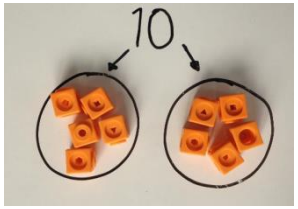
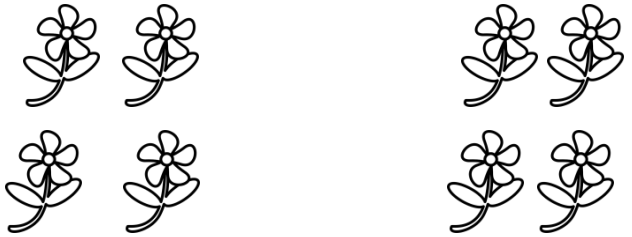
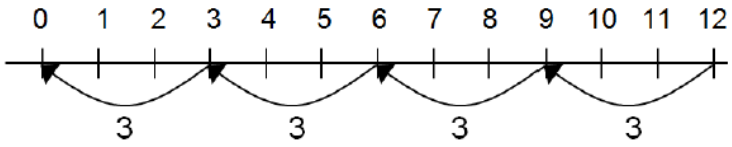
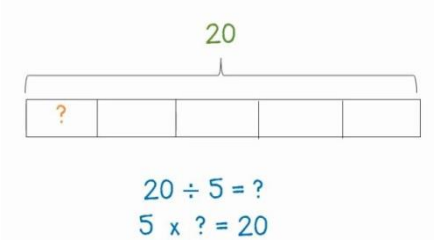
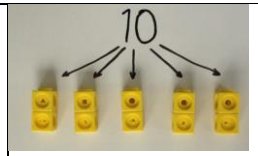
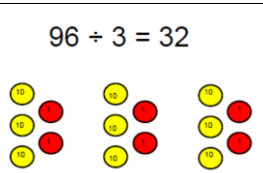
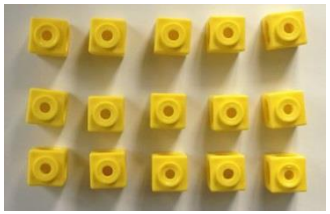
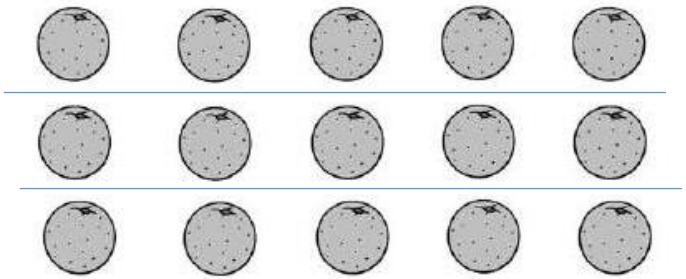
Division

Objective and Strategies	Concrete	Pictorial	Abstract
Year 1 Sharing objects into groups Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	 I have 10 cubes, can you share them equally in 2 groups? 	Children use pictures or shapes to share quantities.  8 ÷ 2 = 4	Share 9 buns between three people. 9 ÷ 3 = 3
Year 2 Division as grouping Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.  	Use a number line to show jumps in groups. The number of jumps equals the number of groups.  Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group. 	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?

addition, mental methods, and multiplication and division facts, including problems in contexts.	 		
Division within arrays	 Link division to multiplication by creating an array and thinking about the number sentences that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15	 Draw an array and use lines to split the array into groups to make multiplication and division sentences.	Find the inverse of multiplication and division sentences by creating four linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7

Year 3

Division with a remainder

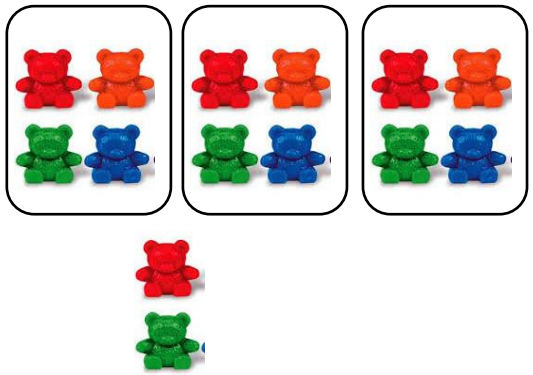
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.

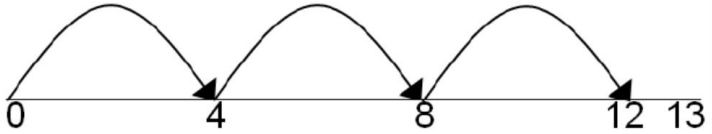
Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

14 ÷ 3 =

Divide objects between groups and see how much is left over



Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.



Draw dots and group them to divide an amount and clearly show a remainder.

Complete written divisions and show the remainder using r.

Year 4

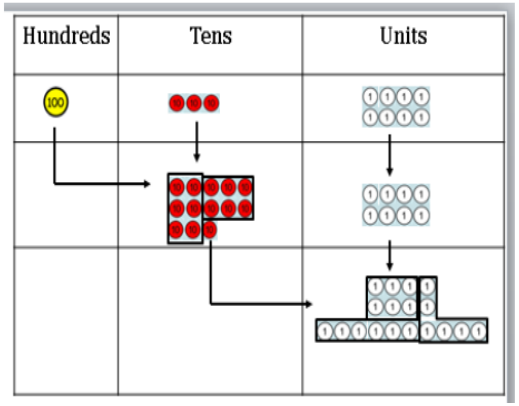
Division through vertical method focussing on grouping

Recall multiplication and division facts for multiplication tables up to 12 × 12.

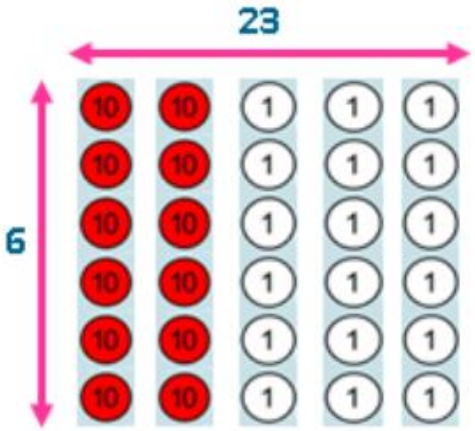
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.

Grouping and sharing using place value counters.
Exchanging counters which cannot be grouped.

138 ÷ 6 = 23

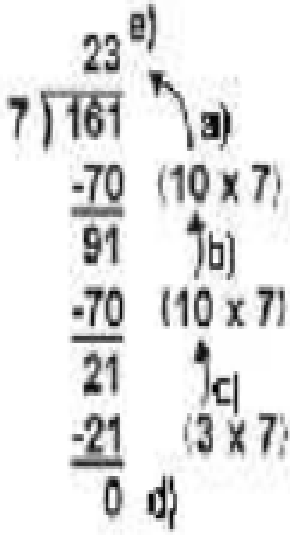


Result of grouping/sharing counters during 'concrete' stage.



Check using multiplication inverse.

Teach chd vertical method through grouping multiples of the divisor. Examples to include remainders.



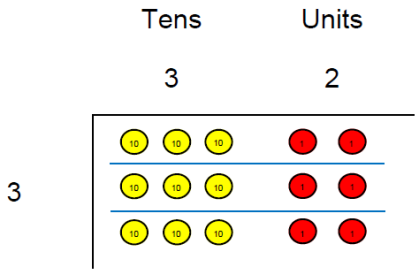
Link to work done on concrete and pictorial learning done previously

Year 5

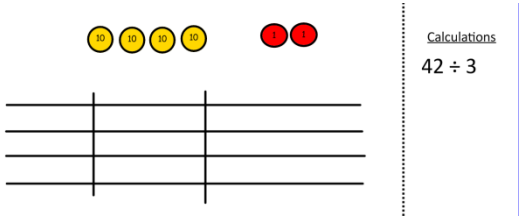
Short division

Pupils start with dividing 4-digit numbers by 2, 3 and 4, where no regrouping is required. Place value counters are used simultaneously in a place value chart, to develop conceptual understanding. They progress to calculations that require regrouping in the hundreds or tens columns. Pupils build on their conceptual knowledge of division to become confident with dividing numbers where the tens digit is smaller than the divisor, extending this to any digit being smaller than the divisor.

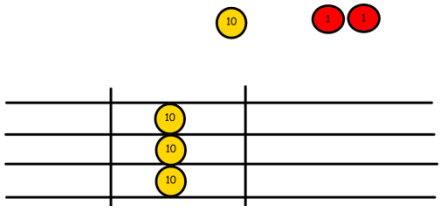
Multiply and divide numbers mentally drawing upon known facts.
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
Solve problems involving multiplication and division, including scaling by simple



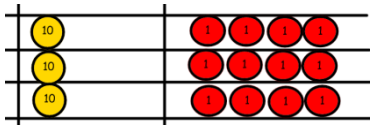
Use place value counters to divide using the bus stop method alongside



42 ÷ 3=
Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.

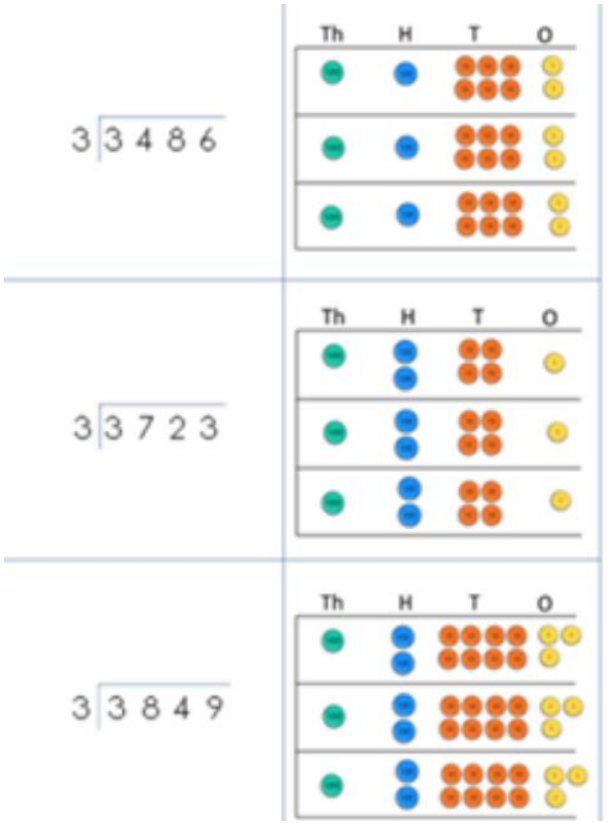


We exchange this ten for ten ones and then share the ones equally among the groups.

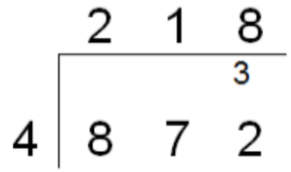


We look how much in 1 group so the answer is 14.

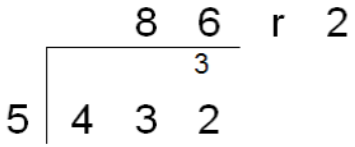
Students move onto representing concept learn using concrete apparatus to drawing to represent different values:

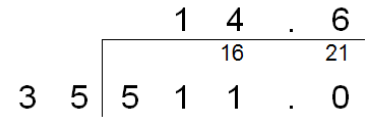


Moving onto short division; begin with divisions that divide equally with no remainder.



Move onto divisions with a remainder.



fractions and problems involving simple rates. **Year 6** Short division Children to be able to divide so that there are no remainders, going into the decimal values if needed. Use written division methods in cases where the answer has up to two decimal places. Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. 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.			Pupils should be encouraged to note down multiples when dividing by a 2 digit number  35 70 105 140 ...