Subject: Maths.
Year: 7 **Overview**

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Key content – knowledge and skills	National Curriculum focus
Autumn 1: Place value and rounding; Operations with integers; Powers, roots, and time; Order of operations **Autumn 2:** Calculating across zero; Algebraic expressions; Manipulating expressions; Solving linear equations **Spring 1:** Area and perimeter of 2D shapes; Understanding decimals; Operations with decimals; Calculating with money **Spring 2:** 2D shapes and symmetry; Angles; Representing 3D shapes; Using a compass and protractor **Summer 1:** Understanding fractions; Calculating with fractions; Percentages **Summer 2:** Proportional reasoning; Using ratios; Charts and graphs Curriculum Document	**Subject content from the National Curriculum Framework Document September 2013:** **N1-16** **A1-16** **R1-10** **G1-16** **P1-4** **S1-3**

Key assessment points

There will be one assessment each half-term
Autumn 1: Unit 1-4 test
Autumn 2: Unit 1-8 test
Spring 1: Unit 1-12 test
Spring 2: Unit 1-16 test
Summer 1: Unit 1-20 test
Summer 2: End of Year exams Unit 1-24

Christian ethos

With all mathematics studied we will be exploring how skills such as problem solving, numerical reasoning and real life applications, covered in each topic, will make our students confident and motivaited, fully equipped to make a positive contribution to society.

British values

An explicit opportunity in the Year 7 curriculum to explore British values falls within the discussion and debate created from exploring real life applications created from mathematics. Teachers will guide and advise students appropriately.

Subject: Maths **Year:** 7
Long-term plan

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Week	Month	Learning Intentions and/or Key Questions
Aut1-1	September	Place value and rounding Operations with integers Powers, roots, and time Order of operations **Half term assessment**
Aut1-2		
Aut1-3		
Aut1-4		
Aut1-5	October	
Aut1-6		
Aut1-7		
		Half term holiday
Aut2-1	November	Calculating across zero Algebraic expressions Manipulating expressions Solving linear equations **End of term assessment**
Aut2-2		
Aut2-3		
Aut2-4		
Aut2-5		
Aut2-6	December	
Aut2-7		
		Christmas holiday
Spr1-1	January	Area and perimeter of 2D shapes Understanding decimals Operations with decimals Calculating with money **Half term assessment**
Spr1-2		
Spr1-3		
Spr1-4		
Spr1-5		
Spr1-6	February	
		Half term holiday
Spr2-1		2D shapes and symmetry Angles Representing 3D shapes Using a compass and protractor **End of term assessment**
Spr2-2		
Spr2-3	March	
Spr2-4		
Spr2-5		
Spr2-6		
	April	**Easter holiday**
Sum1-1		Representing fractions Fractions of amounts Percentages of amounts Multiplying and dividing fractions **Half term assessment**
Sum1-2		
Sum1-3	May	
Sum1-4		
Sum1-5		
Sum1-6		
	June	**Half term holiday**
Sum2-1		Proportional reasoning Ratio Collecting data Representing data **End of year exam**
Sum2-2		
Sum2-3		
Sum2-4		
Sum2-5	July	
Sum2-6		
Sum2-7		

Subject: Maths **Year:** 7
Unit: 1 to 4
Medium-term plan
Autumn 1

Week	Module Overview	Cross Curricular	Planning Links
1 2	**Place Value and Rounding** This unit is intended to ensure all pupils are confident with place value, including multiplying and dividing by powers of 10. Place value of decimals may be introduced for this purpose. Rounding should also be covered.	Cross-Curriculuar Activity on Real-Life Graphs in Science	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
3 4	**Operations with integers** Pupils should already be familiar with much of this unit on adding, subtracting, multiplying and dividing by integers, so identifying prior attainment is important. Care should also be taken in the language used (e.g. exchanging rather than borrowing for subtraction), and manipulatives made use of if possible.		
5	**Powers, roots, and time** In this unit pupils should learn to calculate from simple powers and roots, and should recap on prior knowledge on time. If it is found that knowledge on time is particularly weak, it may be that this takes up the majority of lessons here.		
6 7	**Order of operations** Pupils should here have opportunity to practice some of the calculation work from 7.2 alongside learning and applying orders of operations. There should also be some time taken to ensure pupils are familiar with using caluclators accurately for orders of operations, including powers and roots.		

Subject: Maths **Year:** 7
Unit: 5 to 8
Medium-term plan
Autumn 2

Week	Module Overview	Cross Curricular	Planning Links
1	**Calculating across zero** This is not intended as a full unit on calculating with negative numbers, but an initial introduction to calculating with small numbers in order to enable pupils to collect like terms in subsequent algebra work. For weaker students this may be extensively through counting forwards and backwards on a number line.	Cross-Curriculuar Activity on Real-Life Graphs in Science	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
2	**Algebraic expressions** In this unit pupils should be introduced to writing algebraically, and time taken to ensure they understood the letters represent something about an object (e.g. 2a + 5b is not two apples and five bananas, but could be the cost, weight etc.) alongside basic simplifying and substitution.		
3			
4	**Manipulating expressions** Pupils should now move onto more detailed manipulation of algebraic expressions looking at both expanding brackets and factorising. Algebra tiles and grid models can be useful in helping pupils to see these. Pupils should also be given time to look at whether an expression can be factorised or simplified.		
5			
6	**Solving linear equations** In this final algebraic unit of the half-term, pupils should begin to understand the differences between expressions, identities, and equations, and learn methods on how to solve linear equations with one unknown. Objectives on number machines have been included to give an option of methods to use.		
7			

Subject: Maths **Year:** 7
Unit: 9 to 12
Medium-term plan
Spring 1

Week	Module Overview	Cross Curricular	Planning Links
1	**Area and perimeter of 2D shapes** In this unit pupils should work with perimeter and area, taking time to understand the concepts of both. Pupils should following this unit be able to find the perimeter of most shapes, and be able to recall and apply some formulas to find area. This is a good opportunity to review converstion of units through interleaving.	Cross-Curricular Activity on using maths to plan exercise	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
2			
3	**Understanding decimals** Pupils will here be introduced to the concept of decimals building on the place value work from unit 7.1. They should be able to use understanding of place value to compare and order decimals, and show understanding of the relative value of columns by multiplying and dividing decimals by 10, 100, and 1000.		
4	**Operations with decimals** Following the introduction to decimals in 7.10, pupils will now be expected to begin to perform operations with decimals, allowing some revision of the work done on operations with integers in unit 7.2. It is more important that pupils are fluent with their knowledge here than covering all levels of this work.		
5			
6	**Calculating with money** In the final unit of Spring 1 pupils should have the opportunity to apply some of work on decimals in context, particularly around money. This presents a good opportunity to focus on problem-solving techniques and choosing appropriate methods.		

Subject: Maths **Year:** 7
Unit: 13 to 16
Medium-term plan
Spring 2

Week	Module Overview	Cross Curricular	Planning Links
1 2	**2D shapes and symmetry** The Spring 2 modules focus on working with shapes. In this module we should ensure pupils are aware of key terminology with shapes, such as perpendicular and parallel lines, including their notation, and apply this as well as a knowledge of reflective and rotational symmetry to a variety of shapes.	Cross-Curricular Activity on using maths to plan exercise	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
3 4	**Angles** In the angles unit pupils should be comfortable using protractors and know basic angle facts. Examples and non-examples should be used so pupils know when to apply these facts, and properties of 2D shapes used. The higher attaining pupils should be able to use these properties in conjunction to solve more difficult problems.		
5	**Representing 3D shapes** There is more opportunity here to revise properties of 2D shapes, and pupils should become familiar with the names and basic properties of some 3D shapes. All pupils should understand the key terms of nets, plans, and elevations. Differentiation will occur in the difficulty of the shapes pupils can work with.		
6	**Using a compass and protractor** Any pupils not yet comfortable using a protractor should be able to practice that skill in this unit, and pupils should also become comfortable using a compass. This can be done in the context of lessons on constructing different shapes or making scale drawings.		

Subject: Maths **Year:** 7
Unit: 17 to 19
Medium-term plan
Summer 1

Week	Module Overview	Cross Curricular	Planning Links
1 2	**Representing fractions** Pupils should already be familiar with describing fractions of amounts, but there is here opportunity to ensure such knowledge is secure by exploring the concept of equal parts that is central to fractional knowledge. As well as a ratio, pupils should be encouraged to think of fractions as numbers on the number line.	Cross-Curricular Activity on FDP / Multiplicative Reasoning	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
3	**Fractions of amounts** In this unit the focus should be on calcualting with fractions, using knowledge pupils already have on what it means to have a 'half' or a 'quarter' of something. This can be linked to prior topics such as time and area. For more able pupils, they may here be able to explore working backwards to find the full amount given a fraction.		
4 5	**Percentages of amounts** This unit should mirror in some ways units 7.17 and 7.18, with an initial focus on what it means to have a percentage and representing this pictorially, building up to calculating with percentages both with or without calculators. Pupils must be able to link percentages to fractions and decimals to do this successfully.		
6	**Multiplying and dividing fractions** In the final unit of the half-term pupils should investigate operations with fractions. Multiplying and dividing are the operations introduced here as they are simpler than addition and subtraction. Pupils should be encouraged to explore why the methods work, and to use accurate language and written work (e.g. no 'cross-multiplying')		

Subject: Maths **Year:** 7
Unit: 20 to 22
Medium-term plan
Summer 2

Week	Module Overview	Cross Curricular	Planning Links
1	**Proportional reasoning** In this module pupils should be heavily encouraged to use ratio tables, becoming familiar with the concept of multiplying and dividing across or down to find missing numbers, using both unitary and common factor approaches. Once they are familiar with the concept they can then apply this to a range of numbers.	Cross-Curricular Activity on FDP / Multiplicative Reasoning	Curriculum Document Complete Maths platform Planning Proforma Department padlet Resources folder
2 3	**Ratio** Here pupils should extensively use bar models to describe situations with ratios, being introduced to these and practising drawing them initially independently of solving problems. Once they are famiiliar with drawing bar models solving a range of problems using them should be far easier.		
4	**Collecting data** This unit introduces pupils to collecting data, and should be a good opportunity to ensure pupils are comfortable with the language and definitions used around types of data. This is also an opportunity to ask pupils to engage in more interactive work in collecting their own data, which they can analyse in unit 7.24.		
5 6	**Representing data** Here pupils have the opportunity to explore a variety of different data representations. They should consider when it is most appropriate to use each graph or chart. Lessons can be grouped around the same graph types in different strands to allow differentiation. There is opportunity to return to objectives not covered in 8.24.		