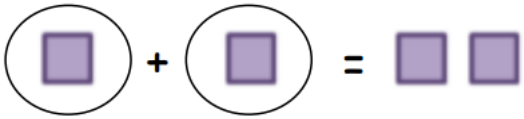
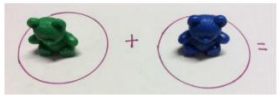
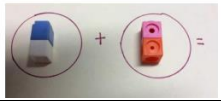
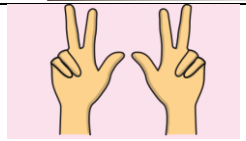
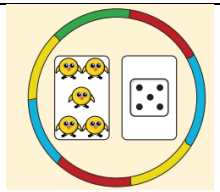
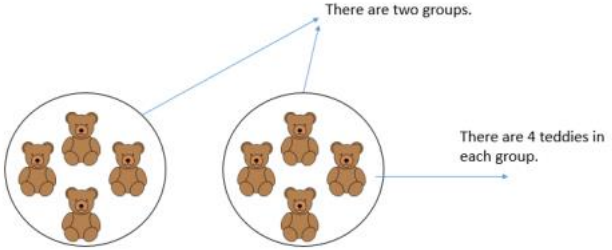
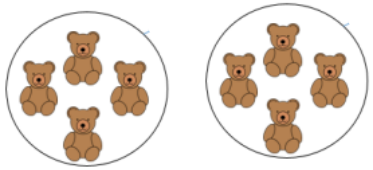
Calculation Policy

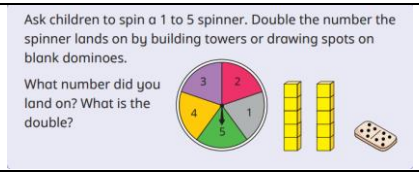
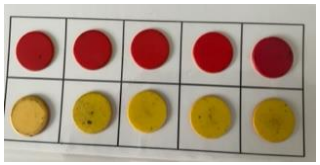
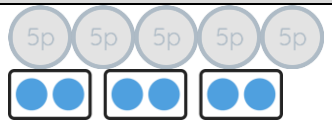
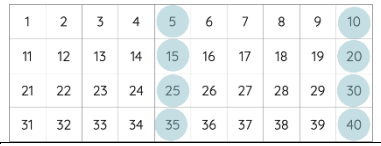
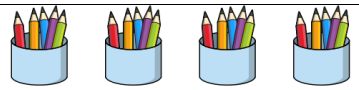
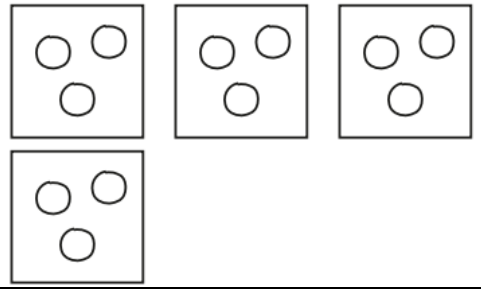
Multiplication

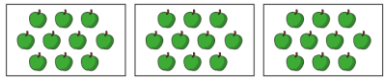
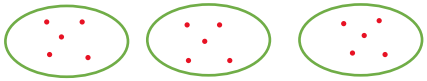
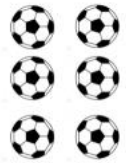
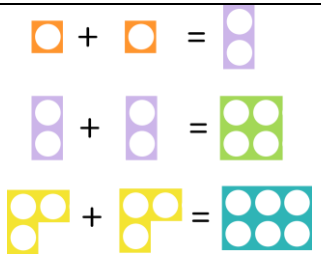
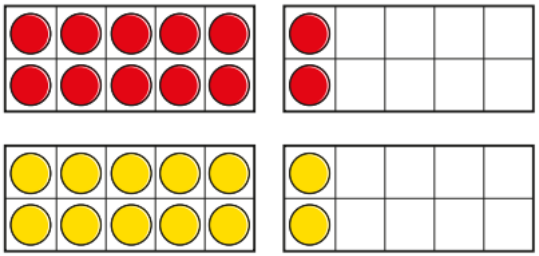
May 2024

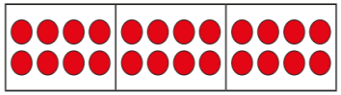
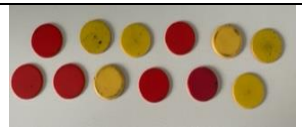
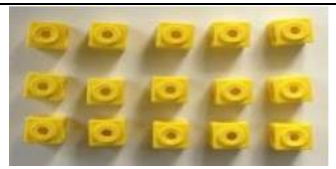
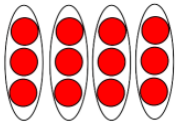
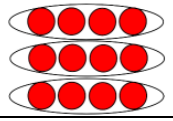
Multiplication

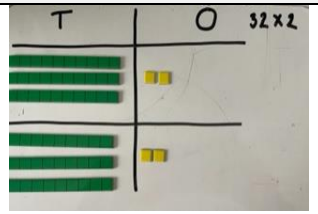
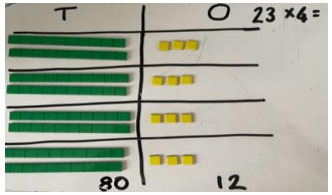
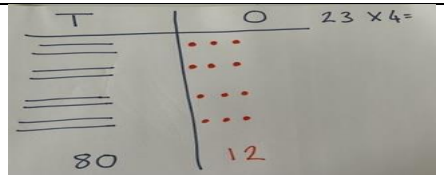
EYFS:			
Vocabulary:	Double. Equal, groups, grouping	**Manipulatives & scaffolds:**	Fingers Five frames Ten frames Double sided counters Numicon Cubes Bead strings Part-whole model
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Doubling	The link between addition and multiplication can be introduced through doubling. Domino can be used to do this as well as fingers to make the link between doubling and halving. They can also be used to illustrate the odd and even patterns of numbers.	Children have a go at recording by drawing pictures in groups 	1 + 1 = 2 Double 1 equals 2 Double ___ is ___

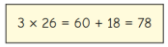
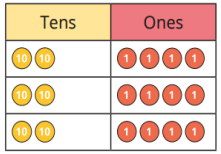
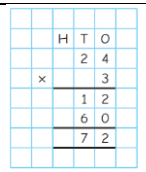
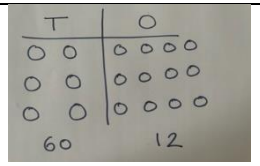
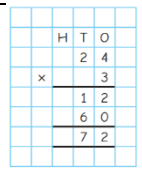
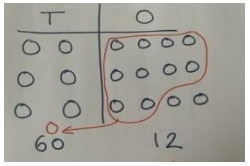
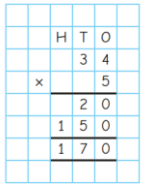
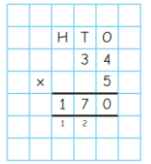
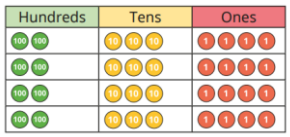
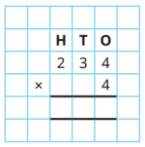
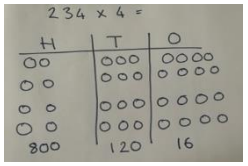
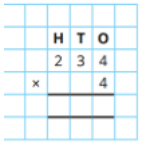
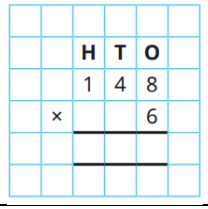
	 		
Doubles to 10	 There are 3 here and 3 there. Double 3 is 6. 6 is double 3.	 There are 5 here and 5 there. Double 5 is 10. 10 is double 5.	There are ___here and ___there. Double ___ is ___ ___ is double ___
Grouping	Children will experience equal groups of objects. Children will be encouraged to count the groups, then count how many objects are in a group – 4 and 4 		Stem sentence: There are __ groups There are __ in each group
Play with and build doubles	Children find and make doubles. Progress this to showing children a double and asking them to say what number has been doubled, by finding the inverse.		Double __ is ___ I can see ___ and ___ I can see ___ altogether This is double ___

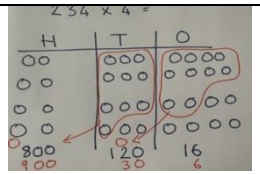
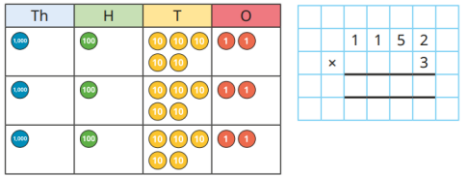
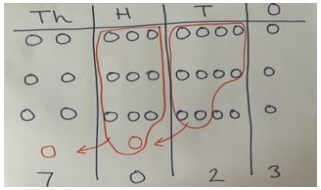
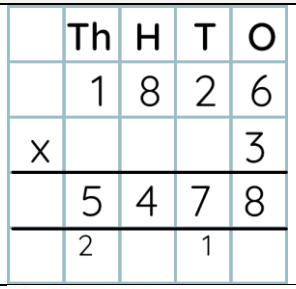
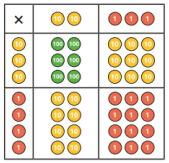
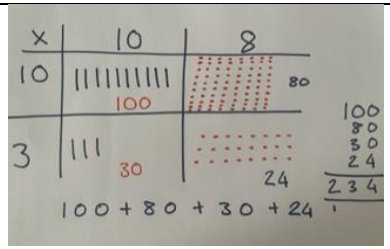
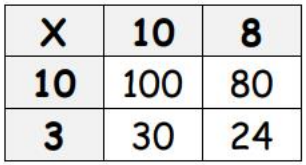
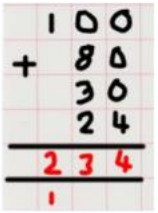
		I can see 4 and 4 Double 4 is 8	
Y1			
Vocabulary :	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing, grouping, groups of	**Manipulatives & scaffolds:**	Ten frames Double sided counters Numicon Cubes Bead strings Number line Bar model
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Counting in multiples – 2s, 5, 10s		 	Say/write sequences: 2, 4, 6, 8… 10, 20, 30, 40… 5, 10, 15, 20, 25, 30…
Recognise equal groups	 There are _____ equal groups of _____ pencils.		There are ___ equal groups of___

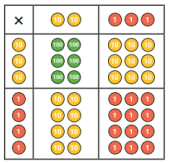
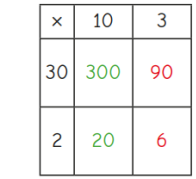
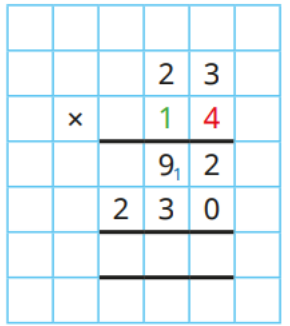
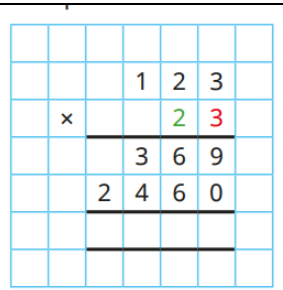
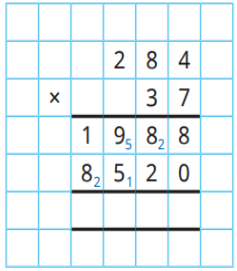
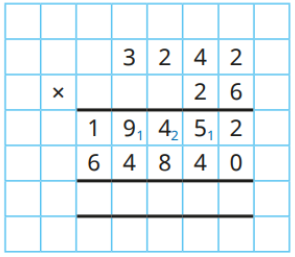
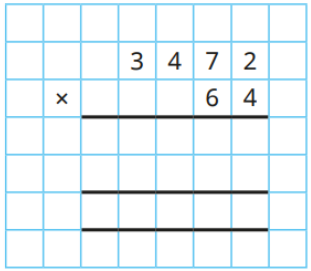
		There are ___ equal groups of___	
Add equal groups	 10 + 10 + 10 = 30	5 + 5 + 5 = 15 	5 + 5 + 5 = 15
Make arrays	  There are __ rows. There are __ in a row. There are __ in total. There are __ columns. There are __ in a column. There are __ altogether.	  There are __ rows. There are __ in a row. There are __ in total. There are __ columns. There are __ in a column. There are __ altogether.	2 + 2 + 2 = 6 3 + 3 = 6 There are 6 altogether
Make doubles		 Double 12 is ___	Double 6 is__
Y2			
Vocabulary :	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing, grouping, groups of, times, repeated addition, row, column, commutative	**Manipulatives & scaffolds:**	Ten frames Double sided counters Numicon Cubes Bead strings Number line Bar model

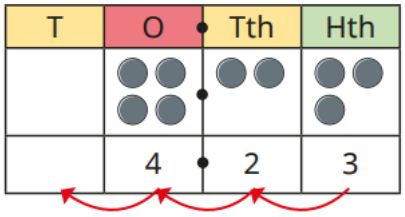
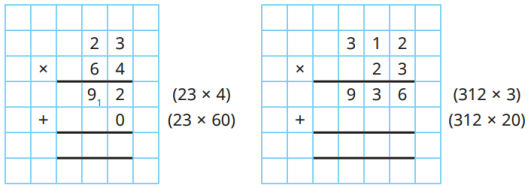
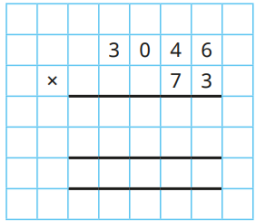
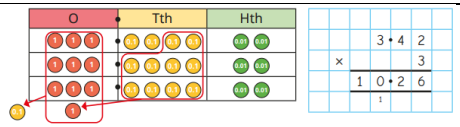
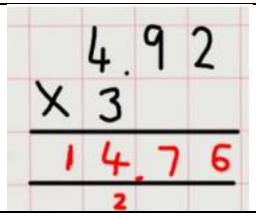
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiplication symbol	 5 + 5 + 5 + 5 + 5 + 5 = There are 6 lots of 5 5 x 6 = 30	 There are _____ equal groups with _____ in each group. _____ + _____ + _____ = 24 _____ × _____ = 24	_____ + _____ + _____ = _____ _____ × _____ = _____
Multiplication sentences	 3 + 3 + 3 + 3 = 12 __ lots of 3 = 12 __ multiplied by __ = 12 __ x __ = 12	 5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15	5 + 5 + 5 + 5 = 20 4 × 5 = 20 5 × 4 = 20
Use arrays	 5 x 3 = 15 3 x 5 = 15	 4 x 3 =12  3 x 4 = 12	__ X __ = 20 __ x __ = 20
Y3:			
Vocabulary:	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing,	**Manipulatives and scaffolds:**	Base 10/Dienes Place value charts Part whole models

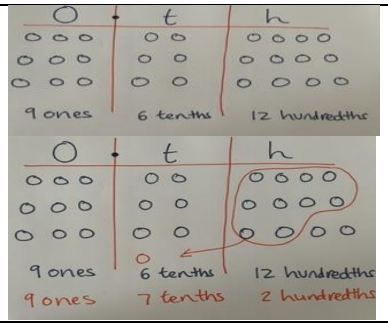
	grouping, groups of, times, repeated addition, row, column, commutative, factor, product		
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiply a 2-digit number by a 1-digit number (no exchange)	 3 tens x 2 = __ tens 2 ones x 2 = __ ones __ + __ = 32 x 2 =	As concrete but drawn	42 × 3 = ___ tens × 3 + ___ ones × 3 = ___ + ___ = ___
Multiply a 2-digit number by a 1-digit number (with exchange)	 2 tens X 4 = __ tens 3 ones X 4 = __ ones 24 X 3 = __ + __ 24 X 3 =		24 × 8 = 20 × 8 + 4 × 8 = ___ + ___ = ___
Y4			
Vocabulary:	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing,	**Manipulatives & scaffolds:**	Base 10/Dienes Place value charts Place value counters Part whole models

	grouping, groups of, times, repeated addition, row, column, commutative, factor, product		
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Informal methods	 	As concrete but drawn	36 X 4 = 160 + 35 = 195
Multiply a 2-digit number by a 1-digit number	  (4 × 3) (20 × 3)	  (4 × 3) (20 × 3) 	 (4 × 5) (30 × 5) 
Multiply a 3-digit number by a 1-digit number	 	 	

			
Y5			
Vocabulary:	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product	**Manipulatives & scaffolds:**	Base 10/Dienes Place value charts Place value counters Part whole models
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiply a 4-digit number by a 1-digit number		2341 x 3 = 	
Multiply a 2-digit number by a 2-digit number (area model)	 34 x 23 = 600 + 90 + 80 + 12 = 782		18 x 13 = 234  

Multiply a 2-digit number by a 2-digit number	 34 × 23 = 600 + 90 + 80 + 12 = 782	 300 + 90 + 20 + 6 = 416	 (23 × 4) (23 × 10)
Multiply a 3-digit number by a 2-digit number	When children begin to multiply larger numbers, written methods become more efficient; concrete and pictorial methods are less effective and take too much time	 (123 × 3) (123 × 20)	 (_____ × _____) (_____ × _____)
Multiply a 4-digit number by a 2-digit number		 (3,242 × _____) (3,242 × _____)	 (_____ × _____) (_____ × _____)

Multiply decimals – missing values	4.23 × _____ = 42.3 	As concrete but drawn	3.4 × _____ = 34 _____ × 5.62 = 5,620 1,000 × _____ = 345
Y6			
Vocabulary:	equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by,division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product	**Manipulatives & scaffolds:**	Base 10/Dienes Place value charts Place value counters Part whole models
Small step:	**Concrete:**	**Pictorial:**	**Abstract:**
Multiply up to a 4-digit number by a 2-digit number			
Multiply decimals by integers		3.24 X 3 =	

		 O . t h 9 ones 6 tenths 12 hundredths O . t h 0 9 ones 6 tenths 12 hundredths 9 ones 7 tenths 2 hundredths		