



Emmanuel Junior Academy: Maths Fluency Practice Overview



	Year 3	Year 4	Year 5	Year 6
Autumn 1 Based on gaps in number from 2021-22	This may include some of the following based on previous assessment data and professional judgement: count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward recognise the place value of each digit in a two-digit number identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs read and write numbers to at least 100 in numerals and in words recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 add and subtract numbers using concrete objects, pictorial representations, and mentally recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, calculate mathematical statements for multiplication and division within the multiplication tables	This may include some of the following based on previous assessment data and professional judgement: count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number recognise the place value of each digit in a three-digit number compare and order numbers up to 1000 identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words add and subtract numbers with up to three digits, using columnar addition and subtraction recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the multiplication tables that they know	This may include some of the following based on previous assessment data and professional judgement: count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1000 read Roman numerals to 100 (I to C) add and subtract numbers with up to 4 digits using columnar addition and subtraction recall multiplication and division facts for multiplication tables up to 12×12	This may include some of the following based on previous assessment data and professional judgement: read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit count forwards and backwards with positive and negative whole numbers, including through zero round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 read Roman numerals to 1000 (M) and recognise years written in Roman numerals. add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) 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 (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method



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			multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	divide numbers up to 4 digits by a one-digit number multiply and divide whole numbers and decimals by 10, 100 and 1000 recognise and use square numbers and cube numbers
Autumn 2	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number recognise the place value of each digit in a three-digit number (hundreds, tens, ones) compare and order numbers up to 1000 read and write numbers up to 1000 in numerals and in words add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 round any number to the nearest 10, 100 or 1000 add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit number using the formal written method of short division divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)



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Spring 1	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 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	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 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 multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 compare and order fractions whose denominators are all multiples of the same number add and subtract fractions with the same denominator and denominators that are multiples of the same number	identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations involving the four operations use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1 add and subtract fractions with different denominators and mixed numbers multiply simple pairs of proper fractions divide proper fractions by whole numbers
Spring 2	add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction including in the context of measure solve missing number problems involving multiplication and division	estimate, compare and calculate different measures multiply two-digit and three-digit numbers by a one-digit number using formal written layout in the context of measure	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 divide numbers up to 4 digits by a one-digit number using the formal written method of	associate a fraction with division and calculate decimal fraction equivalents for a simple fraction [for example, $\frac{8}{3}$] identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places



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		add and subtract numbers with up to 4 digits in the context of measure	short division and interpret remainders appropriately for the context recognise mixed numbers and improper fractions and convert from one form to the other multiply proper fractions and mixed numbers by whole numbers read and write decimal numbers as fractions	multiply one-digit numbers with up to two decimal places by whole numbers use written division methods in cases where the answer has up to two decimal places
Summer 1	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole compare and order unit fractions, and fractions with the same denominators	recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number add and subtract fractions with the same denominator	round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, etc. and those fractions with a denominator of a multiple of 10 or 25.	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit number using the formal written method of short division divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)



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Summer 2	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	recognise and write decimal equivalents of any number of tenths or hundredths	use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation,	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
	add and subtract amounts of money to give change, using both £ and p in practical contexts	find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		
		round decimals with one decimal place to the nearest whole number		
		compare numbers with the same number of decimal places up to two decimal places		

*indicates objective from year group below