# Mathematics National Curriculum 2014 (Statutory Requirements only)

| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Number | Number and Place Value | Count to 100<br>One more, one less<br>Identify and represent numbers<br>Read and write to 20 | Count in steps of 2, 3, 5, 10 from 0<br>Place Value – 2 digits<br>Represent(incl number line)<br>Read and write and order nos 0 to 100<br>Solve problems | Count in multiples of 4, 8, 50, 100<br>10 or 100 more/ less<br>Place Value – 3 digits<br>Read, write and order nos to 1000<br>Different representations<br>Solve problems | Count in multiples of 6, 7, 9, 25, 1000<br>1000 more/less<br>Count back through 0 (negative nos)<br>Place Value - 4 digits, order and compare<br>Round to nearest 10, 100, 1000<br>Solve number and practical problems<br>Read Roman numbers to 100 | Read, write, order and compare nos to 1,000,000<br>Count in steps of powers of 10<br>Interpret –ve nos in context<br>Count on and back through 0<br>Round any no up to 1,000,000<br>Solve no problems<br>Read Roman numerals to 1000<br>(incl years) | Read, write, order and compare numbers to 10 million<br>Round any whole no<br>Use –ve nos and calc intervals across 0<br>Solve no and practical problems |
| | Addition and Subtraction | Signs +, -, =<br>Number bonds to 20<br>+ and – 1 and 2 digit nos to 20<br>One step problems involving +, - pictorially and with objects | Solve problems – nos, quantities and measures, mental and written methods<br>Recall +/- facts fluently to 20, and derive to 100<br>+/- TU+U, TU+tens, TU+TU, U+U+U<br>Any order 3+5=5+3<br>Inverse to check and solve problems | +/- mentally:<br>HTU + U<br>HTU + tens<br>HTU + hundreds<br>+/- formal written methods (3 digits)<br>Estimate and check with inverse<br>Solve problems, incl missing nos, using facts, PV & more complex +/- | +/- 4 digits<br>Estimate and check with inverse<br>Solve +/- two step problems (decide what to do and why) | +/- whole nos more than 4 digit (incl using formal written methods)<br>+/- nos mentally<br>Use rounding to check to determine levels of accuracy<br>Solve +/- multi step problems (decide operations and methods to use and why) | Formal written methods for:<br>ThHTU x TU<br>ThHTU ÷ TU<br>ThHTU ÷ TU<br>Interpret remainders as fractions or rounding (related to context)<br>Perform mental calculations<br>Identify common factors, common multiples and primes<br>Use knowledge of order of operations<br>Solve +/- multi-step problems<br>Decide which operations/ methods to use and why<br>Solve problems +/-/x/÷<br>Estimate to check answers & determine appropriate degree of accuracy |
| | Multiplication and Division | One step problems involving x and ÷ pictorially, with objects & arrays | X 2,5,10<br>Use x,÷ and =<br>Any order 2x4=4x2 (Division cannot)<br>Solve problems – materials, arrays, repeated +, mental, x and ÷ in contexts. | 3x, 4x, 8x<br>Write and calculate x/÷ TU x U mentally → formal written methods<br>Solve problems, incl missing nos, incl +ve integer scaling and correspondence (n is connected to m) | Recall x/÷ facts to 12x12<br>Use PV, known and derived facts to x/÷ mentally (incl x 0 and 1, ÷ by 1, x three nos)<br>Recognise and use factor pairs and mentally any order)<br>HTU x U and TU x U formal written layout<br>Solve problems x and + (incl distr law TU x U, integer scaling and harder correspondence) | Identify multiples and factors (incl factor pairs and common factors)<br>Know and use primes, prime factors and composite (non-prime) nos<br>Establish primes to 100 and recall prime nos to 19<br>ThHTU x U<br>ThHTU x TU using formal written method (incl long mult)<br>x/÷ mentally using known facts<br>÷ nos up to 4 digits by U using formal written method (short division)<br>Interpret remainders appr for context<br>x/÷ whole and decimal nos by 10, 100 and 1000<br>Recognise and use square and cube nos (with notation)<br>Solve x/÷ problems using factors and multiples, squares and cubes<br>Solve problems involving +/-/ x/÷ any combination<br>Meaning of = sign<br>Solve problems involving x/÷ incl scaling by simple fractions and problems involving simple rates | |
| | Fractions | Recognise, find and name: one half (½) as one of 2 equal parts of an object, shape or quantity.<br>As above for one quarter (¼) | Recognise, find, name and write:<br>1/3, ¼ , 2/4, ¾ of a length, shape, set of objects or quantity<br>Write simple fractions :<br>½ of 6=3<br>Equiv fractions 2/4=½ | Count in tenths<br>Recognise, find and write fractions of a discrete set of objects<br>Unit and non-unit fractions with small denominators<br>Use fractions as nos (range, as above)<br>Recognise and show equiv fractions<br>+/- fractions with same denominator (within one whole)<br>Compare and order unit fractions, fractions with same denominators<br>Solve problems | **Fractions(incl.decimals)**<br>Equivalent fractions<br>Count in hundredths<br>Solve problems to calc quantities, and fractions to divide quantities (incl non-unit)<br>+/- fractions with same denominator<br>Recognise and write decimal equivalents of any no of tenths/ hundredths<br>Decimal equiv of ¼, ½, ¾<br>÷ U or TU by 10 and 100<br>Round one decimal place to nearest whole<br>Compare nos with same no of decimal places (up to two)<br>Solve simple measure and money problems | **Fractions (incl decimals + percentages) FDP**<br>Compare and order fractions (with denom multiples of same no)<br>Identify, name and write equiv fractions<br>Recognise and convert between mixed nos and improper fractions<br>Write statements >1 as a mixed no<br>+/- fractions (denom same and multiples)<br>Multiply proper fractions and mixed nos by whole nos (supported by materials and diagrams)<br>Read and write decimal nos as fractions<br>Recognise and use thousandths (and relate to 't' and 'h')<br>Round decimal nos with 2 places<br>Read, write, order, compare nos with up to 3 d.p<br>Solve problems (with nos to 3 d.p)<br>Recognise '%'<br>Write percentages as a fraction (denom '100') and a decimal<br>Solve problems knowing dec and % equivalents | **Fractions(incl decimals + percentages) FDP**<br>Common factors to simplify fractions<br>Common multiples to express fractions in same denomination<br>Compare and order fractions incl fractions>1<br>+/- fractions with different denoms and mixed nos<br>x simple pairs of proper fractions (answer in simplest form)<br>÷ proper fractions by whole nos<br>Associate fraction with ÷ and calc decimal fraction equivalents<br>Identify PV in nos with up to 3 d.p<br>x/÷ nos by 10, 100, 1000<br>U x 0.t & U x 0.0h<br>Use written ÷ methods where answer has up to 2 d.p<br>Solve problems involving rounding answers<br>Equivalence between simple FDP<br>**Ratio and Proportion**<br>Solve problems involving relative sizes of two quantities (missing values using integer x/÷ facts)<br>Solve problems involving the calculation of % and the use of % for comparison<br>Solve problems involving similar shapes where the scale factor is known or can be found<br>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples |
| | Algebra | | | | | | Simple formulae<br>Generate and describe linear no sequences<br>Express missing number problems algebraically<br>Find pairs of nos that satisfy an equation with 2 unknowns<br>Enumerate possibilities of combinations of 2 variables |

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| Measurement | | Compare, describe and solve practical problems: Lengths and heights Mass/weight Capacity and Volume Time (hrs, mins, secs) Money – coins and notes Sequence events in order Language relating to dates Tell time to hour and half past the hour | Standard units, compare and order length, mass, volume/capacity Record <, =, > Money: £ p symbols, equal amounts – diff combinations, Problems - +/- (incl change). Compare/ sequence time intervals Tell time to 5 mins, incl ¼ past/to [] mins= 1 hr? [] hrs= 1 day? | Measure, compare, +/- lengths, mass, volume/capacity Perimeter – small 2d shapes +/- money Tell the time – analogue (incl Roman numerals and 12/ 24 hr clocks) Estimate and read time to the nearest minute Record and compare time with vocab Know: No of secs in a min No of days in months, year and leap year Compare durations of events | Convert between units of measure Measure and calculate perimeter of rectilinear figures Find the area of rectilinear figures by counting squares Estimate, compare and calc different measures (incl money in £ and p) Read, write and convert time between analogue and digital (12 and 24 hr) Solve time problems converting between units | Convert between units of metric measure Understand and use approx equivalents between metric and common imperial units Measure and compare the perimeter of composite rectilinear shapes Calc and compare areas of rectangles and estimate the area of irregular shapes Estimate volume Solve problems converting between units of time Use +/-/ x/÷ solve problems involving measure using decimal notation, incl scaling | Solve problems involving the calculation and conversion of measure (decimal notation 3 places) Use, read, write and convert between standard units Convert between miles and km Recognise that shapes with the same areas can have different perimeters (and vice versa) Recognise when can use formulae for area and volume of shapes Calc the area of parallelograms and triangles Calc, estimate and compare volume of cubes, cuboids using standard units |
| Geometry | Properties of Shape | Recognise and name: 2D shapes 3D shapes | Properties of: 2D (no of sides, line symmetry (vertical) 3D (edges, vertices, faces) 3D shapes with faces made of 2D shapes Compare and sort | Draw 2D shapes and make 3D shapes Recognise 3D in diff orientations and describe Recognise angles as a property of shape or description of turn Identify right angles and compare angles Identify horiz and vertical lines and pairs of perpendicular and parallel lines | Compare and classify geometric shapes based on properties and sizes Identify acute and obtuse; compare and order angles (up to two right angles) Identify lines of symmetry in 2D shapes in different orientations Complete a simple symmetric figure with respect to specific line of symmetry | Identify 3D shapes from 2D representations Angles in degrees, estimate and compare acute, obtuse and reflex angles Draw and measure angles in degrees Identify: Angles at a point Angles on a straight line Other multiples of 90° Use the properties of rectangles to deduce related facts, find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles | Draw 2D shapes given dimensions and angles Recognise, describe and build simple 3D shapes (incl making nets) Compare and classify geometric shapes Find unknown angles in any triangles, quadrilaterals and regular polygons Illustrate and name parts of circles (incl radius, diameter and circumference and know 2xr=d) Recognise angles meeting at a point, on a straight line or vertically opposite Find missing angles |
| | Position and Direction | Describe position, direction and movement, incl whole, half, quarter and three-quarter turns | Order and arrange objects in patterns and sequences Vocab to describe position, direction and movement. Rotation as a turn and right angles for ¼, ½ and ¾ turns (clock and anti) | Recognise that angles are a property of shape or a description of a turn Identify two right angles make a half-turn, three make three quarters of a turn and four a complete turn Identify whether angles are greater/ less than right angle Identify horiz and vertical lines and pairs of perpendicular and parallel lines. | Describe positions as coords in first quadrant Describe movements between positions as translations of a given unit to L/R, 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 with vocab (& know that shape has not changed) | Describe positions on full grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes |
| Statistics | | | Interpret and construct: Pictograms, tally charts, block diagrams and tables Ask and answer questions | Interpret and present data: Bar charts, pictograms, tables Solve one and two step problems using info presented in scaled diagrams | Interpret and present discrete and continuous data (incl bar charts and time graphs) Solve comparison, sum and difference problems | Solve comparison, sum and difference problems Complete, read and interpret information (incl timetables) | Interpret and construct pie charts and line graphs and use these to solve problems Calculate and interpret the mean as an average |