St Anne's C of E Primary School Curriculum Plan

Subject: Maths | Year:5 | Term: Autumn

Unit: Number and place value

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
Millions **Factor pair** - a pair of numbers multiplied together form another number called their product. **Powers of 10** – A power of 10 is the number 10 multiplied by itself a number of times. **≥** - Greater than or equal to **≤** - Less than or equal to **≈ -** Approximately **Divisibility** - can be divided evenly without leaving a remainder. **Square number** - a number that results from multiplying an integer	• Roman numerals up to 1000 • which place value column to look at when round numbers to the nearest 10, 100, 1000 and 10 000 • to focus on the column with the highest place value when comparing numbers • to include the zero when counting up or back through zero Stem Sentences Ten one thousands make ten thousand. One hundred hundreds make ten thousand.	• what is happening in the place value columns when adding 10, 100 and 1000 • what is the same and what is different about our number system and the Roman numeral system • which two numbers a given number lies between when rounding. • the convention of rounding up if numbers are exactly halfway • when rounding is valuable, e.g. populations of countries or when packing 53 items into boxes of 10 you need 6 boxes • negative numbers in context, such as temperature	• Count forward and back in steps of powers of 10 for any given number up to 1,000,000 • Interpret negative numbers in context • Count forwards and backwards with positive and negative whole numbers, including through zero • Read, write, order and compare numbers up to 1,000,000 and determine the value of each digit • Use concrete materials and pictorial representations when representing numbers up to 1,000,000 • Round any number up to 1,000,000 to the nearest 10,100,1000, 10 000 and 100 000

by itself which can be represented in the shape of a square. **Prime number -** a number that has exactly two factors. It can only be divided evenly by itself and one.	Ten ten thousands make one hundred thousand. One hundred one thousands make one hundred thousand. _____ is less than _____ ,so _____thousand is less than _____ thousand. Negative numbers are less than zero. Negative numbers are below zero. Positive numbers are greater than zero. Positive numbers are above zero. For both negative and positive numbers, the larger the value of the number, the further it is away from zero.		• Read Roman numerals to 1000 (M) and recognise years written in Roman numerals • Recognise square numbers and cube numbers

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Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
Addition **Add, more, and, make, sum, total, altogether** **Double** **Near double** **Half, halve** **One more, two more… ten more** **Addends – the numbers added together to make the sum** **Subtraction**	• how to use place value to line up numbers with more than 4 digits accurately • when an exchange is and isn't needed • how to round numbers in order to estimate • the most appropriate number to round to, e.g. the nearest 10, 100 or 1000 • that addition can be done in any order but subtraction cannot **Stem Sentences**	• '0' as a place holder	• use manipulatives and pictorial representations to demonstrate how to add and subtract • add and subtract increasingly larger numbers mentally • use formal written methods to add and subtract numbers greater than 4-digits • use rounding to estimate and check answers • solve addition and subtraction muti-step problems

Take away, minus, fewer, less, difference between **One less, two less… ten less** **Minuend** – a quantity or number from which another is to be subtracted **Subtrahend** - a quantity or number to be subtracted from another. **Equals** **Is equal to, is the same as** **Number bonds** **Number pair** **Number facts** **Part, part, whole** **Partition** **Recombine** **Missing number** **Tens boundary / Hundreds boundary** **Commutative** - involving the condition that a group of quantities connected by operators gives the same result whatever the order of	If one addend is increased by an amount and the other addend is decreased by the same amount, the sum remains the same.		

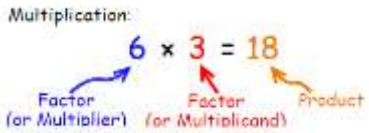
the quantities involved, e.g. $a \times b = b \times a$. **Approximate** - something is almost, but not completely, accurate or exact; roughly			

St Anne's C of E Primary School Curriculum Plan

Subject: Maths | Year: 5 | Term: Autumn and Spring

Unit: Multiplication and division

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
Multiplication **Multiply** **Multiplied by** **Groups of** **Times** **Repeated addition** **Multiple** - The result of multiplying a number by an integer (not by a fraction).	• the commutative law can be applied when multiplying three or more numbers. • 1 is a factor of all positive integers. • 1 is not a prime number (it only has one factor.) • 2 is the only even prime number. • the notation for squared is ^{2}. • the squared numbers up to 12x12. • the notation for cubed is ^{3}. • the number which is left over when dividing is the remainder.	• the relationship between multiplication and division. • the inverse relationship between factors and multiples. • a multiple of a number is the product of the number and another whole number. • some numbers only have two factors (themselves and one) and these numbers are known as prime numbers. • squared numbers are derived from multiplying a number by itself. • cubed numbers are derived by multiplying a number by itself three times e.g. 6x6x6	• have automatic recall of multiplication and division facts within the times tables. • use systematic methods to find all the factors of a positive integer. • use concrete and pictorial representations to build multiples of numbers. • find common factors of two numbers. • recall prime numbers up to 19. • establish whether a number up to 100 is a prime number. • show squared numbers using concrete and pictorial representations.

Common multiple - A multiple that is common to two or more numbers. **Factor** - Numbers we can multiply together to get another number. **Common factor** - When we find the factors of two or more numbers, and then find some factors are the same ("common"), then they are the "common factors". **Multiplicand** – The number to be multiplied **Multiplier** – The number by which the multiplicand is multiplied by **Product** – The result of a multiplication 	**Stem Sentences** "A multiple of a given number is the product of the given number and any whole number." "A factor of a given number is a whole number that the given number can be divided by without giving a remainder." "21 is a multiple of 3. 3 is a factor of 21." "21 is a multiple of 3, so… • 2,100 is a multiple of 300" • 2,100 is a multiple of 3" "2 times 4 ones is equal to 8 ones: write 8 in the ones column." "2 times 3 tens = 6 tens: write 6 in the tens column." "8 tens divided by 4 is equal to 2 tens: write 2 in the tens column."	• what is happening in each step of the long multiplication algorithm. • the role of the zero (place holder) when using the long multiplication algorithm. • the short division method by using place value counters to partition a number and then group.	• multiply four-digit numbers by a single-digit number using a short multiplication algorithm. • use partitioning to multiply up to 4-digi numbers by a 2-digit number. • use long multiplication to multiply up to 4-digit numbers by a 2-digit number or a 3-digit number by a 2-digi number.

Division **Dividing** **Divide** **Divided by** **Divided into** **Grouping** **Sharing** **Shared equally** **Left over** **Remainder** **Equal groups of** **Dividend** – The amount that you want to divide up. **Divisor** – The number we divide by. **Quotient** - The answer after we divide one number by another. **dividend ÷ divisor = quotient.**	"4 ones divided by 4 is equal to 1 one: write 1 in the ones column."		

Commutative law - The Law that says you can swap numbers around and still get the same answer when you add or when you multiply. **Distributive** law - multiplying a number by a group of numbers added together is the same as doing each multiplication separately. **Prime number -** A number that is only divisible by itself and 1 to leave a whole number. **Composite number** - A whole number that can be made by multiplying other whole numbers. **Square number** - the number we get after multiplying an integer (not a fraction) by itself. **Cubed number** - The whole number is used three times, just like the sides of a cube.			

St Anne's C of E Primary School Curriculum Plan

Subject: Maths | **Year: 5** | **Term: Autumn and Spring**

Unit: Fractions

Vocabulary	Knowledge	Understanding	Skills
	Children will know (that)	Children will understand (that)	Children will be able to
fraction **unit fraction –** a fraction with a numerator of 1 **Non-unit fraction –** a fraction where the numerator is greater than or equal to the denominator (equal to or greater than one whole) **Proper fraction –** a fraction where the numerator is smaller than the denominator (less than one whole) **improper fraction – a fraction where the numerator is larger than the denominator**	• how many equal parts make a whole. • when the denominator increases, the fraction is getting smaller. • when adding or subtracting fractions with the same denominator, the denominator remains the same. • multiplying can be written as repeated addition. • when multiplying a fraction by a whole number, the denominator remains the same. • — of ___ is the same as — x ___.	• how multiplication and division are related to finding equivalent fractions. • how to use multiplication and division to convert mixed numbers into improper fractions and vice versa. • if fractions are increasing or decreasing in a sequence. • how to find the intervals between fractions on a number line. • how to use multiples to find a common denominator. • how to use common numerators to compare and order fractions. • how to find a common denominator between two	• use concrete and pictorial representations to show equivalent fractions. • use the abstract method to find equivalent fractions. • represent mixed numbers and improper fractions using bar models and other pictorial representations. • place fractions and mixed numbers on a number line. • count up and down in given fractions. • find missing fractions in a sequence. • compare and order fractions where the denominators are multiples of the same number.

equivalent fraction – equal in value **mixed number –** a whole number and a fraction combined into one number **numerator,** **common numerator –** when two or more fractions have the same numerator **denominator** **common denominator –** when two or more fractions have the same denominator **equal part** **equal grouping** **equal sharing** **parts of a whole** **half, two halves** **one of two equal parts** **quarter, two quarters, three quarters** **one of four equal parts** **one third, two thirds** **one of three equal parts**	**Stem Sentences** The whole is divided into 4 equal parts and 1 of those parts is shaded. The whole is divided into 12 equal parts and 3 of those parts are shaded. To find $\frac{1}{5}$ of 15, we divide 15 into 5 equal parts. 15 divided by 5 is equal to 3, so $\frac{1}{5}$ of 15 is equal to 3. Three-fifths is equal to 3 one-fifths. To find 3 one-fifths of 40, first find one-fifth of 40 by dividing by 5, and then multiply by 3. $\frac{1}{4}$and $\frac{3}{12}$ are equivalent because 1 is the same portion of 4 as 3 is of 12.	fractions, when one of the fractions has the common denominator in order to add or subtract fractions with different denominators. • how partitioning into whole and parts is helpful when adding and subtracting mixed numbers. • the concept of commutativity when multiplying fractions by whole numbers.	• add and subtract mixed numbers. • use concrete and pictorial representations to multiply fractions by whole numbers. • multiply mixed numbers by a whole number.

sixths, sevenths, eighths, tenths, hundredths, thousandths…			