

Year Plan – Book 1.3 Year 7 Top Set



Subject	Mathematics	Key Stage	3	Year	7	Course	N/A
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Time period	Term 6	Title	Maths Frameworking Pupil Book 1.3 Unit 1 Using Number Unit 2 Sequences Unit 3 Perimeter, Area and volume
Number of lessons	Unit 1 Using Number (4 hours) Unit 2 Sequences (5 hours) Unit 3 Perimeter, Area and volume (4 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p><u>Unit 1 Using number</u> The first part of section 1.1 and 1.2 can be left out if pupils are familiar with this material from KS2. This includes questions 1–4 in Exercise 1A and Exercise 1B. Ensure that pupils have a good understanding of the rules they are applying throughout the chapter.</p> <p>This activity is designed to use both the mathematical and problem solving outcomes covered in this chapter in a very common real-life problem set in a slightly less familiar context.</p> <p><u>Unit 2 Sequences</u> Put greater emphasis on inverse functions for more able pupils. Make sure pupils realise that there are a range of different types of sequences, and that within this range, specific examples often follow specific patterns. Provide opportunities for pupils to become fluent in identifying types of sequences. Increase the emphasis on being able to</p>	What will pupils learn?	<p><u>Unit 1 Using Number</u> 1.1 Charts and financial mathematics 1.2 Positive and negative numbers 1.3 Simple arithmetic with negative numbers 1.4 Subtracting negative numbers 1.5 Multiplying negative numbers Review questions and Problem solving – Where in the world</p> <p><u>Unit 2 Sequences</u> 2.1 Function machines 2.2 Sequences and rules 2.3 Working out missing terms 2.4 Working out the nth term 2.5 Other sequences Review questions Mathematical reasoning – Valencia Planetarium</p> <p><u>Unit 3 Perimeter, area and volume</u></p>

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	<p>explain and justify the patterns they spot using the structure of the problem. This will start to make the link between pattern spotting and mathematical proof.</p> <p>This is an opportunity to apply what pupils have learnt to a less familiar problem.</p> <p><u>Unit 3 Perimeter, area and volume</u></p> <p>Leave out lesson 3.1 as consolidating work from KS2. Use the discussion points to check understanding if necessary. Most pupils will have met the basic concepts in this chapter. If they can demonstrate they are confident and fluent with these basic concepts they can move on to the problem challenge questions at the end of each exercise</p> <p>This activity is designed to show pupils an everyday situation that involves area and perimeter.</p>		<p>3.1 Perimeter and area of rectangles</p> <p>3.2 Perimeter and area of compound shapes</p> <p>3.3 Area of some other 2D shapes</p> <p>3.4 Surface area and volume of cubes and cuboids</p> <p>Review questions and Problem solving – Design a bedroom</p>
How will pupils be assessed?	Chapters 1- 3 Assessment on Collins Connect	What are the assessment criteria?	

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Time period	Term 1	Title	Maths Frameworking Pupil Book 1.3 Unit 4 Decimal Numbers Unit 5 Working with numbers Unit 6 Statistics
Number of lessons	Unit 4 Decimal Numbers (4 hours) Unit 5 Working with numbers (7 hours) Unit 6 Statistics (5 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p><u>Unit 4 Decimal numbers</u> Leave out lesson 4.1 as consolidating work from KS2. Use the discussion points to check understanding if necessary. Most pupils will have met the basic concepts in this chapter although they may not have applied them to decimals. If they can demonstrate their ability to transfer this understanding efficiently they can move fairly quickly to the problem challenge questions at the end of each exercise.</p> <p>This activity is designed to apply the skills learnt in this chapter to a multi-step problem. The context may be familiar to learners but they are unlikely to have engaged with it themselves.</p> <p><u>Unit 5 Working with number</u> Pupils will have considered written methods in Key Stage 2. So for lessons 5.4 and 5.5, after a brief recap of methods, concentrate on the word and problem-solving activities in each section.</p> <p>This activity is designed to use the skills covered in this and earlier 'number' chapters to give a real-life context to mathematics.</p> <p><u>Unit 6 Statistics</u></p>	What will pupils learn?	<p><u>Unit 4 Decimal Numbers</u> 4.1 Multiplying and dividing by 10, 100, 1000 and 10,000 4.2 Ordering decimals 4.3 Estimates 4.4 Adding and subtracting decimals 4.5 Multiplying decimals 4.6 Dividing decimals Review questions and Financial skills – Porridge is good for you</p> <p><u>Unit 5 Working with numbers</u> 5.1 Square numbers and square roots 5.2 Rounding 5.3 Order of operations 5.4 Multiplication problems without a calculator 5.5 Division problems without a calculator 5.6 Calculations with measurements Review questions – Problem solving – what is your carbon footprint</p> <p><u>Unit 6 Statistics</u> 6.1 Mode, median and range 6.2 The mean</p>

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	<p>Leave out lessons 6.1 and 6.2, as consolidating work from KS2. Use the discussion points to check understanding if necessary.</p> <p>Pupils need to think about how we use statistics to model populations where it is difficult or in many cases impossible to gather all the population information.</p> <p>This activity is designed to use both the mathematical reasoning and problem-solving outcomes that have been covered in this chapter, in a familiar situation.</p>		<p>6.3 Statistical diagrams</p> <p>6.4 Collecting and using discrete data</p> <p>6.5 Collecting and using continuous data</p> <p>6.6 Data collection</p> <p>Review questions and challenge – Maths tournament</p>
How will pupils be assessed?	Chapters 4 – 6 Assessment on Collins Connect	What are the assessment criteria?	

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Time period	Term 2	Title	Maths Frameworking Pupil Book 1.3 Unit 7 Algebra Unit 8 Fractions Unit 9 Angles
Number of lessons	Unit 7 Algebra (5 hours) Unit 8 Fractions (5 hours) Unit 9 Angles (5 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p><u>Unit 7 Algebra</u> It is important to take time over the examples in this chapter. However, it may often be more worthwhile to work through one or two examples in depth as a class, followed by picking out one or two examples for pupils.</p> <p>A common response to algebra is to ask how it can be used. This activity provides one of the everyday uses of algebra in terms of using a formula to decide cost.</p> <p><u>Unit 8 Fractions</u> If pupils demonstrate the same level of confidence with adding and subtracting fractions they could leave out Exercise 8C and go straight to Exercise 8D.</p> <p>This activity is designed to build confidence and fluency by allowing pupils to apply what they have learnt to an interesting problem in an unfamiliar context.</p> <p><u>Unit 9 Angles</u> Leave out lesson 9.1 as consolidating work from KS2. Use the discussion points to check understanding if necessary.</p> <p>This activity is designed to build confidence and fluency.</p>	What will pupils learn?	<p><u>Unit 7 Algebra</u> 7.1 Expressions and substitution 7.2 Simplifying expressions 7.3 Using formulae 7.4 Writing formulae Review questions and Problem solving – Winter sports</p> <p><u>Unit 8 Fractions</u> 8.1 Equivalent fractions 8.2 Comparing fractions 8.3 Adding and subtracting fractions 8.4 Mixed number and improper fractions 8.5 Calculations with mixed numbers Review questions and Challenge – Fractional dissections</p> <p><u>Unit 9 Angles</u> 9.1 Measuring and drawing angles 9.2 Calculating angles 9.3 Corresponding and alternate angles 9.4 Angles in a triangle 9.5 Angles in a quadrilateral 9.6 Properties of triangles and quadrilaterals Review questions and Activity – Constructing triangles and quadrilaterals</p>

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How will pupils be assessed?	Chapters 7 – 9 Assessment on Collins Connect	What are the assessment criteria?	

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Time period	Term 3	Title	Maths Frameworking Pupil Book 1.3 Unit 10 Coordinates and graphs Unit 11 Percentages Unit 12 Probability
Number of lessons	Unit 10 Coordinates and graphs (7 hours) Unit 11 Percentages (4 hours) Unit 12 Probability (2 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p><u>Unit 10 Coordinates and graphs</u> Leave out lesson 10.1 as consolidating work from KS2. Use the discussion points to check understanding if necessary.</p> <p>This activity is designed to apply pupils' learning in a real-life topical situation.</p> <p><u>Unit 11 Percentages</u> Leave out lessons 11.1 to 11.4 as consolidating work from KS2. Combine the problem-solving or investigational activities in the first four lessons with pupils drawing on prior knowledge from Key Stage 2.</p> <p>This activity is designed to use both the mathematical and transferable process skills covered in this chapter in a very important real-life context that may be less familiar to pupils than might be expected.</p> <p><u>Unit 12 Probability</u> Leave out lessons 12.1 and 12.2 as consolidating work from KS2. Briefly recap probability scales and equally likely outcomes.</p> <p>This activity combines pupils' understanding of experimental and theoretical probability and applies it in a real-life context.</p>	What will pupils learn?	<p><u>Unit 10 Coordinates and graphs</u> 10.1 Coordinates in four quadrants 10.2 Graphs from relationships 10.3 Predicting graphs from relationships 10.4 Graphs of fixed values of x and y, $y = x$ and $y = -x$ 10.5 Graphs in the form $x + y = a$ 10.6 Graphs from the real world Review questions and Challenge – Travelling abroad</p> <p><u>Unit 11 Percentages</u> 11.1 Fractions, decimals and percentages 11.2 Fractions of a quantity 11.3 Calculating simple percentages 11.4 Percentages with a calculator 11.5 Percentage increase and decreases Review questions and Financial skills – Income tax</p> <p><u>Unit 12 Probability</u> 12.1 Probability scales 12.2 Combined events 12.3 Experimental probability Review questions and Financial skills – School easter fayre</p>

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How will pupils be assessed?	Units 10 – 12 Assessment on Collins Connect	What are the assessment criteria?	
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Time period	Term 4	Title	Maths Frameworking Pupil Book 1.3 Unit 13 Symmetry Unit 14 Equations Unit 15 Interpreting data
Number of lessons	Unit 13 Symmetry (5 hours) Unit 14 Equations (3 hours) Unit 15 Interpreting data (3 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p><u>Unit 13 Symmetry</u> Many of the concepts in this chapter will be familiar to pupils from KS2. If pupils can demonstrate confidence with these basic concepts they can focus on the problems solving activities in each chapter or exploring the suggested links to real-life contexts.</p> <p>This activity is designed to show pupils some of the aspects of symmetry used in the real world, by examining the line symmetry of six famous landmarks.</p> <p><u>Unit 14 Equations</u> Recap using letters in equations and run through solving equations before moving straight on to lessons 14.3 and 14.4.</p> <p>In this activity, pupils apply what they know to an abstract number problem. They need to identify and solve multi-step linear equations to solve the problem.</p> <p><u>Unit 15 Interpreting pie charts</u> Focus on the MR questions and the activity in lesson 15.2. Then move straight on to the application of skills in lesson 15.3. Statistical data is everywhere in a modern society, and to function in this society it is important to be able to analyse the data being presented, critically.</p>	<p>What will pupils learn?</p> <p><u>Unit 13 Symmetry</u> 13.1 Line symmetry and rotational symmetry 13.2 Reflections 13.3 Rotations 13.4 Tessellations Review questions and Activity – Rangoli patterns</p> <p><u>Unit 14 Equations</u> 14.1 Finding unknown numbers 14.2 Solving equations 14.3 Solving more complex equations 14.4 Setting up and solving equations Review questions and Challenge – Number puzzles</p> <p><u>Unit 15 Interpreting data</u> 15.1 Pie charts 15.2 Comparing range and averages of data 15.3 Statistical surveys Review questions and Challenge – Ice-skating dance competition</p>	

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	This activity is designed to use both the interpretation and communication skills covered in this chapter.		
How will pupils be assessed?	Units 13 – 15 Assessment on Collins Connect	What are the assessment criteria?	

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Time period	Term 5	Title	Maths Frameworking Pupil Book Unit 16 3D Shapes Unit 17 Ratio
Number of lessons	Unit 16 3D Shapes (3 hours) Unit 17 Ratio (4 hours)	ICT links / tasks	
Literacy links / tasks		Numeracy links / tasks	
What should pupils know already?	<p>Unit 16 3D Shapes Use discussion to check recall of terminology then focus on the mathematical reasoning and problem-solving questions in each lesson.</p> <p>This is a common type of problem used at GCSE so it is important that pupils can identify this type of problem.</p> <p>Unit 17 Ratio If pupils can show understanding by answering one or more of the later questions in Exercise 17A of the Pupil Book, they can move on to simplifying ratios in Exercise 17B. Similarly, if pupils are confident about simple sharing problems, as provided in Exercise 17C, then they can move on to concentrate on the mixed questions in Exercise 17D.</p> <p>This problem-solving activity is designed to reinforce the use of ratios by putting ratios in a realistic context.</p>	What will pupils learn?	<p>Unit 16 3D Shapes 16.1 Naming and drawing 3D shapes 16.2 Using nets to construct 3D shapes 16.3 3D Investigations</p> <p>Unit 17 Ratio 17.1 Introduction to ratios 17.2 Simplifying ratios 17.3 Ratios and sharing 17.4 Solving problems Problem solving – Smoothie bar</p>
How will pupils be assessed?	Units 16 and 17 Assessment on Collins Connect	What are the assessment criteria?	