

Year 6

Visual calculation
methods

Mental Addition

MA1: Partitioning

5

$$576 + 258 = 834$$

$$700 + 120 + 14 = 834$$



MA1: Partitioning

6

$$4.73 + 2.21 = 6.94$$

$$6 + 0.9 + 0.04 = 6.94$$



MA5: Round & Adjust

5

$$4645 + 1996 = 6641$$

$$4645 + 2000 - 4$$

$$6645 - 4 = 6641$$



MA5: Round & Adjust

$$45.2 + 49.9 = 95.1$$

$$45.2 + 50 - 0.1$$

$$95.2 - 0.1 = 95.1$$



Addition

A7e: Column Addition

$$\begin{array}{r} 787567 \\ + 446278 \\ \hline 1233845 \\ \hline 1 \quad 1 \quad 1 \quad \quad 1 \quad 1 \end{array}$$



A7i: Column Addition

With Money

$$\begin{array}{r} \text{€}38.25 \\ + \text{€}27.46 \\ \hline \text{€}65.71 \\ \hline \end{array}$$

1 1



A7j: Column Addition

With Decimals

$$73.4 + 5.67 = 79.07$$

$$\begin{array}{r} \begin{array}{cccc} 10 & 1 & = & \frac{1}{10} \quad \frac{1}{100} \\ 73.4 & & & \\ + & 5.67 & & \\ \hline 79.07 & & & \\ \hline & 1 & & \end{array} \end{array}$$



Mental Subtraction

MS2a: Counting On

$$75 - 47 = 28$$



MS3: Round & Adjust

$$84 - 29 = 55$$

$$84 - 30 + 1$$

$$54 + 1 = 55$$



Subtraction

S11g: Column Subtraction

$$\begin{array}{r} \begin{array}{cccc} 10 & 1 & = & \frac{1}{10} & \frac{1}{100} \\ 6 & 11 & 13 & 1 & \\ \cancel{7} & \cancel{2} & \cancel{4} & 3 & \\ - & 4 & 7 & . & 8 & 5 \\ \hline 2 & 4 & . & 5 & 8 \end{array} \end{array}$$



S11h: Column Subtraction

With Decimals

$$12.4 - 5.97 = 6.43$$

	10	1	=	$\frac{1}{10}$	$\frac{1}{100}$	
0	11	13		1		
1	2	4	.	0		
-	5	9	.	7		
	6	4	.	3		



Mental Multiplication

MM4a: Round & Adjust

$$198 \times 4 = 792$$

$$(200 \times 4) - (2 \times 4)$$

$$800 - 8 = 792$$



MM4c: Round & Adjust

$$\text{€}5.99 \times 6 = \text{€}35.94$$

$$(\text{€}6 \times 6) - (1\text{p} \times 6)$$

$$\text{€}36 - 6\text{p} = \text{€}35.94$$



MM5f: Doubling


$$\text{Double } 768 = 1536$$

$$1400 + 120 + 16 = 1536$$



MM5g: Doubling

$$\text{Double } 3.7 = 7.4$$


$$6 + 1.4 = 7.4$$



Multiplication

M9d: Column Multiplication

$$\begin{array}{r} \text{100} \quad \text{10} \quad \text{1} \quad \text{.} \quad \frac{1}{10} \\ 47.2 \\ \times 3 \\ \hline 141.6 \\ \hline 2 \end{array}$$



M9e: Column Multiplication

$$\begin{array}{r} \begin{array}{cccc} 10 & 1 & \cdot & \frac{1}{10} & \frac{1}{100} \\ & 7 & \cdot & 3 & 8 \\ \times & 6 & & & \\ \hline & 4 & 4 & \cdot & 2 & 8 \\ \hline & 4 & 2 & & 4 \end{array} \end{array}$$



	T	O	.	TH	HT
	2	4	.	3	
X		2	.	5	

Make 10 x bigger and
then $\div 10$

Division

D10f: Short Division

Different Remainders

$$\begin{array}{r} 169.2 \\ 5 \overline{) 846.0} \end{array}$$

3 4 1

$$846 \div 5$$

$$\begin{array}{r} 169r1 \\ 5 \overline{) 846} \end{array}$$

3 4

$$\begin{array}{r} 169 \frac{1}{5} \\ 5 \overline{) 846} \end{array}$$

3 4



D10i: Short Division

$$87.5 \div 7 = 12.5$$

$$\begin{array}{r} 12.5 \\ 7 \overline{) 87.5} \end{array}$$

The diagram shows the short division process for $87.5 \div 7$. The divisor 7 is on the left. The dividend 87.5 is on the right, with a pink bracket over it. The quotient 12.5 is written above the dividend. The digits are color-coded: 1 (pink), 2 (green), 5 (purple) for the quotient; 8 (red), 7 (green), 5 (purple) for the dividend. A pink horizontal line is drawn under the dividend. Small green numbers 1 and 3 are placed above the 8 and 7 respectively, indicating the steps of the division process.



D14: Long Division

Traditional Method

$$\begin{array}{r} 26 \text{ r}21 \\ 37 \overline{) 983} \\ \underline{- 74} \\ 243 \\ \underline{- 222} \\ 21 \end{array}$$

$$983 \div 37 = 26 \text{ r}21$$

