Updated August 2021	Maths Essential Knowledge						
Embedding our learning culture	**Curricular Goal: Know how to use fluency in maths to reason and solve problems** **KS1:** How can I show that I know how to use my knowledge of maths to reason and solve problems? **KS2:** How can I demonstrate that I know how to use fluency in maths to reason and solve problems?						
Safe • positive attitudes to learning	**Component 1: Know numbers and place value of numbers**						
	Reception Essential knowledge	Year 1 Essential knowledge	Year 2 Essential knowledge	Year 3 Essential knowledge	Year 4 Essential knowledge	Year 5 Essential knowledge	Year 6 Essential knowledge
Achieving • alteration in LTM • building knowledge including knowledge checks and low stakes quizzes • building confidence • high expectations	**Know objects, actions and sounds can be counted:** • one to one principle (one number for one object) • stable order (numbers said in certain order) • cardinal principle (last number said is total)	**Know numbers to 100** • build knowledge of counting forwards and backwards from zero, one and any given number	**Know numbers to 100** • build knowledge of counting forwards from zero in steps of 2, 3 and 5 • build knowledge of counting in 10 from any number forwards and backwards				
Nurtured • dialogic approach • learning from mistakes **Included** • pupils supported to meet endpoints **Responsible Respected** • development of interpersonal skills: the whole child	**Know visual representations of numbers up to 5:** • subitise (recognise objects without counting) up to 5 **Know the order of numbers from 0 – 10:** • count aloud • forwards and backwards • number recognition			**Know Roman numerals up to 31**	**Know Roman numerals to 100 (I to C)** **Know the number system has changed over time to include:** • zero • place value	**Know Roman numerals to 1,000 (M)** • apply knowledge to recognise years written in Roman numerals	
		Know base 10 to say, read and write numbers up to 100	**Apply knowledge of base 10 to say, read and write numbers up to 100**	**Know base 10 to say, read and write numbers to 1,000 (importance of comma)**	**Know base 10 to say, read and write numbers to 10,000 (importance of comma)**	**Apply knowledge of base 10 to say, read and write numbers to at least 1,000,000**	**Apply knowledge of the number system to say, read and write any whole/decimal number**

• excellent attitudes	Composition of each number (0 1 2 3 4 5 6 7 8 9 10) **Know the order of numbers 0-10, 0-20 (and beyond):** • count aloud • forwards and backwards • number recognition Recall the concept of zero **Know numbers 0-9, write the numerals:** • count to find cardinal value and represent with correct numeral **Know the language of 'greater than', 'less than' and 'the same as':** • compare quantities up to 10 **Know number bonds up to 5 (including subtraction facts) and some number bonds to 10:** • automatically recall (without references	• build knowledge of digits up to 100 to decompose in a standard way • build knowledge of digits to compare and order numbers to 100 (1 more and less)	• apply knowledge of value of digits up to 100 to decompose in a non-standard way • build knowledge of digits to compare and order numbers to 100 using: • < > and = • number line	• build knowledge of value of digits up to 1,000 to decompose in a standard and non-standard way • build knowledge of digits to compare and order numbers to 1,000 (10 and 100 more and less) • build knowledge of value of digits to round numbers up to the nearest 10	• build knowledge of value of digits to up 10,000 to decompose in a standard and non-standard way • build knowledge of value of digits to compare and order numbers to 10,000 including known decimals (1,000 more and less) • build knowledge of value of digits to round numbers up to 10,000 to the nearest 10, 100 and 1,000 • build knowledge of the value of digits to round decimal numbers (up to 1 decimal place) to the nearest whole number • build knowledge of negative	• apply knowledge of value of digits to decompose numbers to at least 1,000,000 in a standard and non-standard way • apply knowledge of value of digits to compare and order numbers to at least 1,000,000 (powers of 10) decimal numbers get smaller the further away they are from the decimal place • apply knowledge of value of digits to round numbers up to 1,000,000 to the nearest 100,000 • apply knowledge of the value of digits to at least 1,000,000 to decimal numbers (up to 2 decimal places) to the nearest whole number and 1 decimal place • apply knowledge of the position of	• apply knowledge of value of digits to decompose in a non-standard way • apply knowledge of value of digits to compare and order any number • apply knowledge of value of digits to round any number to required degree of accuracy • build knowledge of rules for

				numbers to count back through zero	numbers within the number system to interpret positive and negative whole numbers	calculating negative numbers
	Know patterns within numbers to 10, explore and represent: • odds and evens • sharing equally • double facts – automatically recall (without reference to rhymes, counting or other aids) Apply all of the above to real words mathematical problems.		• multiples of 2, 3 and 5 from 0 (forwards and backwards)	• multiples of 4, 8, 50 and 100 from 0	• multiples of 6, 7, 9, 25 and 1,000 from 0		

to rhymes, counting or other aids)