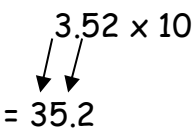## Multiplication and division including multiplying/dividing by 10, 100, 1000

Multiply & divide by 10, 100, 1000
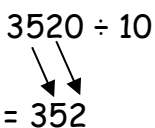
- **By moving the digits**

To multiply by 10, move the digits ONE place to the LEFT…

e.g.   3.52 x 10

          = 35.2

Note that the decimal point does not move.

To divide by 10, move the digits ONE place to the RIGHT…

e.g.   3520 ÷ 10

          = 352

To multiply or divide by 100, move the digits TWO places.
To multiply or divide by 1000, move the digits THREE places.

Count the number of zeroes in the number that you're multiplying or dividing by – that is how many places the digits move.

Multiplication using a formal method

- **By a ONE-DIGIT number**

e.g. 3521 x 7   **COLUMN METHOD**

$$
\begin{array}{r}
3521 \\
{\scriptstyle 3\,1} \\
\times \quad 7 \\
\hline
24647 \\
\hline
\end{array}
$$

- **By a TWO-DIGIT number**

e.g. 152 x 34   **COLUMN METHOD**

$$
\begin{array}{r}
152 \\
{\scriptstyle 2} \\
\times \quad 34 \\
{\scriptstyle 1} \\
\hline
608 \quad (152 \times 4) \\
+4560 \quad (152 \times 3 \;\cancel{\times\,10}) \\
{\scriptstyle 1} \\
\hline
5168 \\
\hline
\end{array}
$$

Division using a formal method

- **By a ONE-DIGIT number**

e.g. 9138 ÷ 6

$$
\begin{array}{r}
1\,5\,2\,6 \\
6\,)\overline{9^3 1^1 3^1 8} \\
\end{array}
$$

This method is known as the **bus stop** method.

If a number does not divide into another number exactly, then you will be left with a remainder.

e.g. 9139 ÷ 6

$$
\begin{array}{r}
1\,5\,2\,6 \; r1 \\
6\,)\overline{9^3 1^1 3^1 9} \\
\end{array}
$$