

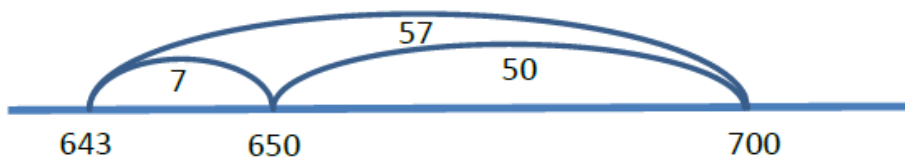
Key Stage 2 Maths (Year 3 and 4)

What do children learn at school in Years 3 and 4?

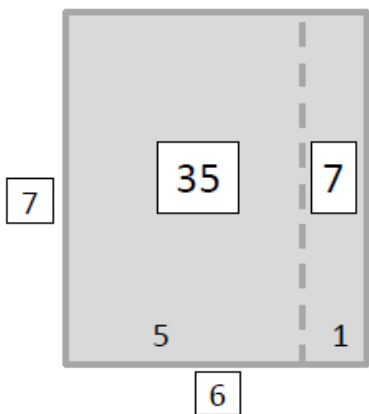
In Year 3 and Year 4, children develop their understanding of numbers through solving a range of problems involving money, measurements and time. Children also learn more about fractions and make links to decimal numbers. By the end of Year 4, children are expected to know their times tables facts, up to and including 12×12 .

Strategies used in school for developing number fluency:

- **Empty number line for supporting mental addition to the next 100, for example:**

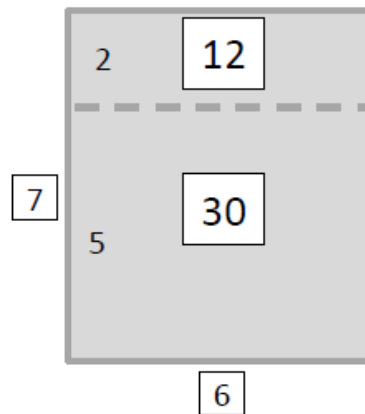


- **Using arrays to support mental multiplication and division, using known facts, for example:**



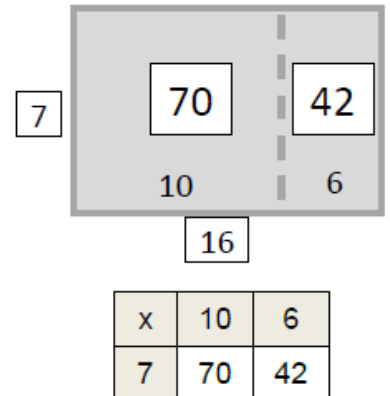
$$\begin{aligned} 6 \times 7 &= (5 \times 7) + (1 \times 7) \\ 6 \times 7 &= 35 + 7 \\ 6 \times 7 &= 42 \end{aligned}$$

or



$$\begin{aligned} 6 \times 7 &= (6 \times 5) + (6 \times 2) \\ 6 \times 7 &= 30 + 12 \\ 6 \times 7 &= 42 \end{aligned}$$

and



$$\begin{aligned} 16 \times 7 &= (10 \times 7) + (6 \times 7) \\ 16 \times 7 &= 70 + 42 \\ 16 \times 7 &= 112 \end{aligned}$$

Using money and measurements:

In school children are taught to recognise coins and notes, using these to solve problems like these:

Solve these questions and explain how you found your answers:

1. Is it possible to buy a soft drink, a salad and lasagne for £5.00?
2. If you had £6.50 to spend at Gino's Ristorante which items would you buy?

Gino's Ristorante

Soft drinks	75p
Garlic bread	£1.25
Salad	£1.95
Lasagne	£3.45
Pizza	£5.50
Spaghetti	£4.75

Children also learn to record and use measurements of length, volume and mass to solve problems like these:

Parcel size	Max. Size	Max. Mass	Cost
Small	10 x 30 x 50cm	3kg	£2.75
Medium	30 x 50 x 90cm	5kg	£4.75
Large	50 x 80 x 100cm	10kg	£6.75

Using the information in the table above, solve these questions and explain how you know:

1. How much would it cost to send three large books?
2. What is the best way to send 12kg of rice?
3. Can you find an object in your classroom that would fit into one of the medium size parcels?

Key Stage 2 Maths (Year 5 and 6)

What do children learn at school in Years 5 and 6?

In Year 5 and 6, children build on their understanding of numbers, shapes and measurements and learn about percentages, ratio and proportion, and algebra. By the end of Year 6, children are expected to know how to use the formal, standard methods of calculation including long division.

Exemplification from the National Curriculum for Mathematics (DfE):

Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline \end{array}$$

Answer: 1431

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \\ \hline \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ \cancel{9} \quad \cancel{3} \quad 2 \\ - 4 \quad 5 \quad 7 \\ \hline 475 \\ \hline \end{array}$$

Answer: 475

932 - 457 becomes

$$\begin{array}{r} 1 \quad 1 \\ 9 \quad 3 \quad 2 \\ - \cancel{4} \quad \cancel{5} \quad 7 \\ \hline 5 \quad 6 \\ \hline 475 \\ \hline \end{array}$$

Answer: 475

Short multiplication

24 × 6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \hline \end{array}$$

Answer: 144

342 × 7 becomes

$$\begin{array}{r} 342 \\ \times 7 \\ \hline 2394 \\ \hline \end{array}$$

Answer: 2394

2741 × 6 becomes

$$\begin{array}{r} 2741 \\ \times 6 \\ \hline 16446 \\ \hline \end{array}$$

Answer: 16 446

Long multiplication

24 × 16 becomes

$$\begin{array}{r} \\ 24 \\ \times 16 \\ \hline 240 \\ 144 \\ \hline 384 \end{array}$$

Answer: 384

124 × 26 becomes

$$\begin{array}{r} \\ 124 \\ \times 26 \\ \hline 2480 \\ 744 \\ \hline 3224 \\ \end{array}$$

Answer: 3224

124 × 26 becomes

$$\begin{array}{r} \\ 124 \\ \times 26 \\ \hline 744 \\ 2480 \\ \hline 3224 \\ \end{array}$$

Answer: 3224

Short division

98 ÷ 7 becomes

$$\begin{array}{r} \\ 7 \overline{) 98} \\ \end{array}$$

Answer: 14

432 ÷ 5 becomes

$$\begin{array}{r} \text{ r } 2 \\ 5 \overline{) 432} \\ \text{ r } 2 \end{array}$$

Answer: 86 remainder 2

496 ÷ 11 becomes

$$\begin{array}{r} \text{ r } 1 \\ 11 \overline{) 496} \\ \text{ r } 1 \end{array}$$

Answer: $45 \frac{1}{11}$

Long division

432 ÷ 15 becomes

$$\begin{array}{r} \text{ r } 12 \\ 15 \overline{) 432} \\ \text{ r } 12 \end{array}$$

Answer: 28 remainder 12

432 ÷ 15 becomes

$$\begin{array}{r} \\ 15 \overline{) 432} \\ \\ \\ \\ \end{array} \begin{array}{l} 15 \times 20 \\ 15 \times 8 \end{array}$$

$$\frac{\cancel{12}}{\cancel{15}} = \frac{4}{5}$$

Answer: $28 \frac{4}{5}$

432 ÷ 15 becomes

$$\begin{array}{r} \cdot 8 \\ 15 \overline{) 432 \cdot 0} \\ \cdot 8 \\ \cdot 0 \\ \cdot 0 \\ \cdot 0 \\ \cdot 0 \\ \cdot 0 \\ \cdot 0 \end{array}$$

Answer: 28.8