KILLISICK JUNIOR SCHOOL
Power Maths Progression Map
MATHEMATICS

Place Value		
YG	Unit	Key Learning
1	Au1 – Numbers to 10	To know how to sort and count objects to 10 To know how to count and write to 10 To know how to count backwards from 10 to 0 To know one more and one less To know how to compare and order numbers To know how to use a number line
1	Au2 – Part whole within 10	To know how to use the part-whole model To know how to write number sentences To know different ways to make a number To know number bonds to 10 To know how to compare number bonds
1	Au6 – Numbers to 20	To know how to count using tens and ones To know one more and one less To know how to compare numbers of objects To know how to compare and order numbers
1	Sp3 – Number to 50	To know how to count up to 50 To know how to compare and order numbers to 50 To know how to count in 2s and 5s To know how to solve word and picture problems
1	Su5 – Numbers to 100	To know how to count in tens To know how to use a 100 square To know how to use tens and ones to make larger numbers To know which number is larger and smaller To know pairs of multiples of 10 that make 100
2	Au1 – Numbers to 100	To know how to count to 100 To know how to use different ways to show numbers to 100 To know how to use place value grids to make and compare numbers To know how to count in 10s To know how to compare and order numbers to 100

3		To know how to count in 2s and 5s
	Au1 – Place Value within 1,000	To know how to count in 100s To know how to partition a number in 100s, 10s and 1s To know 100, 10 and 1 more or less To know how to compare and order numbers up to 1,000 To know how to count in 50s
4	Au1 – Place Value within 10,000 (1)	To know how to round numbers to the nearest 10 or 100 To know how to count in 1,000s To know how to represent 4-digit numbers To know how to use number lines To know the value of Roman numerals I, V, X, C, L, D & M To know how to write Roman numerals to MM
	Au2 – Place Value within 10,000 (2)	To know 1,000 more or less To know how to compare and order numbers to 10,000 To know how to round numbers to the nearest 1,000 To know how to count in 25s To know how to count back through 0 into negative numbers
5	Au1 – Place Value within 100,000	To know the value of each digit in numbers to 100, 000 To know how to partition numbers in different ways To know how to round numbers to the nearest 10,000 To know how to compare and order numbers up to 100,000 To know how to represent numbers in different ways, including with Roman numerals
	Au1 – Place Value within 1,000,000	To know the value of any digit in a number up to 1,000,000 To know how to compare and order numbers to 1,000,000 To know how to round numbers to the nearest 10, 100, 1,000, 10,000 and 100,000 To know how to calculate the difference between a positive and negative number To know how to create number sequences
6	Au1 – Place Value within 10,000,000	To know how to read and write numbers to 10,000,000 To know how to partition, compare and order numbers up to 10,000,000 To know how to round numbers up to 10,000,000 to any degree of accuracy To know how to add and subtract negative numbers

YG	Unit	Key Learning
Addition & Subtraction		
1	Au3 - Addition & Subtraction within 10 (1)	To know how to add parts to find the whole To know how to find a missing part To know number bonds to 10 To know how to find fact families To know how to solve word problems
	Au4 - Addition & Subtraction within 10 (2)	To know to subtract to find how many are left To know how to subtract by breaking the whole into parts To know how to discover related number facts To know how to compare additions and subtractions To know how to find the difference To know how to solve word problems
	Sp1 - Addition (within 20)	To know how to add by counting on To know number bonds to 10 to help us with number bonds to 20 To know how to solve word problems
	Sp2 -Subtraction (within 20)	To know how to subtract tens and ones To know how to cross a 10 when subtracting To know how to compare additions and subtractions To know how to solve word and picture problems
2	Au2 - Addition & Subtraction (1)	To know related number facts To know how to compare number sentences To know how to make number bonds to 100 To know how to add and subtract ones and tens To know how to add a 2-digit and a 1-digit number To know how to subtract a 1-digit number from a 2-digit number
	Au3 - Addition & Subtraction (2)	To know how to add two 2-digit numbers To know how to subtract 2-digit numbers To know how to add three 1-digit numbers To know how to solve word problems
3	Au2 - Addition & Subtraction (1)	To know how to subtract 1s and 10s from 3-digit numbers To know how to add and subtract 3-digit and 2-digit numbers To know when to exchange 1s, 10s and 100s To know how to add and subtract using mental and written methods
	Au3 - Addition & Subtraction (2)	To know how to add and subtract 3-digit numbers To know if we need to exchange To know how to exchange across more than one column To know how to check our answers in different ways

		To know how to use bar models to solve 1- and 2-step problems
4	Au 3 - Addition & Subtraction	To know how to add and subtract 1s, 10s, 100s and 1,000s To know how to add and subtract two 4-digit numbers using the column method To know how to find and use equivalent difference, and other mental methods To know how to estimate answers to additions and subtractions To know how to check strategies and apply our knowledge
5	Au 3 - Addition & Subtraction	To know how to add and subtract numbers with up to 5 digits To know how to use the column method for addition and subtraction To know how to round numbers to estimate answers to problems To know how to add and subtract mentally To know how to solve problems involving addition and subtraction
6	Au2 - Four operations 1	To know how to use written methods for addition and subtraction To know checking strategies for our calculations
	Au3 - Four operations 2	To know the order of operations To know how to solve mental calculations

Multiplication & Division

YG	Unit	Key Learning
1	Su1 - Multiplication	To know how to count in 10s, 5s and 2s To know how to make and add equal groups To know how to make arrays To know how to make doubles To know how to solve word problems
1	Su2 - Division	To know how to make equal groups To know how to share amounts equally To know how to solve word problems
2	Au5 – Multiplication & Division	To know if groups are equal To know how to form multiplication sentences To know how to use arrays To know the 2, 5 and 10 times-tables To know how to solve multiplication word problems
2	Sp1 - Multiplication & Division	To know how to divide by 2 To know odd and even numbers To know how to divide by 5 and 10 To know how to divide by grouping and by sharing To know how to use related multiplication facts to solve division problems
3	Au4 - Multiplication & Division	To know when groups are equal and when they are not To know the 3, 4 and 8 times-tables To know how to find a simple remainder when a number is divided To know how to use a bar model to solve multiplication and division problems
3	Sp1 - Multiplication & Division	To know how to compare multiplication and division statements using inequality signs To know how to use known multiplication facts to solve other multiplication problems To know how to find multiplication and division fact families To know how to multiply and divide by partitioning To know how to solve mixed multiplication and division problems including multi-step problems
4	Au 5 - Multiplication & Division	To know how to multiply by and divide multiples of 10 and 100 To know how to multiply and divide by 0 and 1 To know all of our times-tables from 1 to 12 To know related multiplication and division facts To know how to find solutions to multiplication and division word problems
4	Sp1 - Multiplication & Division	To know how to multiply a number using the written method To know how to multiply and divide numbers in our heads To know how to find the remainder when a number is divided To know how to use bar models and part-whole models to solve multiplication and division problems

5	Au 5 - Multiplication & Division	To know how to recognise and find multiples and factors To know how to recognise and identify prime numbers To know how to calculate square and cube numbers To know how to use inverse operations To know how to multiply and divide by 10, 100 and 1,000 To know how to multiply and divide by multiples of 10, 100 and 1,000
	Sp1 - Multiplication & Division	To know how to multiply a number up to 4 digits by a 1- or 2-digit number To know how to divide a number up to 4 digits by a 1-digit number To know how to interpret remainders To know how to solve problems involving multiplication, division and remainders
6	Au2 - Four operations 1	To know how to use column multiplication To know different written methods for division To know checking strategies for our calculations
	Au3 - Four operations 2	To know how to find common factors and multiples To know prime, square and cube numbers To know the order of operations To know how to solve mental calculations

Geometry

YG	Unit	Key Learning
1	Au5 - Shape	To know the names 3D shapes (sphere, cube, cuboid, cylinder, pyramids) To know the names 2D shapes (squares, triangles, rectangles, circles) To know how to make patterns with shapes
1	Su4 - Position & Direction	To know how to describe turns To know how to use positional language - top, middle, bottom, left, right
2	Sp4 - Properties of Shape	To know how to recognise 2D (squares, triangles, rectangles, circles) and 3D shapes (cubes, cuboids, cylinders, triangular prisms, pyramids (including cones)) To know how to count the sides and vertices on 2D shapes (including pentagons and hexagons) To know the concept of symmetry To know how to count the faces, edges and vertices on 3D shapes To know how to sort 2D and 3D shapes
2	Su1 – Position & Direction	To know how to describe movement To know how to describe turns To know how to make patterns by turning shapes
3	Su3 – Angles & Properties of Shape	To know that an angle to is a measure of a turn To know what a right angle is To know what parallel and perpendicular lines are To know what vertical and horizontal lines are To know how to recognise and describe right angles and parallel and perpendicular lines in 2D shapes To know how to recognise, describe and construct 3D shapes (cube, cuboid, prisms (including cylinder), pyramids (including cones))
4	Su5 – Angles & 2D shapes	To know how to recognise obtuse, acute and right angles To know the concept of regular and irregular shapes To know how to name and describe quadrilaterals (trapezium, parallelogram, rhombus) and triangles (equilateral, isosceles, scalene) To know how to identify lines of symmetry in shapes and patterns
4	Su6 – Position & Direction	To know how to describe positions on a grid To know how to use knowledge of shapes to complete diagrams To know how to describe movements on a grid
5	Su2 - Properties of Shape (1)	To know how to measure angles in degrees, using a protractor To know how to draw lines and angles accurately To know how to calculate missing angles around a point and on a straight line To know how to solve problems involving angles and lengths

	Su3 - Properties of Shape (2)	To know how to recognise and draw parallel lines To know how to recognise and draw perpendicular lines To know the correct notation for parallel and perpendicular lines To know how to identify regular and irregular polygons To know how to recognise different 3D shapes from different views
	Su4 - Position & Direction	To know how to reflect simple 2D shapes in vertical and horizontal lines To know how to plot and find coordinates of a reflected point on a grid To know how to use coordinates to calculate new points of a reflected shape To know how to translate 2D shapes on grid paper To know how to use coordinates to find translations
6	Au6 – Position & Direction	To know how to describe the position of a point on a grid To know that coordinates can have positive or negative values To know how to use knowledge of properties of shape to solve problems on a coordinate grid To know how to move and change shapes on a coordinate grid, through translations and reflections
	Su1 - Properties of Shape	To know how to measure angles and draw shapes using a ruler and protractor To know how to calculate unknown angles in shapes and on lines using angle facts To know that angles in a quadrilateral are equal to 360°, To know that angles in a triangle are equal to 180° To know the names for parts of a circles (circumference, diameter and radius) To know how to identify 3D shapes from 2D representations To know how to draw nets for a 3D shape

Measures		
YG	Unit	Key Learning
1	Sp4 - Introducing Length & Height	To know how to compare lengths and heights of objects To know how to use non-standard units to measure objects To know how to measure with a ruler To know how to solve addition and subtraction word problems about length and height.
1	Sp5 - Introducing Weight & Volume	To know how to measure mass using non-standard units and balance scales To know how to compare mass To know how to measure capacity using non-standard units To know how to compare the capacity of objects (using language of full, half-full, empty) To know how to solve simple word problems about weight and volume.
1	Su6 - Time	To know how to order events using before or after To know how to use a calendar to count days To know how to tell time to the hour and the half hour To know how to compare time To know how to solve time word problems
1	Su7 - Money	To know the value of coins and notes To know how to count in 1s, 2s, 5s and 10s using coins
2	Au4 – Money	To know how to count coins and notes To know how to compare different amounts of money To know how to find different ways to make the same amount To know how to work out the amount of change To know how to solve two-step problems involving money
2	Sp3 – Length & Height	To know how to measure objects in centimetres and metres To know how to compare and order lengths To know how to solve word problems using the 4 operations about length
2	Su3 – Time	To know how to tell the time to the hour, the half hour and quarter hour To know how to tell the time to five minutes To know how to find start and end times To know how to find out how long something lasts To know how to compare amounts of time
2	Su4 - Mass, Volume & Temperature	To know how to compare and measure mass using non-standard units To know how to measure mass in grams (in increments of 5g up to 100g) To know how to measure mass in kg To know how to compare and measure volume using non-standard units To know how to measure volume in ml (in increments of 5ml up to 100ml) To know how to measure volume in l To know how to read a thermometer with positive values

3	Sp2 – Money	To know how to record money in £ and p To know how to convert p to £ To know how to add and subtract amounts of money To know how to find change
	Sp4 – Length	To know how to measure lengths in millimetres, centimetres and metres To know how to compare lengths To know how to add and subtract lengths To know how to measure and calculate perimeter To know how to convert cm to m and cm
	Su2 – Time	To know the relationship between hours, days, months and years To know how to tell the time to the nearest minute To know how to tell the time using am and pm To know how to tell the time using 24-hour clock To know how to find and compare durations To know how to calculate start and end times To know how to solve time problems
	Su4 – Mass	To know how to measure mass in kilograms and grams To know how to work out different intervals on a scale To know how to compare and order masses To know how to add and subtract masses To know how to solve problems involving mass
	Su5 - Capacity	To know how to measure capacity in litres and millilitres To know how to compare and order capacities To know how to compare and order capacity To know how to add and subtract capacities To know how to solve problems involving capacities
4	Au4 – Perimeter	T know how to convert between kilometres and metres To know how to find perimeters of shapes (rectangles and rectilinear shapes) To know how to work out missing lengths To solve problems involving perimeter
	Sp2 - Area	To know the concept of area To know how to find areas of shapes by counting squares To know how to draw shapes with different areas To know how to compare the area of different shapes

5	Su2 – Money	To know how to write money in pounds and pence, using a decimal point To know how to order, estimate, add and subtract amounts of money To know how to round money to the nearest 10p or nearest £1 To know how to find change To know how to solve money problems using the four operations
	Su3 - Time	To know how to convert between units of time (e.g. minutes to seconds) To know how to write times in using am/pm and 24-hour clock To know how to compare times by converting units To know how to solve problems about units of time
	Au6 – Perimeter & Area	To know how to measure and calculate the perimeter of polygons To know how to calculate unknown lengths of composite rectilinear shapes To know how to find areas of rectangles and compound shapes To know how to estimate the area of irregular shapes
	Su5 – Converting Units	To know how to convert between metric units of length, mass and capacity – kg, km, mm, ml To know how to convert imperial units into metric units To know how to convert between units of time To know how to read timetables and understand the information they show To know how to solve problems based on measures
	Su6 – Volume	To know the concept of volume of a shape To know how to find volumes of shapes by counting unit cubes To know how to draw shapes with different volumes To know how to compare and estimate the volume of different shapes To know how to estimate the capacity of different shapes
6	Sp4 - Imperial & Metric measures	To know how to choose the most appropriate metric units of measurement to measure different things To know how to convert between metric units, between imperial units and from one to the other To know how to solve problems involving metric units
	Sp5 – Perimeter, Area & Volume	To know how to find and draw shapes with the same area or perimeter To know how the perimeter changes when the area changes and vice versa To know how to calculate the area of parallelograms and triangles To know how to calculate and estimate the volume of cubes and cuboids

Statistics		
YG	Unit	Key Learning
1		
2	Sp2 - Statistics	To know how to make and interpret tally charts To know how to make and interpret simple tables To know how to make and interpret pictograms To know how to make and interpret block diagrams To know how to solve word problems To know how to ask and answer simple questions
3	Sp3 - Statistics	To know how to present information in different ways To know how to use and interpret pictograms, bar charts and tables To know how to solve one-step and two-step problems using information in scaled bar charts, pictograms and tables.
4	Su4 - Statistics	To know how to interpret and present discrete data in time graphs, pictograms, bar charts and tables To know how to solve comparison, sum and difference problems from bar charts and pictograms To know how to interpret line graphs
5	Au4 – Graphs and Tables	To know how to read and interpret line graphs and tables To know how to draw line graphs To know how to interpret line graphs to solve problems To know how to read and interpret two-way tables and timetables
6	Su3 - Statistics	To know how to calculate the mean of a set of data (as an average) To know how to use the mean to find missing data To know how to read and interpret pie charts using fractions to solve problems To know how to read and interpret pie charts using percentages to solve problems To know how to interpret and create line graphs to solve problems

YG	Unit	Key Learning
Fractions		
1	Su3 – Halves & Quarters	To know how to make equal groups To know how to share amounts equally To know how to solve word problems about the above
2	Sp5 – Fractions	To know about whole and equal parts To know how to recognise and find a half To know how to recognise and find a quarter To know the difference between unit and non-unit fractions To know that ½ and 2/4 are equivalent fractions To know how to count in halves and quarters
3	Sp5 – Fractions (1)	To know how to make a whole with unit and non-unit fractions To know that tenths arise from dividing an object or the number 1 into 10 equal parts To know that fractions are numbers and can be placed on a number line To know how to calculate fractions of a set of objects
3	Su1 – Fractions (2)	To know how to find equivalent fractions To know how to compare fractions with the same denominator To know how to compare fractions with the same numerator To know now how to add and subtract fractions with the same denominator To know how to solve word problems about fractions including finding fractions of an amount
4	Sp3 – Fractions (1)	To know the links between tenths and hundredths To know how to identify and calculate equivalent fractions To know how to simplify fractions To know how to identify fractions that are greater than 1
4	Sp4 – Fractions (2)	To know how to add and subtract fractions with the same denominator To know how to learn to subtract a fraction from a whole number To know how to solve problems by adding and subtracting problems To know how to find a fraction of an amount
5	Sp2 – Fractions (1)	To know how to find and use equivalent fractions To know how to convert between improper fractions and mixed numbers To know how to compare and order fractions To know that fractions are a representation of division To know how to use fractions to show remainders

	Sp3 – Fractions (2)	To know how to add and subtract fractions with the same denominator To know how to add and subtract fractions, including mixed numbers, where one denominator is a multiple of the other To know how to solve word problems involving fractions
	Sp4 – Fractions (3)	To know how to multiply proper fractions and mixed numbers by whole numbers To know how to find a fraction of an amount To know that fractions can be operators To know how to solve word problems involving fractions
	Sp5 – Decimals & Percentages	To know how to write percentages as fractions and as decimals.
6	Au4 – Fractions (1)	To know how to simplify fractions To know how to compare and order fractions To know how to add and subtract fractions including mixed numbers To know how to solve problems involving adding and subtracting fractions
	Au5 – Fractions (1)	To know how to multiply any fraction by a whole number or another fraction To know how to divide a fraction by a whole number To know how to solve problems involving all four operations with fractions To know how to solve problems involving a fraction of an amount

Decimals		
YG	Unit	Key Learning
1		
2		
3		
4	Sp5 - Decimals	To know the concept of tenths and hundredths To know how to write tenths and hundredths as decimals To know how to divide 1 and 2 digits by 10 and 100 To know how to complete calculations resulting in a decimal answer
4	Su1 - Decimals	To know how to represent tenths and hundredths on a place value grid To know how to make a whole To know how to write, compare and order decimals To know how to round decimals to the nearest tenth and whole numbers To know how to express halves and quarters as decimals
5	Sp5 – Decimals & Percentages	To know how to read and write decimals up to three decimal places, including numbers greater than 1 To know how to round decimals to nearest whole number and to one decimal place To know how to order and compare decimal numbers up to three decimal places To know how to write percentages as fractions and as decimals.
5	Su1 - Decimals	To know how to add and subtract decimals with the same number of decimal places To know how to add and subtract decimals with a different number of decimal places To know how to add and subtract wholes and decimals To know how to solve problems involving addition and subtraction of decimals To know how to multiply and divide decimals and whole numbers by 10, 100 and 1,000

6	Sp1 – Decimals	To know the value of each digit in a decimal number
		To know how to multiply and divide decimals by 10, 100 and 1,000
		To know how to convert between fractions and decimals
		To know how to multiply and divide decimals by integers

Percentages		
YG	Unit	Key Learning
1		
2		
3		
4		
5	Sp5 – Decimals & Percentages	To know the concept of percentages To know how to write percentages as fractions and as decimals.
6	Sp2 – Percentages	To know how to convert between fractions to percentages To know how to find fraction, decimals and percentage equivalence To know how to find percentages of amounts To know how to find percentages missing values

		Algebra
YG	Unit	Key Learning
1		
2		
3		
4		
5		
6	Sp3 – Algebra	To know how to find and write algebraic rules – one and two step To know how to form algebraic expression To know how to use algebraic formulae To know how to form equations To know how to solve algebraic equations – one and two step To know how to find pairs of values

Ratio		
YG	Unit	Key Learning
1		
2		
3		
4		
5		
6	Sp6 – Ratio	To know the language of ratios and ratio symbol To know how to calculate ratios To know how to use and calculate scale factors To know how to solve problems involving ratio and proportion