



Mathematics  
Clapham and Patching CofE Primary School  
End of Year Expectations

		YEAR 1
Number	Number & Place Value	1. count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number 2. count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens 3. given a number, identify one more and one less 4. identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least 5. read and write numbers from 1 to 20 in numerals and words.
	Addition & Subtraction	6. read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs 7. represent and use number bonds and related subtraction facts within 20 8. add and subtract one-digit and two-digit numbers to 20, including zero 9. solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$
	Multiplication & Division	10. solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
	Fractions, Decimals & Percentages	11. recognise, find and name a half as one of two equal parts of an object, shape or quantity 12. recognise, find and name a quarter as one of four equal parts of an object, shape or quantity
Measurement		13. compare, describe and solve practical problems for: - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] - mass/weight [for example, heavy/light, heavier than, lighter than] - capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] - time [for example, quicker, slower, earlier, later] 14. measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds) 15. recognise and know the value of different denominations of coins and notes 16. sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] 17. recognise and use language relating to dates, including days of the week, weeks, months and years 18. tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
Geometry	Properties of Shapes	19. recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles (including squares), circles and triangles] - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
	Position & Direction	20. describe position, direction and movement, including whole, half, quarter and three-quarter turns
Statistics		(No prescribed content in this year group)
Ratio & Proportion		(No prescribed content in this year group)
Algebra		(No prescribed content in this year group)



		YEAR 2
Number	Number & Place Value	21. count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward 22. recognise the place value of each digit in a two-digit number (tens, ones) 23. identify, represent and estimate numbers using different representations, including the number line 24. compare and order numbers from 0 up to 100; use <, > and = signs 25. read and write numbers to at least 100 in numerals and in words 26. use place value and number facts to solve problems
	Addition & Subtraction	27. solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods 28. recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 29. add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers 30. show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot 31. recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
	Multiplication & Division	32. recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 33. calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs 34. show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 35. solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
	Fractions, Decimals & %	36. recognise, find, name & write fractions $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity 37. write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Measurement		38. choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ( $^{\circ}\text{C}$ ); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels 39. compare and order lengths, mass, volume/capacity and record the results using >, < and = 40. recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value 41. find different combinations of coins that equal the same amounts of money 42. solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change 43. compare and sequence intervals of time 44. tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times 45. know the number of minutes in an hour and the number of hours in a day.
Geometry	Properties of Shapes	46. identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line 47. identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces 48. identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder] 49. compare and sort common 2-D and 3-D shapes and everyday objects
	Position & Direction	50. order and arrange combinations of mathematical objects in patterns and sequences 51. use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Statistics		52. interpret and construct simple pictograms, tally charts, block diagrams and simple tables 53. ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity 54. ask and answer questions about totalling and comparing categorical data
Ratio & Proportion		(No prescribed content in this year group)



Algebra	(No prescribed content in this year group)
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		YEAR 3
Number	Number & Place Value	55. count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 56. recognise the place value of each digit in a three-digit number (hundreds, tens, ones) 57. compare and order numbers up to 1000 58. identify, represent and estimate numbers using different representations 59. read and write numbers up to 1000 in numerals and in words 60. solve number problems and practical problems involving these ideas
	Addition & Subtraction	61. add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>- a three-digit number and ones</li> <li>- a three-digit number and tens</li> <li>- a three-digit number and hundreds</li> </ul> 62. add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 63. estimate the answer to a calculation and use inverse operations to check answers 64. solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
	Multiplication & Division	65. recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 66. write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods 67. solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which $n$ objects are connected to $m$ objects
	Fractions, Decimals & Percentages	68. count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 69. recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators 70. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators 71. recognise and show, using diagrams, equivalent fractions with small denominators 72. add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$ ] 73. compare and order unit fractions, and fractions with the same denominators 74. Solve problems that involve all of the above
Measurement		75. measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) 76. measure the perimeter of simple 2-D shapes 77. add and subtract amounts of money to give change, using both £ and p in practical contexts 78. tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks 79. estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight 80. know the number of seconds in a minute and the number of days in each month, year and leap year 81. compare durations of events [for example to calculate the time taken by particular events or tasks]
Geometry	Properties of Shapes	82. draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them 83. recognise angles as a property of shape or a description of a turn 84. identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle 85. identify horizontal and vertical lines and pairs of perpendicular and parallel lines
	Position & Direction	(No proscribed content in this year group)
Statistics		86. interpret and present data using bar charts, pictograms and tables 87. solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables
Ratio & Proportion		(No proscribed content in this year group)
Algebra		(No proscribed content in this year group)



		YEAR 4
Number	Number & Place Value	88. count in multiples of 6, 7, 9, 25 and 1000 89. find 1000 more or less than a given number 90. count backwards through zero to include negative numbers 91. recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) 92. order and compare numbers beyond 1000 93. identify, represent and estimate numbers using different representations 94. round any number to the nearest 10, 100 or 1000 95. solve number and practical probs that involve the above and with increasingly large positive numbers 96. 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
	Addition & Subtraction	97. add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 98. estimate and use inverse operations to check answers to a calculation 99. solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
	Multiplication & Division	100. recall multiplication and division facts for multiplication tables up to $12 \times 12$ 101. 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 102. recognise and use factor pairs and commutatively in mental calculations 103. multiply two-digit and three-digit numbers by a one-digit number using formal written layout 104. 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
	Fractions, Decimals & Percentages	105. recognise and show, using diagrams, families of common equivalent fractions 106. count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten 107. 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 108. add and subtract fractions with the same denominator 109. recognise and write decimal equivalents of any number of tenths or hundredths 110. recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ 111. 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 112. round decimals with one decimal place to the nearest whole number 113. compare numbers with the same number of decimal places up to two decimal places 114. solve simple measure and money problems involving fractions and decimals to two decimal places
Measurement		115. Convert between different units of measure [for example, kilometre to metre; hour to minute] 116. measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres 117. find the area of rectilinear shapes by counting squares 118. estimate, compare and calculate different measures, including money in pounds and pence 119. read, write and convert time between analogue and digital 12- and 24-hour clocks 120. solve probs involving converting from hours to minutes; minutes to seconds; years to months; weeks to days
Geometry	Properties of Shapes	121. compare & classify geometric shapes, including quadrilaterals & triangles, based on their properties & sizes 122. identify acute and obtuse angles and compare and order angles up to two right angles by size 123. identify lines of symmetry in 2-D shapes presented in different orientations 124. complete a simple symmetric figure with respect to a specific line of symmetry
	Position & Direction	125. describe positions on a 2-D grid as coordinates in the first quadrant 126. describe movements between positions as translations of a given unit to the left/right and up/down 127. plot specified points and draw sides to complete a given polygon
Statistics		128. interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs 129. solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Ratio & Proportion		(No prescribed content in this year group)
Algebra		(No prescribed content in this year group)



		YEAR 5
Number	Number & Place Value	130. read, write, order & compare numbers to at least 1 000 000 & determine the value of each digit 131. count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 132. interpret negative numbers in context, count forwards & backwards with positive & negative whole numbers, including through zero 133. round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 & 100 000 134. solve number problems & practical problems that involve all of the above 135. read Roman numerals to 1000 (M) & recognise years written in Roman numerals
	Addition & Subtraction	136. add & subtract whole numbers with more than 4 digits, inc using formal written methods (column addition & subtraction) 137. add & subtract numbers mentally with increasingly large numbers 138. use rounding to check answers to calculations & determine, in the context of a problem, levels of accuracy 139. solve addition & subtraction multi-step problems in contexts, deciding which operations & methods to use & why
	Multiplication & Division	140. identify multiples & factors, including finding all factor pairs of a number, & common factors of two numbers 141. know & use the vocabulary of prime numbers, prime factors & composite (non-prime) numbers 142. establish whether a number up to 100 is prime & recall prime numbers up to 19 143. multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers 144. multiply & divide numbers mentally drawing upon known facts 145. divide numbers up to 4 digits by a one-digit number using the formal written method of short division & interpret remainders appropriately for the context 146. multiply & divide whole numbers & those involving decimals by 10, 100 & 1000 147. recognise & use square numbers & cube numbers, & the notation for squared ( <sup>2</sup> ) & cubed ( <sup>3</sup> ) 148. solve problems involving multiplication & division including using knowledge of factors & multiples, squares & cubes 149. solve problems involving addition, subtraction, multiplication & division & a combination of these, including understanding the meaning of the equals sign 150. solve probs involving multiplication & division, including scaling by simple fractions & problems involving simple rates
	Fractions, Decimals & Percentages	151. compare & order fractions whose denominators are all multiples of the same number 152. identify, name & write equivalent fractions of a given fraction, represented visually, including tenths & hundredths 153. recognise mixed numbers & improper fractions & convert from one form to the other & write mathematical statements > 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$ 154. add & subtract fractions with the same denominator & denominators that are multiples of the same number 155. multiply proper fractions & mixed numbers by whole numbers, supported by materials & diagrams 156. read & write decimal numbers as fractions [for example, $0.71 = 71/100$ ] 157. recognise & use thousandths & relate them to tenths, hundredths & decimal equivalents 158. round decimals with two decimal places to the nearest whole number & to one decimal place 159. read, write, order & compare numbers with up to three decimal places 160. solve problems involving number up to three decimal places 161. recognise the per cent symbol (%) & understand that per cent relates to 'number of parts per hundred', & write percentages as a fraction with denominator 100, & as a decimal 162. solve problems which require knowing percentage & decimal equivalents of $1/2$ , $1/4$ , $1/5$ , $2/5$ , $4/5$ & those fractions with a denominator of a multiple of 10 or 25.
Measurement		163. convert between different units of metric measure (for example, kilometre & metre; centimetre & metre; centimetre & millimetre; gram & kilogram; litre & millilitre) 164. understand & use approximate equivalences between metric & common imperial units such as inches, pounds & pints 165. measure & calculate the perimeter of composite rectilinear shapes in centimetres & metres 166. calculate & compare the area of rectangles (including squares), & including using standard units, square centimetres (cm <sup>2</sup> ) & square metres(m <sup>2</sup> ) and estimate the area of irregular shapes 167. estimate volume [for example, using 1 cm <sup>3</sup> blocks to build cuboids (including cubes)] & capacity [for example, using water] 168. solve problems involving converting between units of time 169. use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
Geometry	Properties of Shapes	170. identify 3-D shapes, including cubes & other cuboids, from 2-D representations 171. know angles are measured in degrees: estimate & compare acute, obtuse & reflex angles 172. draw given angles, & measure them in degrees (o) 173. identify: <ul style="list-style-type: none"> <li>- angles at a point &amp; one whole turn (total 360°)</li> <li>- angles at a point on a straight line &amp; 1/2 a turn (total 180°)</li> <li>- other multiples of 90°</li> </ul> 174. use the properties of rectangles to deduce related facts & find missing lengths & angles 175. distinguish between regular & irregular polygons based on reasoning about equal sides & angles.
	Position & Direction	176. identify, describe & represent the position of a shape following a reflection or translation, using the appropriate language, & know that the shape has not changed
Statistics		177. solve comparison, sum & difference problems using information presented in a line graph 178. complete, read & interpret information in tables, including timetables
Ratio & Proportion		(No proscribed content in this year group)
Algebra		(No proscribed content in this year group)

		YEAR 6
Number	Number & Place Value	<p>179. read, write, order &amp; compare numbers up to 10 000 000 &amp; determine the value of each digit</p> <p>180. round any whole number to a required degree of accuracy</p> <p>181. use negative numbers in context, &amp; calculate intervals across zero</p> <p>182. solve number &amp; practical problems that involve all of the above</p>
	Addition & Subtraction, Multiplication & Division	<p>183. multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>184. divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, &amp; interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>185. divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>186. perform mental calculations, including with mixed operations &amp; large numbers</p> <p>187. identify common factors, common multiples &amp; prime numbers</p> <p>188. use their knowledge of the order of operations to carry out calculations involving the four operations</p> <p>189. solve addition &amp; subtraction multi-step problems in contexts, deciding which operations &amp; methods to use &amp; why</p> <p>190. solve problems involving addition, subtraction, multiplication &amp; division</p> <p>191. use estimation to check answers to calculations &amp; determine, in the context of a problem, an appropriate degree of accuracy</p>
	Fractions, Decimals & Percentages	<p>192. use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>193. compare &amp; order fractions, including fractions <math>&gt; 1</math></p> <p>194. add &amp; subtract fractions with different denominators &amp; mixed numbers, using the concept of equivalent fractions</p> <p>195. multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>]</p> <p>196. divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>]</p> <p>197. associate a fraction with division &amp; calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>]</p> <p>198. identify the value of each digit in numbers given to three decimal places &amp; multiply &amp; divide numbers by 10, 100 &amp; 1000 giving answers up to three decimal places</p> <p>199. multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>200. use written division methods in cases where the answer has up to two decimal places</p> <p>201. solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>202. recall &amp; use equivalences between simple fractions, decimals &amp; percentages, including in different contexts</p>
Measurement		<p>203. solve problems involving the calculation &amp; conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>204. use, read, write &amp; convert between standard units, converting measurements of length, mass, volume &amp; time from a smaller unit of measure to a larger unit, &amp; vice versa, using decimal notation to up to three decimal places</p> <p>205. convert between miles &amp; kilometres</p> <p>206. recognise that shapes with the same areas can have different perimeters &amp; vice versa</p> <p>207. recognise when it is possible to use formulae for area &amp; volume of shapes</p> <p>208. calculate the area of parallelograms &amp; triangles</p> <p>209. calculate, estimate &amp; compare volume of cubes &amp; cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) &amp; cubic metres (m<sup>3</sup>), &amp; extending to other units [for example, mm<sup>3</sup> &amp; km<sup>3</sup>]</p>
Geometry	Properties of Shapes	<p>210. draw 2-D shapes using given dimensions &amp; angles</p> <p>211. recognise, describe &amp; build simple 3-D shapes, including making nets</p> <p>212. compare &amp; classify geometric shapes based on their properties &amp; sizes &amp; find unknown angles in any triangles, quadrilaterals, &amp; regular polygons</p> <p>213. illustrate &amp; name parts of circles, including radius, diameter &amp; circumference &amp; know the diameter is twice the radius</p> <p>214. recognise angles where they meet at a point, are on a straight line, or are vertically opposite, &amp; find missing angles.</p>
	Position & Direction	<p>215. describe positions on the full coordinate grid (all four quadrants)</p> <p>216. draw &amp; translate simple shapes on the coordinate plane, &amp; reflect them in the axes</p>
Statistics		<p>217. interpret &amp; construct pie charts &amp; line graphs &amp; use these to solve problems</p> <p>218. calculate &amp; interpret the mean as an average</p>
Ratio & Proportion		<p>219. solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication &amp; division facts</p> <p>220. solve problems involving the calculation of percentages [for example, of measures, &amp; such as 15% of 360] &amp; the use of percentages for comparison</p> <p>221. solve problems involving similar shapes where the scale factor is known or can be found</p> <p>222. solve problems involving unequal sharing &amp; grouping using knowledge of fractions &amp; multiples</p>
Algebra		<p>223. use simple formulae</p> <p>224. generate &amp; describe linear number sequences</p> <p>225. express missing number problems algebraically</p> <p>226. find pairs of numbers that satisfy an equation with two unknowns</p> <p>227. enumerate possibilities of combinations of two variables</p>