Year 6 Maths LTP

St Benet's RC Primary School

Autumn Term 1		Autumn Term 2		
Number & Place Value	**Number – The 4 operations**	**Fractions**	**Decimals**	**Percentages**
-Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. -Round any whole number to a required degree of accuracy. -Use negative numbers in context, and calculate intervals across zero. -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. -Solve number problems and practical problems that involve all of the above.	-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 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. -Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. -Perform mental calculations, including with mixed operations and large numbers. -Identify common factors, common multiples and prime numbers. -Use their knowledge of the order of operations to carry out calculations involving the four operations. -Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. -Solve problems involving addition, subtraction, multiplication and division. -Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	-Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. -Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. ⅜). -Compare and order fractions, including fractions > 1. -Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. -Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. . × . = ⅛). -Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙). -Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	-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. -Solve problems which require answers to be rounded to specified degrees of accuracy. -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.	-Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. -Solve problems involving the calculation of percentages (e.g. of measures, and such as 15% of 360) and the use of percentages for comparison.
Vocabulary: units, ones, tens, hundreds, thousands ,ten thousand, hundred thousand, million digit, one-, two-, three- or four-digit number numeral 'teens' number place, place value stands for, represents exchange the same number as, as many as equal to *Of* ***two*** *objects/amounts:* > , greater	**Vocabulary:** See Y5 Autumn Term	**Vocabulary:** part, equal parts ,fraction, proper/improper fraction , mixed number , numerator, denominator, equivalent, reduced to, cancel , one whole , half, quarter, eighth , third, sixth, ninth, twelfth, fifth, tenth, twentieth , hundredth, *thousandths* , proportion, ratio, in every, for every, to every, as many as , decimal, decimal fraction , decimal point, decimal place, percentage, per cent, %		

than, more than, larger than, bigger than < , less than, fewer than, smaller than *>, greater than or equal to <, less than or equal to Of* ***three*** *or more objects/amounts:* greatest, most, largest, biggest least, fewest, smallest one... ten... one hundred... one thousand more/less compare, order, size *ascending/descending order* first... tenth... twentieth last, last but one before, after, next between, half-way between guess how many, estimate nearly, roughly, close to, about the same as approximate, approximately *is approximately equal to* just over, just under exact, exactly too many, too few, enough, not enough round (up or down), nearest round to the nearest ten/hundred *round to the nearest thousand* integer positive, negative above/below zero, minus number, count, how many...? odd, even every other how many times? multiple of digit next, consecutive sequence continue predict pattern, pair, rule relationship sort, classify, property *formula* divisible (by), *divisibility*, factor *square number one squared, two squared....(12, 22...), prime, prime factor*		

Spring Term 1			Spring Term 2		
Algebra	**Geometry**	**Ratio & Proportion**	**Geometry**	**Measurement**	**Statistics**
-Use simple formulae. -Generate and describe linear number sequences. -Express missing number problems algebraically. -Find pairs of numbers that satisfy an equation with two unknowns. -Enumerate possibilities of combinations of two variables. -Solve number and practical problems that involve all of the above.	-Draw 2-D shapes using given dimensions and angles. -Recognise, describe and build simple 3-D shapes, including making nets. -Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. -Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. -Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	-Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. -Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	-Describe positions on the full coordinate grid (all four quadrants). -Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	-Use, read, write and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places. -Convert between miles and kilometres. -Recognise that shapes with the same areas can have different perimeters and vice versa. -Calculate the area of parallelograms and triangles. -Recognise when it is possible to use the formulae for area of shapes. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	Interpret and construct pie charts and line graphs and use these to solve problems. -Calculate and interpret the mean as an average.
Vocabulary: Linear number sequence Substitute Variables Symbol Known values	**Vocabulary:** Vertically opposite (angles) Circumference, radius, diameter , intersecting, intersection plane tangram dodecahedron rhombus kite parallelogram, trapezium reflex	**Vocabulary:** Proportion, ratio in every, for every to every, as many as	**Vocabulary:** Four quadrants (for coordinates)	**Vocabulary:** Circumference yard, feet, foot, inches, inch, tonne, pound (lb), ounce (oz)	**Vocabulary:** Mean, Pie chart, Construct

Summer Term 1			Summer Term 2
Fractions, Decimals & Percentages	**Measurement**	**Number – The 4 operations**	**Reasoning & Problem Solving - Investigations**
-Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. -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, using the concept of equivalent fractions. -Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. . × . = ⅛). -Divide proper fractions by whole Numbers (e.g. ⅓ ÷ 2 = ⅙). -Solve problems involving the calculation of percentages (e.g. of measures, and such as 15% of 360) and the use of percentages for comparison.	-Use, read, write and convert between standard units, converting measurements of 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. -Recognise when it is possible to use the formulae for volume of shapes. -Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3) and extending to other units (e.g. mm3 and km3). -Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	-Perform mental calculations, including with mixed operations and large numbers. -Use their knowledge of the order of operations to carry out calculations involving the four operations. -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 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. -Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	• Word problems • Visual Problems • Finding all possibilities • Logic problems • Finding rules and patterns
Vocabulary: See Autumn Term 2	**Vocabulary:** See Spring Term	**Vocabulary:** See Autumn Term	

Fluency Memory Joggers:

Within the daily maths session, 5/10 minutes is used to ensure the children have varied and fluent practise of basic skills. Previous maths domains are visited.

Mini Maths Meet:

A daily 10 minute focus (outside of the maths session) on a specific aspect of maths/ basic skills/ problem solving/ reasoning which is explored in depth. Eg. 6x3.

Problem Solving & Reasoning:

PSR takes place within sessions & also in a discrete PSR session once a week.

Year 6 Skills:

Problem Solving	Skills
	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract).
	Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required.
	Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate.
	Make suggestions of ways to solve a range of problems.
	Organise work from the outset, looking for ways to record and work systematically.
	Find and predict possibilities that match the context using patterns spotted to support.
	Independently check and improve their work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve).
	Pattern spot and begin to express generalisations/proof using words and symbolic notation.
	Make and investigate conjectures and provide examples and counter-examples.
	When they have solved a problem, pose a similar problem for a peer.

Reasoning	Skills
	Provide proof of reasoning, expressing generalisations in words and symbolic notation.
	Reflect on others' proof and use this to improve their own work.
	Edit and improve their own and a peer's proof.
	Investigate 'what if?' questions.
	Create 'what if?' questions.