

Calculation Policy- Division

The following methods of division are those that the majority of children in each year group should be using. Children may use different strategies if they are not secure in previously taught strategies. If children are able and confident mathematicians they may be introduced to some of the strategies earlier.

Y1

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



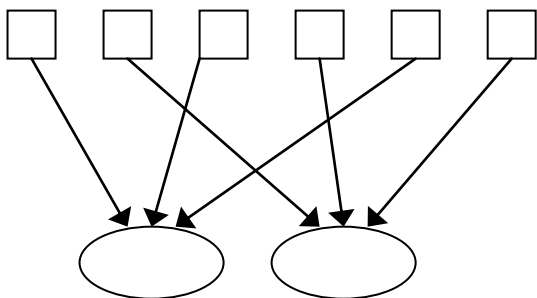
They will be introduced to how arrays can show division.

Y2

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

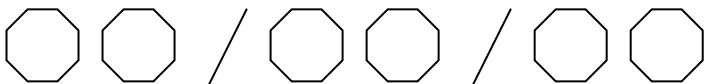
Sharing equally

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



Grouping or repeated subtraction

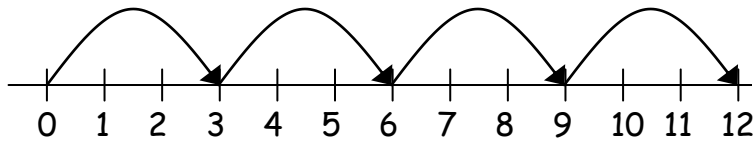
There are 6 sweets, how many people can have 2 sweets each?



Children will understand the \div symbol to interpret number sentences. They will use the \div symbol to record their own number sentences.

Repeated addition using a number line

$$12 \div 3 = 4$$



Children will use arrays to explore division.

They will develop their understanding of division being the inverse of multiplication.

Y3

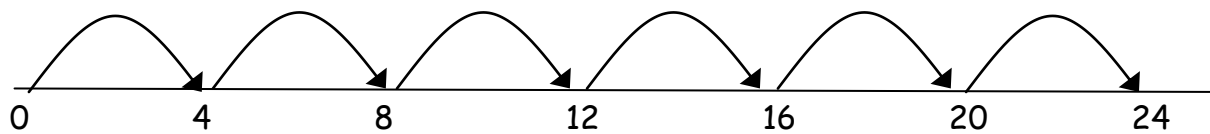
The emphasis in Y3 is on grouping rather than sharing.

Children will continue to use:

Repeated addition using a number line

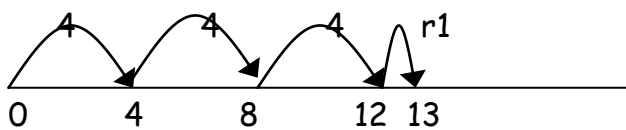
Children will use an empty number line to support their calculation.

$$24 \div 4 = 6$$



Children should also move onto calculations involving remainders.

$$13 \div 4 = 3 \text{ r } 1$$



Towards the end of year three, children should be introduced to using chunking as a method of division.

$$42 \div 3 = 14$$

$$\begin{array}{r} 42 \\ -30 \quad (\underline{10} \times 3) \\ \hline 12 \\ -12 \quad (\underline{4} \times 3) \\ \hline 0 \end{array}$$

Y4

Children will continue with the method of chunking at the start of year four, using their increased knowledge of multiplication tables to help.

$$135 \div 6 = 22 \text{ r}3$$

$$\begin{array}{r} 135 \\ - 60 \quad (\mathbf{10} \times 6) \\ \hline 75 \\ - 60 \quad (\mathbf{10} \times 6) \\ \hline 15 \\ - 12 \quad (\mathbf{2} \times 6) \\ \hline 3 \quad \text{remainder} \end{array}$$

They will then use the bus stop method of division to divide two and three digit numbers by a one digit number.

$$128 \div 4 =$$

Set it out like this

$$4 \overline{)128}$$

$$\begin{array}{r} 0 \\ 4 \overline{)128} \end{array} \quad \text{Then how many 4s in 1}$$

$$\begin{array}{r} 03 \\ 4 \overline{)128} \end{array} \quad \text{So if there is none in 1 how many in 12}$$

$$\begin{array}{r} 032 \\ 4 \overline{)128} \end{array} \quad \text{Finally how many in 8}$$

Then

$$\begin{array}{r} 045 \\ 8 \overline{)360} \end{array}$$

Y5

Children will continue to use the bus stop method to divide numbers with up to four digits by a one digit number.

Any remainders should be shown as integers, i.e. 14 remainder 2 or 14 r 2.

Children need to be able to decide what to do after division and round up or down accordingly. They should make sensible decisions about rounding up or down after division. For example $240 \div 52$ is 4 remainder 32, but whether the answer should be rounded up to 5 or rounded down to 4 depends on the context.

Y6

Children will continue to use written methods to solve short division used in year five.

They should be taught how to do long division.

Long division

$$993 \div 12 = 82 \text{ r}9$$

$$\begin{array}{r} 82 \\ 12 \overline{) 993} \\ \underline{-96} \\ 33 \\ \underline{-24} \\ 9 \end{array} \quad \leftarrow \text{remainder}$$

$$\begin{array}{r} 24 \text{ r}2 \\ 18 \overline{) 434} \\ \underline{36} \\ 74 \\ \underline{72} \\ 2 \end{array}$$

Children should be encouraged to do jottings down the side, counting up in the relevant multiple to help.

Children should also be taught to how show remainders as fractions or decimals.