

**NYCC - APP Grid Curriculum 2014 Year 5 and 6 (page 1 of 2)**

Strand	Yr5	Yr6
<b>NUMBER: Number and place value</b>		
Counting	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 count forwards and backwards with positive and negative whole numbers, including through zero	
Read and write numbers	read and write numbers to at least 1 000 000 read Roman numerals to 1000 (M) and recognise years written in Roman numerals	read and write, numbers up to 10 000 000
Comparing and ordering numbers	order and compare numbers to at least 1 000 000 and determine the value of each digit interpret negative numbers in context	order and compare numbers up to 10 000 000 and determine the value of each digit use negative numbers in context, and calculate intervals across zero
Identify, represent & round	round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	round any whole number to a required degree of accuracy
Solve probs.	solve no. problems & practical problems that involve all of the above	solve number and practical problems that involve all of the above
<b>NUMBER: Addition, Subtraction, Multiplication and Division</b>		
Addition, subtraction, multiplication and division	add and subtract numbers mentally with increasingly large numbers add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 multiply numbers up to 4 digits by a 1- or 2-digit no. using a formal written method, including long multiplication for 2-digit numbers 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	perform mental calculations, including with mixed operations and large numbers  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 their knowledge of the order of operations to carry out calculations involving the four operations
Prime numbers and factors	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise & use square nos. & cube nos, & the notation ( <sup>2</sup> ) & ( <sup>3</sup> )	identify common factors, common multiples and prime numbers
Solving problems	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes  solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign ( <i>also see RATIO AND PROPORTION</i> )	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
Checking	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
<b>NUMBER: Fractions (including decimals and percentages)</b>		
Recognise and find fractions	recognise mixed numbers and improper fractions and convert from one form to the other recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred"	
Count, compare and order  Place value and rounding	compare and order fractions whose denominators are all multiples of the same number read and write decimal numbers as fractions (e.g. 0.71 = 71/100) read, write, order & compare numbers with up to three decimal places round decimals with 2 dp to the nearest whole number and to 1 dp	compare and order fractions, including fractions >1  identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
Equivalence	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents write percentages as a fraction with denominator 100, & as a decimal	use common factors to simplify fractions; use common multiples to express fractions in the same denomination recall and use equivalences between simple fractions, decimals and percentages, including in different contexts associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8)
Calculating	add and subtract fractions with the same denominator and denominators that are multiples of the same number write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5) multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	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 )  multiply 1-digit numbers with up to 2 decimal places by whole numbers use written division methods in cases where the answer has up to 2 dp
Solve problems	solve problems involving number up to three decimal places 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	solve problems which require answers to be rounded to specified degrees of accuracy

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Strand	Yr5	Yr6
<b>NUMBER: Ratio and Proportion</b>		
	solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication & division facts solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 & the use of percentages for comparison 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
<b>ALGEBRA</b>		
		express missing number problems algebraically use simple formulae generate and describe linear number sequences find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities of combinations of two variables
<b>MEASUREMENT</b>		
Estimate, measure, weigh, compare and convert units	convert between different units of metric measure (e.g. km & m; cm & m; cm & mm; g & kg; litre and millilitre) understand and use equivalences between metric units and common imperial units such as inches, pounds and pints use all 4 operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation, including scaling	solve problems involving the calculation and conversion of units of measure, using decimal notation up 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 & vice versa using decimal notation to up to 3dp convert between miles and kilometres
Perimeter, area, volume and capacity	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm <sup>2</sup> ) and square metres (m <sup>2</sup> ) and estimate the area of irregular shapes estimate volume (e.g. using 1cm <sup>3</sup> blocks to build cuboids (including cubes)) and capacity (e.g. using water)	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 formulae for area & volume of shapes calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm <sup>3</sup> ) and cubic metres (m <sup>3</sup> ), and extending to other units (e.g. mm <sup>3</sup> and km <sup>3</sup> )
Time	solve problems involving converting between units of time	
<b>GEOMETRY: Properties of shapes; position and direction</b>		
Properties of shapes	identify 3-D shapes, including cubes and other cuboids, from 2-D representations know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees (°) identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and ½ a turn (total 180°) - other multiples of 90° use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles	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
Position, direction, motion	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	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
<b>STATISTICS</b>		
	solve comparison, sum and difference problems using information presented in a line graph complete, read & interpret information in tables, including timetables	interpret & construct pie charts & line graphs & use to solve problems calculate and interpret the mean as an average

Strand	Emerging	Meeting Expectations	Exceeding Expectations
NUMBER: Number and place value			
NUMBER: Addition, Subtraction, Multiplication and Division			
NUMBER: Fractions (including decimals and percentages)			
RATIO AND PROPORTION			
ALGEBRA			
MEASUREMENT			
GEOMETRY: Properties of shapes; position and direction			
STATISTICS			
Overall	Y5 emg; 23 points	Y5 expt; 24 points	Y5 excd; 25 points
	Y6 emg; 26 points	Y6 expt; 27 points	Y6 excd; 28 points

