

MATHS CURRICULUM

Intent

At Brunel, we intend to make maths learning meaningful and applicable. We believe that the mastery approach we use gives pupils deeper understanding and makes maths more enjoyable. We believe that academic success is a by-product of this approach. The key principles of conceptual understanding, language and communication, and mathematical thinking come together to give children the ability to apply these skills to solve problems, both now and in the future. Mathematical thinking permeates all avenues of life: this approach prepares children for the next phase in their education and ultimately, the world of work.

Implementation

Our curriculum uses Ark's Maths Mastery, a fully resourced programme with regular opportunities for PD, using online tutorials and regular network meetings. Curriculum design means children revisit key learning regularly, helping them embed learning. In-built progression ensures that children have the prior knowledge that allows them to be successful. Resources for daily lessons allow teachers to focus on the mathematical thinking and less on time-consuming resource creation. This enables them to focus on making learning meaningful and challenging for all, providing scaffold and challenge. A wealth of additional resources support the daily maths lessons, including regular maths meetings to revisit areas of study and help children to commit key understanding and facts to long-term memory.

WHOLE SCHOOL OVERVIEW FOR MATHEMATICS

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 1	<ul style="list-style-type: none"> — Numbers to 10 — Addition and subtraction within 10 — Shapes and patterns 	<ul style="list-style-type: none"> — Numbers to 20 — Addition and subtraction within 20 	<ul style="list-style-type: none"> — Time — Exploring calculation strategies within 20 — Numbers to 50 	<ul style="list-style-type: none"> — Addition and subtraction within 20 — Fractions — Measures: Length and mass 	<ul style="list-style-type: none"> — Number 50 to 100 and beyond — Addition and subtraction — Money 	<ul style="list-style-type: none"> — Multiplication and division — Measures: Capacity and volume
YEAR 2	<ul style="list-style-type: none"> — Numbers within 100 — Addition and subtraction of 2 digit numbers — Addition and subtraction word problems 	<ul style="list-style-type: none"> — Measures: Length — Graphs — Multiplication and division: 2, 5, 10 	<ul style="list-style-type: none"> — Time — Fractions — Addition and subtraction of 2 digit numbers 	<ul style="list-style-type: none"> — Money — Face, shapes and patterns; lines and turns 	<ul style="list-style-type: none"> — Numbers within 100 — Measures: Capacity and volume — Measures: Mass 	<ul style="list-style-type: none"> — Exploring calculation strategies — Multiplication and division: 3 and 4
YEAR 3	<ul style="list-style-type: none"> — Number sense and exploring calculation strategies — Place value — Graphs 	<ul style="list-style-type: none"> — Addition and subtraction — Length and perimeter 	<ul style="list-style-type: none"> — Multiplication and division — Deriving multiplication and division facts 	<ul style="list-style-type: none"> — Time — Fractions 	<ul style="list-style-type: none"> — Angles and shape — Measures 	<ul style="list-style-type: none"> — Securing multiplication and division — Exploring calculation strategies and place value
YEAR 4	<ul style="list-style-type: none"> — Reasoning with large numbers — Addition and subtraction 	<ul style="list-style-type: none"> — Multiplication and division — Discrete and continuous data 	<ul style="list-style-type: none"> — Securing multiplication facts — Fractions — Time 	<ul style="list-style-type: none"> — Decimals — Area and perimeter 	<ul style="list-style-type: none"> — Solving measures and money problems — Shape and symmetry 	<ul style="list-style-type: none"> — Position and direction — Reasoning with pattern and sequences — 3D shape
YEAR 5	<ul style="list-style-type: none"> — Reasoning with large whole integers — Integer addition and subtraction — Line graphs and timetables 	<ul style="list-style-type: none"> — Multiplication and division — Perimeter and area 	<ul style="list-style-type: none"> — Fractions and decimals — Angles 	<ul style="list-style-type: none"> — Fractions and percentages — Transformations 	<ul style="list-style-type: none"> — Converting units of measure — Calculating with whole numbers and decimals 	<ul style="list-style-type: none"> — 2D and 3D shape — Volume — Problem-solving
YEAR 6	<ul style="list-style-type: none"> — Integers and decimals — Multiplication and division 	<ul style="list-style-type: none"> — Calculation problems — Fractions — Missing angles and length 	<ul style="list-style-type: none"> — Coordinates and shapes — Fractions 	<ul style="list-style-type: none"> — Decimals and measure — Percentage and statistics 	<ul style="list-style-type: none"> — Proportion problems 	<ul style="list-style-type: none"> — Consolidation and revision

WHOLE SCHOOL OVERVIEW FOR ARITHMETIC

This common teaching order of the arithmetic curriculum has been devised for Years 2 -5 to align with the new cumulative arithmetic assessments. All arithmetic content will have been covered by the end of Spring 1, the last 3 half terms will therefore offer an opportunity to revisit arithmetic skills. The assessments for Spring 2, Summer 1 and Summer 2 will be contain content from the whole year.

Items in blue indicate topics from the previous year for revision.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
YEAR 1	<ul style="list-style-type: none"> — Count forwards across 100 from any given number — Add one digit and two digit numbers to 20 	<ul style="list-style-type: none"> — Count backwards across 100 from any given number — Subtract one digit and two digit numbers to 20 	—	—	<ul style="list-style-type: none"> — Find half of a quantity — Find quarter of a quantity 	—
YEAR 2	<ul style="list-style-type: none"> — Addition — Count forwards across 100 from any given number — Add one digit and two digit numbers to 20 — Add a two-digit and one-digit number mentally (up to 100) — Add a two-digit and tens mentally (up to 100) — Add three one-digit numbers mentally (up to 100) — Subtraction — Count backwards across 100 from any given number — Subtract one digit and two digit numbers to 20 — Subtract a two-digit and one-digit number mentally (up to 100) — Subtract a two-digit and tens mentally (up to 100) 	<ul style="list-style-type: none"> — Addition — Add two two-digit numbers mentally (up to 100) — Subtraction — Subtract two two-digit numbers mentally (up to 100) — Multiplication & division — Use multiplication facts for the 2, 5 and 10 multiplication tables — Use division facts for the 2, 5 and 10 multiplication tables 	<ul style="list-style-type: none"> — Multiplication & division — Use multiplication facts for the 2, 5 and 10 multiplication tables — Use division facts for the 2, 5 and 10 multiplication tables — Addition & Subtraction — Add and subtract two 2-digit number with regrouping — Fractions — Find half of a quantity — Find quarter of a quantity — Find one third of a quantity — Find two quarters of a quantity — Find three quarters of a quantity 	<ul style="list-style-type: none"> — Addition — Count forwards across 100 from any given number — Add one digit and two digit numbers to 20 — Add a two-digit and one-digit number mentally (up to 100) — Add a two-digit and tens mentally (up to 100) — Add three one-digit numbers mentally (up to 100) — Subtraction — Count backwards across 100 from any given number — Subtract one digit and two digit numbers to 20 — Subtract a two-digit and one-digit number mentally (up to 100) — Subtract a two-digit and tens mentally (up to 100) 	<ul style="list-style-type: none"> — Addition — Add two two-digit numbers mentally (up to 100) — Subtraction — Subtract two two-digit numbers mentally (up to 100) — Multiplication & division — Use multiplication facts for the 2, 5 and 10 multiplication tables — Use division facts for the 2, 5 and 10 multiplication tables 	<ul style="list-style-type: none"> — Multiplication & division — Use multiplication facts for the 2, 5 and 10 multiplication tables — Use division facts for the 2, 5 and 10 multiplication tables — Addition & Subtraction — Add and subtract two 2-digit number with regrouping — Fractions — Find half of a quantity — Find quarter of a quantity — Find one third of a quantity — Find two quarters of a quantity — Find three quarters of a quantity

<p>YEAR 3</p>	<ul style="list-style-type: none"> — Addition — Add a two-digit and one-digit number mentally — Add a two-digit and tens mentally — Add two two-digit numbers mentally — Add three one-digit numbers mentally (above 4 bullet points are up to 100) — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Subtraction — Subtract a two-digit and one-digit number mentally (up to 100) — Subtract a two-digit and tens mentally (up to 100) — Subtract two two-digit numbers mentally (up to 100) — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction 	<ul style="list-style-type: none"> — Multiplication — Use multiplication facts for the 2, 5 and 10 multiplication tables — Multiply a two digit by a one digit using mental methods and progressing to formal written methods (2, 3, 4, 5 and 8) — Multiply a whole number by 10 — Multiply more than two numbers together (2, 3, 5, 5 and 8) — Division — Use division facts for the 2, 5 and 10 multiplication tables — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 10 — 	<ul style="list-style-type: none"> — Fractions — Find one third of a quantity — Find two quarters of a quantity — Find three quarters of a quantity — Add and subtract fractions with the same denominator within one whole — Find fractions of quantities (up to 100) where the denominator is 2, 3, 4, 5, 8 or 10 — Addition — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Subtraction — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction 	<ul style="list-style-type: none"> — Addition — Add a two-digit and one-digit number mentally — Add a two-digit and tens mentally — Add two two-digit numbers mentally — Add three one-digit numbers mentally (above 4 bullet points are up to 100) — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Subtraction — Subtract a two-digit and one-digit number mentally (up to 100) — Subtract a two-digit and tens mentally (up to 100) — Subtract two two-digit numbers mentally (up to 100) — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction 	<ul style="list-style-type: none"> — Multiplication — Use multiplication facts for the 2, 5 and 10 multiplication tables — Multiply a two digit by a one digit using mental methods and progressing to formal written methods (2, 3, 4, 5 and 8) — Multiply a whole number by 10 — Multiply more than two numbers together (2, 3, 5, 5 and 8) — Division — Use division facts for the 2, 5 and 10 multiplication tables — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 10 — 	<ul style="list-style-type: none"> — Fractions — Find one third of a quantity — Find two quarters of a quantity — Find three quarters of a quantity — Add and subtract fractions with the same denominator within one whole — Find fractions of quantities (up to 100) where the denominator is 2, 3, 4, 5, 8 or 10 — Addition — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Subtraction — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction
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<p>YEAR 4</p>	<ul style="list-style-type: none"> — Addition — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Add multiples of 10, 100 and 1,000 to a number (up to 9,999) — Add numbers up to 4 digits using formal method of column addition — Add with decimals (up to tenths and hundredths) — Subtraction — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction — Subtract multiples of 10, 100 and 1,000 from a number (up to 9,999) — Subtract numbers up to 4 digits using formal method of column subtraction — Subtract with decimals (up to tenths and hundredths) 	<ul style="list-style-type: none"> — Multiplication — Multiply a two digit by a one digit using mental methods and progressing to formal written methods (2, 3, 4, 5 and 8) — Multiply a whole number by 10 — Multiply more than two numbers together (2, 3, 5, 5 and 8) — Multiply 2 and 3 digit numbers by a 1-digit number using a formal written method — Multiply a whole number by 100 — Multiply more than two numbers together — Division — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 10 — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 100 — Divide multiples of 10, 100 and 1,000 by a single digit number using associated division facts 	<ul style="list-style-type: none"> — Fractions — Add and subtract fractions with the same denominator within one whole — Find fractions of quantities (up to 100) where the denominator is 2, 3, 4, 5, 8 or 10 — Add and Subtract fractions where the answer may be an improper fraction — Find fractions of quantities using known multiplication facts 	<ul style="list-style-type: none"> — Addition — Add multiples of 10 or 100 to a number (up to 999) — Add numbers up to 3 digits using formal method of column addition — Add multiples of 10, 100 and 1,000 to a number (up to 9,999) — Add numbers up to 4 digits using formal method of column addition — Add with decimals (up to tenths and hundredths) — Subtraction — Subtract multiples of 10 or 100 from a number (up to 999) — Subtract numbers up to 3 digits using formal method of column subtraction — Subtract multiples of 10, 100 and 1,000 from a number (up to 9,999) — Subtract numbers up to 4 digits using formal method of column subtraction — Subtract with decimals (up to tenths and hundredths) 	<ul style="list-style-type: none"> — Multiplication — Multiply a two digit by a one digit using mental methods and progressing to formal written methods (2, 3, 4, 5 and 8) — Multiply a whole number by 10 — Multiply more than two numbers together (2, 3, 5, 5 and 8) — Multiply 2 and 3 digit numbers by a 1-digit number using a formal written method — Multiply a whole number by 100 — Multiply more than two numbers together — Division — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 10 — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 100 — Divide multiples of 10, 100 and 1,000 by a single digit number using associated division facts 	<ul style="list-style-type: none"> — Fractions — Add and subtract fractions with the same denominator within one whole — Find fractions of quantities (up to 100) where the denominator is 2, 3, 4, 5, 8 or 10 — Add and Subtract fractions where the answer may be an improper fraction — Find fractions of quantities using known multiplication facts
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YEAR 5	<ul style="list-style-type: none"> — Addition — Add multiples of 10, 100 and 1,000 to a number (up to 9,999) — Add numbers up to 4 digits using formal method of column addition — Add with decimals (up to tenths and hundredths) — Add multiples of 10, 100, 1,000, 10,000 and 100,000 to a number (up to 999,999) — Add numbers with more than 4 digits using formal method of column addition — Add decimals (where two numbers have a different number of decimal places eg 14.7 + 8.65) — Apply knowledge of partitioning with numbers up to 1,000,000 — Subtraction — Subtract multiples of 10, 100 and 1,000 from a number (up to 9,999) — Subtract numbers up to 4 digits using formal method of column subtraction — Subtract with decimals (up to tenths and hundredths) — Subtract multiples of 10, 100, 1,000, 10,000 and 100,000 from a number (up to 999,999) — Subtract numbers with more than 4 digits using formal method of column subtraction — Subtract decimals (where two numbers have a different number of decimal places eg 14.7 - 8.65) 	<ul style="list-style-type: none"> — Multiplication — Multiply 2 and 3 digit numbers by a 1-digit number using a formal written method — Multiply a whole number by 100 — Multiply more than two numbers together — Multiply a 3-digit number by a 2-digit number using formal method of long multiplication — Multiply whole numbers by 10, 100 and 1,000 (where the answer is no greater than 999,999) — Multiply decimal numbers by 10, 100 and 1,000 where the quotient may be a decimal — Recognise and use square and cube numbers — Multiply multiples of 10 by 10, 100 or 1,000 (e.g. 30 x 400) — Division — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 100 — Divide multiples of 10, 100 and 1,000 by a single digit number using associated division facts — Divide numbers up to 4 digits by a 1-digit number using the formal written method of long division (recording with a remainder where required) — Divide whole numbers by 10, 100 and 1,000 (where the quotient contains a decimal and the dividend may contain a decimal) 	<ul style="list-style-type: none"> — Fractions — Add and Subtract fractions where the answer may be an improper fraction — Find fractions of quantities using known multiplication facts — Add fractions with the same denominators and convert the answer from improper fractions to mixed numbers — Add and subtract fractions where there are different denominators and one fraction is a multiple of the other (and one fraction may be a mixed number) — Multiply proper fractions and mixed numbers by whole numbers — Find fractions of quantities using formal calculation strategies — Percentages — Find 10% of a number — Find a multiple of 10% of a number — Find 5% of a number 	<ul style="list-style-type: none"> — Addition — Add multiples of 10, 100 and 1,000 to a number (up to 9,999) — Add numbers up to 4 digits using formal method of column addition — Add with decimals (up to tenths and hundredths) — Add multiples of 10, 100, 1,000, 10,000 and 100,000 to a number (up to 999,999) — Add numbers with more than 4 digits using formal method of column addition — Add decimals (where two numbers have a different number of decimal places eg 14.7 + 8.65) — Apply knowledge of partitioning with numbers up to 1,000,000 — Subtraction — Subtract multiples of 10, 100 and 1,000 from a number (up to 9,999) — Subtract numbers up to 4 digits using formal method of column subtraction — Subtract with decimals (up to tenths and hundredths) — Subtract multiples of 10, 100, 1,000, 10,000 and 100,000 from a number (up to 999,999) — Subtract numbers with more than 4 digits using formal method of column subtraction — Subtract decimals (where two numbers have a different number of decimal places eg 14.7 - 8.65) 	<ul style="list-style-type: none"> — Multiplication — Multiply 2 and 3 digit numbers by a 1-digit number using a formal written method — Multiply a whole number by 100 — Multiply more than two numbers together — Multiply a 3-digit number by a 2-digit number using formal method of long multiplication — Multiply whole numbers by 10, 100 and 1,000 (where the answer is no greater than 999,999) — Multiply decimal numbers by 10, 100 and 1,000 where the quotient may be a decimal — Recognise and use square and cube numbers — Multiply multiples of 10 by 10, 100 or 1,000 (e.g. 30 x 400) — Division — Use known multiplication facts to create associated division facts — Divide one or two digit numbers by 100 — Divide multiples of 10, 100 and 1,000 by a single digit number using associated division facts — Divide numbers up to 4 digits by a 1-digit number using the formal written method of long division (recording with a remainder where required) — Divide whole numbers by 10, 100 and 1,000 (where the quotient contains a decimal and the dividend may contain a decimal) 	<ul style="list-style-type: none"> — Fractions — Add and Subtract fractions where the answer may be an improper fraction — Find fractions of quantities using known multiplication facts — Add fractions with the same denominators and convert the answer from improper fractions to mixed numbers — Add and subtract fractions where there are different denominators and one fraction is a multiple of the other (and one fraction may be a mixed number) — Multiply proper fractions and mixed numbers by whole numbers — Find fractions of quantities using formal calculation strategies — Percentages — Find 10% of a number — Find a multiple of 10% of a number — Find 5% of a number
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YEAR 6	<ul style="list-style-type: none"> — Add multiples of 10, 100, 1,000, 10,000, 100,000 and 1,000,000 to a number (up to 9,999,999) — Add and subtract using negative numbers through zero — Use BIDMAS to identify the correct order of operations 	<ul style="list-style-type: none"> — Subtract multiples of 10, 100, 1,000, 10,000, 100,000 and 1,000,000 from a number up to 9,999,999) 	<ul style="list-style-type: none"> — Multiply a 4-digit number by a 2-digit number using the formal method of multiplication — Multiply one digit numbers with up to two decimal places by whole numbers — Multiply a tenths number that is less than one by a multiple of 10 or 100 (e.g. 0.4×60) — Multiply a number with decimals by a two digit number using the formal method of long multiplication (e.g. 5.1×28) 	<ul style="list-style-type: none"> — Divide numbers up to 4 digits by a 2-digit number using the formal written method of long division (where the dividend may include a fraction) — Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division (where the dividend may include a fraction) 	<ul style="list-style-type: none"> — Add and subtract fractions with different denominators (using two or three fractions) — Add and subtract a mixed number to a fraction where there are different denominators — Multiply pairs of proper fractions writing the answer in its simplest form — Divide proper fractions by whole numbers 	<ul style="list-style-type: none"> — Find a multiple of 5% of a number — Find 1% of a number — Find a multiple of 1% of a number
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