

Maths Progression Document - East Stour Primary

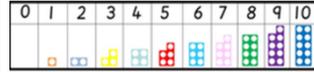
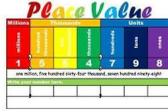
VOCABULARY PLACE VALUE

	EFYS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>ALL PREVIOUS ones tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more one less, ten less compare order size first, second, third... twentieth last, last but one before, after next between</p>	<p>ALL PREVIOUS ones tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one less, ten less equal to one more, ten more one less, ten less compare order size first, second, third... twentieth last, last but one before, after next between half-way between above, below</p>	<p>ALL PREVIOUS number numeral zero one, two, three ... twenty teens numbers, eleven, twelve ... twenty twenty-one, twenty-two ... one hundred, two hundred ... one thousand none how many ...? count, count (up) to, count on (from, to), count back (from, to) forwards backwards count in ones, twos, fives, tens, threes, fours and so on equal to equivalent to is the same as more, less most, least tally many odd, even multiple of sequence continue predict few pattern pair, rule > greater than < less than ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more one less, ten less, one hundred less equal to compare order size first, second, third ... twentieth twenty-first, twenty-second ... last, last but one before, after next between halfway between above, below</p>	<p>ALL PREVIOUS fours, eights, fifties and so on to hundreds equal to equivalent to is the same as more, less most, least tally many odd, even multiple of, factor of sequence continue predict few pattern pair, rule relationship > greater than < less than Roman numerals ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more one less, ten less, one hundred less equal to compare order size first, second, third ... twentieth twenty-first, twenty-second ... last, last but one before, after next between halfway between above, below</p>	<p>ALL PREVIOUS equal to equivalent to is the same as more, less most, least tally many odd, even multiple of, factor of sequence continue predict few pattern pair, rule relationship next, consecutive > greater than < less than Roman numerals integer, positive, negative above/below zero, minus negative numbers Place value ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more, one hundred more one less, ten less, one hundred less equal to compare order size first, second, third ... twentieth twenty-first, twenty-second ... last, last but one before, after next between halfway between above, below</p>	<p>ALL PREVIOUS ones tens, hundreds digit one-, two- or three-digit number place, place value stands for, represents exchange the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, largest, greatest one more, ten more, one hundred more, one thousand more one less, ten less, one hundred less, one thousand less equal to compare order size first, second, third ... twentieth twenty-first, twenty-second ... last, last but one before, after next between halfway between above, below</p>	<p>ALL PREVIOUS factorise prime factor ascending/descending order digit total difference between equals is the same as number bonds/pairs/facts missing number tens boundary, hundreds boundary, ones boundary, tenths boundary inverse</p>
Strand	NURSERY/EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value & Counting	<p>25-30 months To organise everyday objects in groups 31-36 months Uses number names in play 37-42 months</p>	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	Count in steps of 2, 3, and 5 from 0 and in tens from any number, forward and backwards.	Count from 0 in multiples of 4, 8, 50 and 100; Find 10 more or less than any given number.	Count in multiples of 6, 7, 9, 25 and 1000 Count backwards through zero to include negative numbers	Count forwards and backwards in steps of power of 10 for any give number up to 1000,000.	

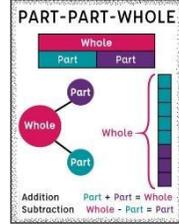
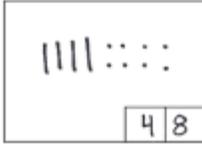
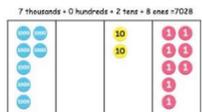
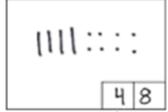
Maths Progression Document - East Stour Primary

	<p>Compare quantities 43-48 months</p> <p>Recite number names to 10 in order and reliably count 4 objects 49-54 Months</p> <p>Counts with 1:1 correspondence and recognises numerals of significance 55- 60 months</p> <p>Counts with 1:1 correspondence, places numerals in order and uses resources to say 1 more and 1 less.</p>	<p>Count in numbers to 100 in numerals; count in multiples of twos, fives and tens.</p>				<p>Count forwards and backwards with positive and negative whole numbers, including through zero.</p>	
<p>Place Value Represent</p>	<p>25-30 months</p> <p>Plays hide and seek with people and objects and knows they exist when out of sight. 31-36 months</p> <p>Show an interest in numbers in the environment 37-42 months</p> <p>Count along with rhymes and simple counting songs 43-48 months</p> <p>Uses graphic representations to record number explorations in pictures and mark making. 49-54 Months</p> <p>Uses graphic representations to record number explorations in pictures and mark making. 55- 60 months</p> <p>Identify and represent numbers using objects and pictorial representations.</p>	<p>Identify and represent numbers using objects and pictorial representations.</p> <p>Read and write numbers to 100 in numerals</p> <p>Read and write numbers from 1-20 in numerals and words.</p>	<p>Read and write numbers to at least 100 in numerals and words.</p> <p>Identify, represent and estimate numbers using different representation including 31-36 number lines.</p>	<p>Identify, represent and estimate numbers using different representations</p> <p>Read and write number to 1000 in numerals and in words.</p>	<p>Identify, represent and estimate numbers using different representation</p> <p>Read roman numerals to 100- know that the numeral system changed to include zero.</p>	<p>Read Roman numerals to 1000(M) and recognise years written in Roman numerals.</p>	<p>Read, write, (order and compare) numbers \pm at least 1000000 and determine the value of each digit.</p>

Maths Progression Document - East Stour Primary

<p>Manipulatives & Resources</p>	 <p>Numicon-main resource for reinforcing concept of amount and number.</p> <p>Alongside Number blocks curriculum.</p>   	<p>Place Value arrow cards</p>  <p>Coins</p>  <p>Straws</p>  <p>Dice</p>  <p>Dienes</p>  <p>Numicon</p> 	<p>Place Value counters</p>  <p>Number Fans</p>  <p>Place Value Grid</p>  <p>Place Value Cup</p>  <p>Dienes</p> 	<p>Place Value</p>  <p>Flip Chart</p>  <p>Roman numeral</p>  <p>clock</p> <p>Roman numeral</p>  <p>Place Value Tiles</p> <p>numeral</p>
---	---	---	--	--

The resources above are only suggestions and not an exclusive list for each Year group. A range of resources should be available to ALL children within each lesson and modelled to the children as part of the lesson. These should be easily accessed by ALL children to underpin and extend their learning of key concepts. Careful planning should be used to link an appropriate resource to children's understanding and these choices should be underpinned by discussions with previous teachers about resources used with current learners. Clear links between resources should be made explicit to the children allowing them to build a solid schema.

<p>Pictorial Representations to underpin Place Value</p>	<p>Recording in pictures of real life objects</p> <p>Photographs of real life objects which children are calculating with.</p>	<p>Part Part Whole Model</p>  <p>Burgers, Chips & Peas</p> 	<p>Drawing Place Value Grids</p>  <p>Burgers, Chips, Peas</p> 	
---	--	--	---	--

All pictorial representations should be carefully underpinned by an appropriate manipulative to ensure children make a seamless transition between the concrete and pictorial phase of understanding.

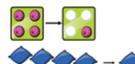
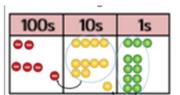
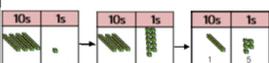
Eg: Burgers chips and Peas is underpinned through using Dienes or Base 10. The pictorial representation is similar to the jotting being made by the children making clear links for the children.

Maths Progression Document - East Stour Primary

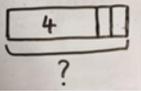
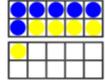
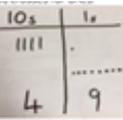
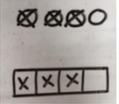
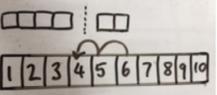
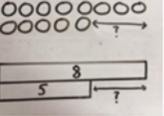
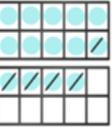
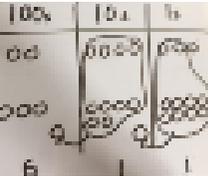
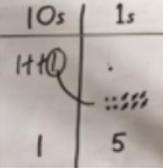
Useful Websites and interactive Resources	<p>For Children</p> <ul style="list-style-type: none"> • Third Space Learning Maths Hub (resources from maths tuition experts) • BBC Bitesize - KS2 Maths (everything) • Primary Games Arena (games) • Hit the Button (times tables and number bonds) • Math is Fun (worksheets) • Primary Resources • NRich (problem solving and challenge questions) • TT Rockstars (competitive times tables) • Maths Zone (portal to lots of maths games and quizzes) • ICT Games 	<p>For Teachers</p> <p>www.tes.co.uk</p> <p>www.nrich.org</p> <p>www.NCETM.org</p>
---	---	---

Vocabulary							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Addition add, more, and make, sum, total altogether double one more, two more ... ten more how many more to make ...? how many more is ... than...? how much more is ...?</p> <p>Subtraction take away how many are left/left over? how many have gone? one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between</p>	<p>Addition addition add, more, and make, sum, total altogether double near double half, halve one more, two more ... ten more how many more to make ...? how many more is ... than ...? how much more is ...?</p> <p>Subtraction subtract take away how many are left/left over? how many have gone? one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between equals is the same as number bonds/pairs missing number</p>	<p>Addition addition add, more, and make, sum, total altogether double near double half, halve one more, two more ... ten more ... one hundred more how many more to make ...? how many more is ... than ...? how much more is ...?</p> <p>Subtraction subtract take away how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less how many fewer is ... than ...? how much less is ...? difference between equals is the same as number bonds/pairs/facts tens boundary</p>	<p>Addition All Previous</p> <p>Subtraction All Previous bonds/pairs/facts missing number tens boundary, hundreds boundary</p>	<p>Addition All Previous</p> <p>Subtraction All Previous bonds/pairs/facts missing number tens boundary, hundreds boundary inverse</p>	<p>ALL PREVIOUS Subtraction ones boundary, tenths boundary</p>	
Addition and Subtraction-Number bonds and mental calculations							
Strand	NURSERY/EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

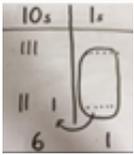
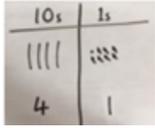
Maths Progression Document - East Stour Primary

Addition & Subtraction Number bonds and Mental Calculations	<p>49-54 Months Finds totals by counting and combines groups of objects.</p> <p>55-60 months. Add and subtract single digit numbers in their play by counting on or back to find the answer.</p> <p>61-66 Months Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.</p>	<p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers adding three one-digit numbers <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>	<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds 	<p>Add and subtract numbers mentally with increasingly large numbers</p>	<p>Perform mental calculations, including with mixed operations and large numbers</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations</p>	
	EVFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Written Methods Addition and subtraction	<p>43-48 months Uses graphic representations to record number explorations in pictures and mark making.</p>	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)</p>		<p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p>	
Manipulative and Resources	<p>Real life objects</p>  <p>Numicon</p>  <p>Cubes</p> 	<p>Addition Multilink Cubes</p>  <p>Numberlines</p> 	<p>Subtraction Physically taking Objects away Bean Bags/Counters</p>  <p>Number lines</p> 	<p>Addition Place Value Counters</p> 	<p>Subtraction Base 10</p>  <p>Place Value Counters</p>	<p>Year 5 & 6- use a variety of resources to develop understanding- Please see calculation Policy for detailed Steps of progression with resources.</p>	

Maths Progression Document - East Stour Primary

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Pictorial Representations to underpin addition and subtraction.</p>	<p>Recording in pictures of real life objects</p> <p>Photographs of real life objects which children are calculating with.</p>	<p>Addition</p> <p>Part Part Whole</p>  <p>Bar Model</p>  <p>Tens</p> <p>Frames</p>  <p>Chips and Beans</p>  <p>(YEAR 2 ONLY)</p>	<p>Subtraction</p> <p>Pictorial Representation of real life objects</p>  <p>Number lines</p>  <p>Bar</p> <p>Model</p>  <p>Tens Frames</p> 	<p>Addition -Partitioning</p>  <p>(link with Place Value counters)</p> <p>Formal written method</p> <p>Subtraction-</p> 	<p>Formal written method</p>	<p>Formal written method</p>	<p>Formal written method</p>

Maths Progression Document - East Stour Primary

		(Year 2 ONLY) 	<u>Formal Written Method</u>			
Useful Websites and interactive Resources	<p>For Children</p> <ul style="list-style-type: none"> • Third Space Learning Maths Hub (resources from maths tuition experts) • BBC Bitesize - KS2 Maths (everything) • Primary Games Arena (games) • Hit the Button (times tables and number bonds) • Math is Fun (worksheets) • Primary Resources • NRich (problem solving and challenge questions) • TT Rockstars (competitive times tables) • Maths Zone (portal to lots of maths games and quizzes) • ICT Games 		<p>For Teachers</p> <p>www.tes.co.uk</p> <p>www.nrich.org</p> <p>www.NCETM.org</p>			

Vocabulary							
	EVFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Multiplication doubling halving number patterns</p> <p>Division halving number patterns sharing</p>	<p>Multiplication multiplication multiply multiplied by multiple</p> <p>Division division dividing grouping sharing doubling halving array number patterns</p>	<p>Multiplication multiply multiplied by multiple groups of times once, twice, three times ... ten times repeated addition</p> <p>Division division dividing, divide, divided by, divided into grouping sharing, share, share equally left, left over one each, two</p>	<p>Multiplication ALL PREVIOUS Product Factor</p> <p>Division Remainder</p>	<p>Multiplication ALL PREVIOUS inverse square, squared cube, cubed</p> <p>Division</p>	ALL PREVIOUS	

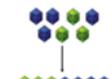
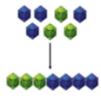
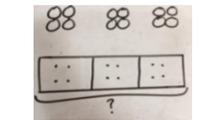
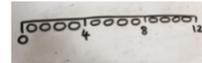
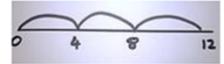
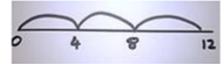
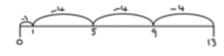
Maths Progression Document - East Stour Primary

			each, three each ... ten each group in pairs, threes ... tens equal groups of doubling halving array row, column number patterns multiplication table multiplication fact, division fact				
Multiplication and Division Facts							
Strand	NURSERY/EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division Facts	<p>61-66 Months They solve problems, including doubling, halving and sharing.</p> <p>67+ Months Solves practical problems that involve combining groups of 2,5 or 10 or sharing into equal groups.</p>	Count in multiples of twos, fives and tens	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	Count from 0 in multiples of 4, 8, 50 and 100	Count in multiples of 6, 7, 9, 25 and 1 000	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12×12				
Mental Calculations							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Written Methods Addition and subtraction			<p>Multiplication Show that multiplication of two numbers can be done in any order (commutative)</p> <p>Division division of one number by another cannot</p>	<p>Multiplication & Division 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</p>	<p>Multiplication & Division 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</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>	<p>Multiplication & Division Multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Multiplication & Division Perform mental calculations, including with mixed operations and large numbers</p> <p>Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)</p>

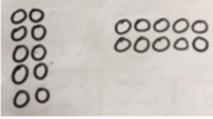
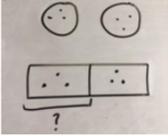
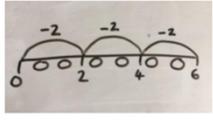
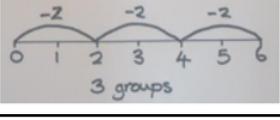
Maths Progression Document - East Stour Primary

<p>Written Calculations</p>			<p>Multiplication & Division calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</p>	<p>Multiplication & Division 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</p>	<p>Multiplication & Division Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p>	<p>Multiplication & Division Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p> <p>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</p>	<p>Multiplication & Division Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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</p>
<p>PROPERTIES OF NUMBERS : MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS</p>					<p>Number Properties Recognise and use factor pairs and commutativity in mental calculations (repeated)</p>	<p>Number Properties Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)</p>	<p>Number Properties Identify common factors, common multiples and prime numbers</p> <p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³</p>

Maths Progression Document - East Stour Primary

Manipulative and Resources	<p><u>Grouping and Sharing</u></p> <p>Real life objects</p>  <p>Cubes</p>  <p>Counting materials</p> 	<p><u>Doubling</u></p> <p>Real Life Objects</p>  <p>Mirrors</p>  <p>Halving</p> 	<p><u>MULTIPLICATION & DIVISION</u></p> <p>Multilink Cubes</p>  <p>Numicon</p>  <p>Real Life Objects</p> 		ALL PREVIOUS	ALL PREVIOUS	
	EYFS	Year1	Year 2	Year 3	Year 4	Year 5	Year 6
Pictorial Representations to underpin addition and subtraction.			<p><u>MULTIPLICATION</u></p> <p><u>Bar Model Using Pictures</u></p>  <p><u>Numberlines using pictures</u></p>  <p><u>Abstract Numberline</u></p>  <p><u>Arrays</u></p> 	<p><u>Numberlines with remainders</u></p> <p>'3 groups of 4, with 1 left over'</p> 	<p><u>Formal Method</u> (Please see calculation Policy for steps)</p>	<p><u>Formal Method</u> (Please see calculation Policy for steps)</p>	<p><u>Formal Method</u> (Please see calculation Policy for steps)</p>

Maths Progression Document - East Stour Primary

			 <p>DIVISION Bar Model Using Pictures</p>  <p>Numberlines using pictures</p>  <p>Abstract Number lines</p> 				
<p>Useful Websites and interactive Resources</p>	<p>For Children</p> <ul style="list-style-type: none"> • Third Space Learning Maths Hub (resources from maths tuition experts) • BBC Bitesize - KS2 Maths (everything) • Primary Games Arena (games) • Hit the Button (times tables and number bonds) • Math is Fun (worksheets) • Primary Resources • NRich (problem solving and challenge questions) • TT Rockstars (competitive times tables) • Maths Zone (portal to lots of maths games and quizzes) • ICT Games 		<p>For Teachers</p> <p>www.tes.co.uk</p> <p>www.nrich.org</p> <p>www.NCETM.org</p>				