Primary Phase Long Term Plan

Maths

Overview

There are **six key principles** that shape our curriculum intent in Maths, these are:

Entitlement- every pupil has the right to learn all aspects of the curriculum.
Coherence- learning is built upon term by term, as well as year-on-year.
Adaptability- our curriculum is adapted, where necessary, to suit the needs or interests of our pupils.
Representation- a diverse and inclusive curriculum is provided, in which pupils see themselves.
Mastery- providing depth to learning.
Education with Character- opportunities to nurture pupils Spiritual, Moral, Social, Cultural (SMSC) needs are created- where possible.

The Maths curriculum at William Hulme's Grammar School provides children with the opportunity to build an understanding of different areas of Mathematics. The key areas are **Number**, **Measurement**, **Geometry** and **Statistics**. Each year, children are introduced to new concepts within the key areas of learning to deepen their understanding. Within each unit, children follow a **small steps** approach to gain a full understanding of every topic. Our aim is for children to develop number sense so that they can choose the appropriate written or mental method to solve a problem. Children will develop **fluency**, **reasoning** and **problem-solving** skills in order to achieve mastery in each area. Fluency involves children using the most appropriate method in order to complete a task. Reasoning involves children being able to explain how to reach the correct answer to different mathematical problems. Finally, problem solving involves children applying their knowledge and skills in different contexts.

The ambition our maths curriculum is for all pupils to achieve the year-by-year expectations outlined in the curriculum. That is, that all pupils are taught the full content of the curriculum and that with reference to the key performance indicators outlined for each year group, all pupils are taught to achieve these. Our maths curriculum follows a mastery approach. Mastery means that pupils should be able to recall and apply what they have learnt at another point in the future rather than just at the time they first meet an idea or technique. Achievements throughout the year contribute to evidence of mastery by the end of the year.
Our curriculum is based on the **White Rose** scheme of learning which we use as a basis for all our planning.

Teachers assess the progress of children daily using formative assessment techniques. In addition, pre-learning tasks and post-learning tasks are used to assess children knowledge at the start and the end of each unit. Summative PUMA tests are used once a term to identify gaps in pupils' knowledge.

Topics covered within each key area of learning:			
Number	**Measurement**	**Geometry**	**Statistics**
Place Value Addition and Subtraction Multiplication and Division Fractions Decimals Percentages Algebra Ratio	Length and Height Weight and Volume Money Time Mass and Capacity Temperature Area and Perimeter Converting Units of Measurement	Shape Position and Direction	Statistics is broken down within each unit of study

Early Years

	Nursery	Reception	Assessment
Autumn Term	Using the UL EYFS Framework **Unit: Marvellous me** **Area of Learning:** Number **Overview:** Sort objects according to colour size and shape and subitise small groups of objects **Area of Learning:** Shape, Space Measure **Overview:** Make comparisons based on size and length	Using the UL EYFS Framework **Unit: Me and My World** **Area of Learning:** Number **Overview:** Identify representations of 1,2 and 3 and match names to numerals and quantities. Explore AB patterns **Area of Learning:** Shape, Space Measure **Overview:** Compare and order objects according to their size	Assessments carried out through daily observations based on the Early Years Framework.
	Using the UL EYFS Framework **Unit: It's Getting Cold Outside** **Area of Learning:** Number **Overview:** Recite numbers to 5 and match number of objects to numerals **Area of Learning:** Shape, Space Measure **Overview:** Selecting shapes appropriately and understanding position through words alone		
	Using the UL EYFS Framework **Unit: Cold and Special Days** **Area of Learning:** Number **Overview:** Says numbers in order and reciting numbers beyond 5. Finding patterns around them **Area of Learning:** Shape, Space Measure **Overview:** Comparing objects related to size, length, weight and capacity. Exploring properties of 2D shapes	Using the UL EYFS Framework **Unit: My Heroes and Standing Ovation** **Area of Learning:** Number **Overview:** Recognise sets of 4 and 5 objects by counting or subitising. Explore 1 more and 1 less of numbers to 5 **Area of Learning:** Shape, Space Measure **Overview:** Recognise circles, triangles, squares and rectangles in everyday objects and describe their properties	

	Nursery	Reception	Assessment
Spring Term	Using the UL EYFS Framework **Unit: On the Move** **Area of Learning:** Number **Overview:** Counting sets of objects up to 5, matching objects to numerals and using the ABAB patter **Area of Learning: Shape, Space Measure** **Overview:** Talk about and explore 3D shapes. Use time sequencing words (first, next) and use positional language.	Using the UL EYFS Framework **Unit: Castles, Knights and Dragons** **Area of Learning:** Number **Overview:** Explore the composition of 4 and 5, introduce zero and compare numbers to 5. Recognise 6, 7 and 8 by counting and subitising. **Area of Learning:** Shape, Space Measure **Overview:** Compare mass using appropriate vocabulary and compare the capacity of different containers	Assessments carried out through daily observations based on the Early Years Framework.
	Unit: On the Farm **Area of Learning:** Number **Overview:** Sorting and matching objects, counting up to 5 using fingers and matching numbers to numerals **Area of Learning:** Shape, Space Measure **Overview:** Explore properties of 3D shapes, make comparisons between objects relating to size, length, weight and capacity and explore changing the length and size of materials	**Unit: Spring in Our Step** **Area of Learning: Number** **Overview:** Recognise and represent 9 and 10. Compare numbers to 10 and explore number bonds to 10. Explore repeating patterns. **Area of Learning:** Shape, Space Measure **Overview**: Select, rotate and manipulate shapes. Compare length, weight and capacity. Use 'yesterday, today and tomorrow' to sequence events	

	Nursery	Reception	Assessment
Summer Term	Using the UL EYFS Framework **Unit: Once Upon a Time** **Area of Learning:** Number **Overview:** Solve real world problems with numbers up to 5, compare numbers using more than and less than and quickly recognise 3 objects without having to count them individually. **Area of Learning:** Shape, Space Measure **Overview:** Make comparisons related to weight and capacity, sequence events using words such as 'first' and 'then'.	Using the UL EYFS Framework **Unit Where We Live** **Area of Learning:** Number **Overview:** Counting beyond 10 and identify numbers beyond 20. Add by counting on and subtract by taking away objects. **Area of Learning:** Shape, Space Measure **Overview:** Rotating shapes, matching shape arrangements and combining shapes to make new shapes	Assessments carried out through daily observations based on the Early Years Framework.
	Using the UL EYFS Framework **Unit: All Creatures Great and Small** **Area of Learning:** Number **Overview:** Extend and create ABAB patterns, count on fingers up to 5, experiment with their own symbols and marks as well as numerals. **Area of Learning:** Shape, Space Measure **Overview:** Make comparisons related to size, length, weight and capacity	Using the UL EYFS Framework **Unit: Science Detectives** **Area of Learning:** Number **Overview:** Recall number bonds to 10, doubling, and use objects to make equal groups. Recognise odds and evens. Continue, copy and create repeating patterns. **Area of Learning:** Shape, Space Measure **Overview:** Use positional language to describe where objects are.	

Year 1

Autumn Term	**Number: Place Value (within 10)** **Overview:** • Count objects up to 10 • Count forwards and backwards within 10 • Compare/order numbers up to 10 • Write numbers to 10 as words		**Number: Addition and Subtraction (within 10)** **Overview:** • Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts using the part-whole model • To read and write equations using the addition (+) and subtraction (-) symbols • Know number bonds to 10 and use to derive subtract facts		**Geometry: Shape** **Overview:** • Recognise common 2-D and 3-D shapes in different orientations • To know that 2D shapes and 3D shapes are not always similar to one another • Compose 2D and 3D shapes from smaller shapes	**Assessment** Assessments are carried out through daily formative assessment. Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress.
Spring Term	**Number: Place value (within 20)** **Overview:** • Count forwards and backwards within 20 • Reason about the location of numbers to 20 on a number line • Compare numbers to 20 using < > =	**Number: Addition and Subtraction (within 20)** **Overview:** • Know number bonds to 20. • To use to derive subtraction facts	**Number: Place value within 50** **Overview:** • Partition tens and ones • Compare numbers to 50 on a number line • Count in tens	**Measurement: Length and Height** **Overview:** • Compare lengths and heights • Measure using centimetres	**Measurement: Mass and Volume** **Overview:** • Compare mass- heavier/lighter • Compare volume- more/less • Compare capacity	
Summer Term	**Number: Multiplication and Division** **Overview:** • Count in 2s, 5s and 10s • Make equal groups • Double numbers to 10	**Number: Fractions** **Overview:** • Make a half • Find a half • Make a quarter • Find a quarter	**Geometry: Position and Direction** **Overview:** • Describe turns • Describe position- left, right, forwards backwards, above, below	**Number: Place Value (within 100)** **Overview:** • Count forwards and backwards within 100 • Count in 10s to 100 • Order/compare numbers to 100 • Partition numbers to 100	**Measurement: Money** **Overview:** • Recognise coins and notes • Count using coins	**Measurement: Time** **Overview:** • Days of week/ months of the year • Time to the hour • Time to half an hour

Year 2

Autumn Term	**Number: Place Value** **Overview:** • Recognise the value of each digit within a 2-digit number • Decompose 2-digit numbers using standard and non-standard partitioning • Reason about the location of 2-digit numbers in a linear number system • Find 10 more and 10 less	**Number: Addition and Subtraction** **Overview:** • Add and subtract across 10 • Add and subtract 2-digit numbers across 10 • Add and subtract only 1s or 10s from a 2-digit number • Use related number facts to add and subtract • Answer difference questions using 'How many more…?'	**Geometry: Shape** **Overview:** • Know names and properties of 2D shapes • Know names and properties of 3D shapes • Reason about similarities and differences between the properties of shapes		**Assessment** Assessments are carried out through daily formative assessment. Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress. Children sit the PUMA test once a term to assess their current knowledge and to identify gaps in their learning.
Spring Term	**Measurement: Money** **Overview:** • Count in pounds and pence • Make the same amount of money in difference ways • Find change • Solve problems involving money	**Number: Multiplication and Division** **Overview:** • Recognise repeated addition and how it relates to multiplication within the 2, 5- and 10-times tables • Relate grouping problems where the number of groups is unknown • Use known multiplication and division facts to reason about unknown facts	**Number: Fractions** **Overview:** • Understand that fractions are equal groups • Find ½, ¼, 1/3, of shapes and numbers • Recognise the equivalence between ½ and 2/4		
Summer Term	**Measurement: Time** **Overview:** • Know o'clock and half past • Know quarter past and quarter to • Tell the time to the nearest 5 minutes	**Measurement: Length and Height** **Overview:** • Measure in centimetres • Measure in metres • Compare heights	**Measurement: Mass, Capacity and Temperature** **Overview:** • Measure in grams and kilograms • Measure in millilitres and litres • Read temperature	**Geometry: Position and Direction** **Overview:** • Describe movement • Describe turns	**Statistics** **Overview:** • Draw and interpret tally charts • Draw and interpret pictograms

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Year 3

Autumn Term

Number: Place Value

Overview:

- Know 10 tens is equivalent to 100 and apply this to find how many 10s in 3-digit multiples of 10
- Decompose 3-digit numbers using standard and non-standard partitioning
- Reason about the location of 3-digit numbers in a linear number system
- Find 10 more/ less and 100 more/less
- Divide 100 into 2, 4, 5, 10 equal parts and read scales and number lines divided in these ways

Number: Addition and Subtraction

Overview:

- Calculate complements to 100
- Add and subtract 3-digit numbers using column method
- Understand the inverse relationship between addition and subtraction
- Understand commutative property of addition and related property for subtraction
- Add and subtract mentally across 10

Number: Multiplication and Division A

Overview:

- Know multiplication and division facts for 2,5, 10, 3, 4, and 8 times tables

Spring Term

Number: Multiplication and Division B

Overview:

- Multiply and divide 2-digit numbers by 1-digit numbers
- Apply known multiplication and division facts to solve contextual problems including partitive and quotative division.

Measurement: Length and Perimeter

Overview:

- Measure in millimetres and centimetres
- Add and subtract lengths
- Measure and calculate perimeter

Number: Fractions A

Overview:

- Write unit and non-unit fractions
- Add and subtract fractions with the same denominator with one
- Count in fractions
- Place fractions in a number line

Measurement: Mass and Capacity

Overview:

- Measure in grams and kilograms
- Measure in millilitres and litres
- Add and subtract mass
- Add and subtract capacity/ volume

Summer Term

Number: Fractions B

Overview:

- Find unit fractions of quantities using known division facts

Measurement: Money

Overview:

- Add and subtract money using pounds and pence

Measurement: Time

Overview:

- Tell times to the nearest minute
- Convert between 12 hour and 24-hour time

Geometry: Shape

Overview:

- Know/compare different angles
- Know different types of lines
- Recognise and describe 2-D and 3-D shapes

Statistics

Overview:

- Draw and interpret pictograms
- Draw and interpret bar charts

Assessment

Assessments are carried out through daily formative assessment.

Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress.

Children sit the PUMA test once a term to assess their current knowledge and to identify gaps in their learning.

Year 4

Autumn Term	**Number: Place Value** **Overview:** • know that 10 hundreds is equivalent to 1000 • Decompose 4-digit numbers using standard and non-standard partitioning • Reason about the location of 4-digit numbers in a linear number system • Round to the nearest 10,100, 1000 • Divide 1000 into 2, 4, 5, 10 equal parts and read scales and number lines divided in these ways		**Number: Addition and Subtraction** **Overview:** • Add and subtract 4-digit numbers using column method • Understand the inverse relationship between addition and subtraction • Understand commutative property of addition and related property for subtraction • Add/subtract mentally across 100		**Number: Multiplication and Division A** **Overview:** • Know multiplication and division facts up to 12 x 12 • Multiply and divide whole numbers by 10 and 100 • Manipulate multiplication and division questions by applying commutative property of multiplication • Understand and apply the distributive property of multiplication	
Spring Term	**Number: Multiplication and Division B** **Overview:** • Use factor pairs • Multiply and divide by 10/100 • Multiply and divide 3-digit number by 1 digit number • Solve multiplication and division problems		**Measurement: Length and Perimeter** **Overview:** • Find perimeter on a grid • Find perimeter of rectilinear shapes • Find the perimeter of polygons		**Number: Fractions** **Overview:** • Count in fractions beyond 1 • Convert between improper fractions and mixed numbers • Add and subtract mixed numbers and improper fractions	**Number: Decimals A** **Overview:** • Understand tenths as fractions and decimals • Understand hundredths as fractions and decimals • Divide 1- and 2-digit numbers by 10/100
Summer Term	**Number: Decimals B** **Overview:** • Make wholes • Round decimals • Halves and quarters as decimals	**Measurement: Money** **Overview:** • Solve problems with money	**Measurement: Time** **Overview:** • Analogue and digital • 24-hour time	**Geometry: Shape** **Overview:** • Identify regular and irregular polygons including triangles and quadrilaterals • Identify angles • Compare and order angles	**Statistics** **Overview:** • Interpret charts • Draw and interpret line graphs	**Geometry: Position and Direction** **Overview:** • Plot coordinates • Draw a 2D shape on a grid

Assessment

Assessments are carried out through daily formative assessment.

Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress.

Children sit the PUMA test once a term to assess their current knowledge and to identify gaps in their learning.

Year 5

Autumn Term	**Number: Place Value** **Overview:** • Read and write numbers up to 1 million • Partition numbers up to 1 million using standard and non-standard partitioning • Round to the nearest 10, 100 or 1000 • Read scales and number lines marked with units of 1, 2, 4, 5 and 10 equal parts	**Number: Addition and Subtraction** **Overview:** • Add and subtract whole numbers with more than four digits • Use inverse operations to check answers	**Number: Multiplication and Division A** **Overview:** • Multiply and divide by 10, 100 and 1000 • Find factors and multiples of whole numbers including common factors and common multiples of 2 numbers	**Number: Fractions A** **Overview:** • Find equivalent fractions of that have the same position on a linear number system • Add and subtract mixed numbers		**Assessment** Assessments are carried out through daily formative assessment. Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress. Children sit the PUMA test once a term to assess their current knowledge and to identify gaps in their learning.
Spring Term	**Number: Multiplication and Division B** **Overview:** • Multiply a 4-digit number by a 1-digit number using a formal written method • Divide a 4-digit number by a 1-digit number using a formal written method including remainders	**Number: Fractions B** **Overview:** • Find non-unit fractions of quantities • Multiply fractions by an integer	**Number: Decimals and Percentages** **Overview:** • Know decimals up to 2 decimal places • Order decimals • Round decimals to the nearest 1 or 0.1	**Measurement: Perimeter and Area** **Overview:** • Find the perimeter of rectangle, rectilinear shapes and polygons • Find the area of rectangles and compound shapes	**Statistics** **Overview:** • Draw line graphs • Read and interpret line graphs • Read and interpret 2-way tables and timetables	
Summer Term	**Geometry: Shape** **Overview:** • Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size	**Geometry: Position and Direction** **Overview:** • Plot coordinates • Translate shapes	**Number: Decimals** **Overview:** • Add and subtract decimal numbers	**Number: Negative Numbers** **Overview:** • Compare and order negative numbers	**Measurement: Converting Units** **Overview:** • Convert between units of measure, including using common decimals and fractions	**Measurement: Volume** **Overview:** • Understand volume • Estimate volume and capacity

Year 6

Autumn Term	**Number: Place Value** **Overview:** • place value of each digit in numbers up to 10 million, partition using standard and nonstandard partitioning • Reason about the location of any number up to 10 million in the linear number system, and round numbers • Powers of 10	**Number: Addition and Subtraction, Multiplication and Division** **Overview:** • Add and subtract integers • Multiply up to 4-digit by 2-digit • Use short and long division methods including with remainders	**Number: Fraction A** **Overview:** • Simplify fractions using common factors • Express fractions using a common denominator to compare them • Add and subtract fractions with different denominators including mixed numbers	**Number: Fractions B** **Overview:** • Multiply and divide fractions • Find a fraction of an amount	**Geometry: Converting Units** **Overview:** • Convert between different metric measures • Convert imperial measures to metric	**Assessment** Assessments are carried out through daily formative assessment. Pre- and post-learning tasks take place at the start and the end of every unit to assess children's progress. Children sit the PUMA test once a term to assess their current knowledge and to identify gaps in their learning.
Spring Term	**Number: Decimals** **Overview:** • Multiply and Divide by 10, 100, 1000 • Round decimals • Add, subtract, multiply and divide decimal numbers	**Number: Fractions, Decimals, Percentages** **Overview:** • Convert between FDP • Find percentages of amounts	**Measurement: Perimeter, Area and Volume** **Overview:** • Area and perimeter of different shapes • Area of triangles • Area of a parallelogram • Volume of a cuboid	**Statistics** **Overview:** • Draw, read and interpret pie charts • Find the mean	**Number: Ratio** **Overview:** • Solve problems involving ratio relationships	**Number: Algebra** **Overview:** • Complete function machines • Form expressions • Solve 1 and 2-step equations • Find pairs of values
Summer Term	**Geometry: Shape** **Overview:** • Measure angles • Calculate missing angles on a line • Angles in a triangle • Angles in a quadrilateral • Angles in polygons • Draw shapes accurately		**Geometry: Position and Direction** **Overview:** • Plot coordinates across 4 quadrants • Translate shapes • Reflect shapes		**Themed Projects, consolidation and Problem Solving** **Overview:** • Consolidation of key areas such as pie charts, percentages, algebra • Link to PSHE- using money to solve problems	

Useful Resources for Supporting Your Child at Home:	Homework:
Maths & Science resources | CPD courses | White Rose Education Times Tables Rock Stars – Times Tables Rock Stars (ttrockstars.com) Maths - BBC Bitesize Topmarks: teaching resources, interactive resources, worksheets, homework, exam and revision help	Children practise times tables using TT Rockstars. Parents can use videos and questions from the White Rose website to support their children at home.