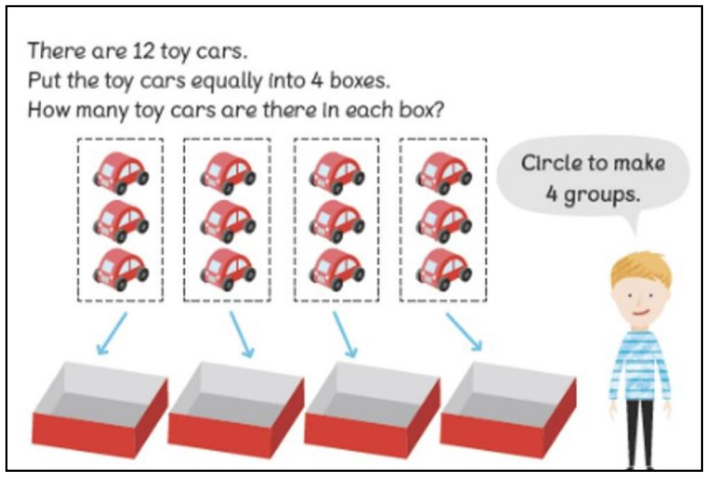
Air Balloon Calculation Policy: Division

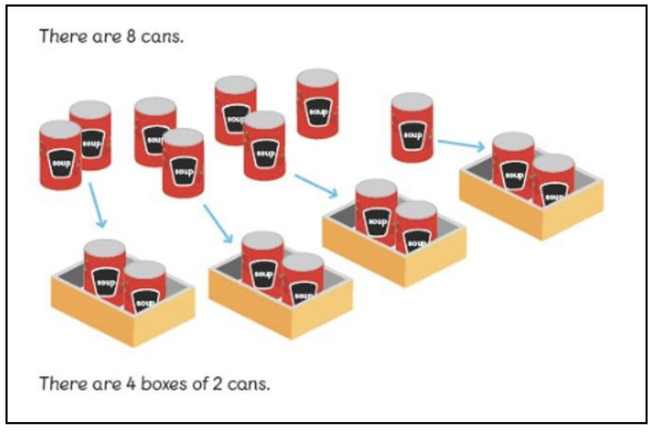
At Air Balloon, we follow the CPA approach- concrete materials; followed by pictorials and models; then abstract. One or more of these stages will be shown concurrently in a lesson. The examples shown start from KS1 and move on to KS2. However, teachers are encouraged to refer back to previous Key Stages' calculation strands to consolidate and reinforce fluency when calculating multiplication and division problems. Objects, base 10 and place value counters are key resources which are used to reinforce calculations. Missing number problems should be included in lessons regularly, to check understanding with connections to multiplication.

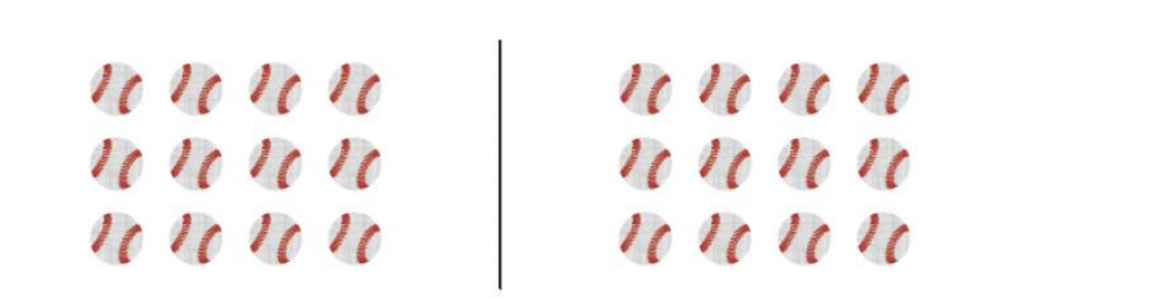
Calculating in KS2 has been shown as mental and written methods. This is to promote efficiency and fluency. To promote reasoning skills, children should be encouraged to discuss their methods and why using a mental or written method is the most efficient with the calculations they have been given.

Division: KS1

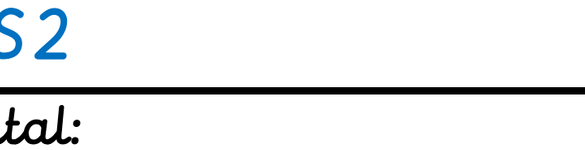
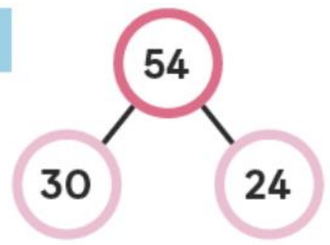
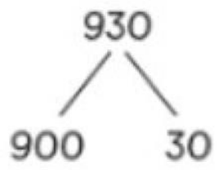
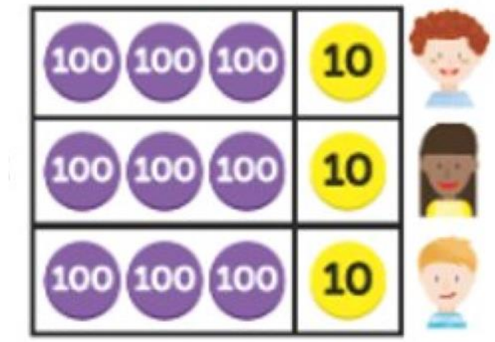
Year 1	Year 2
Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. *Methods of sharing and grouping should be explored.*	Calculate mathematical statements for division within the multiplication tables (2, 5 and 10) and write them using the division (÷) and equals (=) signs. *Children should be able to express that division is not commutative. Methods of sharing and grouping should be explored.*



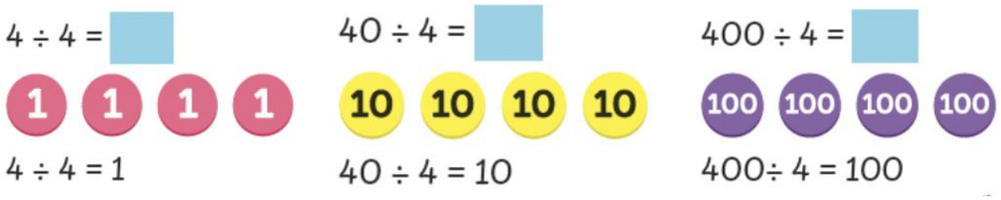




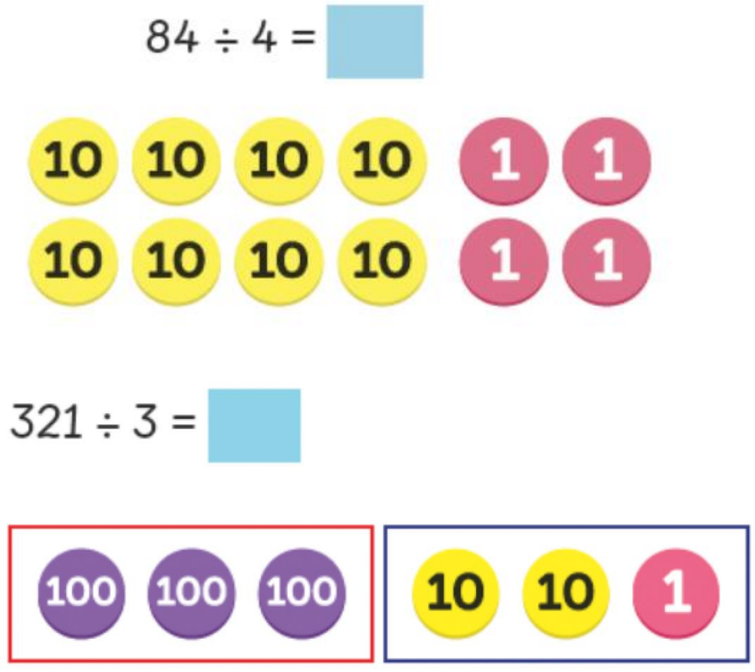
Division: KS2

Skill	LKS2	UKS2
Dividing by a 1-digit number	**Mental:** 3. *Write and calculate mathematical statements for division using the multiplication tables that they know (2, 3, 4, 5, 8, 10) using mental methods.* 68 ÷ 2 = ☐ Step 1 Divide 6 tens by 2.  Step 2 Divide 8 ones by 2.  *Moving to trickier dividends where partitioning is needed:* 54 ÷ 3 = ☐ 	**Mental:** 5. *Divide numbers mentally, drawing upon known facts.* 930 ÷ 3 = ☐   24 ÷ 4 = ☐ 824 ÷ 4 = ☐ 8024 ÷ 4 = ☐ 8424 ÷ 4 = ☐

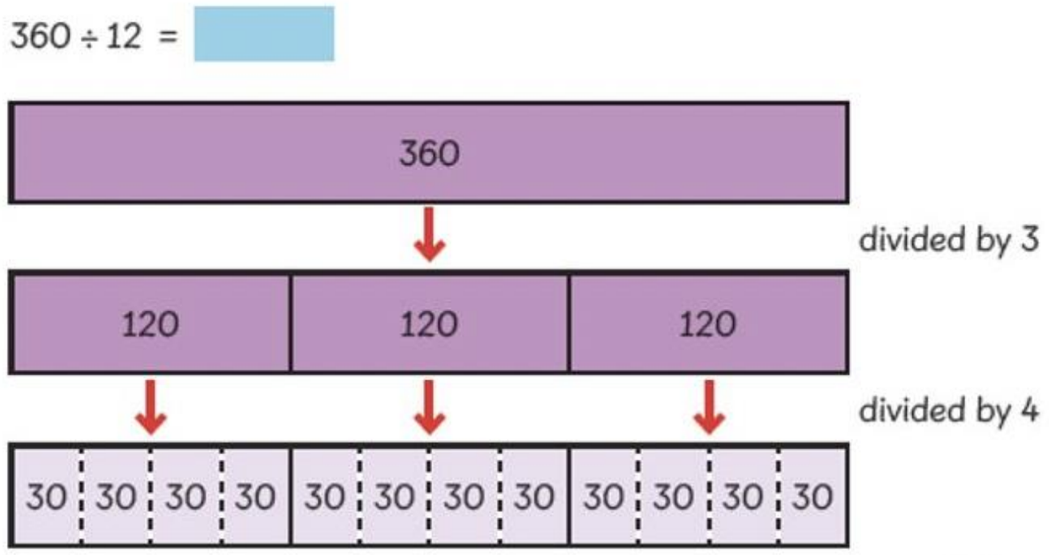
4. Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).



Where derived facts can be identified between the dividend and the divisor, mental methods should be used:



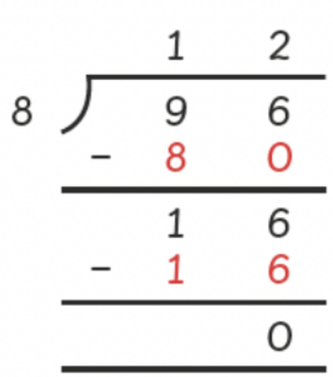
6. Pupils undertake mental calculations with increasingly large numbers and more complex calculations.



Written:

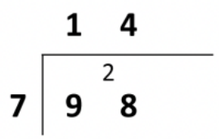
3. Write and calculate mathematical statements for division using the multiplications they know with formal written methods

Long multiplication or 'chunking'. Support can be given where children need to find multiples to 'chunk off' with this method (ie 96 can be shown as partitioned to 80 and 16). Base 10 should be as a concrete resource.



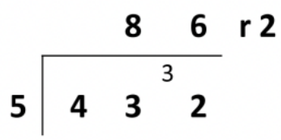
4. Progress to written methods of division (including short method) with 1-digit divisors and 3-digit dividends.

98 ÷ 7 becomes



Answer: 14

432 ÷ 5 becomes

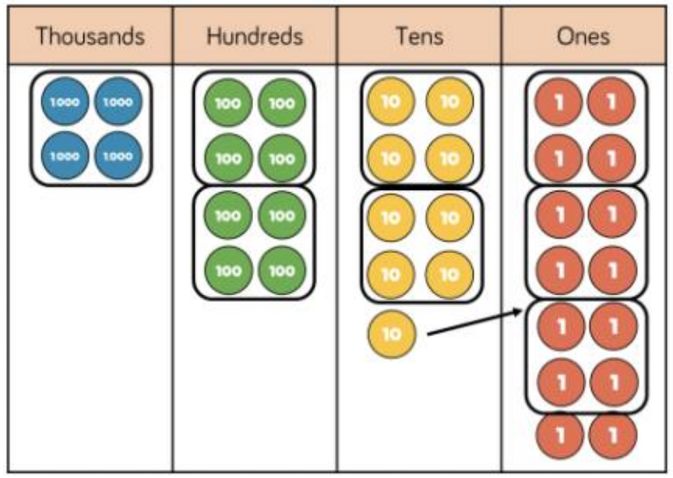


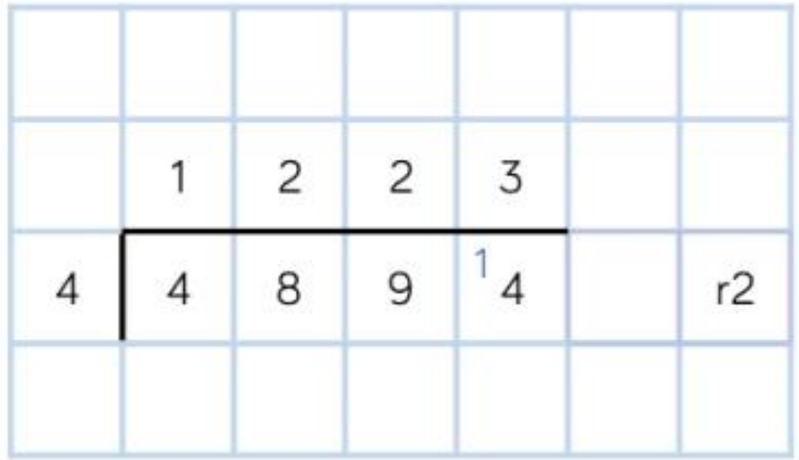
Answer: 86 remainder 2

Written:

5. Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Pupils practise and extend their use of the formal written methods of short division. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.

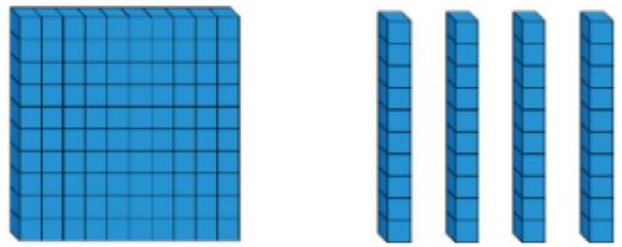




Dividing by 1, 10, 100 and 1000

4. Divide mentally including dividing by 1, 10 and 100.

Use Base 10 to divide 140 by 10



Th	H	T	O
		● ● ● ●	●

÷ 100 ÷ 100

4,100 ÷ 100 = 4

5. Divide whole numbers and those involving decimals by 10, 100 and 1000

64,000 ÷ 10 = _____

64,000 ÷ 100 = _____

64,000 ÷ 1,000 = _____

HTh	TTh	Th	H	T	O
	6	4	0	0	0

Dividing by 2-digit numbers	N/A	6. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context