

## Class 5 Calculations

### Written Addition

$$\begin{array}{r} \phantom{+} 4 \overset{1}{5} \overset{1}{6} 3 \\ + 3 2 8 9 \\ \hline 7 8 5 2 \end{array}$$

Line up the numbers so they are in columns (units, tens, hundreds etc). The addition sign goes on the left and two lines need drawing.

Start adding from the right and write any 'carried' numbers above the calculation.

### Written Subtraction

$$\begin{array}{r} 9 \overset{5}{\cancel{6}} \overset{16}{\cancel{7}} \overset{13}{3} \\ - 3 2 9 4 \\ \hline 6 3 7 9 \end{array}$$

Set out the calculation like the addition above, making sure the larger number is on top. Start from the right and subtract the bottom number from the top number.

If the top number is smaller than the bottom number, exchange from the number on the left.

### Written Multiplication (Short)

$$\begin{array}{r} \phantom{x} 4 \overset{1}{3} \overset{2}{2} 4 \\ \times \phantom{00} 6 \\ \hline 25944 \end{array}$$

Write the larger number on the top and make sure the hundreds, tens and units columns line up. Start multiplying from the right and write any carried numbers at the top of the calculation.

### Written Multiplication (Long)

$$\begin{array}{r} \overset{x}{\cancel{2}} \overset{x}{\cancel{2}} \overset{x}{\cancel{2}} 9 \\ \times \phantom{00} 23 \\ \hline 11037 \\ + 73580 \\ \hline 84617 \end{array}$$

Set out the calculation as in the short multiplication.

Start multiplying from the right using the units digit first. When completed, write a 0 in the units column in the next row down. This is because the next multiplications are tens numbers. When carrying, write numbers above the calculation and cross them out when they have been added.

Multiply from the right using the tens number.

Finally, add up both of the rows using the addition method above.

## Written Division

$$3 \overline{) 1405r2} \\ \underline{4217}$$

In class we call this method of division the 'bus stop' method.

It is set out with the number you are dividing by (divisor) on the left, and the larger number under the bus stop.

Working from left to right, write how many times the divisor goes in to each digit. If there is a remainder, write it to the left of the next digit to make it a tens number.

## Multiplying and Dividing by 10, 100 and 1000

It is very important to reinforce that the decimal point is a fixed point and cannot move. When dividing or multiplying by 10, 100 or 1000 the numbers 'jump' along the columns. To multiply the numbers jump left and to divide they jump right. They jump once for 10, twice for 100 and three times for 1000.

E.g.  $24 \div 100$

The numbers will jump to the right as we are dividing. We will jump twice because we are dividing by 100.

H	T	U	.	t	h
2	4	6			
		2	.	4	6

Sometimes you will need to put zero in the tens or units columns to complete the number. In class we say that there are 'invisible zeros' after every number, so these jump too - but when they cross to the left of the decimal point we can see them.

E.g. when calculating  $0.6 \times 100$  we can say that the number is really 0.60000 (going on forever!)