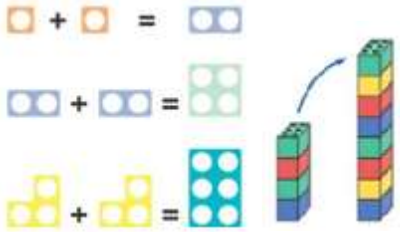
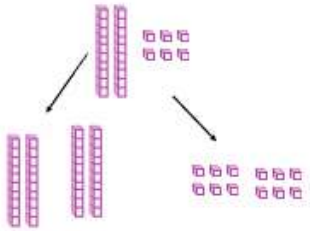
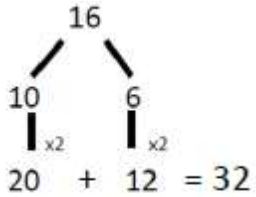
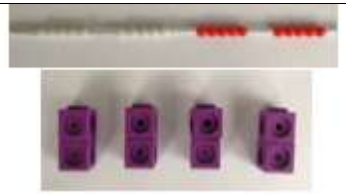
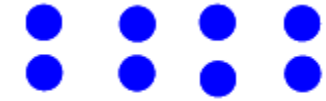
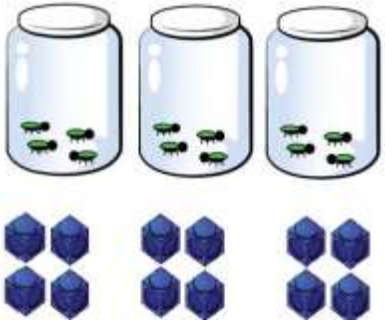
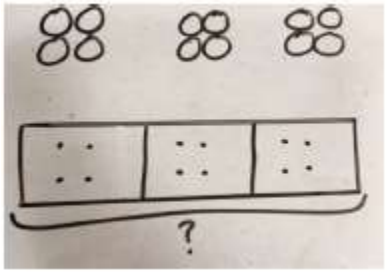
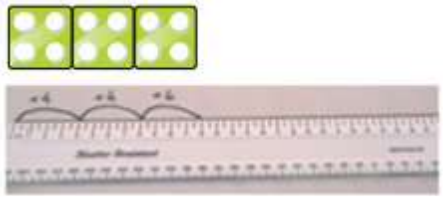
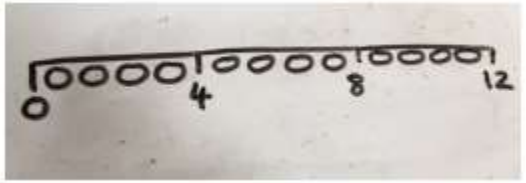
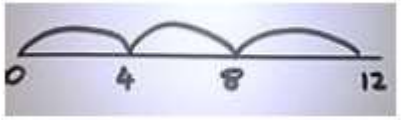
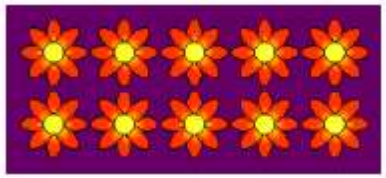
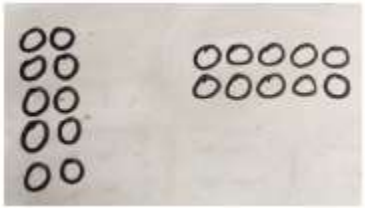
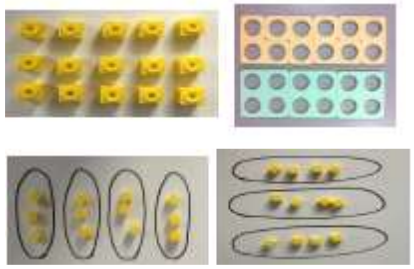
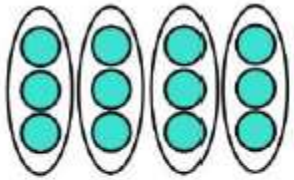
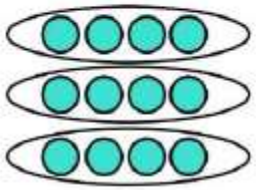
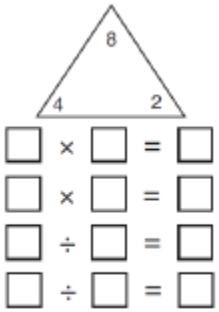
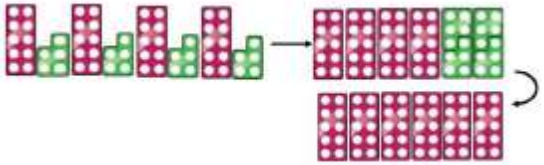
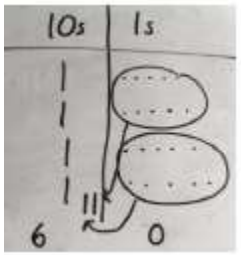
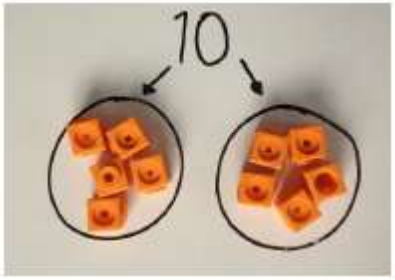
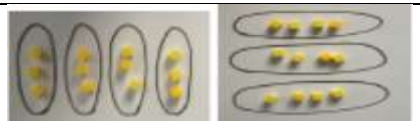
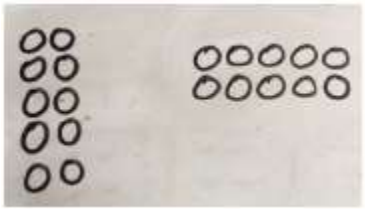
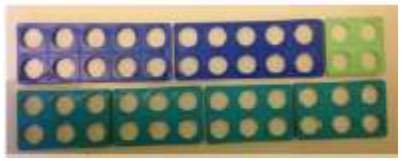
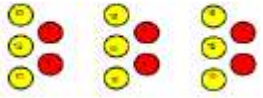
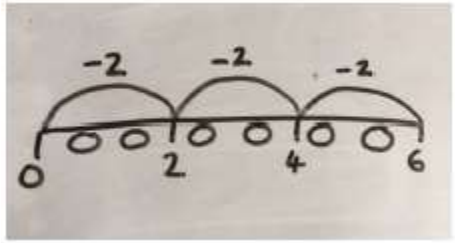
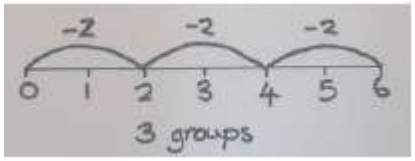
Objective/ strategy	Concrete	Pictorial	Abstract
Doubling and near doubles	Use practical activities using manipultives including cubes and Numicon to demonstrate doubling  Double 4 is 8 Use practical activities to demonstrate near doubles Model doubling using dienes 4 x 2 is 8  Use practical activities to demonstrate near doubles	Draw pictures to show how to double numbers Double 4 is 8  Draw pictures of dienes to show doubling numbers	Partition a number and then double each part before recombining it back together  . Calculate near doubles mentally by doubling and adding/ subtracting 1

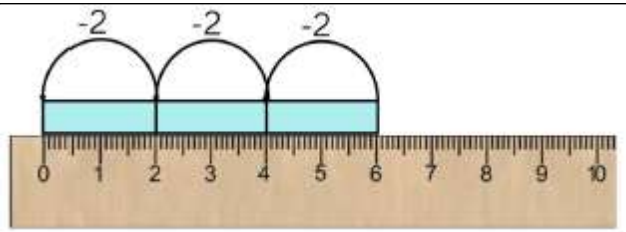
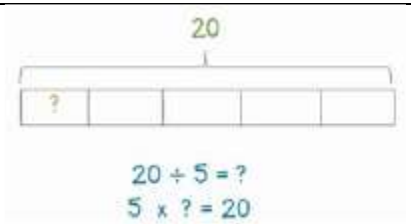
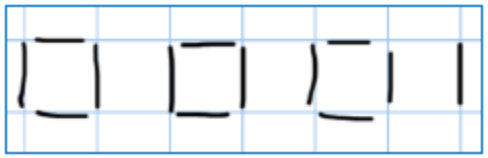
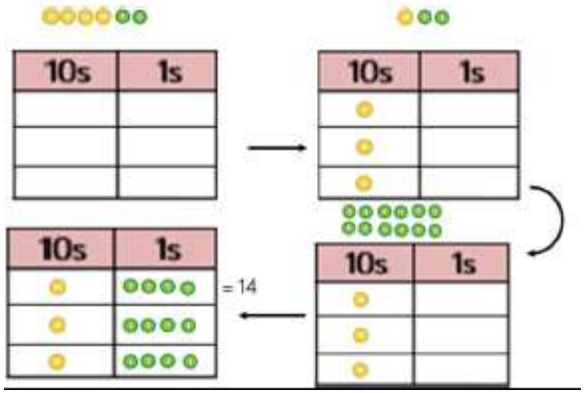
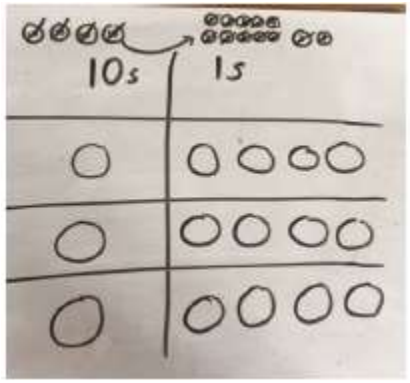
Counting in multiples		Children make representations to show counting in multiples.  	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30
Repeated addition	 4 + 4 + 4 There are three equal groups of four	Children to represent repeated addition using drawings and a bar model 	3x 4 = 12 4+ 4+ 4 = 12

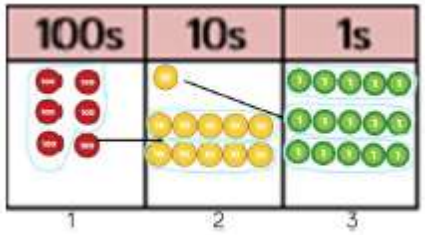
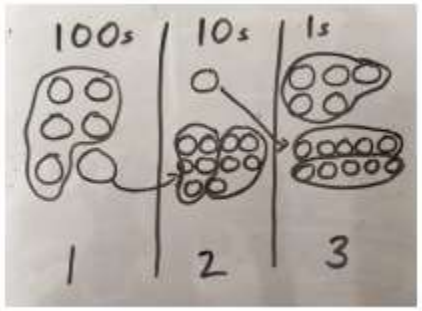
Repeated addition using number lines	Number lines to show repeated addition 	Represent this pictorially alongside a number line 	Abstract number line showing 3 jumps of 4 
Understanding arrays	Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc. 	Draw representations of arrays to show understanding 	2 x 5 = 10 5 x 2 = 10
Multiplication is commutative	Create arrays using counters and cubes and Numicon.  Pupils should understand that an array can represent different equations and that, as multiplication is commutativity, the order of the multiplication does not affect the answer.	Use representations of arrays to show different calculations and explore commutativity  	 Use an array to write multiplication sentences and reinforce repeated addition 3x 5 = 15 5x 3 = 15 5+ 5+5 =

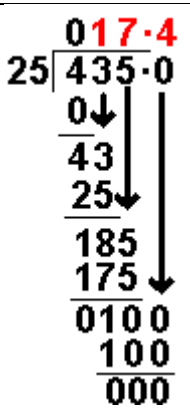
Using the inverse			2 x 4 = 8 4 x 2 = 8 8 ÷ 2 = 4 8 ÷ 4 = 2 8 = 2 x 4 8 = 4 x 2 2 = 8 ÷ 4 4 = 8÷ 2 Show all 8 related fact family sentences.
Partitioning 2 digit numbers to multiply	Partition to multiply using dienes or numicon 	Children to represent pictorially  Children draw a number line to represent jumps e.g. 14 x 8 = 10 x 8 + 4 x 8	Children show steps they have taken using partitioning 
Formal method			Formal written method for short multiplication, then long multiplication

			6 x 23 = 23 × 6 138 1 1 1 2 4 × 2 6 7 4 4 2 4 8 0 3 2 2 4 1 1 Answer: 3224 Multiplication of decimals – multiply as whole numbers, add back decimal places.
DIVISION			
Division as sharing	Sharing using a range of objects 10÷2  I have 10 objects can you share them between 2 ?	Represent the sharing pictorially  8÷2 = 4	6 ÷ 2 =3 3 | 3 Children should also be encouraged to use their times tables facts

Inverse	 Children use arrays to show division sentences	 Children draw own arrays to show division sentences and link to multiplication	Children are able to give division facts for multiplication facts 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7 28 = 7 x 4 28 = 4 x 7 4 = 28 ÷ 7 7 = 28 ÷ 4
Division as grouping	Use cubes, counters dienes to help understanding  24 divided into groups of 6 = 4 96 ÷ 3  Repeated subtraction using Cuisenaire rods above a ruler 3 groups of 2	Children to represent repeated subtraction pictorially  Continue to use bar modelling to aid understanding and link division to multiplication	Abstract number lines to represent the equal groups that have been subtracted 

			
Division with remainders	Use of objects to divide into groups e.g. 13 ÷ 4 = 	Children to represent objects pictorially  There are 3 squares/ groups of 4 with 1 left over	Jump forward in equal jumps on a numberline and then see what is left over for a remainder 
	Sharing using place value counters/dienes 42÷3=14 	Children to represent pictorially 	Children to write calculations to show the process of partitioning. Children to understand partitioning into 10x number and rest. Link to partitioning to multiply by a 2 digit number 42÷3 = 30÷3= 10 12÷3= 4

	To begin with children use dienes to show grouping as below with no remainders or carrying e.g. 639 ÷ 3 = Short division using place value counters/ dienes to group 615 ÷ 5 =  1. Make 615 with dienes 2. How many groups pf 5 hundreds can you make with 6 hundred ? 3. Exchange 100 for tens 4. How many groups of 5 tens can you make with 11 counters ? 5. Exchange 1 ten for 10 ones 6. How many groups of 5 ones can you make with 15 ones?	To begin with children represent grouping pictorially where there is no carrying ore remainders e.g. 639 ÷ 3 =  	Children use short division without remainders and then move onto short division with remainders 2 1 8 3 4 | 8 7 2 8 6 r 2 3 5 | 4 3 2 Move onto changing remainders into decimals 017 r 10 25 | 435 0↓ 43 25↓ 185 175 010

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000