

NYCC - APP Grid Curriculum 2014 Year 4 and 5 (page 1 of 2)

Strand	Yr4	Yr5
NUMBER: Number and place value		
Counting	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	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 Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value	read and write numbers to at least 1 000 000 read Roman numerals to 1000 (M) and recognise years written in Roman numerals
Comparing and ordering numbers	order and compare numbers beyond 1000	order and compare numbers to at least 1 000 000 and determine the value of each digit; interpret negative numbers in context
Place value (<i>see also frac, dec & %</i>)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	
Identify, rep, est & round	identify, rep and est numbers using different representations round any number to the nearest 10, 100 or 1000	round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
Solve problems	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve no. problems & practical problems that involve all of the above
NUMBER: Addition, Subtraction, Multiplication and Division		
Addition, subtraction, multiplication and division	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 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 multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 & divide whole numbers & those involving decimals by 10, 100 & 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
Derive and recall $+ \times \div$	recall multiplication and division facts for multiplication tables up to 12×12	
Prime numbers and factors	recognise and use factor pairs and commutativity in mental calculations	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 & recall prime numbers to 19; recognise & use square nos. & cube nos, & the notation (2) & (3)
Solving problems	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; 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	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>)
Checking	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
NUMBER: Fractions (including decimals and percentages)		
Recognise and find fractions		recognise mixed numbers & imp fractions & convert from one 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	count up & down in hundredths; recognise that hundredths arise when dividing an object by one hundred & dividing tenths by ten; compare numbers with the same number of dp up to two dp; 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 ones, tenths and hundredths; round decimals with one dp to the nearest whole number	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
Equivalence	recognise and show, using diagrams, families of common equivalent fractions; recognise and write decimal equivalents of any number of tenths or hundredths; recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$	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
Calculating	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and denominators that are multiples of the same number; write mathematical statements >1 as a mixed no. (eg $2\frac{5}{5} + 4\frac{5}{5} = 6\frac{5}{5} = 1\frac{1}{5}$); multiply proper fractions & mixed nos by whole numbers (diagrams to support)
Solve problems	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; solve simple measure and money problems involving fractions and decimals to two decimal places	solve problems involving number up to three decimal places 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

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Strand	Yr4	Yr5
NUMBER: Ratio and Proportion		
	solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	
MEASUREMENT		
Estimate, measure, weigh, compare and convert units	convert between different units of measure (e.g. kilometre to metre; hour to minute) estimate, compare and calculate different measures, including money in pounds and pence	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
Perimeter, area, volume and capacity	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares	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 ²) and square metres (m ²) and estimate the area of irregular shapes estimate volume (e.g. using 1cm ³ blocks to build cuboids (including cubes)) and capacity (e.g. using water)
Money		
Time	read, write and convert time between analogue and digital 12 and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	solve problems involving converting between units of time
GEOMETRY: Properties of shapes; position and direction		
Properties of shapes	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	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
Position, direction, motion	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	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
STATISTICS		
	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	solve comparison, sum and difference problems using information presented in a line graph complete, read & interpret information in tables, including timetables

Strand	Emerging	Meeting Expectations	Exceeding Expectations
NUMBER: Number and place value			
NUMBER: Addition, Subtraction, Multiplication and Division			
NUMBER: Fractions (including decimals and percentages)			
MEASUREMENT			
GEOMETRY: Properties of shapes; position and direction			
STATISTICS			
Overall	Y4 emerging; 20 points	Y4 expecting; 21 points	Y4 exceeding; 22 points
	Y5 emerging; 23 points	Y5 expecting; 24 points	Y5 exceeding; 25 points