Year 3 Programme of Study for Mathematics

- The topics in this document should be taught in the order that they are written.
- All objectives should be taught through problem solving and encourage the development of reasoning and fluency.
- Refer to the other planning documents for further guidance.
- Use the last week of each half term for addressing misconceptions and assessment.
- By the end of each half term, the children should have a firm understanding of the objectives highlighted in red.
- **Every lesson should include 10-15 minutes of daily arithmetic – focusing on previous learning, key number facts for the year group and the developing of conceptual understanding through the discussion of related examples.**

Daily Arithmetic

Each maths lesson should start with daily arithmetic. The focus of this time must be mental strategies and revision of learning already covered. This session should be quick and focused with discussion over strategies used. Maximum of 15 minutes before the main teaching session begins. Refer to examples in the maths folder.

Daily Ten

At the end of each day, children should be practising use key mental strategies using Daily Ten on Topmarks.

Mastery Checker		
Taught in the context of number through problem solving over the year	**Graphs**	• interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables

Transition Fortnight. (1st 2 weeks of July.) Consolidation and assessment of key number based objectives from the previous year.	• recognise the place value of each digit in a two-digit number (tens, ones) • read and write numbers to at least 100 in numerals and in words • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

1st Half of Autumn term	**Reasoning with number up to 100 (3 weeks)**	• recognise the place value of each digit (tens, ones), compare and order numbers up to 100 • read and write numbers up to 100 in numerals and in words • find 10 more or less than a given number • add and subtract two-digit numbers mentally • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction • estimate the answer to a calculation and use inverse operations to check answers • solve number problems and practical problems involving these ideas • identify, represent and estimate numbers using different representations, including the number line • add and subtract amounts of money to give change, using both £ and p in practical contexts
	Place Value (3 weeks)	• the place value of each digit in a three-digit number (hundreds, tens, ones) • read and write numbers up to 1000 in numerals and in words • compare and order numbers up to 1000 • round any number to the nearest 10 and 100 • identify, represent and estimate numbers using different representations • find 10 or 100 more or less than a given number; recognise • solve number problems and practical problems involving these ideas • count from 0 in multiples of 50 and 100
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.

2nd Half of Autumn term	**Week of Inspirational Maths / Problem solving week**	Use Youcubed website/NRich to begin half term focusing on these areas: • Problem solving, reasoning, fluency • Mindset in Maths
	Addition and subtraction (5 weeks)	• recall and use addition and subtraction facts to 20 fluently • add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds • add and subtract numbers with up to three digits using a variety of methods • estimate the answer to a calculation and use inverse operations to check answers • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.

1st Half of Spring term	**Multiplication and division (4 weeks)**	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and a variety of written methods • divide 2-digits by one-digit using sharing and grouping • count from 0 in multiples of 4, 8, 50 and 100 • solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.

2nd Half of Spring term	**Proportionality [Fractions]** **(3 weeks)**	• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators • recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • count up and down in tenths • recognise and show, using diagrams, equivalent fractions with small denominators • add and subtract fractions with the same denominator within one whole *[for example,* $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] • compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above
	Length and perimeter **(2 weeks)**	• measure, compare, add and subtract: lengths (m/cm/mm) • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction • measure the perimeter of simple 2-D shapes • continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed … and simple equivalents of mixed units (for example, 5m = 500cm)
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.

1st Half of Summer term	**Angles and shape (3 weeks)**	• recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle • draw 2-D shapes and make 3-D shapes using modelling materials • recognise 3-D shapes in different orientations and describe them • identify horizontal and vertical lines and pairs of perpendicular and parallel lines • measure the perimeter of simple 2-D shapes
	Length, weight and volume (2 weeks)	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction • continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm)
	Time (1 week)	• tell and write the time from an analogue clock, including using 12-hour and 24-hour clocks • estimate and read time with increasing accuracy to the nearest minute • know the number of seconds in a minute and the number of days in each month, year and leap year • use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • record and compare time in terms of seconds, minutes and hours • compare durations of events [for example to calculate the time taken by particular events or tasks]
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.

2nd Half of Summer term Last two weeks of the term are dedicated to transition weeks	**Revision of calculation methods (5 weeks)**	• revision of addition, subtraction, multiplication and division calculation methods • understanding deepened through problem solving and reasoning
	Assessment and addressing misconceptions (1 week)	Assess at the beginning of the week then plan to address misconceptions for the remainder of the sessions.