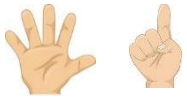
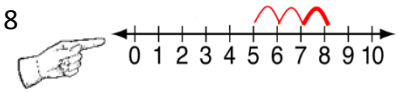
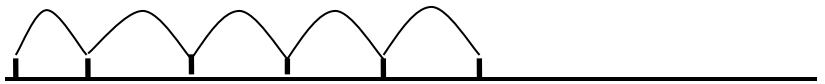
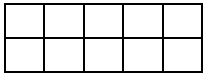
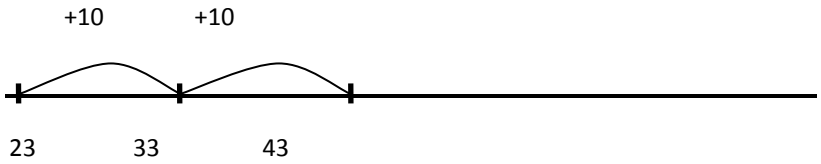
EYFS Addition

Maths for young children should be meaningful. Where possible, concepts should be taught in the context of real life.

Guidance/ Models and Images	Key Vocabulary
If available, Numicon shapes are introduced straight away and can be used to : • Identify 1 more/less • Combine pieces to add • Find number bonds • Add without counting  Children can record this by printing or drawing around Numicon pieces. Children begin to combine groups of objects using concrete apparatus  Construct number sentences verbally or using cards to go with practical activities. Children are encouraged to read number sentences aloud in different ways " Three add two equals 5 " 5 is equal to three and two" Children make a record in pictures, words or symbols of addition activities already carried out. Solve simple problems using fingers  5 + 1 = 6 Number tracks can be introduced to count up on ad to find one more 1 2 3 4 5 6 : What is 1 more than 4? 1 more than 13? Number lines can then be used alongside number tracks and practical apparatus to solve addition calculations and word problems. 5 + 3 = 8  **Children will need opportunities to look at and talk about the different models and images as they move between representations.**	Games and songs can be a useful way to begin using vocabulary involved in addition e.g. • Alice the Camel • Add • More • And • Make • Sum • Total • Altogether • Score • Double • One more, two more, ten more … • How many more to make ….? • How many more is … than …?

ADDITION				
	Mental strategies	Written methods	Vocabulary	Models, Images and resources
Year 1	Add a pair of single-digit numbers, including crossing 10, e.g. 5 + 8 Add one-digit number to a teens number, e.g. 13 + 5 Add one-digit to 10, and a multiple of 10 to a one-digit number, e.g. 10 + 7, 7 + 30 Add one-digit and two-digit numbers to 20 (9 + 9, 18 - 9), including zero Add near doubles, e.g. 6 + 7 Represent and use number bonds to 20 (and 2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,18,19)	Solve simple one-step problems that involve addition using concrete objects and pictorial representations, and missing number problems. Explain methods & reasoning Use the 100 square to add 10 to a single digit number Record addition by: - showing jumps on prepared number lines - recording number sentences eg 6 + 5 = 11  6 7 8 9 10 11 Read, write and interpret mathematical statements involving addition (+) and equals (=) signs	Add Total More Tens Ones	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame  Numicon Straws

Year 2	Add numbers using concrete objects, pictorial representations, and mentally, including: • add a single-digit number to a two-digit number, including crossing the tens boundary, e.g. 23 + 5,, then 28 + 5 • add a multiple of 10 to any two-digit number, e.g. 27 + 60 • add two two-digit numbers • adding three one-digit numbers • add 9, 19, 29, … or 11, 21, 31, … • add near doubles, e.g. 13 + 14, 39 + 40 Recall number bonds to 20 fluently and derive and use related facts to 100 Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Count or add in multiples of 10 using 100 square or number line  Add 9 or 11 by adding 10 and adjusting by Add by using partitioning of tens and ones Solve simple one-step problems with addition: using concrete objects and pictorial representations, involving numbers, quantities and measures Recognise and use the inverse relationship between addition and subtraction to check calculations and missing number problems. Check by adding numbers in a different order eg. 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5. Begin recording addition in columns to support place value and prepare for efficient written methods.	Add Sum More than Total Altogether Plus Partition into tens and ones	100 square Number lines Partly marked number lines Number tracks Bead strings Arrow cards Dienes apparatus Numicon
Year 3	Use number bonds to 20 and links to bonds of multiples of 10 to 100 , complements to 100 e.g. 45 + 55 = 100 Practise solving varied addition questions mentally with two-digit numbers, the answers could exceed 100. Add numbers mentally, including: • a three-digit number and ones • a three-digit number and tens	Add numbers with up to three digits, using the efficient written methods. Use understanding of place value and partitioning. Estimate the answer to a calculation and use inverse operations to check Solve problems, including missing number problems, using number facts, place value, and more complex addition.	Partition Tens, ones, digit Empty number line Count on	Arrow cards 100 square Dienes apparatus Numicon

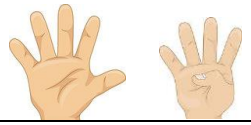
	• a three-digit number and hundreds Partition numbers in different ways Eg: 62 = 60 + 2 , 50+12, 40+22 etc	Add by using partitioning TU + TU, HTU + TU or HTU + HTU **67 + 24 = 60 + 20 + 7 + 4** **= 80 + 11** **= 91** <u>Expanded columnar addition</u> 4 7 <u>+ 2 4</u> 1 1 7 + 4 <u>6 0</u> 40 + 20 <u>7 1</u> <u>Compact columnar addition</u> 3 2 2 9 + 6 4 + 4 6 9 6 7 5 1	Carry ten	
Year 4	Practise mental methods with increasingly large numbers to aid fluency Add any pair of two-digit numbers, including crossing the tens and 100 boundary, e.g. 47 + 58 add a near multiple of 10, e.g. 56 + 29 Add near doubles of two-digit numbers, e.g. 38 + 37	<u>Compact columnar addition</u> Add numbers with up to 4 digits using the efficient written column method Practise with increasingly large numbers to aid fluency.	Partition Place value Carry 10, carry 100 Two digit,	Arrow cards Dienes apparatus

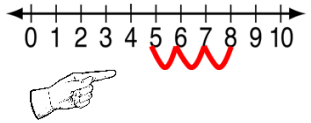
	Understand addition as inverse of subtraction	372 + 74 = 446 (1) 357 + 145 = 502 (1 1) 1306 + 722 = 2028 Estimate and use inverse operations to check answers Solve addition two-step problems in contexts, deciding which operations and methods to use and why. Include problems involving decimals in money or measures eg. 6.3m + 3.7m = 10m	three digit Crossing tens boundary Inverse	
Year 5	Add numbers mentally with increasingly large numbers to aid fluency e.g. 12 462 + 2 300 = 14 762 Use rounding to check answers and determine, levels of accuracy Add a pair of two or three-digit multiples of 10, e.g. 30 + 80, 35 +36 and 350+ 360 Add a near multiple of 10 or 100 to any two-digit or three-digit number, e.g. 235 + 198 Add pairs of decimal fractions each with units and tenths, e.g. 5.7 + 2.5, 6.3 + 4.8	Add whole numbers with more than 4 digits and increasingly large numbers using efficient column written methods to aid fluency 372 + 474 = 846 (1) 27.03 + 13.98 = 41.01 (1 1 1) Solve multi-step problems in contexts, deciding which operations and methods to use and why.	Decimal point Carry one, carry 10, carry 100	
Year 6	Calculate mentally with increasingly large numbers and more complex calculations. Addition facts for multiples of 10 to 1000 and decimal numbers with one decimal place,	Practise addition for larger numbers, using the efficient written methods of columnar addition.		

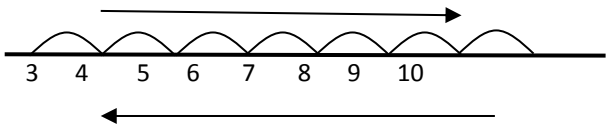
	e.g. 650 + □ = 930, □ + 1.4 = 2.5			

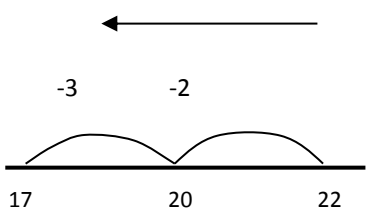
EYFS Subtraction

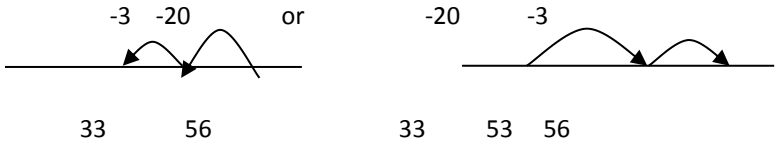
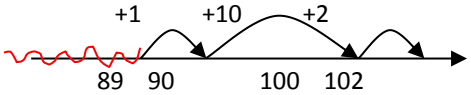
Maths for young children should be meaningful. Where possible, concepts should be taught in the context of real life.

Guidance/ Models and Images	Key Vocabulary
Children begin with mostly pictorial representations XXX XX Concrete apparatus is used to relate subtraction to taking away and counting how many objects are left.  **5 – 1 =4** Concrete apparatus models the subtraction of 2 objects from a set of 5. Construct number sentences verbally or using cards to go with practical activities. Children are encouraged to read number sentences aloud in different ways “five subtract one leaves four” “four is equal to five subtract one” Children make a record in pictures, words or symbols of subtraction activities carried out. Solve simple problems using fingers 	Games and songs can be a useful way to begin using vocabulary involved in subtraction e.g. • Five Little men in a flying saucer • Take (away) • Leave • How many are left/left over? • How many have gone? • One less, two less … ten less… • How many fewer is … than …?

5 -1 = 4 Number tracks can be introduced to count back and to find one less : <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr></table> What is 1 less than 9? 1 less than 20? Number lines can then be used alongside number tracks and practical apparatus to solve subtraction calculations and word problems. Children count back under the number line. **8 – 3 = 5**  **Children will need opportunities to look at and talk about the different models and images as they move between representations.**	• Difference between • Is the same as

SUBTRACTION				
	Mental strategies	Written methods	Vocabulary	Models, Images and resources
Year 1	Subtract a pair of numbers, including crossing 10, e.g. 15 - 8 Subtract a single-digit number from a teens number e.g. 13 - 5 from 10, beginning to subtract a multiple of 10 from a two-digit number, e.g. 10 - 7, 67 -30 Subtract one-digit and two-digit numbers to 20 (9 + 9, 18 - 9), including zero Represent and use number bonds to 20	Count back orally or use a marked or partly marked number line to find the difference by **counting on** in ones 9 – 4 = 5 (counting back) and when secure 9 – 4 = 5 (counting on)  Solve simple one-step problems and missing number problems involving subtraction using practical equipment , concrete objects and pictorial representations, Explain methods & reasoning	Count back Count on Less than Difference Take away subtract	100 square Number lines Number tracks Bead strings Numicon

	(and 2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,18,19)	Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs		
Year 2	Subtract numbers using concrete objects, pictorial representations, and mentally, including: • subtract a single-digit number from a two-digit number, including crossing tens boundary, e.g. 26 - 5, then 22 - 5 • subtract a multiple of 10 from any two-digit number, e.g. 67 -20 • subtract two two-digit numbers • subtract 9, 19, 29, … or 11, 21, 31... Recall number bonds to 20 fluently and derive and use related facts to 100 (and 11,12,13,14, 15,16,17, 18,19) Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Understand when it is sensible to **count back** (take away) and when to **count on** (find the difference) Use empty number lines to bridge through multiple of 10 22 – 5 = 17(counting back)  Subtract by using partitioning of TU - TU Solve simple one-step problems involving numbers, quantities and measures using concrete objects and pictorial representations, Recognise and use the inverse relationship between addition and subtraction to check calculations and missing number problems. Begin recording subtraction in columns to support understanding of place value and prepare for efficient written methods.	Count back Count on Subtract take away Less than Minus Decrease Difference	100 square Number lines Partly marked number lines Number tracks Bead strings Arrow cards Dienes apparatus Numicon
Year 3	Recall number bonds to 20 and links to bonds of multiples of 10 to 100 , complements to 100 e.g. 100 – 55 = 45 Practise solving varied subtraction questions mentally with two-digit numbers, the answers could exceed 100.	Solve problems, including missing number problems, using number facts, place value, and more complex subtraction Subtract with up to three digits, using the efficient written methods of columnar subtraction. Use understanding of place value and partitioning	Subtraction Partition Tens, ones, digit	Partly marked number lines Empty number line Arrow card

	Subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds groups of small numbers, e.g. 9 – 3 – 2 a two-digit number from a multiple of 10, eg. 50 - 38, 90 – 27, 68 – 35	Estimate answers calculations and use inverse operations to check Use partitioning to subtract TU - TU, developing to HTU - TU **67 - 24 = 60 - 20 + 7 - 4** **= 40 + 3** **= 43** Children will continue to use empty number lines with increasingly large numbers. <u>Count back from the largest number</u> **56 – 23 = 33**  <u>Count on or find the difference</u> when the numbers involved are close together **102 – 89 = 13**  <u>Expanded columnar subtraction</u> 89 - 57 is 80 + 9 - <u>50 + 7</u>	Empty number line Count back Count on Find the difference	100 square Dienes apparatus Bead bar Numicon

		30 + 2 = 32 <u>Compact columnar subtraction (no exchange)</u> 8 6 • 6 4 2 2 ———		
Year 4	Practise mental methods with increasingly large numbers to aid fluency Subtract any pair of two-digit numbers, including crossing the 10 and 100 boundary, e.g. 58 - 23 Count on and back in 10's from any number ubtract a near multiple of 10, e.g. 56 - 29 Understand subtraction as inverse of addition	Subtract numbers with up to 4 digits using efficient written column method with increasingly large numbers to aid fluency. Estimate and use inverse operations to check answers Solve subtraction of two-step problems in contexts, deciding which operations and methods to use and why. <u>Expand columnar subtraction</u> 74-27 is 60 + 14 • 20 + 7 40 + 7 = 47 <u>Compact columnar subtraction with decomposition (or</u> Expanded method as in Year 3) **6 14** 7 4 - 2 7	Partition Place value Two digit, three digit Crossing tens boundary Inverse Exchange a 10 for ten ones	Dienes apparatus

		4 7		
Year 5	Subtract numbers with increasingly large numbers to aid fluency e.g. 12 462 - 2 300 = 10 162 Use rounding to check answers and determine, levels of accuracy Subtract a pair of two or three-digit multiples of 10, e.g. 80 - 30, 45 -36 and 450 – 360 Subtract a near multiple of 10 or 100 from any two-digit or three-digit number, e.g. 235 - 199 subtract pairs of decimal fractions each with ones and tenths, e.g. 5.7 - 2.5, 6.3 -4.8	Subtract whole numbers with more than 4 digits and increasingly large numbers using efficient column written methods with decomposition to aid fluency e.g. 754 – 86 6 4 14 7 5 4 - 8 6 6 6 8 With decimals in the context of money or measures e.g £21.31 - £18.06 1 2 2 16 . 3 11 - 1 8 . 0 6 8 . 2 5 Solve multi-step problems in contexts, deciding which operations and methods to use and why.	Decimal point Exchange a 10 for 10 ones, exchange a 100 for ten 10's	
Year 6	Calculate mentally with increasingly large numbers and more complex calculations. Use subtraction facts for multiples of 10 to 1000 and	Practise subtraction for larger numbers, using the efficient written methods of columnar subtraction.		

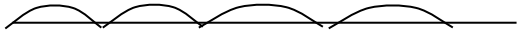
	decimal numbers with one decimal place, e.g. 650 - □ = 930, □ - 1.4 = 2.5			

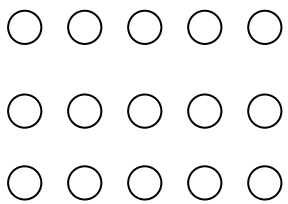
EYFS Multiplication

Maths for young children should be meaningful. Where possible, concepts should be taught in the context for life.

Guidance / Models and Images	Key Vocabulary
The link between addition and multiplication should be introduced though doubling. If available, Numicon is used to visualise the repeated adding of the same number. These can then be drawn around or printed as a way of recording.  Children begin with mostly pictorial representations:  How many groups of 2 are there? Real life contexts and use of practical equipment to <u>count in repeated groups of the same size:</u>  How many wheels are there although?  How much money do I have? Count in twos; fives; tens both aloud and with objects. Children are <u>given multiplication problems set in a real life context.</u> Children are encouraged to visualise the problem. How many fingers on two hands? How many sides on three triangles? How many legs on four ducks? Children are encouraged to read number sentences aloud in different ways “five times two makes ten” “ten Is equal to five multiplied by two”	Lots of Groups of Times Multiply Multiplied by Multiply of Once, twice, three times … ten times… …times as (big, long, wide … and so on) Repeated addition Double

MULTIPLICATION

	Mental strategies	Written methods	Vocabulary	Models, Images and resources
Year 1	Count on from and back to zero in ones, twos, fives or tens Make connections between arrays, number patterns, and counting in twos, fives and tens.	Solve simple one-step problems calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Understanding multiplication as an array:   2+2+2 3+3 Practical problem solving activities involving equal sets or groups. Through grouping small quantities, pupils should begin to understand multiplication; doubling numbers and quantities.	Sets Groups, pairs	100 square Number lines Number tracks Bead strings Numicon
Year 2	Practise to become fluent in recall and use of multiplication facts for the 2, 5 and 10 multiplication tables, (connect the 10x table to place value, and the 5x table to the divisions on the clock face) Double any multiple of 5 up to 50, eg. double 35 Find the total number of objects when they are organised into groups of 2, 5 or 10 Recognise odd and even numbers Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Introduce the symbol for multiplication	Calculate mathematical statements and write them using the multiplication (×) and equals (=) signs Solve one-step x problems using materials, arrays, repeated addition and x facts, include problems in contexts. <u>Understand multiplication as repeated addition</u> *There are 5 pencils in one packet.* *How many pencils in 4 packets?* 5 + 5 + 5 + 5 4 lots of 5 or 5 x 4 <u>On a number line:</u> **+5 +5 +5 +5**  **0 5 10 15 20** <u>and on a bead bar:</u> 5 x 3 = 5 + 5 + 5  <u>Understand x as an Array</u> (of objects) 	lots of groups of multiply symbol x times repeated addition times as big …as wide …as long	100 square Number lines Partly numbered lines Bead strings Numicon

		5 x 4 = 20 **4 x 5 = 20** Begin to use other x tables and recall facts in written calculation Recognise and use the inverse relationship between multiplication and division in checking calculations.		
Year 3	Recall and use multiplication facts for the 4, 8 and 3 multiplication tables Practise mental recall of x tables to improve fluency. Use doubling to connect the 2, 4 and 8 x tables. Use x facts to derive related facts and write mathematical statements e.g. using 3 × 2 = 6 to derive 30 × 2 =60 Develop efficient mental methods using commutativity e.g. 4 × 12 × 5 = 4 × 5 × 12 = 20 × 12 = 240) Double any two-digit number, e.g. double 39 and any multiple of 5 , 10 or 100, e.g. double 340, double 800, Multiply one-digit or two-digit numbers by 10 or 100 and understand the effect e.g. 7 × 100, 46 × 10, 54 x 100	Solve problems in context decide which operation to use and why, including • missing number problems • integer scaling problems eg double or treble 50p or 5x60cm • correspondence problems in which m objects are connected to n objects eg finding all possibilities '3 hats and 4 coats, how many different outfits?' Understand multiplication <u>represented as an Array</u>  5 x 3 = 15 3 x 5 = 15 Develop reliable methods for TU X U progressing to efficient short multiplication 2 6 X 4 1 0 4	Multiply Partition Tens, ones, digit Empty number line	Partly marked number lines Empty number line Arrow card 100 square Dienes apparatus Bead Strings

<table>
<tr>
<td>Year 4</td>
<td>Recall and practise multiplication facts for tables up to 12 × 12 to aid fluency.

Use place value, known and derived facts to multiply mentally, including multiplying
• by 0 and 1
• TU by 4 or 8, eg. 26 × 4 by doubling)
• three numbers together
• numbers to 20 by a unit eg. 17 × 3
• numbers to 1000 by 10 and 100 (whole-numbe answers) eg. 325 × 10, 42 × 100

Extend mental methods to HTU to derive facts e.g. 200 × 3 = 600 into 600 ÷ 3 = 200

Recognise and use factor pairs e.g. give the factor pair associated with a multiplication fact, ((if 2 x 3 = 6 then 6 has the factor pair 2 and 3)

.</td>
<td><u>Multiply using partitioning</u> (recorded informally)

43 x 6 =

40 x 6 = <u>240</u> or

3 x 6 = <u>18</u>

<u>240</u> + <u>18</u> = <u>258</u>

43
40 + 3
↓ ↓ × 6
240 + 18 = 258

<u>Grid multiplication</u>

Introduce grid multiplication for TU x U and HTU X U

38 x 7

<table>
<tr><td>×</td><td>7</td></tr>
<tr><td>30</td><td>210</td></tr>
<tr><td>8</td><td>56</td></tr>
<tr><td></td><td>266</td></tr>
</table>

Develop fluency in efficient written method of <u>short multiplication</u>

5 6 3 0 4

<u>X 4</u> <u>x 9</u>

<u>2 2 4</u> <u>2 7 3 6</u>

Write statements using the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)

Solve two step problems with increasingly harder numbers and in which n objects are connected to m objects eg. finding all possibilities ‘6 hats and 5 coats, how many different outfits?’</td>
<td>Multiply

Partition

Place value

Two digit, three digit</td>
<td>Arrow cards

Dienes apparatus</td>
</tr>
</table>

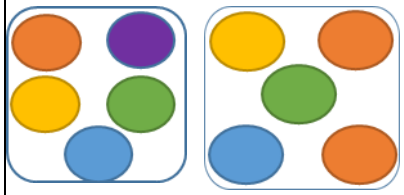
Year 5	Multiply TU X U mentally using known facts for all multiplication tables to 12 x 12 numbers Identify multiples and factors, including finding all factor pairs for numbers to 100, e.g. 30 has the factor pairs 1 × 30, 2 × 15, 3 × 10 and 5 × 6 Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square and cube numbers, and notation for squared ^{2} and cubed ^{3} Multiply by 25 or 50, e.g. 48 × 25, 32 × 50 Multiply whole numbers decimals by 10, 100 and 1000 e.g. 4.3 × 10, 0.75 × 100 Multiply pairs of multiples of 10, e.g. 60 × 30, and a multiple of 100 by a single digit number, e.g. 900 × 8 Find 50%, 25% or 10% of whole numbers or quantities, e.g. 25% of 20 kg, 10% of £80	Solve problems including understanding the meaning of the equals sign e.g. 34 x = 28 including scaling by simple fractions Use multiplication and division as inverses to support the introduction of ratio e.g *if there are 6 blue beads for every 10 red beads, calculate number of blue beads for 348 red bead* Multiply up to 4 digits by a one- or two-digit number <u>Short multiplication</u> 3 8 2 4 0 6 X 7 x 8 2 6 6 1 9, 2 4 8 5 <u>Long multiplication for two-digit numbers</u> 56 × 27 1000 $50 \times 20 = 1000$ 120 $6 \times 20 = 120$ 350 $50 \times 7 = 350$ 42 $6 \times 7 = 42$ 1512 1	Partition Product multiple Multiply Add total factor prime square and cube numbers.	
Year 6	Multiply two-digit decimals such as 0.8 × 7 and pairs of multiples of 10 and 100, e.g. 50 × 30, 600 × 20 Double decimals with units and tenths, e.g. double 7.6	Use efficient written method confidently, reducing the recording further and extending to larger numbers	Multiply Carry ten	

	Find 10% or multiples of 10%, of whole numbers and quantities, e.g. 30% of 50 ml, 40% of £30, 70% of 200 g Scale up and down using known facts, e.g. given that three oranges cost 24p, find the cost of four oranges Identify numbers with an odd number of factors (square numbers), even numbers of factors and no factor pairs other than 1 and themselves (prime numbers) Explore the order of operations using brackets; eg. 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9.	56 × 27 1120 5 392 5 1512 1		

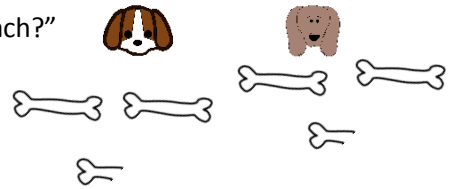
EYFS Division and Fractions

Maths for young children should be meaningful. Where possible, concepts should be taught in the context of real life.

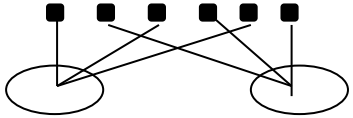
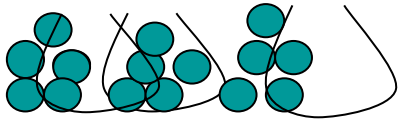
Guidance/ Models and Images	Key Vocabulary
The ELG states that children solve problems, including doubling, halving and sharing. Children need to see and hear representations of division as both grouping and sharing. Division can be introduced through halving.  Children begin with mostly pictorial representations linked to real life contexts: **Grouping model** Mum has 6 socks. She grouped them into pairs – how many pairs did she make?	Halve Share, share equally One each, two each, three each …. Group im pairs, threes… Tens Equal groups of

 **Sharing Model** I have 10 sweets. I want to share them with my friend. How many will we have each? Children have a go at recording the calculation that has been carried out?	Divide Divided by Divided into Left, left over

Fractions

Guidance / Models and Images	Key Vocabulary
Although not explicit in the Development Matters document, the sharing model is a useful way of introducing young children to fractions and calculating with fractions. Setting the problems in real life context and solving them with <u>concrete apparatus</u> will support children's understanding. "I have got 5 bones to share between my two dogs. How many bones will they get each?"  Children have a go at recording the calculation that has been carried out. 2 ½ + 2 ½ = 5	As division vocabulary Plus: Fraction Half Halves Third thirds

DIVISION				
	Mental strategies	Written methods	Vocabulary	Models, Images and resources
Year 1	Share objects into equal groups and count how many in each group and consider 'left over'. count on from and back to zero in ones, twos, fives or	Practical problem solving activities involving equal sets or groups. Begin to understand division through grouping and sharing and halving small quantities *Can you cut the cake in half?*	Share Sharing grouping	Practical equipment Arrays

	tens Make connections between arrays, number patterns, and counting in twos, fives and tens. Introduce the symbol for division ÷	*How many pieces are there?* *How many cakes are there in the box? Take <u>half</u> of them out.* Solve simple one-step problems using concrete objects, pictorial representations and finding simple fractions of objects, numbers and quantities. with the support of the teacher	Equal groups Left over Half halving	beadstrings
Year 2	Practise to become fluent in recall and use of multiplication and division facts for the 2, 5 and 10 multiplication tables, Halve any multiple of 10 up to 100, e.g. halve 90 find half of even numbers to 40 Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	Calculate mathematical statements and write using division (÷) and equals (=) signs Solve one-step problems iusing materials, arrays, repeated subtraction and division facts, including problems in contexts. Understand as <u>sharing</u> equally *6 sweets are shared equally between 2 people. How many sweets does each one get?*  Understand as <u>grouping</u> (repeated subtraction). ***There are 15 apples in a box.*** ***How many bags of 5 apples can be filled?*** ***How many groups of 5 can you make from 15?***  <u>Model repeated subtraction using a number line</u> **24 ÷ 4 = 6** 	Divide Share equally, one each, two each…, Grouping equal groups, how many lots of, groups of…	Practical equipment

		0 4 8 12 16 20 24 Begin to use other x tables and division facts to perform written calculation. Relate to fractions and measures eg. 40÷2 =20, 20 is a half of 40 Check calculations using the inverse relationship between x and ÷		
Year 3	Halve any multiple of 10 up to 200, e.g. halve 170 Find unit fractions of numbers and quantities involving halves, thirds, quarters, fifths and tenths ½ 1/3 ¼ 1/5 1/10 Recall and use division facts for the 3, 4 and 8 x tables, use halving to derive division by 2, 4 and 8 Calculate and write mathematical statements for division using related x tables facts, including for TU ÷ U mentally Develop efficient mental methods using facts e.g 6 ÷ 3 = 2 and 2 = 6 ÷ 3 to derive related facts 60 ÷ 3 = 20 and 20 = 60 ÷ 3 Divide TU and HTU numbers by U or 10, understand the effect of ÷10 e.g. 700 ÷ 10, 46 ÷ 2, 33÷3. Identify remainders when dividing by 2, 5 or 10	Solve problems in context deciding which method to use and why, including • missing number problems • measuring and money context • correspondence problems in which m objects are connected to n objects eg 12 sweets shared equally between 4 children; 40 cakes shared equally between 8. Use practical methods and jottings, including remainders ***Sharing:*** If £20 is shared between 4 people, how much would each get? ***or*** ***Grouping:*** There are 20 children and they sit in tables of 4. How many tables will we need? <u>Repeated subtraction using a number line</u> **24 ÷ 4 = 6**  0 4 8 12 16 20 24 Develop reliable written methods for TU ÷U progressing to efficient written <u>short division</u> e.g. 63÷3	Divide Share Group Remainder Left over Repeated subtraction	

		2 1 3)6 3		
Year 4	Recall and practise division facts for x tables up to 12 × 12 use place value, known and derived facts to aid fluency. Practise and extend mental methods to three-digit numbers to derive facts e.g. 200 × 3 = 600 into 600 ÷ 3 = 200 Divide numbers to 1000 by 10 and then 100 (whole-number answers), e.g. 120 ÷ 10, 600 ÷ 100, 850 ÷ 10 Divide two-digit numbers by 4 or 8, e.g. 296 ÷ 8 Identify remainders when dividing by 1 to 12 Find halves of multiples of 10 , even numbers to 200 and three-digit multiples of 10 to 500 e.g. 760 ÷ 2 Find unit and simple non-unit fractions of numbers and quantities eg 3/8 of 24	Develop fluency in efficient written method of short division with **exact answers** when dividing by a one-digit number. (eg. 11 ÷ 2 expressed as 5 ½ or 5.5 not 5 remainder 1) Solve two step problems with increasingly harder numbers including correspondence questions such as three cakes shared equally between 10 children. Introduce dividing using subtracting 10 lots of divisor and asking 'how many more left over?' **52 ÷ 4** **I know that 10 lots of 4 are 40, there will be 12 left over which is another 3 lots of 4 so there are 13 lots of 4 in 52** Recorded informally 81 ÷ 3 3)81 3) 30 + 30 + 21 10 + 10 + 7 27 2 3) 30 + 30 + 21 so 3) 81	Inverse Divide 10 lots	
Year 5	Divide numbers mentally using known facts for all multiplication tables to 12 x 12 Divide whole numbers and decimals by 10, 100 or 1000, e.g. 25 ÷ 10, 673 ÷ 100, 74 ÷ 100 Find the whole number remainder after dividing a	Practise and extend efficient written methods applying X tables and related facts confidently for larger calculations Interpret answers by expressing in different ways including with remainders, as fractions, as decimals or by rounding eg. 98 ÷ 4 = 24r2 = 24 ½ = 24.5 ≈ 25	Decimal point	

	two-digit number by a single-digit number, e.g. 27 ÷ 4 = 6 R 3 Find fractions of whole numbers or quantities, e.g. 23 of 27, 45 of 70 kg Find 50%, 25% or 10% of whole numbers or quantities, e.g. 25% of 20 kg, 10% of £80	Divide up to ThHTU by U number using efficient <u>short division</u> Solve problems including scaling by simple fractions Use x and ÷ as inverses to support dividing by powers of 10 in scale drawings or in converting units e.g km to m		
Year 6	Divide TU by U number, eg. 68 ÷ 4 divide by 25 or 50, eg. 480 ÷ 25, 3200 ÷ 50 Divide two-digit decimals eg. 4.8 ÷ 6 and find halves of decimals with units and tenths, eg. half of 15.2 Divide multiples of 100 by a multiple of 10 or 100 (whole number answers), e.g. 600 ÷ 20, 800 ÷ 400, 2100 ÷ 300 Simplify fractions by cancelling and relating common factors to equivalent fractions. Find 10% or multiples of 10%, of whole numbers and quantities, e.g. 30% of 50 ml, 40% of £30, 70% of 200 g Scale up and down using known facts, e.g. given that six oranges cost 24p, find the cost of four oranges	Divide numbers up to ThHTU by a TU whole number using efficient written method of long division, and interpret remainders as whole numbers, fractions, decimals fractions or by rounding as appropriate for the context <u>Develop efficient chunking method</u> $6\overline{)196}$ $-\ \underline{180}$ $\quad 6 \times 30$ 16 $-\ \underline{12}$ $\quad 6 \times \underline{2}$ $4 \qquad 32$ Answer: $\quad 32\,\mathrm{R}\,4$ or 32 4/6 or 32⅔ or 32.66 . $24\overline{)560}$ $20 - \underline{480} \qquad 24 \times 20$ 80 $3 \quad \underline{72} \qquad 24 \times 3$ 8 Answer: 23 R 8		
