

# DIVISION

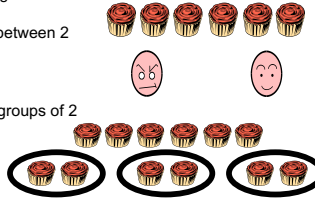

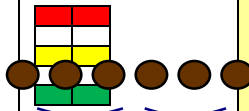

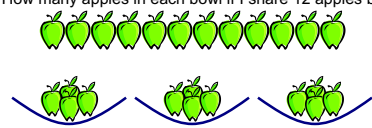
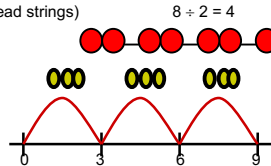
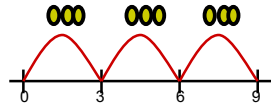
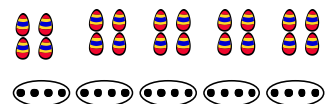
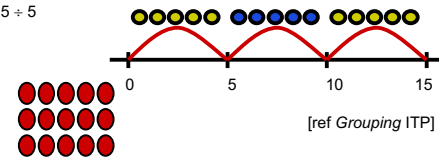
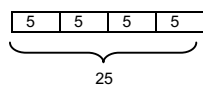
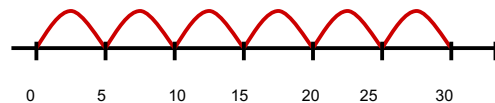
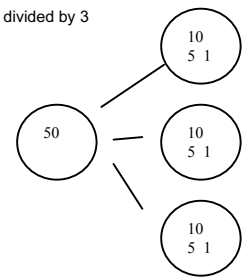
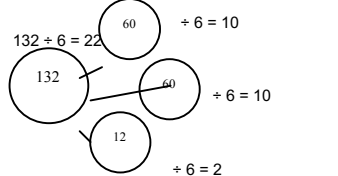
## AGE-RELATED EXPECTATIONS

## Recording

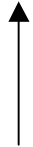
## Bar model

## Rapid Recall

## Mental calculation

YR	Share objects into equal groups and count how many in each group	Practical / recorded using ICT (eg digital photos / pictures on IWB)	Pictures / Objects 6 cakes shared between 2  6 cakes put into groups of 2 		Symbols 6 cakes shared between 2  6 cakes put into groups of 2 	(see recording)
KS1	Solve (practical) problems that involve sharing into equal groups	Practical / recorded using ICT	Pictures / Symbols How many apples in each bowl if I share 12 apples between 3 bowls? 		Number tracks / Number line (modelled using bead strings) $8 \div 2 = 4$  $9 \div 3 = 3$ Counting in 3s 	Halves of even numbers to 10 (see recording)
		Pictures / Symbols Four eggs fit in a box. How many boxes would you need to pack 20 eggs? 	Number lines / Arrays $15 \div 5$  [ref Grouping ITP]	Partitioning $28 \div 2$ $20 \div 2 = 10$ $8 \div 2 = 4$ $25 \div 5 =$ 	Derive / recall $\div$ facts for 2, 5 and 10 tables Derive / recall halves of even numbers to 20 $TU \div 2$ , $TU \div 10$ (multiples of 10)	
Lower KS2	$TU \div U$ (where divisor is 2, 3, 4, 5, 8 or 10)  Round remainders up / down, depending on the context	Number lines (start from zero) $33 \div 5 = 6 \text{ r}3$ (counting in 5s) 		Partitioning (multiples of the divisor) $50 \div 4 = 12 \text{ r}2$ $10 \times 4 = 40$ $2 \times 4 = 8$ (48)	50 divided by 3 	Derive / recall $\div$ facts for 2, 3, 4, 5, 8 and 10 tables Derive / recall halves of numbers to 100 Find tenths (see fractions) $TU / HTU \div 2, 4, 10, 5$ $\div 4$ (half, half again)
		Partitioning (multiples of the divisor) $67 \div 4 = 16 \text{ r}3$ $10 \times 4 = 40$ $6 \times 4 = 24$ (64)	Grouping/chunking (vertical layout) $96 \div 7$ $\begin{array}{r} 96 \\ -70 \\ \hline 26 \\ -21 \\ \hline 5 \end{array}$ (7 $\times$ 10) (7 $\times$ 3) Answer: 13 R 5	$132 \div 6 = 22$ 	Derive / recall $\div$ facts up to the 12 times table Numbers up to 1000 $\div 10 / 100$ (whole number answers and understand the effect) Halves of $TU / HTU$ numbers including decimals (1dp)	

Estimate first



Y5	<p><b>Refine and use efficient methods:</b></p> <p>ThHTU ÷ U (eg 4123 ÷ 7)</p>	<p>Grouping (expanded)</p> $\begin{array}{r} 6 \overline{)196} \\ -60 \quad 6 \times 10 \\ \hline 136 \\ -60 \quad 6 \times 10 \\ \hline 76 \\ -60 \quad 6 \times 10 \\ \hline 16 \\ -12 \quad 6 \times 2 \\ \hline 4 \quad 32 \\ \hline \end{array}$ <p>Answer: 32R4</p>	<p>Grouping (efficient)</p> <p>346 ÷ 8 (estimate: 400 ÷ 8 = 50)</p> $\begin{array}{r} 8 \overline{)346} \\ -320 \quad (8 \times 40) \\ \hline 26 \\ -24 \quad (8 \times 3) \\ \hline 2 \end{array}$ <p>Answer: 43 R 2</p> <p>Use tables fact and place value knowledge to support the fact that:</p> <p>10 lots of 8 = 80 so, further multiplying 80 by 4 = 320 (8 x 40 = 320)</p>	<p>'Short' division</p> <p>432 ÷ 5 becomes</p> $\begin{array}{r} 8 \quad 6 \quad r2 \\ 5 \overline{)432} \\ \underline{40} \phantom{0} \\ 32 \phantom{0} \\ \underline{30} \phantom{0} \\ 2 \phantom{0} \end{array}$ <p>Answer: 86 remainder 2</p> <p>432 ÷ 5 becomes</p> $\begin{array}{r} 8 \quad 6 \\ 5 \overline{)432} \\ \underline{40} \phantom{0} \\ 32 \phantom{0} \\ \underline{30} \phantom{0} \\ 2 \phantom{0} \end{array} \frac{2}{5}$ <p>Answer: 86 and 2 fifths</p>	<p>Bar Visualisation</p> <div><div>432</div><div></div><div></div><div></div><div></div></div>	<p>Recall quickly ÷ facts up to 12 times table</p> <p>Divide whole numbers by 10, 100, 1000.</p>
Y6	<p><b>Use efficient methods:</b></p> <p>ThHTU ÷ TU (eg 4123 ÷ 27)</p>	<p>Grouping / Chunking (fractional remainder) or (decimal)</p> <p>432 ÷ 15 becomes</p> $\begin{array}{r} 28 \\ 15 \overline{)432} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{135} \\ 3 \end{array}$ <p>15 × 20 = 300 15 × 8 = 120 300 + 120 = 420 432 - 420 = 12 12 ÷ 15 = <math>\frac{4}{5}</math></p> <p>Answer: 28 <math>\frac{4}{5}</math></p>	<p>Use mental maths knowledge to support the fact that:</p> <p>10 lots of 15 = 150 so, doubling it = 300</p> <p>It may be useful to write multiples of 15 to assist.</p> <p><math>15 \overline{)028.8}</math> <math>15 \overline{)432.0}</math></p>	<p>Short/Compact/ 'Bus-stop' ((fractional remainder)</p> <p>496 ÷ 11 becomes</p> $\begin{array}{r} 45 \quad r1 \\ 11 \overline{)496} \\ \underline{44} \phantom{0} \\ 56 \\ \underline{55} \\ 1 \end{array}$ <p>Answer: 45 <math>\frac{1}{11}</math></p> <p>Support with Base 10 apparatus / deines equipment.</p> <p>iPad app = "number pieces"</p>	<p>Bar Visualisation</p> <p>Larger divisors make the Bar an inefficient visualisation method.</p>	<p>Factors</p> <p>Divide decimals by 100, 1000</p>