Kinsley Academy Mathematics Objectives - Year 5

	Number				Geometry & Measurement			
POS	Number and place value	Addition and subtraction	Multiplication and division	Fractions (including decimals and percentages)	Measurement	Properties of shapes	Position and direction	Statistics
LO	1. -read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. 2. -count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. 3. -interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. 4. -round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. 5. -solve number problems and practical problems that involve all of the above. 6. -read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	7. -add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). 8. -add and subtract numbers mentally with increasingly large numbers. 9. -use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. 10. -solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	11. -identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. 12. -know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. 13. -establish whether a number up to 100 is prime and recall prime numbers up to 19. 14. -multiply numbers up to 4 digits by a one- or two-digit number using an formal written method, including long multiplication for two-digit numbers. 15. -multiply and divide numbers mentally drawing upon known facts. 16. -divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. 17. -multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. 18. -recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). 19. -Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. 20. -solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. 21. -solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	22. -compare and order fractions whose denominators are all multiples of the same number. 23. -identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. 24. -recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number, for example, 2/5 + 4/5 = 6/5 = 1 and 1/5. 25. -add and subtract fractions with the same denominators that are multiples of the same number. 26. -multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. 27. -read and write decimal numbers as fractions (e.g. 0.71 = 71/100). 28. -recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. 29. -round decimals with two decimal places to the nearest whole number and to one decimal place. 30. -read, write, order and compare numbers with up to three decimal places. 31. -solve problems involving number up to three decimal places. 32. -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 hundred, and as a decimal fraction. 33. -solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	34. -convert between different units of metric measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). 35. -understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. 36. -measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres 37. -calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. 38. -estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water). 39. -solve problems involving converting between units of time. 40. -Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation.	41. -identify 3-D shapes, including cubes and cuboids, from 2-D representations. 42. -know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. 43. -draw given angles and measure them in degrees (°). 44. -Identify: A) angles at a point and one whole turn (total 360°) -B) angles at a point on a straight line and ½ a turn (total 180°) - C) other multiples of 90° 45. use properties of rectangles to deduce related facts and find missing lengths and angles. 46. -distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	47. -identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	48. -solve comparison, sum and difference problems using information presented in a line graph. 49. -complete, read and interpret information in tables, including timetables.