



Maths Workshop

Years 4, 5 and 6

Please look at the statements on the table and put them in to 'true or false' - discuss on your tables what you think.

This evening's Agenda

- Explain the three aims of the maths curriculum.
- Focus on fluency in maths and progression of calculation
- Know end of year expectations for each year group.

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

'I don't understand why my child
isn't taught formal written
methods from KS1'

Progression in calculation

Each step of each calculation is an important stage in the child's understanding of number and to move onto formal written methods. They need to go through these important stages.

Concrete

Pictorial

Abstract

Please see Activity 1 on your handout

Leaving off from Year 3 children should be at the stage of expanded addition.

- Expanded addition

Leads in to the formal written method...

- $176 + 147 = 323$

$$\begin{array}{r} 176 \\ + 147 \\ \hline 13 \quad (\text{ones}) \\ 110 \quad (\text{tens}) \\ + 200 \quad (\text{hundreds}) \\ \hline 323 \end{array}$$

$$\begin{array}{r} 147 \\ + 176 \\ \hline 323 \\ \hline 11 \end{array}$$

Addition: End of KS2

**Year 4 and 5 : columnar addition with
4-7 digit numbers**

$$\begin{array}{r} 21848 \\ + 1523 \\ \hline 23371 \\ \hline 1 \quad 1 \end{array}$$

**Year 6 : all numbers including different
length decimals**

$$\begin{array}{r} 154.75 \\ + 233.82 \\ \hline 388.57 \\ \hline 1 \end{array}$$

Activity 2

Leaving off from Year 3 children should be at the stage of expanded subtraction

$$73 - 27 = 46$$

$$\begin{array}{r} 70 + 3 \\ - 20 + 7 \end{array}$$

becomes

$$\begin{array}{r} 60 \text{ and } 13 \\ - 20 \text{ and } 7 \\ \hline 40 + 6 = 46 \end{array}$$

73 is partitioned into 60 and 13
in order to calculate $73 - 27$

Subtraction: End of KS2

Year 4/5: subtraction with 4-7 digit numbers

$$3625 - 1219 = 2406$$

		1	15
3	6	2	5
-1	2	1	9
2	4	0	6

Year 6: all numbers including different length decimals

16 5	12
1 6 6	2 5
- 8 3	7 2
8 2	5 3

Activity 3

Multiplication

End of Y3: grid method

36 x 4

X	30	6
4	120	24

Year 4

Expanded multiplication moving to short formal written method.

$$\begin{array}{r} 30 \quad 6 \\ \times \quad 4 \\ \hline \quad 24 \\ + 120 \\ \hline 144 \end{array}$$

$(4 \times 6 = 24)$
 $(4 \times 30 = 120)$

$$\begin{array}{r} 36 \\ \times 4 \\ \hline 144 \\ 2 \end{array}$$

- Return to expanded written methods to help secure long multiplication with larger numbers which leads into compact method.

$$23 \times 13 = 299$$

23	
<u>X 13</u>	
9	(3 x 3)
60	(3 x 20)
+ 30	(10 x 3)
<u>200</u>	(10 x 20)
<u>299</u>	

$$23 \times 13 = 299$$

23	
<u>X 13</u>	
+ 69	(3 x 23)
<u>230</u>	(10 x 23)
<u>299</u>	

Activity 4

End of KS2

*Formal written methods with 4 x 2 digit numbers

*Mulitplying decimals

$$53.2 \times 24 = 1276.8$$

X	50	3	0.2	
20	1000	60	4	1064.0
4	200	12	0.8	212.8
				1276.8

Division

Year 4 – introduction to ‘bus stop’ with familiar number fact.

$$\begin{array}{r} 4 \\ 8 \overline{) 32} \end{array}$$

Year 4/5 – introduction to remainders

$$\begin{array}{r} 8 \quad r1 \\ 3 \overline{) 25} \end{array}$$

Year 5/6

- Remainders – fractions/decimals

$$\begin{array}{r} 8 \quad r1 \\ 3 \overline{) 25} \end{array}$$

Year 5/6: short division

$$\begin{array}{r} 8 \ 6 \ r2 \\ 5 \overline{) 432} \end{array}$$

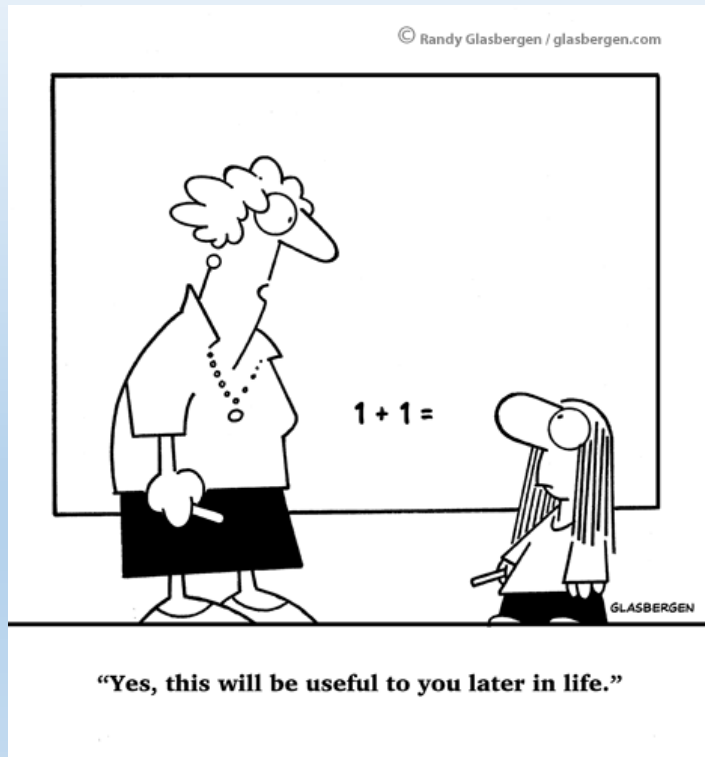
End of KS2 – long division

$$\begin{array}{r} 45 \text{ r}1 \\ 11 \overline{) 496} \\ \underline{-440} \quad (40 \times 11) \\ 56 \\ \underline{-55} \quad (5 \times 11) \\ 1 \quad (\text{remainder}) \end{array}$$

Thank you for attending this evening's workshop.

We hope that you found it useful!

If you would like to understand previous methods please attend tomorrow evening's workshop (Year 1–3).



Please could you fill out an evaluation form for the session.