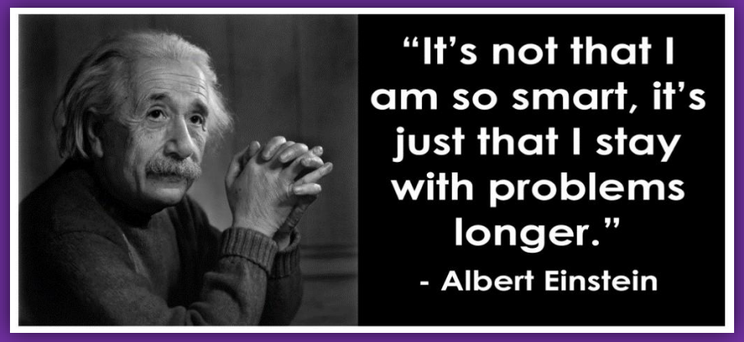
Elliston Primary

Mathematics End Points



	End of EYFS	End of KS1	End of Lower KS2	End of Upper KS2
Place Value	• counts in steps of 1 from 0 to 20 forwards and backwards and then beyond • counting in 1's forwards and backwards from any number up to 20 and then beyond recognising the pattern of the counting system. • Link the number symbol • (numeral) with its cardinal number value. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–5 and some to 10. • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5. • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	• 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 (tens, ones) identify, represent and estimate numbers using different representations, including the number line • compare and order numbers from 0 up to 100; use signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems	• 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 fourdigit number (thousands, hundreds, tens, and a 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 • solve number and practical problems that involve all of the above and with increasingly large positive numbers • read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value.	• 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 • solve number problems and practical problems that involve all of the above.
Addition & Subtraction	• compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	• solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, and measures • applying their increasing knowledge of mental and written methods • 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, including: • a two-digit number and ones • a two-digit number and tens • two two-digit numbers • adding three one-digit numbers • show that addition of two numbers can be done in	• add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which operations and • methods to use and why	• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient 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 whole number using the formal written method of short division, and interpreting remainders according to the context

		• any order (commutative) and subtraction of one number from another cannot recognise and use the inverse relationship between addition and subtraction and use this to check calcu and solve missing number problems.		• 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 calculation determine, in the context of a problem, levels accuracy.
Multiplication & Division	• explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed • equally	• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • calculate mathematical statements for multiplication division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • solve problems involving multiplication and division, materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	•recall multiplication and division facts for multiplication tables up to 12 × 12 • 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 • recognise and use factor pairs and commutativity in mental calculations multiply and divide two-digit and three-digit numbers by a one-digit number using formal written layout • 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	
Fractions (including decimals and percentages)	• in practical activities explore halves of whole amounts	• recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity write simple fractions for example, ½ of 6 = 3 and the equivalence of 2/4 and ½ .	• 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 a 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 recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to ¼; ½; ¾ • 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 units, 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 solve simple measure and money problems involving and decimals to two decimal places.	• use common factors to simplify fractions; • use common multiples to express fractions in the same denomination • compare and order fractions, including fractions >1 • associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) • 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. 1/4 × 1/2 = 1/8) • divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6). • identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places • 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 • solve problems which require answers to be rounded to specified degrees of accuracy. • recall and use equivalences between simple fractions, decimals and

				percentages, including in different contexts and to compare proportions
Measurement	• compare length, weight and capacity.	• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • compare and order lengths, mass, volume/capacity record the • results using >, < and = • recognise and use symbols for pounds (£) and pence	• convert between different units of measure (e.g. kilometre to metre; hour to minute) measure • and calculate the perimeter of a rectilinear figure (including squares) in a centimetres and metres find the area of rectilinear shapes by counting squares • estimate, compare and calculate different measures, including money in pounds and pence	• solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate • 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 three decimal places

		• pence (p); combine amounts to make a particular value find different combinations of coins that equal the • same amounts of money • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change compare and sequence intervals of time • tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times • know the number of minutes in an hour and the number of hours in a day.	• read, write and convert time between analogue and digital 12 and 24-hour clocks • solve problems involving converting from hours to m minutes to seconds; years to months; weeks to day	• 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 necessary to use the formulae for area and volume of shapes calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3) and extending to other units, such as mm3 and km3.
Geometry (Properties of Shapes)	• Select, rotate and manipulate shapes in order to develop spatial reasoning skills. • Selects a particular named shape. • Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in line • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • compare and sort common 2-D and 3-D shapes and objects	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry.	• Draw 2D 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 • recognise angles where they meet at a point, are on a straight line, and are vertically opposite and find missing angles
Geometry (Position & Direction)	• continue, copy and creates repeating patterns. • uses everyday language to talk about position and distance.	• order and arrange combinations of mathematical objects in patterns and sequences • use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise	• describe positions on a 2-D grid as coordinates in the first quadrant • describe movements between positions as • translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon.	• 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.

Statistics		• interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the by quantity ask and answer questions about totalling and comparing categorical data.	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	• interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average
Ratio & Proportion			• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	• 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 the calculation of percentages e.g. of measures and such as 15% of 360 and the use of percentages for comparison • solve problems involving similar shapes where the scale factor if known or can be found • solve problems involving unequal sharing and grouping using knowledge and multiples
Algebra	• explore and represent patterns within numbers up to 10	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.	• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• express missing number problems • algebraically use simple formulae expressed in words generate and describe linear number sequences
		• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.		• find pairs of numbers that satisfy number sentences involving two unknowns. • Enumerate all possibilities of combinations of two variables