

YEAR 6 MATHS WORKSHOP

Mrs Smeulders and Year 6 students

Aims of the session:

- Understand the methods used in Year 6 Maths.
- Learn the mathematical skills needed to answer Year 6 questions.
- Give opportunities for the children in Year 6 to teach some of the Maths they have learnt.
- Develop confidence in helping our children with their homework or revision during Year 6.

Student example:

ADDITION



HTH	TTh	Th	H	T	0	.	t	h	th	tth	hth
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Step 1: write the decimal number FIRST in a formal column method

$$\begin{array}{r} 25.00 \\ + 13.25 \\ \hline \hline \end{array}$$

Step 2: the whole number (which doesn't have a decimal number) will fit in the place value chart as normal and the decimal places will be filled with place holders (zeros)

$$25 + 13.25 = 38.25$$

Parent example:

ADDITION



HTH	TTh	Th	H	T	0	.	t	h	th	tth	hth
-----	-----	----	---	---	---	---	---	---	----	-----	-----

Step 1: write the decimal number FIRST in a formal column method

$$\begin{array}{r} 46.00 \\ + 19.02 \\ \hline \hline \end{array}$$

Step 2: the whole number (which doesn't have a decimal number) will fit in the place value chart as normal and the decimal places will be filled with place holders (zeros)

$$19.02 + 46 = 65.02$$

Student example:

ADDITION



	1		
	3	7	2
+	1	4	1
<hr/>			
	5	1	3

Step 1: check the answer – if it's bigger than one of the given numbers, the missing number is needed to add to the given number to make the total.

Step 2: if the missing number is less than one of the given numbers, the missing number will definitely have a **carry-over** when the two numbers are added

Parent example:

ADDITION



Step 1: check the answer – if it's bigger than one of the given numbers, the missing number needs to add to make that digit

Step 2: if the missing number is less than one of the given numbers, the missing number will definitely have a **carry-over** when the two numbers are added

Work out the missing numbers:

	5	4	0	3	7
+	2	4	5	9	2
	7	8	6	2	9

A red box with the number 1 is positioned above the top row, between the 4 and 0 columns.

Student example:

SUBTRACTION



$$3847 = \boxed{5812} - 1965$$

$$\begin{array}{r} \text{????} \\ - 1965 \\ \hline 3847 \end{array}$$

$$\begin{array}{r} 3847 \\ + 1965 \\ \hline 5812 \end{array}$$

The **INVERSE** of **SUBTRACTION** is **ADDITION**

Step 1: place the numbers you have as a column subtraction to make it easier to see what the **INVERSE** would be

Step 2: work out the sum and then complete the **INVERSE** (the opposite) to find out if you are right

Parent example:

SUBTRACTION



$$847 = 1965 - 1118$$

$$\begin{array}{r} 1965 \\ - \quad ???? \\ \hline 847 \end{array}$$

$$\begin{array}{r} 1965 \\ - \quad 847 \\ \hline 1118 \end{array}$$

In this situation, the numbers need to be subtracted from each other to find the missing number, as the top number has been given.

Step 1: place the numbers you have as a column subtraction to make it easier to see what the INVERSE would be

Step 2: work out the sum and then complete the INVERSE (the opposite) to find out if you are right

Student example:

SUBTRACTION



I need to collect **4,106** stamps to complete my collection. I have **1,893**. How many more do I need to collect?

$$\begin{array}{r} 4106 \\ - 1893 \\ \hline \end{array}$$

????

$$\begin{array}{r} 4106 \\ - 1893 \\ \hline 2213 \end{array}$$

Step 1: Underline/highlight key information

Step 2: place the numbers you have as a column subtraction

Step 3: work out the sum and then complete the INVERSE (the opposite) to find out if you are right

Parent example:

SUBTRACTION



A city has a population of **93,150** people. **34,593** of these are over 60 years old. How many are below 60?

$$\begin{array}{r} 93150 \\ - 34593 \\ \hline ?????? \end{array}$$

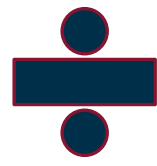
$$\begin{array}{r} 93150 \\ - 34593 \\ \hline 58557 \end{array}$$

Step 1: Underline/highlight key information

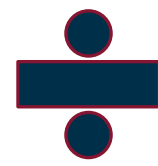
Step 2: place the numbers you have as a column subtraction

Step 3: work out the sum and then complete the INVERSE (the opposite) to find out if you are right

Student example:



DIVISION



Step 1: use times table knowledge to find out what times the divisor will make the number nearest to 9

Step 2: any unused numbers or carry-overs **MUST** be added to the next number or shown as a remainder

Step 3: remember to add zeros to the answer where necessary

Step 4: show remainders one of three ways: as $r \text{ ___}$, as a **fraction** or as a **decimal**

$$\begin{array}{r} 032 \\ 9 \overline{) 288} \end{array}$$

Student example:

DIVISION



1 3 0 5 r2

$$5 \overline{) 61527}$$

1305 r2

Step 1: use times table knowledge to find out what times the divisor will make the number nearest to 9

Step 2: any unused numbers or carry-overs MUST be added to the next number or shown as a remainder

Step 3: remember to add zeros to the answer where necessary

Step 4: show remainders one of three ways: as r __ , as a **fraction** or as a **decimal**

Student example:

DIVISION

1 3 0 5 r2

$$5 \overline{) 61527}$$

$$\frac{1305}{5} \frac{2}{5}$$

Remainder as a fraction

Step 1: use times table knowledge to find out what times the divisor will make the number nearest to 9

Step 2: any unused numbers or carry-overs MUST be added to the next number or shown as a remainder

Step 3: remember to add zeros to the answer where necessary

Step 4: show remainders one of three ways: as r __ , as a **fraction** or as a **decimal**

Student example:

DIVISION



Step 1: use times table knowledge to find out what times the divisor will make the number nearest to 9

Step 2: any unused numbers or carry-overs **MUST** be added to the next number or shown as a remainder

Step 3: remember to add zeros to the answer where necessary

Step 4: show remainders one of three ways: as r __ , as a **fraction** or as a **decimal**

$$\begin{array}{r} 1305.4 \\ 5 \overline{) 61527.20} \end{array}$$

1305.4

Remainder as a decimal

Parent example:

DIVISION

1 8 0 7 r1

$$4 \overline{) 73229}$$

OR

$$\begin{array}{r} 1807 \\ \hline 4 \end{array}$$

OR

$$1807.25$$

Step 1: use times table knowledge to find out what times the divisor will make the number nearest to 9

Step 2: any unused numbers or carry-overs **MUST** be added to the next number or shown as a remainder

Step 3: remember to add zeros to the answer where necessary

Step 4: show remainders one of three ways: as r __, as a **fraction** or as a **decimal**

Student example:

DIVISION



Jack is thinking of a number.

When he multiplies his number by 7, he gets 161

What is Jack's number?

$$\underline{\quad} \times 7 = 161$$

Step 1: set out the sum as a number sentence

Step 2: then use the **INVERSE** (working backwards) to work out the answer

Step 3: remember that the **INVERSE** for **addition** is **subtraction** & *vice versa* and the **INVERSE** for **multiplication** is **division** & *vice versa*

$$\begin{array}{r} 023 \\ 7 \overline{) 161} \end{array}$$

23

MULTIPLICATION

Student example:

$$28 \times 36 =$$

$$876 \times 67 =$$

Parent example:

$$523 \times 65 =$$

BODMAS

Student example:

$$(5 + 5) \times 6^2 =$$

Parent example:

$$5^2 \times (56 - 45) =$$

Order of Operations

B - Brackets

O - Orders

D - Division

M - Multiplication

A - Addition

S - Subtraction

Fractions

Student example:

$$\frac{2}{3} \times \frac{3}{4} =$$

More student examples:

$$\frac{4}{5} \text{ divided by } 3 =$$

$$\frac{2}{3} + \frac{3}{4} =$$

Parent example:

$$\frac{1}{2} \times \frac{2}{3} =$$

$$\frac{4}{5} - \frac{1}{3} =$$

**THANK YOU FOR COMING
TO OUR YEAR 6 MATHS
WORKSHOP**