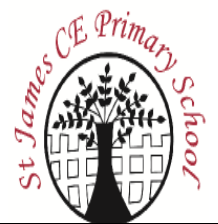


St James Multiplication and Division Journey



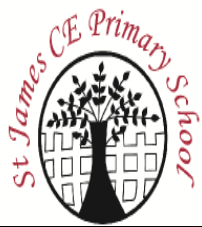
MULTIPLICATION & DIVISION FACTS						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	count in multiples of twos, fives and tens (copied from Number and Place Value)	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)	count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)	count in multiples of 6, 7, 9, 25 and 1000 (copied from Number and Place Value)	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)	
		recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Counters Tens frame	recall and use multiplication facts for the 3 multiplication tables Cubes Number line Counters	recall and use multiplication and division facts for the 6 multiplication tables Objects Arrays Number lines Cubes		
			recall and use division facts for the 3 multiplication tables Counters	recall and use multiplication and division facts for the 7 multiplication tables Objects Arrays		

Black – The objective

Blue – The manipulatives that need to be used

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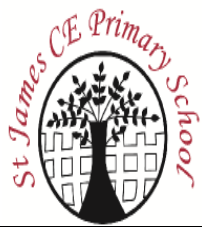
			recall and use multiplication facts for the 4 multiplication tables Dotted card Objects	recall and use multiplication and division facts for the 9 multiplication tables Objects Arrays		
			recall and use division facts for the 4 multiplication tables Counters	recall and use multiplication and division facts for the 11 multiplication tables Objects Arrays Cubes Place value counters		
			recall and use multiplication facts for the 8 multiplication tables Dotted card Objects Counters Number line	recall and use multiplication and division facts for the 12 multiplication tables Cubes Bar models		
			recall and use division facts for the			

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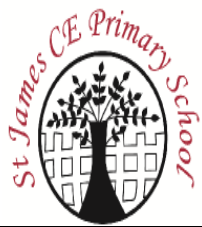
			8 multiplication tables Objects			
MENTAL CALCULATION						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ELG - They solve problems, including doubling, halving and sharing.				use place value, known and derived facts to multiply mentally , including: multiplying by 0 and 1;	multiply and divide numbers mentally drawing upon known facts	perform mental calculations, including with mixed operations and large numbers
				use place value, known and derived facts to divide mentally , including: dividing by 1;		
				use place value, known and derived facts to multiply mentally, including: multiplying together three numbers Dots		

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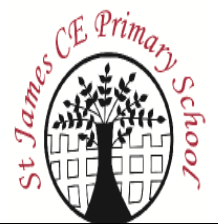
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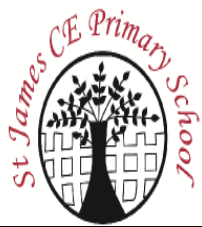
		show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	<p>multiply whole numbers and those involving decimals by 10, 100 and 1000 Number discs (YPB)</p> <p>divide whole numbers and those involving decimals by 10, 100 and 1000 Partitioning Number discs (YPB)</p>	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) (copied from Fractions)
WRITTEN CALCULATION						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Making and adding equal groups Cubes Counters	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs	write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers , using mental and progressing to formal written	multiply two-digit numbers by a one-digit number using formal written layout Number discs (PY) Part wholes Column Base 10 Bar models	multiply numbers up to 4 digits by a one-digit number using a formal written method, including long multiplication for two-digit numbers Number discs (PYPB) Column Bar models Place value charts Part wholes	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication Number discs (PYPB) Column Part wholes (Partitioning) Number cards

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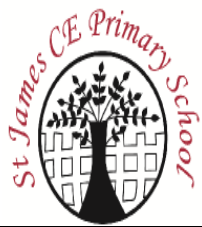
			methods Base 10 Column Arrow cards (PY) Part wholes (Partitioning)		(Partitioning)	
	Grouping equally Counters	multiplication of equal groups Counters Cubes	write and calculate mathematical statements for multiplication with regrouping using the multiplication tables that they know, including for two- digit numbers times one-digit numbers , using mental and progressing to formal written methods Base 10 Column Part wholes (Partitioning)			

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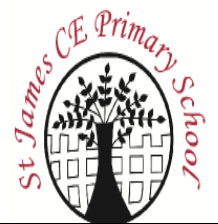
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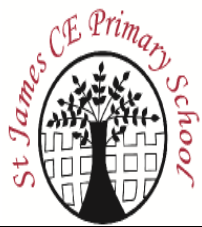
	<p>Dividing using grouping and sharing Counters Cubes</p>	<p>write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods Base 10 Part wholes (Partitioning)</p>	<p>multiply three-digit numbers by a one-digit number using formal written layout Number discs (PYP) Bar models Column Part wholes</p>	<p>multiply numbers up to 4 digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers Number discs (PYPB) Column Bar models Place value charts Part wholes (Partitioning) Grid method</p>	
	<p>Multiplication and division Counters Cubes</p>	<p>write and calculate mathematical statements for division with regrouping using the multiplication tables that they know, including for two-digit numbers times one-digit numbers,</p>			

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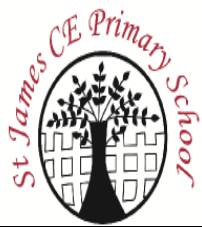
			using mental and progressing to formal written methods Base 10 Part wholes (Partitioning)		appropriately for the context Number discs (PYPB) Bus stop method Part wholes (Partitioning) Bar models	context and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context Number discs (PYP) Bus stop method Bar models Part wholes (Partitioning)
						use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))
PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				recognise and use factor pairs and commutativity in	identify multiples	identify common factors Part wholes

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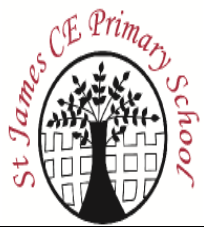
				mental calculations (repeated)		(Partitioning) Bus stop method
					identify factors, including finding all factor pairs of a number, and common factors of two numbers.	identify common multiples
					know and use the vocabulary of prime numbers , prime factors and composite (non-prime) numbers Counters One hundred squares	identify prime numbers Counters
					establish whether a number up to 100 is prime and recall prime numbers up to 19 Counters One hundred squares	

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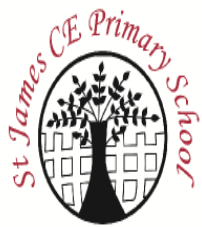
					recognise and use square numbers and cube numbers , and the notation for squared (²) and cubed (³) Cubes	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm ³) and cubic metres (m ³), and extending to other units such as mm ³ and km ³ (copied from Measures)
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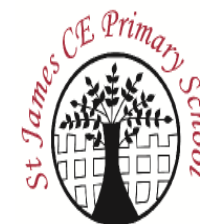
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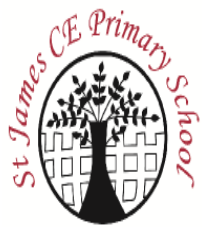
ORDER OF OPERATIONS						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						use their knowledge of the order of operations to carry out calculations involving the four operations Number cards
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)	estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

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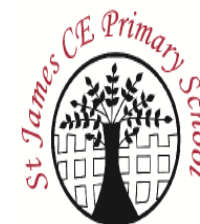
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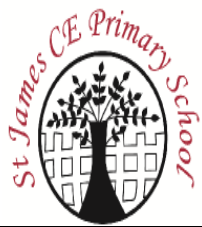
PROBLEM SOLVING						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects Bar models	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects Bar models Column	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes Bus stop method Bar models	solve problems involving addition, subtraction, multiplication and division Bar models Bus stop method Part wholes (Partitioning)
					solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Bus stop method Bar models	

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					solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates Bus stop method Bar models	solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)
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