



Mathematics Curriculum

At Mount Pleasant, we follow the Maths Ark Mastery scheme of work. The curriculum design in the Ark Curriculum is informed by four key design principles:

1. Knowledge Rich

A rich and broad body of core knowledge is clearly and meticulously specified. Knowledge is selected for its power in developing expertise in the subject discipline. Therefore, it is knowledge possessing sufficient significance, status, or influence in the subject discipline to support the claim that it is ‘the best that has been thought and said’. This powerful knowledge helps induct students into the great conversations of humankind, that they may understand, challenge and further those conversations. It empowers students to achieve in school and to live fulfilling lives, able to understand, appreciate, critique and, if they desire, change the world in which they live. The specific knowledge students should remember is precisely defined. Skills are understood to be domain-specific and their development is intrinsically linked with acquisition of knowledge. For example, for students to analyse, solve problems or think critically in a subject, they need a rich knowledge of the area of the subject they are required to analyse, solve problems in, or think critically about.

2. Academically ambitious

The curriculum provides students with knowledge that they are unlikely to otherwise encounter or understand without a teacher’s support. The content selected is ambitious in order to challenge the most able and provide a rich and empowering education to all. The extent of knowledge provides a broad and deep grounding in subjects, so that students have a framework within which they can situate future learning, regardless of whether they continue a subject beyond Key Stage 3. The curriculum is not narrowed by selecting knowledge solely for its utility in preparing students for later exam success.

3. Logically sequenced

Knowledge is ‘generative’ or ‘sticky’. It attaches to pre-existing knowledge, creating connections in long-term memory and forms increasingly complex mental models (or ‘schemata’). In other words, ‘students learn new ideas by reference to ideas they already know.’ Therefore, within units and across the whole curriculum, knowledge is positioned to build on what has come before. The curriculum sets out a logical journey that students need to embark on to get better at a subject. In this sense, ‘the curriculum is the progression model’; it is the selection and organisation of knowledge to form a coherent model of intended progression in the subject. As students progress through the curriculum, they grapple with greater complexity and develop both increasing conceptual understanding and disciplinary competency. This does not mean the curriculum always starts with the ‘easiest’ knowledge, but with the most foundational or facilitating knowledge.¹¹ The sequencing of content also aims to pre-empt and avoid common misconceptions.

4. Designed to support memory

Learning is a change in long-term memory. The curriculum is structured to help students remember, not simply encounter, the core knowledge they learn. 'Memory is the residue of thought', therefore, tasks are designed to ensure that students are thinking about subject matter. In order to disrupt the forgetting curve, knowledge from previous units is interleaved in future units and revisited through frequent lowstakes retrieval practice. The points at which students apply knowledge from existing and previous units are explicitly stated.

5. Diversity and Inclusion

The curriculum supports our commitment to diversity and inclusion and provides scope to engage and enthuse all our students. The subject disciplines of our curricula are inherently diverse: scholars, writers performers, thinkers from across history and around the world have contributed to the ever-evolving bodies of knowledge that comprise our subjects. An authentic and truthful study of a subject celebrates and acknowledges that diverse bodies of people have generated and evolved the powerful knowledge in our subjects and have made our disciplines what they are. We support students of all backgrounds, experiences, and protected characteristics to access and enjoy our aspirational curricula. Our inclusive approach to curriculum aims to widen participation and engagement with our subjects long after students have left school. As a result, our curricula help students to develop an understanding of how they relate to the subjects they are studying, and use this knowledge to appreciate, critique and, if they desire, change the world in which they live.

MPPS Maths Medium Term Planning

Below, we have shared the medium-term planning for each year group.

Year Reception

	Weeks 1-4	Weeks 5-6	Weeks 7-8	Week 9	Week 10	Week 11
Autumn	Early Mathematical Experiences <ul style="list-style-type: none"> •Classifying objects based on one attribute •Matching equal and unequal sets •Comparing objects and sets •Ordering objects and sets 	Pattern and Early Number <ul style="list-style-type: none"> •Recognise, describe, copy and extend colour and size patterns •Count and represent the numbers 1 to 3 •Estimate and check by counting 	Numbers Within 6 <ul style="list-style-type: none"> •Count up to six objects. •One more or one fewer •Order numbers 1 – 6 •Conservation of numbers within six 	Addition and Subtraction Within 6 <ul style="list-style-type: none"> •Explore zero •Explore addition and subtraction 	Measures <ul style="list-style-type: none"> •Estimate, order compare, discuss and explore capacity, weight and lengths 	Shape and Sorting <ul style="list-style-type: none"> •Describe, and sort 3- D shapes •Describe position accurately

	Weeks 1 -2	Week 3	Week 4	Weeks 5-6	Weeks 7-8	Week 9	Week 10
Spring	Numbers within 10 Count up to ten objects <ul style="list-style-type: none"> •Represent, order and explore numbers to ten •One more or fewer, one greater or less 	Calendar and Time Days of the week, seasons <ul style="list-style-type: none"> •Sequence daily events 	Addition & Subtraction Within 10 Explore addition as counting on and subtraction as taking away	Grouping and Sharing Counting and sharing in equal groups <ul style="list-style-type: none"> •Grouping into fives and tens •Relationship between grouping and sharing 	Number Patterns Within 15 Count up to 15 objects and recognise different representations <ul style="list-style-type: none"> •Order and explore number patterns to 15 •One more or fewer 	Doubling & Halving Doubling and halving <ul style="list-style-type: none"> •Relationship between doubling and halving 	Shape & Pattern Describe and sort 2-D and 3- D shapes <ul style="list-style-type: none"> •Recognise, complete and create patterns

	Weeks 1-2	Weeks 3-4	Week 5	Week 6	Weeks 7-8	Weeks 9-10
Summer	Securing Addition and Subtraction Facts Commutativity <ul style="list-style-type: none"> •Explore addition and subtraction •Compare two amounts 	Number Patterns Within 20 Count up to 10 and beyond with objects <ul style="list-style-type: none"> •Represent, compare and explore numbers to 20 •One more or fewer 	Number Patterns Beyond 20 One more one less <ul style="list-style-type: none"> •Estimate and count •Grouping and sharing 	Money <ul style="list-style-type: none"> •Coin recognition and values •Combinations to total 20p •Change from 10p 	Measures <ul style="list-style-type: none"> •Describe capacities •Compare volumes •Compare weights •Estimate, compare and order lengths 	Exploration of Patterns within Number <ul style="list-style-type: none"> •Explore numbers and strategies •Recognise and extend patterns •Apply number, shape and measures knowledge •Count forwards and backwards

Year 1

	Weeks 1-2	Weeks 3-4	Weeks 5-6	Weeks 7-8	Week 9-10
Autumn	Numbers to 10 •Represent, compare and explore numbers within 10 •One more and one less •Doubling and halving	Addition and Subtraction Within 10 •Represent and explain addition and subtraction •Commutativity •Addition and subtraction facts	Shape and Pattern •Identify, describe, sort and classify 2-D and 3-D shapes •Investigate repeating patterns •Use and follow instructional and positional language	Numbers to 20 •Identify, represent, compare and order numbers to 20 •Doubling and halving •One more and one less	Addition and Subtraction Within 20 Represent and explain addition and subtraction strategies including 'Make Ten' •Use known facts to add and subtract

	Weeks 1 -2	Week 3	Week 4-5	Weeks 6-7	Week 8	Weeks 9 -10
Spring	Time Read, write and tell the time to o'clock and half past on analogue clock •Sequencing daily activities •Whole and half turns linked to time	Exploring Calculation Strategies Within 20 Model, explain and choose addition and subtraction strategies	Numbers to 50 2-digit numbers – represent, sequence, explore, compare. •Count in 2s, 5s and 10s •Describe and complete number patterns	Addition and Subtraction Within 20 Illustrate, explain and link addition and subtraction with equations •Apply 'Make Ten' strategy •Use language to quantify and compare difference	Fractions Identify 1 2 and 1 4 of a shape or object •Find 1 2 and 1 4 of a quantity	Measures: Length and Mass Compare and measure lengths and mass using cm and kg •Doubling and halving

	Weeks 1-2	Weeks 3-4	Week 5 -6	Weeks 7,8,9	Weeks 10-11
Summer	Numbers 50 -100 and Beyond Read, write, represent, compare and order numbers to 100 •One more / fewer, ten more / fewer •Identify number patterns	Addition and Subtraction Explore addition and subtraction involving 2- digit numbers and ones •Represent and explain addition and subtraction with regrouping •Investigate number bonds within 20	Money Name coins and notes and understand their value •Represent the same value using different coins •Find change	Multiplication and Division Explore arrays •Share equally into groups •Doubling •Link halving to fractions	Measures: Capacity and Volume Compare capacities, volumes and lengths •Explore litres •Apply understanding of fractions to capacity

Year 2

	Weeks 1-2	Weeks 3-4	Weeks 5-6	Weeks 7-8	Week 9	Weeks 10,11,12
Autumn	Numbers Within 100 Read, write, represent, partition, compare and order numbers to 100 •Explore patterns including, odds and evens, tens and ones	Addition and Subtraction of 2-digit Numbers Apply number bonds to add and subtract •Represent and explain addition and subtraction of two 2-digit numbers. •Add three 1-digit numbers	Addition and Subtraction Word Problems •Introduction to bar models as a representation •Create, label and sketch bar model	Measures •Draw and measure lengths in centimetres •Use and = to compare and order lengths in metres and centimetres	Graphs •Represent and interpret: pictograms, block diagrams, tables and tally charts.	Multiplication and Division Explore multiplication and division through arrays •Explore division as grouping and as sharing •Connect multiplication and division facts using commutativity and inverse •Calculate the times tables of 2, 5, and 10 using different strategies

	Weeks 1 -2	Week 3-4	Week 5-6	Weeks 7-8	Week 9,10,11
Spring	Time •Tell the time on an analogue clock: quarter past, quarter to and five minute intervals •Calculate durations of time in minutes and seconds •Sequence daily events •Minutes in an hour and hours in a day	Fractions Part-whole relationships •Fractions as part of a whole or a whole set •Relate to division •Equivalent fractions	Addition and Subtraction of 2-digit Numbers •Illustrate, represent and explain addition and subtraction involving regrouping including 'Make Ten', 'Round and adjust' and near doubles strategies	Money •Recognise coins and notes •Use £ and p accurately •Add and subtract amounts •Calculate change	Face, Shape and Pattern: Lines and Turns •Explore, sort and describe 2-D shapes •Lines of symmetry in 2-D shapes •Identify 2-D shapes on 3-D shapes •Compare and sort 2-D and 3-D shapes •Use language to describe position, direction and rotation to follow a route

	Week 1	Weeks 2-3	Week 5	Weeks 5-6	Weeks 7-8
Summer	Numbers Within 1000 Represent in different ways •Compare using symbols •Read scales	Measures: Capacity and Volume •Read and measure temperature •Estimate, measure and understand litres and millilitres •Compare and order capacities	Measures: Mass Weigh and compare masses in kilograms and grams	Exploring Calculation Strategies •Apply addition and subtraction strategies to solve equations •Illustrate and explain addition and subtraction using column method	Exploring Multiplicative Thinking •Pattern seek with multiples of 2, 3, 4 5 and 10 using an array •Use known facts to derive facts from the 3 and 4 times tables. •Connect multiplication and division facts using commutativity and inverse

Year 3

	Weeks 1,2,3	Weeks 4-5	Week 6	Weeks 8-9	Week 10-11
Autumn	Number sense and exploring calculation strategies <ul style="list-style-type: none"> •Read, write, order and compare numbers to 100 •Calculate mentally using known facts, round and adjust, near doubles, adding on to find the difference •Derive new facts from a known fact 	Place Value <ul style="list-style-type: none"> •Read, write, represent, partition, order and compare 3-digit numbers •Find 10 and 100 more or less •Round to the nearest multiple of 10 and 100 	Graphs <ul style="list-style-type: none"> •Collect, interpret and present data using charts and tables 	Addition and Subtraction <ul style="list-style-type: none"> •Develop and use a range of mental calculation strategies •Illustrate and explain formal written methods – column method 	Length and perimeter <ul style="list-style-type: none"> •Measure, draw and compare lengths •Add and subtract lengths •Calculate perimeter

	Weeks 1 -2	Week 3,4,5	Week 6-7	Weeks 8,9,10
Spring	Multiplication and Division <ul style="list-style-type: none"> • Understanding multiplicative relationships: commutativity and inverse •Exploring multiplication and division facts for 2, 3, 4, 5, 6, 8 and 10 	Calculating with multiplication and division <ul style="list-style-type: none"> •Multiply and divide by 10 •Multiply a 2-digit number by a 1-digit number •Divide 2-digit by a 1-digit •Correspondence problems 	Time <ul style="list-style-type: none"> Tell, record, write and order the time analogue and digital •12-hour, a.m., p.m. •Measure, calculate and compare durations 	Fractions <ul style="list-style-type: none"> Part-whole relationships •Fractions as part of a whole or a whole set and as a number •Add, subtract, compare and order fractions

	Week 1,2,3	Weeks 4,5,6	Week 7	Weeks 8-9
Summer	Angles and Shape <ul style="list-style-type: none"> •Identify angles including right angles and recognise as a quarter of a turn •Identify and draw parallel and perpendicular lines •Draw/make, classify and compare 2-D and 3-D shapes •Measure the perimeter 	Measures <ul style="list-style-type: none"> •Read scales with different intervals when measuring mass and volume •Weigh and compare masses and capacities with mixed units •Estimate mass and capacity 	Applying multiplicative thinking <ul style="list-style-type: none"> Representing multiplication and division problems •Solve a one-step problem 	Exploring calculation strategies and place value <ul style="list-style-type: none"> •Add and subtract mentally •Find 10, 100 and 1000 more or less •Order and compare beyond 1000 •Round numbers

Year 4

	Weeks 1,2	Weeks 3,4,5	Week 6,7,8,9	Week 10-11
Autumn	Reasoning with Large Numbers •4-digit place value. Read, write, represent, order and compare •Find 10, 100 or 1000 more or less •Round numbers to the nearest 10, 100 or 1000	Addition and Subtraction •Select appropriate strategies to add and subtract •Illustrate and explain appropriate addition and subtraction strategies including column method with regrouping	Multiplication and Division •Identify and explore patterns in multiplication tables including 7 and 9 •Distributive property including multiplying three 1-digit numbers •Mental multiplication and division strategies using place value and known and derived facts •Short multiplication	Discrete and Continuous Data Read, interpret and construct pictograms, bar charts and time graphs •Compare tables, pictograms and bar charts

	Week 1	Week 2,3,4,5	Week 6	Weeks 7,8,9	Weeks 10,11
Spring	Calculating with multiplication and division •Division using partitioning •Short division	Fractions Explore different interpretations and representations of fractions •Equivalent fractions •Represent fractions greater than one as mixed number and improper fractions •Add and subtract fractions with the same denominator including fractions greater than one	Time •Analogue to digital, 12- hour and 24-hour •Convert between units of time	Decimals Decimal equivalents to tenths, quarters and halves •Compare and order numbers with same number of decimal places •Multiply and divide by 10 and 100 including decimals	Area and Perimeter •Perimeter of rectangles and rectilinear shapes •Area of rectangles and rectilinear shapes •Investigate area and perimeter

	Week 1,2,3	Weeks 4-5	Week 6-7	Weeks 8-9	Week 10
Summer	Solving measures and money problems •Convert units of measure •Select appropriate units to measure •Use strategies to investigate problems: trial and improvement, organising using lists and tables, working systematically	Shape and symmetry •Classify, compare and order angles •Compare and classify 2-D shapes •Identify lines of symmetry	Position and Direction Describe and plot using coordinates •Describe translations	Reasoning with pattern and sequences •Roman numerals up to 100 •Place value of other number systems •Number sequences and patterns	3-D Shape •Use understanding of 3-D shapes •Identify 3-D shapes from 2-D representations

Year 5

	Weeks 1,2	Weeks 3-4	Week 5,6	Week 7,8,9	Week 10
Autumn	Reasoning with large whole integers <ul style="list-style-type: none"> •Read, write, order and compare numbers up to one million •Round numbers within one million to the nearest multiple of powers of ten •Read Roman numerals up to M 	Integer addition and subtraction <ul style="list-style-type: none"> Use rounding to estimate •Use a range of mental calculation strategies to add and subtract integers •Illustrate and explain the written method of column addition and subtraction •Select efficient calculation strategies 	Line graphs and timetables <ul style="list-style-type: none"> •Complete, read and interpret data presented in line graphs •Read and interpret timetables including calculating intervals 	Multiplication and division <ul style="list-style-type: none"> •Identify multiples and factors •Investigate prime numbers •Multiply and divide by 10, 100 and 1000 (integers) •Multiply and divide using derived facts •Use written methods to multiply and divide •Use a range of mental calculation strategies 	Perimeter and area <ul style="list-style-type: none"> •Investigate area and perimeter of rectilinear shapes •Estimate area of nonrectilinear shapes

	Week 1,2,3	Week 4,5	Week 6,7,8	Weeks 9-10
Spring	Fractions and decimals <ul style="list-style-type: none"> •Read, write, order and compare decimals •Round decimals to the nearest whole number •Represent, identify, name, write, order and compare fractions (including improper and mixed numbers) •Calculate fractions of amounts 	Angles <ul style="list-style-type: none"> Classify, compare and order angles •Measure and draw angles with a protractor •Understand and use angle facts to calculate missing angles 	Fractions and percentages <ul style="list-style-type: none"> Add, subtract fractions with denominators that are multiples of the same number •Multiply fractions (and mixed numbers) by a whole number •Explore percentage, decimal, fractions equivalence 	Transformations <ul style="list-style-type: none"> •Coordinates in all four quadrants •Translation and reflection •Calculate intervals across zero as a context for negative numbers

	Week 1-2	Weeks 4,5,6	Week 6-7	Weeks 8	Week 9-10
Summer	Converting units of measure <ul style="list-style-type: none"> •Convert between metric units of length, mass and capacity and units of time •Know and use approximate conversion between imperial and metric 	Calculating with whole numbers and decimals <ul style="list-style-type: none"> •Mental strategies to add and subtract involving decimals •Formal written strategies to add, subtract and multiply involving decimals •Multiply and divide decimal numbers by ten, 100 and 1,000 •Derive addition, subtraction and multiplication facts involving decimals 	2-D and 3-D shape <ul style="list-style-type: none"> •Classify 2-D shapes and reason about regular and irregular polygons •Properties of diagonals of quadrilaterals •Classify 3-D shapes •2-D representations of 3-D shapes. 	Volume <ul style="list-style-type: none"> Use cube numbers and notation •Estimate volume •Convert units of volume 	Problem-solving <ul style="list-style-type: none"> •Negative numbers and calculating intervals across zero •Calculating the mean •Interpret remainders •Investigate numbers: consecutive, palindromic, multiples

Year 6

	Weeks 1,2	Weeks 3,4,5	Week 6,7	Week 7,8,9	Week 10	Weeks 11-12
Autumn	Integers and decimals •Represent, read, write, order and compare numbers up to ten million •Round numbers, make estimates and use this to solve problems in context Solve multi-step problems	Multiplication and division •Identify and use properties of number, focusing on primes •Multiply larger integers and decimal numbers •Divide integers by 1-digit and 2-digit numbers representing remainders appropriately	Calculation problems Use of brackets •Use knowledge of the order of operations to carry out calculations •Generate and describe linear number sequences •Express missing number problems algebraically •Solve equations with unknown values	Fractions and Decimals •Deepen understanding of equivalence •Order, simplify and compare fractions, including those greater than one •Recall equivalence between common fractions and decimals •Find decimal quotients using short division •Add and subtract fractions •Represent multiplication involving fractions •Multiply two proper fractions •Divide a fraction by an integer	Percentages (with fraction and decimal equivalence) Calculate and compare percentages of amounts •Connect percentages with fractions •Explore the equivalence	Revision and consolidation

	Week 1,2,3	Week 4	Week 5,6	Week 7	Weeks 8,9	Weeks 10,11
Spring	Decimals and measures •Use, read, write and convert between standard units of measures; length, mass, time, money and volume as well as imperial units •Calculate the area of parallelograms and triangles • Calculate, estimate and compare the volume of cuboids	Missing angles and length Compare and classify a range of geometric shapes •Use angle facts to find unknown angles	Coordinates and shapes Draw a range of geometric shapes using given dimensions and angles •Describe, draw, translate and reflect shapes on a coordinate plane •Recognise and construct 3-D shapes •Name parts of a circle	Statistics Calculate the mean •Construct and interpret lines graphs and pie charts •Compare pie charts	Proportion problems Use fractions to express proportion •Identify ratio as a relationship between quantities and as a scale factor •Unequal sharing involving ratio	Revision and consolidation

	Week 1-7	Weeks 8-10
Summer	Revision and Consolidation	Post SATs- problem solving