Bishop Lonsdale Church of England Primary and Nursery
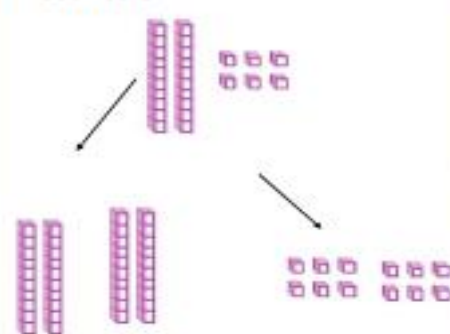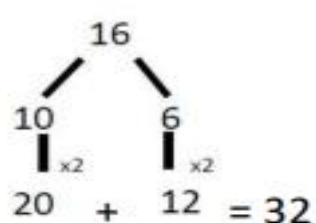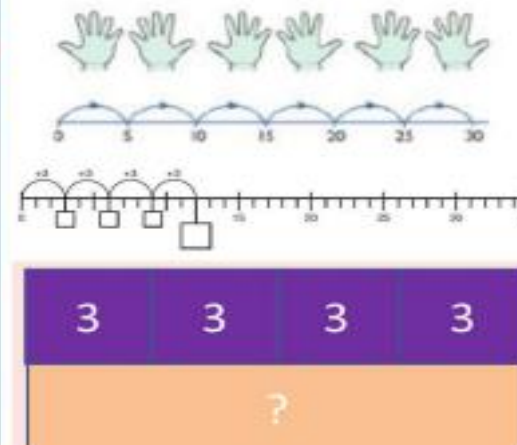
Multiplication
Maths
Parent Guide
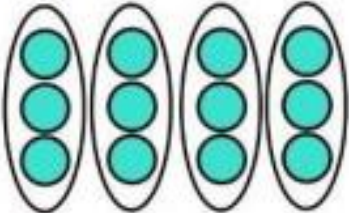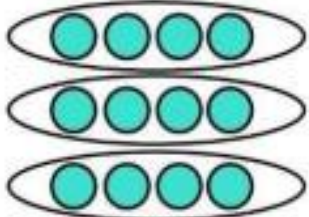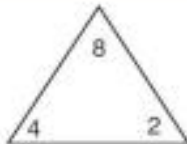
Year 1 - Multiplication

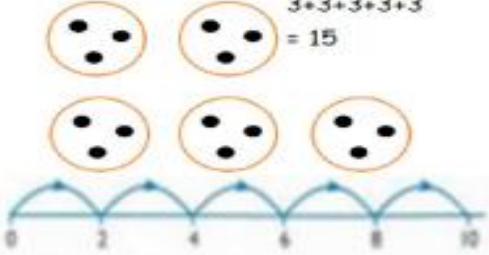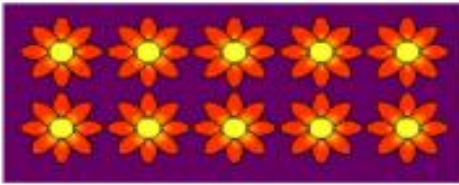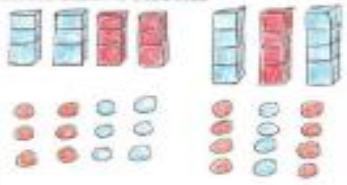| Objective / Strategy	Concrete	Pictorial	Abstract
Doubling	Use practical activities using manipultives including cubes and Numicon to demonstrate doubling double 4 is 8 $4 \times 2 = 8$	Draw pictures to show how to double numbers Double 4 is 8	Partition a number and then double each part before recombining it back together. 16 10 6 x2 x2 20 + 12 = 32
Counting in multiples (2s, 5s, 10s)	Count the groups as children are skip counting, children may use their fingers as they are skip counting.	Children make representations to show counting in multiples. 2 2 2 2 2 2 2 2 2 2 4 6 8 10 12 14 16 18 20	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30
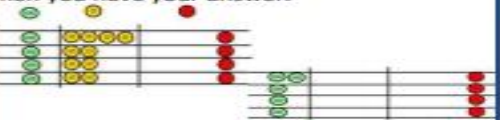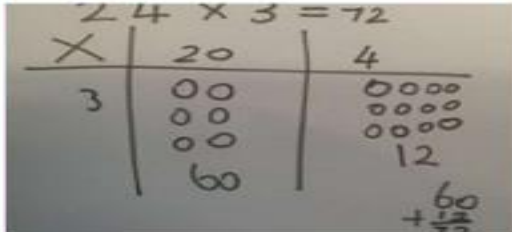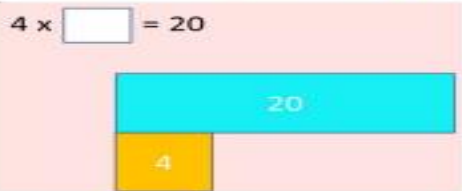
Making equal groups and counting the total	 Use manipulatives to create equal groups.	Draw to show 2 x 3 = 6 Draw and make representations	2 x 4 = 8
Repeated addition	 3 + 3 + 3 **Use different objects to add equal groups**	Use pictorial including number lines to solve prob There are 3 sweets in one bag. How many sweets are in 5 bags altogether? 3+3+3+3+3 = 15 	Write addition sentences to describe objects and pictures. 2 + 2 + 2 + 2 + 2 = 10
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	3 x 2 = 6 2 x 5 = 10

Year 2 - Multiplication

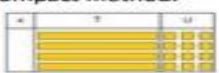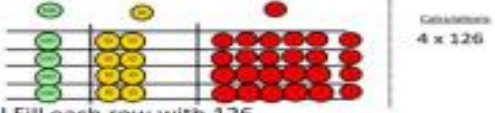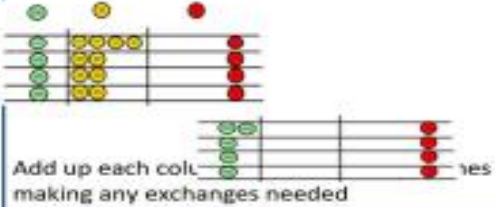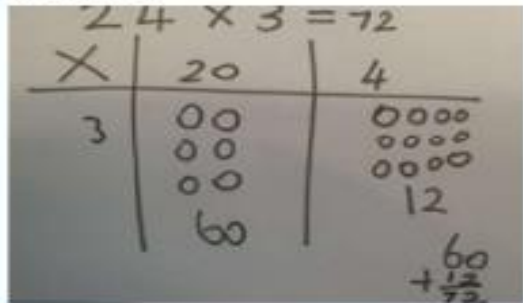| Objective / Strategy	Concrete	Pictorial	Abstract
Doubling	Model doubling using dienes and PV counters. $40 + 12 = 52$	Draw pictures and representations to show how to double numbers	Partition a number and then double each part before recombining it back together. 16 10 6 x2 x2 $20 + 12 = 32$
Counting in multiples of 2, 3, 4, 5, 10 from 0 (repeated addition)	Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models. $5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40$	Number lines, counting sticks and bar models should be used to show representation of counting in multiples. 3 3 3 3 ?	Count in multiples of a number aloud. Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25 , 30 $4 \times 3 = \square$
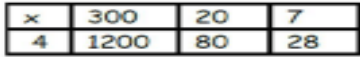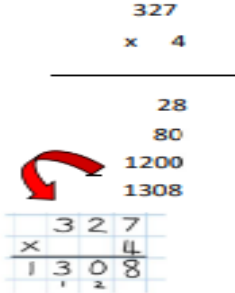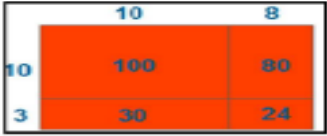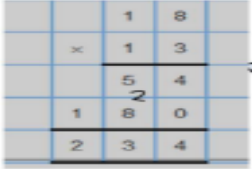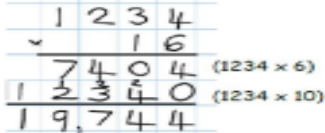
Objective / Strategy	Concrete	Pictorial	Abstract
Multiplication is commutative	Create arrays using counters and cubes and Numicon. Pupils should understand that an array can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.	Use representations of arrays to show different calculations and explore commutativity.	$12 = 3 \times 4 \quad 12 = 4 \times 3$ Use an array to write multiplication sentences and reinforce repeated addition. $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$
Using the Inverse *This should be taught alongside division, so pupils learn how they work alongside each other.*		$\square \times \square = \square$ $\square \times \square = \square$ $\square \div \square = \square$ $\square \div \square = \square$	$2 \times 4 = 8$ $4 \times 2 = 8$ $8 \div 2 = 4$ $8 \div 4 = 2$ $8 = 2 \times 4$ $8 = 4 \times 2$ $2 = 8 \div 4$ $4 = 8 \div 2$ Show all 8 related fact family sentences.

Year 3 - Multiplication

Objective /Strategy	Concrete	Pictorial	Abstract
Grid method, progressing to the formal method Multiply 2 digit numbers by 1 digit numbers	Show the links with arrays to first introduce the grid method. 4 rows of 10 4 rows of 3 Move onto base ten to move towards a more compact method. 4 rows of 13 Move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows Calculations 4 x 126 Calculations 4 x 126 Fill each row with 126. Add up each column, starting with the ones making any exchanges needed Then you have your answer.	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below. $24 \times 3 = 72$ Bar model are used to explore missing numbers $4 \times \boxed{} = 20$ 20 4	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. <table><tr><td>×</td><td>30</td><td>5</td></tr><tr><td>7</td><td>210</td><td>35</td></tr></table> $210 + 35 = 245$ Move forward to the formal written method: 3 5 X 7 2 4 5 3
Solve problems, including missing number problems, integer scaling problems,			Three times as high, eight times as long $? \times 5 = 20$ $20 \div ? = 5$ 3 hats and 4 coats, how many different outfits?

Year 4 – Year 6 Multiplication

Objective /Strategy	Concrete	Pictorial	Abstract
Grid method recap from year 3 for 2 digits x 1 digit Move to multiplying 3 digit numbers by 1 digit. (year 4 expectation)	Use place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows 4 x 126 Fill each row with 126 Add up each col___ ___ ___ ___es making any exchanges needed	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below. 24 X 3 = 72 X 20 4 3	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. | ×	30	5
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7	210	35	 210 + 35 = 245
Column multiplication	Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. 321 x 2 = 642 Hundreds / Tens / Ones It is important at this stage that they always multiply the ones first. The corresponding long multiplication is modelled alongside	× 300 20 7 / 4 1200 80 28 The grid method my be used to show how this relates to a formal written method. Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.	327 x 4 ――― 28 80 1200 1308 3 2 7 × 4 ――― 1 3 0 8 This may lead to a compact method.

Objective /Strategy	Concrete	Pictorial	Abstract
Column Multiplication for 3 and 4 digits x 1 digit.	It is important at this stage that they always Multiply the ones first. Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. 321 x 2 = 642		327 x 4 28 80 1200 1308 327 × 4 1308
Column multiplication	Manipulatives may still be used with the corresponding long multiplication modelled alongside.	Continue to use bar modelling to support problem solving	18 x 3 on the first row (8 x 3 =24, carrying the 2 for 20, then 1 x 3) 18 x 10 on the 2nd row. Show multiplying by 10 by putting zero in units first 1234 × 16 7404 (1234 × 6) 12340 (1234 × 10) 19,744
Multiplying decimals up to 2 decimal places by a single digit.			Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer. 3 . 1 9 × 8 2 5 . 5 2