



Short and Long multiplication, carrying below the bottom line.

Rationale: - Pupils will be taught to calculate quickly and accurately using one secure approach in all mathematics work in school; it is our belief that children should be confident in accurate computation. This knowledge and ability provides a secure basis upon which to develop skills and understanding which are also extended through the teaching and use of mental calculation strategies.

This is where knowing times tables facts is essential. Almost all children should have instant recall of times tables, up to 12x, by the end of year 4.

Short Multiplication (Multiplication by a single digit)

Rule: Always start with the multiplier

Step 1 2 6 Say aloud: 7 times 6 is 42. Put the 2 in the units column and carry my 4.
 X 7 7 times 2 is 14, **add** the **carried 4** equals 18.
 1 8 2
 4

Step 2 2 0 6 Say aloud: 7 times 6 is 42. Put 2 in the units column and carry the 4.
 X 7 7 times 0 is 0, **add** the **carried 4** = 4. Put 4 in the tens column.
 1 4 4 2
 4

Children should be taught to explain that even though they are multiplying 7 by 2, in this case, it is actually, 7 x 200. Mentally, children should be encouraged to estimate that if they are multiplying 200 by 7, then the answer to the sum must be at least 1400.

Long Multiplication (Multiplication by more than one digit)

Rules: Multiply units first, then tens, then hundreds and so on. . .

In long multiplication we write the small number below the appropriate line – this is a **huge step** forward and requires careful teaching

During addition, carried numbers go below the line

Step 1 5 6 Say aloud: 7 times 6 is 42.
 X 4 7 Put the 2 in my units column and **carry 4**
 3 9 2 7 times 5 is 35, add the 4 makes 39.
 2 2 4 0 On this line, we now need to put down one zero because we are about to multiply
 2 6 3 2 by our tens (this time 4), so put down **one zero**. 4 times 6 is 24, put down 4 and
 carry 2. 4 times 5 is 20 add the 2 equals 22.
 Add, the units column, then the tens and so on using our addition method.

Step 2 5 0 6
 X 1 2 5
 2 5 3 0
 1 0 1 2 0 **Put down one zero**
 5 0 6 0 0 **Hundreds column so**
 6 3 2 5 0 **put down 2 zeros**
 1

Decimals: E.g. 50.6 x 1.25 =
 Becomes: 5 0 6
 X 1 2 5
 2 5 3 0
 1 0 1 2 0
 5 0 6 0 0
 6 3 2 5 0 ∴ = 63.250
 We had one place after the point in 50 and two places after the point in 1 which makes 3 decimal places. We then place the decimal point, 3 places in. We use and teach the ∴, therefore, symbol.