



Denton Community College

Departmental Curriculum Map

Subject: Mathematics

Year Group: 7



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	Algebraic Thinking	Place Value and Proportion	Addition and Subtraction	Multiplication and Division	Lines and Angles	Reasoning with Number
What will students be learning during this unit?	<p>Students will be expected to understand what a sequence is, recognise differences and finding missing values.</p> <p>Students will be expected to find the input and output, by using the inverse functions, of an algebraic function machine.</p> <p>Students will be able to substitute into two-step expressions and generate sequences given an algebraic rule.</p>	<p>Students will be expected to recognise, order and compare positive and negative integers up to one billion.</p> <p>Students should understand the place value of and order decimals. Students should be able to round both decimals and integers to a relevant degree of accuracy.</p> <p>Students should investigate with powers of 10, with higher prior attaining students being introduced to standard form.</p>	<p>Students will be expected to know the properties of addition and subtraction, understand mental methods to help add and subtract and use formal methods. Students will be expected to be able to work with negative numbers and understand and calculate with fractions. Students will be learning how to apply these skills to help with geometry, statistics and financial problems.</p>	<p>Students will develop their understanding of the properties of multiplication and division. Formal methods will be used to solve problems using integers and decimals. This will be applied to solving problems involving fractions, percentages, measures, geometry, powers, roots and algebra.</p>	<p>Students will be able to recognise different types of angles. They will also be able to measure and draw angles, including reflex. Students will also be familiar with the properties of triangles and quadrilaterals.</p> <p>Students will be able to use angle facts to find missing angles in straight lines, around a point and in triangles. Students will also be able to find missing angles in regular polygons and parallel lines.</p>	<p>Students will be expected to put numbers from a data set in a Venn diagram. Students will be expected to find the intersect and union from a venn diagram. Students will be expected to understand that probability is a scale from 0 to 1 and to be able to express situations as a probability.</p> <p>Students will be expected to recognise and use factors, multiples, prime numbers, square numbers and triangular numbers. Students will then be expected to use venn</p>

		Students will be representing fractions, decimals and percentages on diagrams and number lines. Students will be able to convert fluently between simple fractions, decimals and percentages. Higher prior attaining students will be exploring fractions, decimals and percentages above 1.				diagrams to find the highest common factor (HCF) and lowest common multiple (LCM) of numbers.
When will students be assessed?	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.	Students will be given CABs after each component of learning. Students will have a pre test at the beginning of the half term and a post test at the end of the half term.
How will students be assessed?	CABS (Classwork Assessment Booklet) + pre and post tests.	CABS (Classwork Assessment Booklet) + pre and post tests.	CABS (Classwork Assessment Booklet) + pre and post tests.	CABS (Classwork Assessment Booklet) + pre and post tests.	CABS (Classwork Assessment Booklet) + pre and post tests.	CABS (Classwork Assessment Booklet) + pre and post tests.
Key Vocabulary	Sequences, Linear, Non-Linear, Term-to-term, Fibonacci. Function machines, inverse functions,	Integer, negative, place value, decimals, powers. Fractions, Decimals, Percentages,	Negative, place value, numerator, denominator, decimals.	multiple, factor, integer, decimal	Sum, Angle, Degrees, Line Segment, Notation	Factors, Multiples, Square Numbers, Prime Numbers, Cube Numbers, Triangular Numbers, Venn

	substitution, expressions	Number Lines, Equivalence, Converting.				Diagram, Highest Common Factor, Lowest Common Multiple
Homework opportunities to broaden or deepen student knowledge	Sparx Maths: Generating Sequences, Finding the nth term, Finding missing terms of sequences. Mathswatch: Function Machines, Substitution, Generating sequences.	Sparx Maths: Place Value, Ordering Integers, Negative Numbers, Rounding, Decimals, Powers of 10 Mathswatch: FDP conversion, Simplifying Fractions, Equivalent Fractions	Sparx Maths: Adding and subtracting, adding and subtracting decimals, adding and subtracting fractions, directed numbers	Sparx Maths: multiplication and division of integers, fractions, decimals, percentages, problem solving	Sparx Maths: Angles on a straight line, Angles in a triangle, Angles in a Quadrilateral, Angles in Parallel Lines	Sparx Maths: Finding Factors and Multiples of Numbers, Identifying Prime Numbers, Finding HCF and LCM of numbers
Links to the National Curriculum	Page 45 Generate terms of a sequence from either a term-to-term or a position-to-term rule. Recognise arithmetic sequences and find the nth term. Recognise geometric sequences and appreciate other sequences that arise. Page 44-45 Use and interpret algebraic notation. Substitute numerical values into formulae and expressions. Recognise arithmetic sequences and find the nth term.	Page 43 Understand and use place value for decimals, measures and integers of any size Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; Use the symbols =, ≠, <, >, ≤, ≥ Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]. Interpret and compare numbers in	Page 44 Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative Recognise and use relationships between operations including inverse operations.	Page 44 Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative interpret when the structure of a numerical problem requires multiplicative reasoning develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	Page 46-47 Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles understand and use the relationship between parallel lines and alternate and corresponding angles Mathematics Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons	Page 43 Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations

		<p>standard form $A \times 10^n$ where n is a positive or negative integer or zero</p> <p>Page 44 Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%.</p> <p>Interpret fractions and percentages as operators</p>				
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