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|  | **Reception** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** | Holy Name Primary School**Mathematics Non-Negotiables (Minimum end of year expectations)**  |
| **Counting & ordering** | - Count reliably to 20 & beyond where possible.- Compare quantities up to 10. | - Count to & across 100, forwards & backwards from 0 or 1 or any given number.- Use the language of: equal to, more than, less than, (fewer), most, least. | - Compare & order numbers up to 100 & use < > =. | - Compare & order numbers up to 1,000. | - Count backwards through zero to include negative numbers.- Compare & order numbers beyond 1,000.- Compare & order numbers with up to 2 decimal places. | - Count forwards & backwards in steps of powers of 10 for any given number up to 1,000, 000.- Compare & order numbers up to 1, 000, 000.- Count forwards & backward with positive & negative numbers through zero.- Compare & order numbers with 3 decimal places. | - Use negative numbers in context & calculate intervals across zero. |
| **Numbers & more/less** | - Write all numbers to 10.- Subitise numbers to 5.- Say one more or less. | - Read & write numbers to 20 in numerals & words.- Read & write numbers to 100 in numerals. - Say one more or less to 100. | - Read & write all numbers to 100 in digits & words.- Say 10 more/less than any number to 100. | - Read & write all numbers to 1,000 in digits & words.- Find 10 or 100 more/less than a given number. | - Find 1,000 more/less than a given number. | - Read, write, order & compare numbers to at least 1,000,000. | - Read, write & compare numbers up to 10, 000, 000.  |
| **Tables & multiples** |  | - Count in multiples of 1, 2, 5 & 10. | - Count in steps of 2, 3 & 5 from any number up to 100 & in 10s from any number (fwd./bwd).- Recall & use multiplication & division facts for 2, 5 & 10 tables. | - Count from 0 in multiples of 4, 8, 50 & 100.- Recall & use multiplication & division facts for 3, 4, 8 tables. | - Count in multiples of 6, 7, 9, 25 & 1000.- Recall & use multiplication & division facts all tables to 12x12. | - Identify all multiples & factors, including finding all factor pairs. | - Identify common factors, common multiples & prime numbers. |
| **Bonds & Facts** | - Recall number bonds to five without reference to aids.- Know some number bonds to 10 including some double facts, odd & even reference.  | - Use bonds & subtraction facts to 20. | - Recall & use +/- facts to 20.- Derive & use related facts to 100. |  | - Recognise factor pairs. | - Read Roman numerals to 1,000.- Recall prime numbers up to 19. - Recognise & use square numbers & cube numbers. |  |
| **Place value & rounding** |  | - Identify & represent numbers using objects & pictorial representations including: the number line. | - Recognise place value of any 2-digit number.- Use place value & number facts to solve problems.- Identify, represent & estimate numbers using different representations, including the number line. | - Recognise place value of any 3-digit number.- Identify, represent & estimate numbers using different representations, including the number line. | - Recognise place value of any 4-digit number. - Identify, represent & estimate numbers using different representations. - Round any number to the nearest 10, 100, 1000.- Round decimals with one decimal place to the nearest whole number.  | - Recognise place value of any 6-digit number. - Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 or 100000.- Round decimals with 2dp to nearest whole number & 1dp. | - Recognise place value of any -digit number. - Round any whole number to a required degree of accuracy. |
| **Calculations** +/- | - Add & subtract two single digit numbers.- Count on/back to find the answer. | Add & subtract:- 1 digit & 2-digit numbers to 20, including zero.- Use the symbols (+, -, =).- Solve one-step problems that involve addition & subtraction using concrete objects, pictorial representations & missing number problems.  | Add & subtract:- 2-digit numbers & ones- 2-digit numbers & tens- Two, 2-digit numbers- Three 1-digit numbers.- Using all above to solve problems. | Add & subtract:- 3-digit numbers & ones- 3-digit numbers & tens- 3-digit numbers & hundreds.- Add & subtract numbers with up to 3-digits using written columnar method.- Estimate & use inverse to check.- Using all above to solve problems. | Add & subtract:- Numbers with up to four digits using written columnar method.- Numbers with up to 1dp.- Estimate & use inverse to check.- Using all above to solve problems. | Add & subtract:- Numbers with more than 4- digits using formal written method.- Numbers with up to 2dp.- Use rounding to check answers.- Using all above to solve problems. | - Use knowledge of order of operations to carry out calculations involving 4 operations.- Use estimation to check answers.- Using all above to solve problems. |
| **Calculations** x/÷ |  | - Solve one-step multiplication & division using objects, pictorial representations & arrays. | - Calculate & write multiplication & division calculations using multiplication tables.- Write & recognise & use inverse.- Use the symbols (x, ÷, =). | Multiply:- 2-digit by 1-digit. | Multiply:- 2-digit by 1-digit.- 3-digit by 1-digit.- Understand outcome when multiplying & dividing by 1 or 0.- Divide one & two-digit numbers by 10 or 100. | Multiply:- 4-digits by 1-digit & 2-digit numbers.Divide:- Up to 4-digits by 1-digit.Multiply & divide:- Whole numbers & decimals by 10, 100 & 1000. | Multiply:- 4-digit by 2-digit.Divide:-4-digit by 2-digit (both short & long methods).- Perform mental calculations including mixed operations. - Multiply one- digit numbers with up to 2dp by whole numbers. - Divide numbers with up to 2dp.  |
| **Fractions, decimals percentages** |  | - Recognise half & quarter of object, shape or quantity. | - Recognise, find, name & write 1/3; 1/4; 2/4; 3/4.- Recognise equivalence of simple fractions. | - Count up/down in tenths.- Compare & order fractions with same denominator.+/- fractions with same denominator within one whole. | - Count up & down in hundredths.- Recognise & write equivalent fractions. - Add & subtract fractions with the same denominator. - Compare numbers with the same number of decimal places. | - Recognise & use thousandths. - Recognise mixed numbers & improper fractions & convert from one to another.- Multiply proper fractions & mixed numbers by whole numbers.- Identify & write equivalent fractions.- Add & subtract fractions with the same denominator. - Read & write decimal numbers as fractions. - Recognise & use % symbol.  | - Add & subtract fractions with different denominators & mixed numbers.- Multiply simple pairs of proper fractions, writing the answer in the simplest form.- Use common factors to simplify fractions. - Compare & order fractions including >1. - Divide proper fractions by whole nos.- Calculate % of whole number.- Solve problems including calculating the percentage or using them for comparison.  |
| **Time** |  | - Sequence events in chronological order.-Use language of day, week, month & year.- Tell the time to hour & half past. | - Tell time to five minutes, including quarter past/to.- Compare & sequence intervals of time.- Know minutes in an hour/ hours in a day.  | - Tell time using 12 & 24 hour clocks; & using Roman numerals.- Tell time to nearest minute. - Know number of days in each month & number of seconds ina minute. | - Read, write & convert time between analogue & digital 12 & 24- hour clocks.  | - Solve time problems using timetables & converting between different units of time. |  |
| **Measurements** | - Understand the terms: tall/short, light/heavy in context. | - Compare & solve practical problems for: length, mass, capacity & time. - Begin to measure: length, weight, capacity & time. - Recognise coins & notes. | - Understand the measurements: cm/mm, kg/g, l/ml, °C & compare them using < > =.- Use a ruler, scales, thermometers, measuring vessels.- Recognise & use £ & p symbols.   | - Measure, compare, add/subtract: length, (m/cm/mm), mass (kg/g), volume & capacity (ml/l).- Measure perimeter of simple 2D shapes.- Add/subtract money to find change (p/£).  | - Convert between different units of measure. - Measure & calculate the perimeter of a rectilinear shapes.- Find the area of rectilinear shapes by counting squares. - Estimate, compare & calculate money in pounds & pence.  | - Convery between different units of measure. - Understand & use approximate estimates between metric & imperial measures. - Measure & calculate perimeter of composite rectilinear shapes. - Calculate & compare the area of shapes in cm2 & m2. - Estimate volume & capacity in cm3.  | - Solve problems involving the calculation & conversions of measure. - Use, read, write & convert between standard units including up to 3dp.- Convert between kilometers & miles. - Recognise when it’s possible to use formulae for area & volume.  |
| **Geometry- shape** | - Recognise & name 2D shapes (square, circles & triangles). | - Recognise & name 2D shapes (square, circles & triangles)- Recognise & name 3D shapes (cubes, pyramids & spheres) | - Identify & describe properties of 2D & 3D shapes (symmetry, edges, face, sides, vertices). - Identify 2D shapes on 3D shapes. - Understand patterns & sequences. | - Draw 2D & make 3D shapes.- Recognise 3D shapes & describe them.- Identify if angles are bigger or smaller than right angles.- Identify horizontal & vertical lines & pairs of perpendicular & parallel lines. | - Compare & classify geometric shapes based on their properties & size. - Identify acute & obtuse angles.- Compare & order angles up to two right angles by size. - Identify lines of symmetry in 2D shapes. - Complete a single symmetric figure with one line of symmetry. - Describe positions on a 2D grid as coordinates (one quadrant).- Plot specified points & draw sides to complete a given polygon.  | - Identify 3D shapes from 2D representations. - Know angles are measured in degrees. - Estimate & compare acute, obtuse & reflex angles. - Draw given angles & measure them in degrees. - Use the properties of rectangles to find missing lengths & angles. - Distinguish between regular & irregular polygons.  | - Recognise the shapes with the same perimeter can have different areas. - Calculate the area of triangles & parallelograms. - Calculate, estimate & compare volume of cubes & cuboids. - Draw 2D shapes using given dimensions. - Recognise, describe & build simple 3D shapes, including nets. - Compare & classify geometric shapes based on their properties. - Find unknown angles in triangles, quadrilaterals & regular polygons. - Illustrate & name parts of a circle, including radius, diameter & circumference. - Recognise angles where they meet at a point, on a straight line or are vertically opposite.- Find missing angles.  |  |
| **Geometry- position & direction** |  | - Describe position, direction & movement including: half, quarter, whole, three-quarter turns. |  | - Recognise & identify angles (two quarters as half, three right angles as three quarters). |  | Identify:- Angles at a point & one whole turn (360).- Angles on a straight line (180)- Other multiples of 90. | - Describe positions on the full coordinate grid.- Draw & translate simple shapes on the grid & reflect them in the axes.  |
| **Statistics & Algebra** |  |  | - Interpret & construct pictograms, tally charts, block diagrams & tables.  | - Interpret & present data on bar charts, pictograms & tables.- Solve one & two-step problems from information is charts/ graphs. | - Interpret & present discrete & continuous data (bar charts, time graphs etc.). - Solve comparison, sum & difference problems using information presented in a bar chart, pictogram & tables.  | - Solve comparison, sum & difference problems from line graphs. - Complete, read & interpret information from tables including timetables.  | - Interpret & construct pie charts & line graphs.- Calculate & interpret the mean as an average. - Use simple formulae.- Generate & describe linear number sequences. - Express missing number problems algebraically. - Find pairs of numbers that satisfy an equation with two unknowns. - Enumerate possibilities of combinations of two variables.  |
| **Ratio & Proportion** |  |  |  |  |  |  | - Solve problems involving the relative sizes of two quantities with missing values. - Solve problems involving similar shapes where the scale factor is known or can be found. - Solve problems involving unequal sharing & grouping using knowledge of fractions & multiples. |