out, and in turn explain how you did it.

- Tables and related division facts: use bingo cards - children write the question on the grid. You call out the answer. They cross it off if they have it.
- Four in a Row: Use a 100 grid or multiplication grid. Using a pack of cards to generate numbers, turn over 2 cards and multiply them. If you correctly answer, cover that number on the grid. Spice it up by using coins as counters - winner gets to keep their coins!
- Target Numbers: select 2 or 3 cards from a pack of playing cards. Place them face up to create a 3 digit number. Using only the numbers 1, 2, 3, 4, 5, 7, 9 and any symbol, who can get closest?

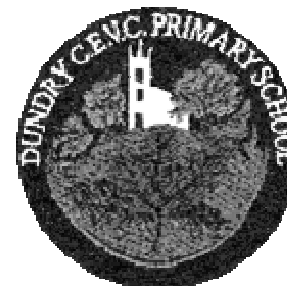
Websites

<http://www.mad4maths.com/parents/>
http://www.direct.gov.uk/en/Parents/Schoolslearninganddevelopment/HelpingYourChildToLearn/DG_4016596
<http://woodlands-junior.kent.sch.uk/Homework/>
<http://www.bbc.co.uk/skillswise/numbers/wholenumbers/>

If your child is finding the methods in this leaflet challenging, remind them of the methods they already know from Years 3 and 4. These leaflets are also available to help you. Please contact the class teacher if you have any questions or worries.

Acknowledgements: Leicestershire Primary Team.

Parent's Guide to



Mathematics Year 5

This guide is designed to help you understand how your child is taught mathematics in school. There are examples of how addition, subtraction, multiplication and division are taught during this year, together with some of the language we use in lessons. On the back page you will find some ideas for games and helpful websites.

Teaching of mathematics in Upper Key Stage 2 is based on strong understanding of mental calculations which are applied to formal written calculations. Children are encouraged to decide whether a formal written method, informal or mental calculation is needed before starting work. Children check their calculations using the inverse operation (opposite, eg check addition using subtraction).

The Year 4 leaflet gives examples of the methods with which the children are already familiar. It is OK if children need to continue using these methods.

Addition

In Year 5, children's understanding of addition is reinforced through the number line or column addition, when they fully understand the concept of **place value**. Children estimate the total before beginning their calculation. In both methods, children must place digits in the correct column and begin by adding the units first.

<p>Column Method</p> <table style="border-collapse: collapse;"> <tr><td style="padding: 2px;">H</td><td style="padding: 2px;">T</td><td style="padding: 2px;">U</td></tr> <tr><td style="padding: 2px;">4</td><td style="padding: 2px;">9</td><td style="padding: 2px;">7</td></tr> <tr><td style="padding: 2px;">+</td><td style="padding: 2px;">3</td><td style="padding: 2px;">9</td></tr> <tr><td colspan="3" style="border-top: 1px solid black; padding: 2px;">5 3 6</td></tr> <tr><td style="padding: 2px;">1</td><td style="padding: 2px;">1</td><td></td></tr> </table>	H	T	U	4	9	7	+	3	9	5 3 6			1	1		<p>Begin with the units. $7 + 9 = 16$. Place the 6 in the unit column of the equal sign and the ten is represented as 1 (ten) beneath the = sign in the T column. Next add the T column saying '9 tens add 3 tens = 120 or 12 tens.' Then add the ten below the = sign. 130 is then written as 3 tens in the T column and 100 is represented as 1 (hundred) beneath the = sign in the H column. We then add the hundreds including the 1 hundred beneath the H column saying '400 + 100 = 5 00'. Place the 5 in the H column of the = sign.</p>
H	T	U														
4	9	7														
+	3	9														
5 3 6																
1	1															

Vocabulary

Place Value: knowing what each digit in a number represents, eg $23 = 2$ tens and 3 units.
add total altogether more than plus

Subtraction

As with addition, we establish children's understanding of subtraction through using the numberline as in Year 4. When children's understanding of **place value** is secure we introduce column subtraction.



$100 + 42 + 4 =$
 $342 - 196 =$

<p>HTU</p> <table style="border-collapse: collapse;"> <tr><td style="padding: 2px;">2</td><td style="padding: 2px;">13</td><td style="padding: 2px;">1</td></tr> <tr><td style="padding: 2px;">3</td><td style="padding: 2px;">4</td><td style="padding: 2px;">2</td></tr> <tr><td style="padding: 2px;">-</td><td style="padding: 2px;">1</td><td style="padding: 2px;">9</td></tr> <tr><td colspan="3" style="border-top: 1px solid black; padding: 2px;">1 4 6</td></tr> </table>	2	13	1	3	4	2	-	1	9	1 4 6			<p>Column Subtraction</p> <p>Begin with the units column. 2-6 can't be done without going into negative numbers, so we exchange one ten and place it in the units column, replacing the 4 tens with a 3. $12 - 6 = 6$. place this in the = sign. 3 tens - 9 tens can't be done without going into negative numbers, so we exchange one hundred and place it in the ten column, replacing 3 hundreds with 2 hundreds. We now complete the calculation.</p>
2	13	1											
3	4	2											
-	1	9											
1 4 6													

Vocabulary

take away partition jump on count back count on
minus less than difference subtract exchange



Multiplication

We continue using the grid method learned in Year 4, extending it to multiply TU x TU and HTU x U, eg 67×34 or 135×6 . It is **essential** that children know their **2, 3, 4, 5, 6, 7, 8, 9** and **10** times tables by heart, including the related division facts, and can recall them immediately without the need to work it out.

$67 \times 34 = 2278$		
X	60	7
30	1800	210
4	240	28

2010	
+	
268	
2278	

Draw a 3 x 3 grid. Begin by partitioning each number in the calculation, eg $67 = 60 + 7$ and $34 = 30 + 4$. Place the partitioned numbers in the grid as shown. The grid then acts like a multiplication square. First multiply the 60×30 and place the answer in the grid. Next multiply the 30 by 7 and place the answer in the grid. Do the same with 60×4 and 7×4 . Then, add the numbers in each row and write the answer next to the grid. Finally, total the amounts at the side of the grid using the vertical method of addition.
 A similar method is used to multiply HTU x U.

$6 \times 30 = (6 \times 3 = 18, 18 \times 10 = 180)$

X	100	30	5
6	600	180	30

$135 \times 6 = 600 + 180 + 30 = 810$

Vocabulary

Partition: splitting a number into tens and units: 23 is 20 + 3
multiply jump on/back in groups of times multiple factor

Division

We continue using the informal methods of division used in Year 4. These are based on our good knowledge of multiplication. We subtract larger groups from the start number, before subtracting smaller groups. Later in the year, we use this method as the basis of an extended version of the short vertical method. We continue to show groupings through arrays (see Y4 leaflet).

<p>Extended Method</p> $\begin{array}{r} 6 \overline{) 196} \\ - 60 \quad (10 \times 6) \\ \hline 136 \\ - 60 \quad (10 \times 6) \\ \hline 76 \\ - 60 \quad (10 \times 6) \\ \hline 16 \\ - 12 \quad (2 \times 6) \\ \hline 4 \quad 32 \end{array}$ <p>Answer: 32 r 4</p>	<p>Short Vertical Method</p> $\begin{array}{r} 6 \overline{) 196} \\ - 180 \quad (30 \times 6) \\ \hline 16 \\ - 12 \quad (2 \times 6) \\ \hline 4 \quad 32 \end{array}$ <p>Answer: 32 r 4</p>
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Vocabulary

share factor divide groups of factor pair
sets of is a multiple of