

PROGRESSION THROUGH CALCULATIONS FOR DIVISION



MENTAL CALCULATIONS

Tables

Tables are taught everyday from Y1 onwards, children should then be able to use these to find other facts eg $280 \div 4 = 70$.

Halving

Knowing that halving is dividing by 2 and that dividing by 4 is halving and halving again.

Dividing by 10 or 100

Children should know that to $\div 10$, they should move digits one place to the right and to $\div 100$ they should move the digits 2 places to the right.

Using Known facts

Given that $1.4 \times 1.1 = 1.54$

What is $1.54 \div 1.4$, or $1.54 \div 1.1$?

MANY MENTAL CALCULATION STRATEGIES WILL CONTINUE TO BE USED. THEY ARE NOT REPLACED BY WRITTEN METHODS.

YR/1

Children will understand equal groups and share items out in play and problem solving. They will count in 2s, 10s and later in 5s.

Grouping

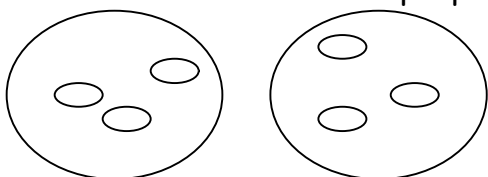


Y2/3

Children will develop their understanding of division and use jottings to support calculation

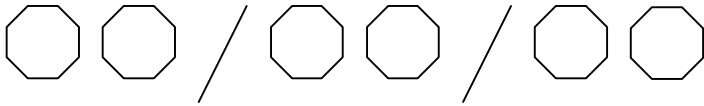
Sharing Equally

6 sweets shared between 2 people, how many do they each get?

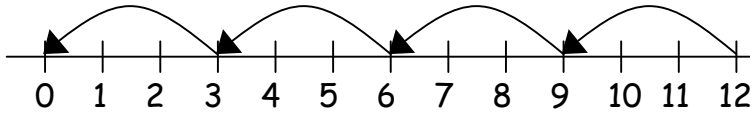


Grouping or Repeated Subtraction

There are 6 sweets, how many people can have 2 sweets each?



Repeated subtraction can be shown on a number line: $12 \div 3 = 4$



Y3/4

Long division using repeated subtraction $TU \div U$ and moving on to $HTU \div U$

$$\begin{array}{r} 14 \text{ r } 3 \\ 6 \overline{) 87} \\ - 60 \quad (6 \times 10) \\ \hline 27 \\ - 24 \quad (6 \times 4) \\ \hline 3 \end{array}$$

$$\begin{array}{r} 32 \text{ r } 4 \\ 6 \overline{) 196} \\ \underline{\cancel{2} 60} 610 \\ 136 \\ \underline{\cancel{2} 60} 610 \\ 76 \\ \underline{\cancel{2} 60} 610 \\ 16 \\ \underline{\cancel{2} 12} 62 \quad _ \\ 432 \end{array}$$

Answer: 32R4

Using symbols to stand for unknown numbers to complete equations using inverse operations.

$$26 \div 2 = \square \quad 24 \div \triangle = 12 \quad \square \div 10 = 8$$

Y5/6

Children move onto the doorstep method, using remainders when necessary

$$291 \div 3 =$$

$$\begin{array}{r} 97 \\ 3 \overline{) 291} \end{array}$$

$$647 \div 4 =$$

$$\begin{array}{r} 161 \text{ r}3 \\ 4 \overline{) 647} \end{array}$$

Any remainders should be shown as whole numbers eg. 14 r 2.

In some problems, children must decide whether to round an answer up or down eg.

Apples are packed into boxes of 8. There are 62 apples. How many boxes are needed?

Answer: 8 (the remaining 6 apples still need to be placed into a box)

In Year 6, children will also be expected to divide and represent the remainder as a decimal or as a fraction:

$$\begin{array}{r} 161 \frac{3}{4} \\ 4 \overline{) 647} \end{array}$$

Here the remainder becomes the top of the fraction and the divisor becomes the bottom.

When children are expected to represent the remainder as a decimal it will be like this:

$$\begin{array}{r} 161.5 \\ 4 \overline{) 646.0} \end{array}$$