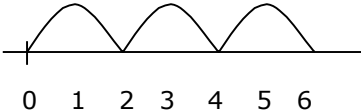
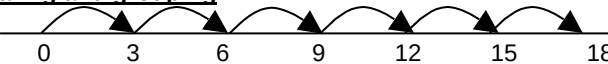
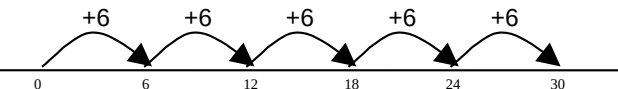
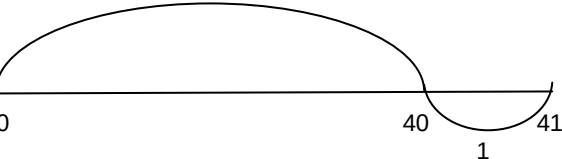
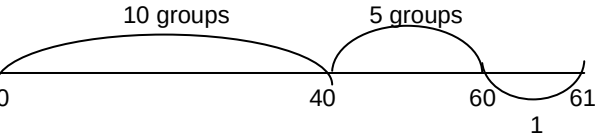
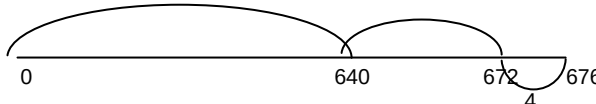


Big Maths

Written Methods for Division.

Years 1 - 2	Years 1 -3
Division is introduced as sharing. Sharing – 6 sweets are shared between 2 people. How many do they have each?  Practical activities involving sharing objects one at a time between people, distributing cards when playing a game, putting objects onto plates, into cups, hoops etc and then ensuring that the groups are equal. <u>Grouping</u> Sorting objects into 2s / 3s/ 4s etc How many pairs of socks are there?  Children will also halve groups of things and count how many are in each half. <u>Application to real life</u> There are 12 crocus bulbs. Plant 3 in each pot. How many pots are there? Jo has 12 Lego wheels. How many cars can she make?	Introduce the symbol for division and begin to relate the sharing to the calculations. Eg. Show 15 divided by 3 and then do the calculation together by physically sharing out 15 of something between 3 people. Gradually increase the number that is being divided by. <u>Grouping</u> Link to counting and understanding number strand Count up to 100 objects by grouping them and counting in tens, fives or twos;... Find one half, one quarter and three quarters of shapes and sets of objects $6 \div 2$ can be modelled as: There are 6 strawberries. How many people can have 2 each? How many 2s make 6? $6 \div 2$ can be modelled as:  In the context of money count forwards and backwards using 2p, 5p and 10p coins Practical grouping e.g. in PE 12 children get into teams of 4 to play a game. How many teams are there? <u>Understand division as sharing and grouping</u> $18 \div 3$ can be modelled as:  Sharing – 18 shared between 3 (see Year 1 diagram) OR Grouping - How many 3's make 18? <u>Remainders</u> $16 \div 3 = 5 \text{ r}1$ Sharing - 16 shared between 3, how many left over? Grouping – How many 3's make 16, how many left over? e.g. 

	Arrays - Use arrays to illustrate relationship between multiplication and division  $3 \times 4 = 12$ $12 \div 3 = 4$
Years 2 - 4	Years 4 -6
<u>Sharing and grouping</u> $30 \div 6$ can be modelled as: grouping – groups of 6 placed on no. line and the number of groups counted e.g.  sharing – sharing among 6, the number given to each person <u>Remainders</u> $41 \div 4 = 10 \text{ r}1$ 10 groups  $41 = (10 \times 4) + 1$ <u>Sharing and grouping</u> Continue to understand division as both sharing and grouping (repeated subtraction). <u>Remainder</u> Quotients expressed as fractions or decimal fractions $61 \div 4 = 15 \frac{1}{4}$ or 15.25  Children will jump in only 2 stages. The first group will always be a multiple of ten and the second will be what is left – the remainder.	<u>Pencil and paper procedures</u> $256 \div 7$ lies between $210 \div 7 = 30$ and $280 \div 7 = 40$ * Partition the dividend into multiples of the divisor: e.g. $256 = 210 + 46$ $210 \div 7 = 30$ $46 \div 7 = 6 \text{ r}4 \rightarrow 30 + 6 \text{ r}4 = 36 \text{ r}4$ 256 $210 + 46$ $30 + 6 \text{ r}4$ OR $\begin{array}{r} 256 \\ - 210 \\ \hline 46 \\ - 42 \\ \hline 4 \end{array}$ (30 groups) (6 groups) Answer: 36 remainder 4 <u>Expanded bus stop method leads into Compact bus stop method for short division.</u> $\begin{array}{r} 6 \overline{) 196} \\ - 180 \\ \hline 16 \\ - 12 \\ \hline 4 \end{array}$ 6×30 6×2 Answer: 32 R 4 <u>Sharing and grouping</u> Continue to understand division as both sharing and grouping (repeated subtraction). <u>Remainders</u> Quotients expressed as fractions or decimal fractions $676 \div 8 = 84.5$ 

Pencil and paper procedures

$977 \div 36$ is approximately $1000 \div 40 = 25$

* Partition the dividend into multiples of the divisor:

e.g. $977 = 720 + 180 + 77$

$$720 \div 36 = 20$$

$$180 \div 36 = 5$$

$$77 \div 36 = 2\text{r}5 \rightarrow 20 + 5 + 2\text{r}5 = 27\text{r}5$$

OR

977		977
		- <u>720</u> (20 groups)
720 + 180 + 77		257
		- <u>180</u> (5 groups)
20 + 5 2r5		77
		- <u>72</u> (2 groups)
		5

Answer: $27 \frac{5}{36}$

8 goes into 40 five times so write in 5.

$$\begin{array}{r} 9 \quad 2 \quad 5 \\ 8 \overline{) 7 \quad 4 \quad 0 \quad 0} \end{array}$$

Compact bus stop method