

Curriculum Overview

Subject: Mathematics

7H – Class 7X1

Autumn Term	Spring Term	Summer Term
<p><u>Calculation 1</u></p> <p>Use efficient written methods of addition and subtraction and of short multiplication and division. Understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three digit number by any two digit number.</p>	<p><u>Calculation 3</u></p> <p>Understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three digit number by any two digit number. Use known facts, place value, knowledge of operations and brackets to calculate including using all four operations with decimals to two places.</p>	<p><u>Shape 4</u></p> <p>Rotate a simple shape or object about its centre or vertex. Reason about position and movement and transform shapes. Understand rotational symmetry. Reflect simple shapes in a mirror line (includes reflective symmetry). Reason about position and movement and transform shapes (translation). Know and use the formulae for the circumference and area of a circle.</p>
<p><u>Algebra 1</u></p> <p>Generate terms of a sequence using term to term definitions of a sequence on paper and using ICT.</p>	<p><u>Algebra 3</u></p> <p>Use and interpret coordinates in all four quadrants. Plot the graphs of linear functions, where y is given explicitly in terms of x; recognise that equations of the form $y=mx+c$ correspond to straight line graphs.</p>	<p><u>Number 5</u></p> <p>Recognise and describe number relationships including multiple, factor, square and prime. Includes HCF and LCM. Equivalent fractions, cancelling fractions, adding and subtracting fractions with different denominators. Use efficient methods of multiplication and division, including all four operations with decimals to 2 places. Use a calculator where appropriate to calculate fractions/percentages of quantities/measurements. Round decimals to the nearest decimal place and order negative numbers in context. Use rounding to estimate values.</p>
<p><u>Shape, Space and Measure 1</u></p> <p>Understand and use the formula for the area of a rectangle and distinguish area from perimeter. Deduce and use the formula for the area of a triangle.</p>	<p><u>Number 3</u></p> <p>Recognise and describe number relationships including multiple, factor and square (including primes and cubes).</p>	<p><u>Handling data 3</u></p> <p>Understand and use the probability scale from 0 to 1. Find and record all possible mutually exclusive outcomes for single events and two successive events in a systematic way.</p>
<p><u>Number 1</u></p> <p>Use equivalence between fractions. Reduce a fraction to its simplest form by cancelling common factors. Add and subtract fractions by writing them with a common denominator. Calculate fractions of quantities (fraction answers).</p>	<p><u>Handling data 2</u></p> <p>Interpret graphs and diagrams, including pie charts and draw conclusions. Select, construct and modify, on paper and using ICT a) pie charts for categorical data . Data handling project. Understand and use the probability scale from 0 to 1. In probability, select methods based on equally likely outcomes and experimental evidence as appropriate.</p>	<p><u>Algebra 5</u></p> <p>Construct functions arising from real-life problems and plot their corresponding graphs; interpret graphs arising from real situations. Construct and solve linear equations with integer coefficients, using an appropriate method. Generate terms of a sequence using term-to-term and position-to-term definitions of the sequence on paper and using ICT; write an expression to describe the nth term of an arithmetic sequence.</p>
<p><u>Handling data 1</u></p> <p>Understand and use the mode and range to describe sets of data. Understand and use the mean of discrete data and compare two simple distributions, using the range and one of mode, median or mean.</p>	<p><u>Calculation 4</u></p> <p>Solve simple problems involving ratio and direct proportion. Understand simple ratio. Divide a quantity into two or more parts in a given ratio and solve problems involving ratio and direct proportion. Add and subtract negative numbers (in context). Multiply and divide negative numbers.</p>	<p><u>Shape 5</u></p> <p>Solve problems involving the conversion of units and make sensible estimates of a range of measures in relation to everyday situations. Use language associated with angle and know and use the angle sum of a triangle and that of angles at a point. Solve geometrical problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons: identify alternate and corresponding angles. Use straight edge and compasses to do standard constructions. Use a wider range of properties of 2-D and 3-D shapes: visualise and use 2-D representations of 3-D objects (includes nets).</p>
<p><u>Calculation 2</u></p> <p>Use known facts, place value, knowledge of operations and brackets to calculate including all four operations with decimals to two places. As above using a calculator.</p>	<p><u>Algebra 4</u></p> <p>Construct and solve linear equations with integer coefficients, using an appropriate method. Multiply out brackets.</p>	
<p><u>Algebra 2</u></p> <p>Construct, express in symbolic form, and use simple formulae involving one or two operations.</p>	<p><u>Shape 3</u></p> <p>Measure and draw angles to the nearest degree, when constructing models and drawing or using shapes. Use straight edge and compasses to do standard constructions (SSS triangles). Classify quadrilaterals by their geometric properties. Use a wider range of properties of 2-D (and 3-D) shapes and identify all symmetries of 2-D shapes.</p>	
<p><u>Shape 2</u></p> <p>Measure and draw angles to the nearest degree. Use language associated with angle. Know and use the angle sum of a triangle and that of angles at a point.</p>		
<p><u>Number 2</u></p> <p>Use equivalence between fractions, decimals and percentages.</p>	<p><u>Number 4</u></p> <p>Use equivalence between fractions and order fractions and decimals. Use a calculator where appropriate to calculate fractions/percentages of quantities/measurements.</p>	

Curriculum Overview

Subject: Mathematics

7C - Class 7X2 and 7X3

Autumn Term	Spring Term	Summer Term
<p><u>Calculation 1</u></p> <p>Use efficient written methods of addition and subtraction and of short multiplication and division. Understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three digit number by any two digit number.</p>	<p><u>Calculation 3</u></p> <p>Understand and use an appropriate non-calculator method for solving problems that involve (multiplying and) dividing any three digit number by any two digit number (NB whole numbers). Multiply a simple decimal by a single digit. Understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three digit number by any two digit number (decimals).</p>	<p><u>Shape 4</u></p> <p>Reason about position and movement and transform shapes (not enlargements). Know that translations, rotations and reflections preserve length and angle and map objects onto congruent images</p>
<p><u>Algebra 1</u></p> <p>Generate terms of a sequence using term to term definitions of a sequence on paper and using ICT.</p>	<p><u>Algebra 3</u></p> <p>Use and interpret coordinates in all four quadrants. Plot the graphs of linear functions, where y is given explicitly; recognise that equations of the form $y=mx+c$ correspond to straight line graphs.</p>	<p><u>Number 5</u></p> <p>Number review including: multiples, factors, primes, HCF, LCM, FDP, long multiplication and division, all four operations with decimals, finding fractions/ percentage of a quantity. Round numbers to the nearest decimal place. Make and justify estimates and approximations of calculations.</p>
<p><u>Shape, Space and Measure 1</u></p> <p>Understand and use the formula for the area of a rectangle, and distinguish area from perimeter. Deduce and use the formula for the area of a triangle.</p>	<p><u>Number 3</u></p> <p>Understanding of place value (to multiply decimals). Use known facts, place value, knowledge of operations and brackets to calculate using (all four operations) with decimals (add and subtract only). Recognise and describe number patterns including multiple, factor and square (and primes).</p>	<p><u>Handling data 3</u></p> <p>In probability select methods based on equally likely outcomes and experimental evidence as appropriate. Understand the probability scale from 0 to 1. Construct and interpret frequency diagrams and simple line graphs.</p>
<p><u>Number 1</u></p> <p>Use equivalence between fractions. Reduce a fraction to its simplest form by cancelling common factors. Add and subtract fractions by writing them with a common denominator. Calculate fractions of quantities (fraction answers).</p>	<p><u>Handling data 2</u></p> <p>Construct and interpret frequency diagrams and simple line graphs. Interpret graphs and diagrams, including pie charts, and draw conclusions. Ask questions, plan how to answer them and collect the data required. In probability, select methods based on equally likely outcomes and experimental evidence as appropriate. Data handling project. Understand and use the probability scale from 0 to 1.</p>	<p><u>Algebra 5</u></p> <p>Algebra review: simplify expressions, equivalent expressions, substitute into formulae.</p>
<p><u>Handling data 1</u></p> <p>Understand and use the mode and range to describe sets of data. Understand and use the mean of discrete data and compare two simple distributions, using the range and one of mode, median or mean.</p>	<p><u>Calculation 2</u></p> <p>Understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any 3 digit number by any two digit number. Use known facts, place value, knowledge of operations and brackets to calculate including all four operations.</p>	<p><u>Shape 5</u></p> <p>Solve problems involving the conversion of units and make sensible estimates of a range of measures in relation to everyday situations (includes imperial units). Read and interpret scales on a range of measuring instruments, explaining what each division represents. Review earlier angle work. Measure and draw angles to the nearest degree, when constructing models and drawing or using shapes. Use straight edge and compasses to do standard constructions. Use the properties of 3D shapes. Use a wider range of properties of 2D and 3D shape. Begin to recognise the nets of familiar 3D shapes Measure and draw angles to the nearest degree, when constructing models and drawing or using shapes (applied to nets).</p>
<p><u>Algebra 2</u></p> <p>Construct, express in symbolic form, and use simple formulae involving one or two operations.</p>	<p><u>Calculation 4</u></p> <p>Solve simple problems involving direct proportion and ratio. Solve simple problems involving ordering, adding and subtracting negative numbers in context (includes multiply and divide).</p>	<p><u>Algebra 6</u></p> <p>Construct and solve linear equations with integer coefficients, using an appropriate method. Generate terms of a sequence using term-to-term and position-to-term definitions of the sequence, on paper and using ICT; write an expression to describe the nth term of an arithmetic sequence.</p>
<p><u>Shape 2</u></p> <p>Measure and draw angles to the nearest degree. Use language associated with angle, and know and use the angle sum of a triangle and that of angles at a point.</p>	<p><u>Algebra 4</u></p> <p>Construct and solve linear equations with integer coefficients, using an appropriate method. Multiply out single brackets.</p>	
<p><u>Number 2</u></p> <p>Use equivalence between fractions, decimals and percentages.</p>	<p><u>Shape 3</u></p> <p>Measure and draw angles to the nearest degree, when constructing models and drawing or using shapes. Use language associated with angle. Use a wider range of properties of 2-D (and 3-D) shapes and identify all symmetries of 2-D shapes. Classify shapes by their geometric properties.</p>	
	<p><u>Number 4</u></p> <p>(Use a calculator when appropriate to) calculate fractions/percentages of quantities/measurements.</p>	

Curriculum Overview

Subject: Mathematics

7S - Class 7X4

Autumn Term	Spring Term	Summer Term
<p><u>Calculation 1</u></p> <p>Add and subtract two digit numbers mentally. Add and subtract three digit numbers using written method.</p>	<p><u>Calculation 3</u></p> <p>Use efficient methods of (addition and subtraction) and of short multiplication and division (NB may include remainders).</p> <p>Understand and use an appropriate non-calculator method for solving problems that involve multiplying (and dividing) any three digit number by any two digit number.</p> <p>Use known facts, place value, knowledge of operations to calculate BIDMAS.</p> <p>Use (all four) operations to calculate using decimals to 2 places (add and subtract money)</p> <p>Use a range on mental methods of computation with all operations.</p>	<p><u>Calculation 5</u></p> <p>Use a range of mental methods of computation with all operations. Use efficient written methods of addition and subtraction and of short multiplication and division. Use known facts, place value, knowledge of operations and brackets to calculate, including using all four operations with decimals to 2 places. Use a calculator efficiently.</p>
<p><u>Algebra 1</u></p> <p>Recognise sequences of numbers, including odd and even numbers. Recognise a wider range of sequences. Begin to use simple formulae expressed in words.</p>	<p><u>Algebra 3</u></p> <p>Use and interpret coordinates in the first quadrant.</p>	<p><u>Shape 5</u></p> <p>Recognise shapes in different orientations and reflect shapes, presented on a grid, in a vertical or horizontal mirror line. Reflect simple shapes in a mirror line, translate shapes horizontally or vertically, and begin to rotate a simple shape about its centre or a vertex (includes rotational symmetry). Tessellate simple shapes.</p>
<p><u>Shape 1</u></p> <p>Begin to use a wider range of measures including to use everyday non-standard and standard units to measure length and mass. Use a wider range of measures including non-standard units and standard metric units of length, capacity and mass in a range of contexts. Find perimeters of simple shapes and find areas by counting squares.</p>	<p><u>Shape 3</u></p> <p>Solve problems involving the conversion of units and make sensible estimates of a range of measures in relation to everyday situations. Learn to use timetables, and solve problems involving time.</p>	<p><u>Number 5</u></p> <p>Recognise and describe number relationships including multiple, factor and square. Make sensible decisions about rounding after division.</p>
<p><u>Number 1</u></p> <p>Recognise and describe number relationships including multiple, factor and square. Recognise prime numbers to at least 20. Read and write whole numbers in figures and know what each digit represents. Recognise negative numbers in contexts such as temperature. Use standard column procedures to add and subtract decimals with up to two places. Use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent.</p>	<p><u>Number 3</u></p> <p>Times tables (6, 7, 8, 9) Add and subtract three digit numbers using written method. Understand place value in numbers to 1000. Recognise and describe number patterns including multiple, factor and square. Includes primes and triangular numbers and square roots. Rounding (whole numbers and decimals to whole numbers).</p>	<p><u>Handling data 3</u></p> <p>Understand and use the mode and range to describe sets of data: Understand and use the mean of discrete data and compare two simple distributions, using the range and one of median, mean or mode. Construct and interpret frequency diagrams and simple line graphs. Find outcomes, calculate probability and understand the probability scale from 0 to 1, start to use probability experiments. Data Handling project.</p>
<p><u>Handling data 1</u></p> <p>Understand and use the mode and range to describe sets of data. Understand and use the mean of discrete data. Construct and interpret frequency diagrams (bar charts). Use vocabulary and ideas of probability drawing on experience. Understand and use the probability scale from 0 to 1.</p>	<p><u>Handling data 2</u></p> <p>Construct and interpret frequency diagrams and simple line graphs. Data handling project (collect data, draw frequency chart).</p>	<p><u>Calculation 6</u></p> <p>Develop own strategies for solving problems, search for a solution by trying out ideas of their own Use all four operations.</p>
<p><u>Calculation 2</u></p> <p>Use a range of mental methods of computation with all operations. Solve problems with or without a calculator. Recall multiplication facts up to 10x10 and quickly derive corresponding division facts.</p>	<p><u>Calculation 4</u></p> <p>Use a calculator where appropriate to calculate fractions/percentages of quantities/measurements. Doubling and halving. Use efficient written methods of short multiplication and description. Use a range of mental methods of computation with all operations.</p>	<p><u>Algebra 5</u></p> <p>Begin to use simple formulae expressed in words; construct and express in symbolic form. Solve linear equations. Substitute into expressions. Use and interpret coordinates in all four quadrants.</p>
<p><u>Algebra 2</u></p> <p>Simplify linear algebraic expressions by collecting like terms. Construct, express in symbolic form and use simple formulae using one or two operations. Use and interpret co-ordinates in the first quadrant.</p>	<p><u>Algebra 4</u></p> <p>Construct simple expressions. Collect like terms.</p>	<p><u>Shape 6</u></p> <p>Use language associated with angle. Know and use the angle sum of a triangle and that of angles at a point (includes angles on a line). Make nets of 3-D shapes.</p>
<p><u>Shape 2</u></p> <p>Classify 3-D shapes in various ways using mathematical properties. Make 3-D models by linking given faces or edges. Begin to recognise nets of familiar 3-D shapes. Classify 2-D shapes in various ways using mathematical properties. Recognise and estimate angles. Identify parallel and perpendicular lines.</p>	<p><u>Shape 4</u></p> <p>Use a wider range of properties of 2-D (and 3-D) shapes and identify all the symmetries of 2-D shapes. Translate shapes horizontally or vertically. Measure and draw angles to the nearest degree. Use language associated with angle, and know and use the angle sum on a line, in a triangle and at a point.</p>	<p><u>Number 6</u></p> <p>Develop own strategies for solving problems. Investigate sequences of numbers.</p>

Curriculum Overview

Subject: Mathematics

<p>Number 2</p> <p>Recognise approximate proportions of a whole and use simple fractions and percentages to describe this. Use a calculator where appropriate to calculate percentages of quantities/measurements. Use the equivalence of fractions, decimals and percentages. Order decimals to three decimal places.</p>	<p>Number 4</p> <p>Recognise approximate proportions of a whole number and use simple fractions (and percentages) to describe these. Use equivalence between fractions and order fractions and decimals (include improper fractions) Begin to understand simple ratio. Solve simple problems involving ratio and direct proportion. Understand divisibility tests</p>	
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