

	Numbers and the number system	Book 7S pages	Book 8S pages	Book 9S pages
Level 6	<ul style="list-style-type: none"> • use the equivalence of fractions, decimals and percentages to compare proportions 			38-39
Level 5	<ul style="list-style-type: none"> • use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 and 1000 and explain the effect • round decimals to the nearest decimal place and order negative numbers in context • recognise and use number patterns and relationships • use equivalence between fractions and order fractions and decimals • reduce a fraction to its simplest form by cancelling common factors • understand simple ratio 	220-222 62-63 148-149 152	113 16-18 187-188 34-35 47-48 195	157-158 43-44 121 132-134 23-24 23 162 31-32 154-155 165-166
Level 4	<ul style="list-style-type: none"> • recognise and describe number patterns • recognise and describe number relationships including multiple, factor and square • use place value to multiply and divide whole numbers by 10 or 100 • recognise approximate proportions of a whole and use simple fractions and percentages to describe these • order decimals to three decimal places • begin to understand simple ratio 	1-3 124 1 6 86-90 122-123 125 186-187 48-49 52-55 61 147 208 60 150	14-15 8-11 33 112 194	135 165 157-158 27-29 161 19 163 30

Level 3	<ul style="list-style-type: none"> understand place value in numbers to 1000 use place value to make approximations recognise negative numbers in contexts such as temperature use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent begin to use decimal notation in contexts such as money 	84-85 98-99 14-15 50-51 144-146 114-115	114-115 5-6	160 161
Level 2	<ul style="list-style-type: none"> count sets of objects reliably begin to understand the place value of each digit; use this to order numbers up to 100 begin to use halves and quarters and relate the concept of half of a small quantity to the concept of half of a shape 			
	Calculating	Book 7S pages	Book 8S pages	Book 9S pages
Level 6	<ul style="list-style-type: none"> calculate percentages and find the outcome of a given percentage increase or decrease divide a quantity into two or more parts in a given ratio and solve problems involving ratio and direct proportion use proportional reasoning to solve a problem, choosing the correct numbers to take as 100% or as a whole add and subtract fractions by writing them with a common denominator, calculate fractions of quantities (fraction answers), multiply and divide an integer by a fraction 		166-168	35-37 164 31-32 154-155 165 22 25-26
Level 5	<ul style="list-style-type: none"> use known facts, place value, knowledge of operations and brackets to calculate including using all four operations with decimals to two places use a calculator where appropriate to calculate fractions / percentages of quantities / measurements understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three digit number by any two digit number solve simple problems involving ordering, adding, subtracting negative numbers in context solve simple problems involving ratio and direct proportion 	56-57 153 209 94	121 169 51-57 3-4 173 5-8 196-199	90 125-126 163 20-22 34 161-162 164 92 158-159 132-134 160-161 31-33 213

	<ul style="list-style-type: none"> • apply inverse operations and approximate to check answers to problems are of the correct magnitude 	41	170-171	123-124 156
Level 4	<ul style="list-style-type: none"> • use a range of mental methods of computation with all operations • recall multiplication facts up to 10 x 10 and quickly derive corresponding division facts • use efficient written methods of addition and subtraction and of short multiplication and division • multiply a simple decimal by a single digit • solve problems with or without a calculator • check the reasonableness of results with reference to the context or size of numbers 	12-13 20 83 100-101 119 154-156 164 190-192 8-9 22-23 41 81-82 188-189 211 18-19 91 92 95-97 158-161 194-195 198-200 196 21 113 201 230	60-63 117 164-165 58-59 1-2 118-119 122 172 120 123-124	40-41 158-159 92 158-159 91-92 158-159 92 126 163 123-124
Level 3	<ul style="list-style-type: none"> • derive associated division facts from known multiplication facts • add and subtract two digit numbers mentally • add and subtract three digit numbers using written method • multiply and divide two digit numbers by 2,3,4 or 5 as well as 10 with whole number answers and remainders • use mental recall of addition and subtraction facts to 20 in solving problems involving larger numbers 	8-9 7 12 17 22-23 91 156		

	<ul style="list-style-type: none"> • solve whole number problems including those involving multiplication or division that may give rise to remainders 	93		160
Level 2	<ul style="list-style-type: none"> • use the knowledge that subtraction is the inverse of addition and understand halving as a way of ‘undoing’ doubling and vice versa • use mental recall of addition and subtraction facts to 10 • use mental calculation strategies to solve number problems including those involving money and measures • record their work in writing • choose the appropriate operation when solving addition and subtraction problems 			
	Algebra	Book 7S pages	Book 8S pages	Book 9S pages
Level 6	<ul style="list-style-type: none"> • use systematic trial and improvement methods and ICT tools to find approximate solutions to equations such as • construct and solve linear equations with integer coefficients, using an appropriate method • generate terms of a sequence using term-to-term and position-to-term definitions of the sequence, on paper and using ICT; write an expression to describe the nth term of an arithmetic sequence • plot the graphs of linear functions, where y is given explicitly in terms of x; recognise that equations of the form $y = mx + c$ correspond to straight-line graphs • construct functions arising from real life problems and plot their corresponding graphs; interpret graphs arising from real situations 		176-177	48 169-170
			102-104 181-183	3-6 210-212
				16-18 207-208
				9-13
Level 5	<ul style="list-style-type: none"> • construct, express in symbolic form, and use simple formulae involving one or two operations • use and interpret co-ordinates in all four quadrants 	65-67 165 212-219	36-41 137-144	7-8 45-47 48 168-169 204-206
		128 223-225	100-101 178-180 209-212 233-234	14-16 99-101 139-140 167
Level 4	<ul style="list-style-type: none"> • begin to use simple formulae expressed in words 	4-5		7-8 206

	<ul style="list-style-type: none"> reason about position and movement and transform shapes measure and draw angles to the nearest degree, when constructing models and drawing or using shapes read and interpret scales on a range of measuring instruments, explaining what each labelled division represents solve problems involving the conversion of units and make sensible estimates of a range of measures in relation to everyday situations understand and use the formula for the area of a rectangle and distinguish area from perimeter 	138-140	134-136 24-27 213 72-74 174-175	148-149 175-176 66-69 178-179 229-230 173 102-103 122 171-172 108-110 176-177
Level 4	<ul style="list-style-type: none"> use the properties of 2-D and 3-D shapes make 3-D models by linking given faces or edges and draw common 2-D shapes in different orientations on grids reflect simple shapes in a mirror line, translate shapes horizontally or vertically and begin to rotate a simple shape or object about its centre or a vertex choose and use appropriate units and instruments interpret, with appropriate accuracy, numbers on a range of measuring instruments find perimeters of simple shapes and find areas by counting squares 	32 68-69 170 32 228-229 137 169 171-172 25 103-104 102-103 26-27	201-202 210-211 200 203-205 131-133 72-74 174 75-76 77-78	223-225 223-224 147 174 175-176 102-103 118-120
Level 3	<ul style="list-style-type: none"> classify 3-D and 2-D shapes in various ways using mathematical properties such as reflective symmetry for 2-D shapes begin to recognise nets of familiar 3-D shapes, eg cube, cuboid, triangular prism, square-based pyramid recognise shapes in different orientations and reflect shapes, presented on a grid, in a vertical or horizontal mirror line describe position and movement use a wider range of measures, including non-standard units and standard metric units of length, capacity and mass in a range of contexts 	30-31 134-135 33 136 24 25 102-106	130	147 102-103

	<ul style="list-style-type: none"> • use standard units of time 	107-112		118-120
Level 2	<ul style="list-style-type: none"> • use mathematical names for common 3-D and 2-D shapes • describe their properties, including numbers of sides and corners • describe the position of objects • distinguish between straight and turning movements, recognise right angles in turns and understand angle as a measurement of turn • begin to use a wider range of measures including to use everyday non-standard and standard units to measure length and mass • begin to understand that numbers can be used not only to count discrete objects but also to describe continuous measures 			
	Handling Data	Book 7S pages	Book 8S pages	Book 9S pages
Level 6	<ul style="list-style-type: none"> • design a survey or experiments to capture the necessary data from one or more source; design, trial and, if necessary, refine data collection sheets; construct tables for large discrete and continuous sets of raw data, choosing suitable class intervals; design and use two way tables • select, construct and modify, on paper and using ICT: <ul style="list-style-type: none"> - pie charts for categorical data - bar charts and frequency diagrams for discrete and continuous data - simple time graphs for time series - scatter graphs <p>and identify which are most useful in the context of the problem</p> • find and record all possible mutually exclusive outcomes for single events and two successive events in a systematic way 		69-71	73-74 75-78 84-86 84-86 142-143 144-145

	<ul style="list-style-type: none"> know that the sum of probabilities of all mutually exclusive outcomes is 1 and use this when solving problems communicate interpretations and results of a statistical survey using selected tables, graphs and diagrams in support 			
Level 5	<ul style="list-style-type: none"> ask questions, plan how to answer them and collect the data required in probability, select methods based on equally likely outcomes and experimental evidence, as appropriate understand and use the probability scale from 0 to 1 understand and use the mean of discrete data and compare two simple distributions, using the range and one of mode, median or mean understand that different outcomes may result from repeating an experiment interpret graphs and diagrams, including pie charts, and draw conclusions create and interpret line graphs where the intermediate values have meaning 	<p>46-47 179-183</p> <p>44-45</p> <p>35 174-175</p> <p>182-183</p>	<p>145 157-158 227</p> <p>64-68</p> <p>146-147 224-227</p> <p>67-68</p> <p>148-150 153-156 157-158 220-224</p> <p>105-109 184-186</p>	<p>84-86 217-219</p> <p>141-142 144-145 184-185</p> <p>141-142</p> <p>79-83 181-182</p> <p>144-145</p> <p>75-78 84-86 87-89 182-183</p>
Level 4	<ul style="list-style-type: none"> collect and record discrete data group data, where appropriate, in equal class intervals continue to use Venn and Carroll diagrams to record their sorting and classifying of information construct and interpret frequency diagrams and simple line graphs understand and use the mode and range to describe sets of data 	<p>120-121</p> <p>176-178 184-185</p> <p>116-118 176-178 184-185</p> <p>34-35 120-121 174-175 184-185</p>	<p>157-158</p> <p>217-219 227</p> <p>105-109 184-186 217-219</p> <p>146-147 152 227</p>	<p>217-219</p> <p>217-219</p> <p>87-89 179-180 217-219</p> <p>79-83 106 181-182 217-219 222</p>
Level 3	<ul style="list-style-type: none"> gather information construct bar charts and pictograms, where the symbol represents a group of units 	<p>42-43</p>		<p>179-180</p>

	<ul style="list-style-type: none"> • use Venn and Carroll diagrams to record their sorting and classifying of information • extract and interpret information presented in simple tables, lists, bar charts and pictograms 	42-43		
Level 2	<ul style="list-style-type: none"> • sort objects and classify them using more than one criterion • understand vocabulary relating to handling data • collect and sort data to test a simple hypothesis • record results in simple lists, tables, pictograms and block graphs • communicate their findings, using the simple lists, tables, pictograms and block graphs they have recorded 			179-180
	Using and applying mathematics	Book 7S pages	Book 8S pages	Book 9S pages
Level 6	<ul style="list-style-type: none"> • solve problems and carry through substantial tasks by breaking them into smaller, more manageable tasks, using a range of efficient techniques, methods and resources, including ICT; give solutions to an appropriate degree of accuracy • interpret, discuss and synthesise information presented in a variety of mathematical forms • present a concise, reasoned argument, using symbols, diagrams, graphs and related explanatory texts • use logical argument to establish the truth of a statement 		187-188	
Level 5	<ul style="list-style-type: none"> • identify and obtain necessary information to carry through a task and solve mathematical problems • check results, considering whether these are reasonable 		145 187-188 227	93-97 104-107 129-131 186-187 188-203 209-212 231
			11 170-171 187-188	36-37 104-107 186-187 209-212

	<ul style="list-style-type: none"> • solve word problems and investigations from a range of contexts • show understanding of situations by describing them mathematically using symbols, words and diagrams • draw simple conclusions of their own and give an explanation of their reasoning 	<p>66-67 162-163</p>	<p>11 17-18 32 159-162 187-188 189-193 228-231</p> <p>17-18 32 187-188</p> <p>11 67-68 155-156 157-158 187-188 225-226 227</p>	<p>13 49-50 61 104-107 129-131 186-187 188-203 209-212 231</p> <p>13 129-131 209-212</p> <p>104-107 129-131 186-187 209-212 231</p>
Level 4	<ul style="list-style-type: none"> • develop own strategies for solving problems • use their own strategies within mathematics and in applying mathematics to practical contexts • present information and results in a clear and organised way 	<p>12-13 17 21 28 36-40 76-80 112-113 157 193 206-207</p> <p>32 36-40 41 75-80 96-97 105-106 112-113 129-132 166-169 193 198-199 202-207 231-233</p> <p>31 71-72 120-121 127-128 134-137 161 169 171-172 176-178 182-183 184-185 193 224-225</p>	<p>11 32 89-94 128-129 131 187-188 192-193 200</p> <p>11 32 42-45 63 72-74 88-97 125-129 165 175 187-188 192-193 200 210-212</p> <p>11 17-18 32 67-68 79-80 85 157-158 187-188 217-227</p>	<p>40-41 61 93-97 104-107 186-187 188-203 209-212 231</p> <p>49-50 61 104-107 186-187 209-212 231</p> <p>11-12 40-41 129-131 186-187 209-212 231</p>

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| | <ul style="list-style-type: none">• predict what comes next in a simple number, shape or spatial pattern or sequence and give reasons for their opinions• explain why an answer is correct | | | |
|--|---|--|--|--|