

Multiplication: Indigo (Y5)

Mental Work

Derive and recall

- squares to 12×12
- cubes to 5×5
- factor pairs to 100
- prime numbers within 100
- composite numbers

Work mentally (with jottings if needed)

- multiply 2-digit numbers by 4 or 8, e.g. 26×4 (by repeated doubling)
- multiply 2-digit numbers by 5 or 20, e.g. 320×5 , 14×20 (form an equivalent calculation, e.g. to multiply by 5, multiply by 10 then halve; to multiply by 20, double then multiply by 10)
- multiply by 25 or 50, e.g. 48×25 , 32×50 (use knowledge of doubles and place value, e.g. when multiplying by 50, multiply by 100 and divide by 2)
- double 3-digit multiples of 10 to 500, e.g. 380×2
- multiply whole numbers and decimals by 10, 100 or 1000, e.g. 4.3×10 , 0.75×100 (know that when a number is multiplied by 10 or 100, its digits move one or two places to the left relative to the decimal point, and zero is used as a placeholder)
- multiply pairs of multiples of 10, e.g. 60×30 , and a multiple of 100 by a single-digit number, e.g. 900×8 (use knowledge of \times facts and place value)
- find factor pairs for numbers to 100, e.g. 30 has the factor pairs 1×30 , 2×15 , 3×10 and 5×6 (use knowledge of \times and \div facts to find factor pairs)
- Find common factors of 2 numbers

Children should be encouraged to:

* **approximate** their answers before calculating

***consider if a mental calculation** would be appropriate **before** using written methods

***check their answers** after calculation using an appropriate strategy

Recording

Estimate first 34×22 is approximately $30 \times 30 = 900$

Start with TU \times TU using long multiplication, first with no carrying.

$$\begin{array}{r} 34 \\ \times 22 \\ \hline 68 \\ 680 \\ \hline 748 \end{array}$$

Estimate first 56×27 is approximately $60 \times 30 = 1800$

$$\begin{array}{r} 56 \\ \times 27 \\ \hline 392 \\ + 1120 \\ \hline 1512 \end{array}$$

Move on to multiplying up to 4 digits by a 1 and 2 digit using the same method.

Solve problems which include factors, multiples, squares and cubes.