

Oakwood Junior School's

Standard Written Methods



Addition

HTU + HTU
587 + 475

$$\begin{array}{r} 587 \\ + 475 \\ \hline 1062 \\ \text{11} \end{array}$$

$7 + 5 = 12$
Place the 2 in the units column and carry the 10 forward to the tens column.

$80 + 70 = 150$ then $+ 10$ (carried forward) which totals 160.
Place 60 in the tens column and carry the 100 forward to the hundreds column.

$500 + 400 = 900$ then $+ 100$ which totals 1000. Place this in the thousands column.

$$587 + 475 = 1062$$

Subtraction

HTU - HTU
754 - 286

54 is the same value as 40 + 10 + 4.
Now 6 can be subtracted from 14.

740 is the same value as 600 + 100 + 40.
Now 80 can be subtracted from 140.

$$\begin{array}{r} 700 + \cancel{50} + 4 \\ - 200 + 80 + 6 \end{array}$$

$$\begin{array}{r} 600 + \cancel{70} + 14 \\ - 200 + 80 + 6 \end{array}$$

$$\begin{array}{r} 600 + 140 + 14 \\ - 200 + 80 + 6 \end{array}$$

$$400 + 60 + 8 = 468$$

Or, more efficiently the *standard method*.

$$\begin{array}{r} \overset{6}{\cancel{7}}\overset{4}{\cancel{5}}4 \\ - 286 \\ \hline 468 \end{array}$$

$$754 - 286 = 468$$

Multiplication

TU X U
23 x 8

GRID METHOD

X	20	3	
8	160	24	184

EXPANDED METHOD

20 multiplied by 8 equals 160.
3 multiplied by 8 equals 24.

Final product from totalling the *part-products*.

$$\begin{array}{r}
 \text{HTU} \\
 23 \\
 \times 8 \\
 \hline
 160 \quad (20 \times 8) \\
 24 \quad (3 \times 8) \\
 \hline
 184
 \end{array}$$

COMPACT METHOD (short multiplication)

$$\begin{array}{r}
 \text{HTU} \\
 23 \\
 \times 8 \\
 \hline
 184 \\
 \underline{2}
 \end{array}$$

3 multiplied by 8 equals 24 (the first *part product*).

2 is the 2 tens that need to be carried forward and added to the next *part product*.

20 multiplied by 8 equals 160 (2nd *part product*), plus the 2 tens equals 180.

The digits are put in the correct columns, to give the answer 184.

23 x 8 = 184

TU X TU
46 x 32

GRID METHOD

X	40	6	
30	1200	180	1380
2	80	12	92
			1472

EXPANDED METHOD

The 4 *part products* are set out vertically underneath the calculation.

Part products totalled to give final product.

$$\begin{array}{r}
 46 \\
 \times 32 \\
 \hline
 1200 \quad (40 \times 30) \\
 180 \quad (6 \times 30) \\
 80 \quad (40 \times 2) \\
 12 \quad (6 \times 2) \\
 \hline
 1472
 \end{array}$$

COMPACT METHOD (long multiplication)

$$\begin{array}{r}
 46 \\
 \times 32 \\
 \hline
 1380 \\
 92 \\
 \hline
 1472
 \end{array}$$

46 x 30 is the same as 46 x 3 x 10.

46 x 2 mentally or by short multiplication.

46 x 32 = 1472

Division

$$\text{HTU} \div \text{U}$$
$$471 \div 3$$

$$\begin{array}{r} 1 \\ 3 \overline{) 471} \end{array}$$

Q: What is the largest number of hundreds that will divide exactly by 3?
A: 300 divided by 3 = 100. This leaves 100 which is exchanged for ten tens in the tens column.

$$\begin{array}{r} 15 \\ 3 \overline{) 471} \end{array}$$

Q: What is the largest number of tens that will divide exactly by 3?
A: 150 divided by 3 = 50. This leaves 20 which is exchanged for 20 units in the units column.

$$\begin{array}{r} 157 \\ 3 \overline{) 471} \end{array}$$

Q: What is the largest number of units that will divide exactly by 3?
A: 21 divided by 3 = 7

$$471 \div 3 = 157$$