

# Planning grids

## Year 5 scope and sequence

The following grid shows the concepts and objectives that are covered within each *Rising Stars Mathematics* Year 5 unit and provides page references to each of the various components.

Unit	Concept	Objectives	Textbook	Teacher's Guide	Practice Book	Homework Sheets
1	1a Distances	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 500 000 and determine the value of each digit.</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</li> <li>Round any number up to 500 000 to the nearest 10, 100, 10 000 and 100 000.</li> </ul>	12-13	26-7	4-6	192
	1b Converting units of measure	<ul style="list-style-type: none"> <li>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</li> <li>Convert between different units of metric measure, e.g. kilometre and metre; centimetre and metre; centimetre and millimetre.</li> <li>Solve problems involving converting between units of time.</li> </ul>	14-15	28-9	7-9	193
	1c Fractions and decimal equivalences	<ul style="list-style-type: none"> <li>Read and write decimal numbers as fractions, e.g. <math>0.71 = \frac{71}{100}</math>.</li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>Convert between different units of metric measure, e.g. grams and kilograms</li> </ul>	16-17	30-1	10-12	194
	1d Reading, writing and ordering decimal numbers	<ul style="list-style-type: none"> <li>Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>Read, write, order and compare numbers with up to three decimal places.</li> <li>Solve problems involving number up to three decimal places.</li> </ul>	18-19	32-3	13-15	195
2	2a Mental calculation strategies	<ul style="list-style-type: none"> <li>Add and subtract numbers mentally with increasingly large numbers.</li> <li>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	26-7	40-1	16-18	196
	2b Written methods for addition and subtraction	<ul style="list-style-type: none"> <li>Add and subtract whole numbers with four digits, including using written methods (columnar addition and subtraction).</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	28-9	42-3	19-21	197
3	3a Exploring multiples, factors, squares and cubes	<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> </ul>	36-7	50-1	22-4	198
	3b Mental calculation strategies for multiplication and division	<ul style="list-style-type: none"> <li>Multiply and divide numbers mentally drawing upon known facts.</li> <li>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</li> </ul>	38-9	52-3	25-7	199
	3c Written methods for multiplication and division	<ul style="list-style-type: none"> <li>Multiply numbers up to 4 digits long by a single- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.</li> <li>Divide numbers up to 4 digits long by a single-digit number using the formal written method of short division and interpret remainders appropriately for the context.</li> </ul>	40-1	54-5	28-31	200
4	4a Regular or irregular?	<ul style="list-style-type: none"> <li>Know angles are measured in degrees: estimate and compare acute and obtuse angles.</li> <li>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> </ul>	48-9	62-3	32-4	201
	4b Angles	<ul style="list-style-type: none"> <li>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</li> <li>Draw given angles, and measure them in degrees (<math>^{\circ}</math>).</li> <li>Identify:               <ul style="list-style-type: none"> <li>angles at a point and 1 whole turn (total <math>360^{\circ}</math>)</li> <li>angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^{\circ}</math>)</li> <li>other multiples of <math>90^{\circ}</math>.</li> </ul> </li> <li>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> </ul>	50-1	64-5	35-6	202
	4c Drawing	<ul style="list-style-type: none"> <li>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</li> <li>Draw given angles, and measure them in degrees (<math>^{\circ}</math>).</li> <li>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>Identify angles at a point and one whole turn (total <math>360^{\circ}</math>).</li> </ul>	52-3	66-7	37-9	203
5	5a Place holders and comparing	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 500 000 and determine the value of each digit.</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</li> <li>Round any number up to 500 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>Solve number problems and practical problems that involve all of the above.</li> </ul>	60-1	74-5	40-1	204
	5b Positive and negative numbers	<ul style="list-style-type: none"> <li>Interpret negative numbers in context.</li> <li>Count forwards and backwards with positive and negative whole numbers, including through zero.</li> </ul>	62-3	76-7	42-3	205
	5c Roman numerals	<ul style="list-style-type: none"> <li>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> <li>Solve problems involving units of time.</li> </ul>	64-5	78-9	44-5	206

# Introduction

Unit	Concept	Objectives	Textbook	Teacher's Guide	Practice Book	Homework Sheets
6	6a Mental or written methods?	<ul style="list-style-type: none"> <li>Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction).</li> <li>Add and subtract numbers mentally with increasingly large numbers.</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>Solve problems involving number up to three decimal places.</li> <li>Use addition and subtraction to solve problems involving mass using decimal notation.</li> </ul>	72-3	86-87	46-8	207
	6b Don't forget to check!	<ul style="list-style-type: none"> <li>Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction).</li> <li>Add and subtract numbers mentally with increasingly large numbers.</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>Solve comparison, sum and difference problems using information presented in a line graph and bar charts.</li> <li>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul>	74-5	88-9	49-51	208
7	7a Comparing and ordering fractions	<ul style="list-style-type: none"> <li>Compare and order fractions whose denominators are all multiples of the same number.</li> <li>Identify, name and write equivalent fractions of a given fraction, represented visually.</li> </ul>	82-3	96-7	52-4	209
	7b Improper fractions and mixed numbers	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number (e.g. <math>\frac{2}{5} + \frac{4}{5} = 1\frac{1}{5}</math>).</li> <li>Solve problems involving measures.</li> </ul>	84-5	98-9	55-7	210
	7c Equivalences	<ul style="list-style-type: none"> <li>Read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>).</li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents..</li> </ul>	86-7	100-1	58-9	211
	7d Percentages	<ul style="list-style-type: none"> <li>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.</li> </ul>	88-9	102-3	60-3	212
8	8a Primes, squares and cubes	<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</li> <li>Recall primes up to 19.</li> <li>Recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>).</li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> </ul>	96-7	110-11	64-6	213
	8b Using fractions as operators for multiplication	<ul style="list-style-type: none"> <li>Solve problems that require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</li> </ul>	98-9	112-13	67-9	214
	8c Using scaling for multiplication and division	<ul style="list-style-type: none"> <li>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul>	100-1	114-15	70-3	215
9	9a Reflecting and translating 2-D shapes	<ul style="list-style-type: none"> <li>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.</li> </ul>	108-9	122-3	74-8	216
	9b Identifying 3-D shapes	<ul style="list-style-type: none"> <li>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</li> </ul>	110-11	124-5	79-82	217
	9c Angles	<ul style="list-style-type: none"> <li>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</li> <li>Draw given angles, and measure them in degrees (<math>^{\circ}</math>).</li> <li>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>Identify: <ul style="list-style-type: none"> <li>angles at a point and 1 whole turn (total <math>360^{\circ}</math>)</li> <li>angles at a point on a straight line and half a turn (total <math>180^{\circ}</math>).</li> </ul> </li> </ul>	112-13	126-7	83-5	218
10	10a Negative numbers and millions	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</li> <li>Interpret negative numbers in the context of temperature.</li> <li>Count forwards and backwards with positive and negative whole numbers, including through zero.</li> <li>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</li> <li>Solve number problems and practical problems that involve all of the above.</li> </ul>	120-1	134-5	86-8	219
	10b All about fractions	<ul style="list-style-type: none"> <li>Compare and order fractions whose denominators are all multiples of the same number.</li> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number, e.g. <math>\frac{2}{5} + \frac{4}{5} = 1\frac{1}{5}</math>.</li> </ul>	122-3	136-7	89-92	220
	10c All about decimal fractions	<ul style="list-style-type: none"> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>Read, write, order and compare numbers with up to three decimal places.</li> <li>Solve problems involving numbers up to three decimal places.</li> </ul>	124-5	138-9	93-5	221

Unit	Concept	Objectives	Textbook	Teacher's Guide	Practice Book	Homework Sheets
11	11a Mental and written calculations	<ul style="list-style-type: none"> <li>Add and subtract numbers mentally with increasingly large numbers.</li> <li>Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction).</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>Convert between different units of metric measure.</li> <li>Use addition and subtraction to solve problems involving measurement using decimal notation.</li> <li>Solve problems involving units of time.</li> </ul>	132-3	146-7	96-9	222
	11b Adding and subtracting fractions	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number.</li> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number.</li> <li>Start to solve comparison, sum and difference problems using information presented in a line graph.</li> <li>Start to solve problems involving units of time.</li> </ul>	134-5	148-9	100-3	223
12	12a Exploring fractions	<ul style="list-style-type: none"> <li>Compare and order fractions whose denominators are all multiples of the same number.</li> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number (e.g. <math>\frac{6}{5} + \frac{4}{5} = \frac{10}{5} = 1\frac{1}{5}</math>).</li> <li>Multiply fractions by whole numbers.</li> </ul>	142-3	156-7	104-7	224
	12b Working with decimals	<ul style="list-style-type: none"> <li>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</li> <li>Read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>).</li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> </ul>	144-5	158-9	108-10	225
	12c Calculating and converting percentages	<ul style="list-style-type: none"> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.</li> <li>Identify, name and write equivalent fractions of tenths and hundredths.</li> </ul>	146-7	160-1	111-13	226
13	13a All about factors	<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> </ul>	154-5	168-9	114-17	227
	13b Mental calculation and scaling	<ul style="list-style-type: none"> <li>Multiply and divide numbers mentally drawing upon known facts.</li> <li>Solve problems involving addition, subtraction, multiplication and division and a combination of these.</li> <li>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul>	156-7	170-1	118-20	228
	13c 4-digit and long multiplication	<ul style="list-style-type: none"> <li>Multiply numbers up to four digits by a single- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.</li> </ul>	158-9	172-3	121-5	229
	13d Division with remainders	<ul style="list-style-type: none"> <li>Divide numbers up to four digits by a single-digit number using the formal written method of short division and interpret remainders appropriately for the context.</li> </ul>	160-1	174-5	126-7	230
14	14a Finding perimeters	<ul style="list-style-type: none"> <li>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</li> </ul>	168-9	182-3	128-31	231
	14b Areas and perimeters	<ul style="list-style-type: none"> <li>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</li> <li>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>), and estimate the area of irregular shapes.</li> <li>Identify multiples and factors, including all factor pairs, and common factors of two numbers.</li> </ul>	170-1	184-5	132-6	232
	14c Volume and capacity	<ul style="list-style-type: none"> <li>Estimate the volume of cuboids e.g. using cm cubes, and capacity, e.g. using water.</li> </ul>	172-3	186-7	132-6	233