

Dudley Academies Trust

CURRICULUM INTENT STATEMENT

Mathematics



Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

We believe strongly in teaching for understanding and mastery of the subject. Our high quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. Learners also learn to apply their mathematical knowledge in Science, Geography, Computing and other subjects.

The Curriculum implementation is sequenced into distinct topics, but learners build on knowledge from Primary phases and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

Our GCSE map is structured so that Year 9 is an introduction and ensures that learners experience all content that appears on both tiers of entry at GCSE. By Year 10, learners will follow one of two routes on their learning journey, Foundation or Higher. Both the Foundation and Higher route builds on previously mastered topics where we retrieve, affirm and build on the knowledge and understanding as we progress through the curriculum.

As learners enter Year 11 they will follow a personalised scheme of learning that targets gaps in knowledge as identified by the thorough question level analysis (QLA) of each learner's performance in the frequent assessments that take place. This fully prepares them for success in their GCSE examination. Learners also learn to apply their mathematical knowledge in Science, Geography, Computing and other subjects.

Dreaming big	Rewarding effort	Leading together	Respecting each other and our world	Learning that inspires
<p>Learners will be immersed in and ambitious, broad and balanced curriculum for all. It offers learners meaningful real life experiences that reject the idea that a large proportion of people ‘just can’t do maths’, influenced by the Growth Mind-set theories.</p> <p>These elements will build a firm foundation in Mathematics that can be used to influence social mobility, providing access to Further and Higher Education, and a heightened sense of self efficacy.</p>	<p>Our curriculum will reward resilient learners with knowledge and skill development and further reinforce high aspirations. Rewards will be based on effort and progress but not limited by prior attainment. An emphasis on hard work, curiosity and perseverance will be celebrated to bolster academic achievements in line with the Trust behaviour policy.</p>	<p>Curriculum content is effectively delivered, in the main, through whole class interactive teaching, focusing on all learners working together on the same lesson content, allowing no learner to be left behind and reducing extraneous cognitive load in the process. We will ensure all learners understand what they are doing well and what they need to do to improve. In addition learners will be encouraged to communicate, justify, argue (and prove) using mathematical vocabulary.</p> <p>Sharing a common goal within a lesson will establish a sense of ownership and foster desirable behaviours that support the developmental of all.</p>	<p>The Mathematics department will raise awareness of the historical aspects of maths and the cultural diversity across number systems that have shaped our world to this day.</p> <p>Verbal and written diversity is encouraged and the views of others are celebrated in line with our focus on diversity.</p> <p>British values are key to creating strong resilient Mathematicians that can appreciate, the diverse thoughts of others. This will impact on social, moral, spiritual and cultural aspects of Academy life and the wider community improving learner confidence.</p>	<p>The ‘teaching for mastery’ approach allows ALL pupils the best chances of mastering Mathematical concepts. It incorporates international pedagogy from Shanghai and Singapore allowing learners will strive for improvements in knowledge and given the abundant opportunities to acquire a deep, long-term, secure and adaptable understanding of the subject. Learning mathematics requires learners to engage in abstract thinking, bringing together techniques and theories to explore new ideas, deepen understanding and solve problems. Teachers, will break down concepts into small connected and structured steps enabling application to a range of contexts.</p>

Year 7

Teaching Topic	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY																																																
	Date				Date				Date				Date				Date				Date				Date				Date				Date				Date																																																				
Solving equations	31 August 2020				Place value, decimals and using scales	07 September 2020				Presenting and interpreting data	14 September 2020				Four operations with integers and decimals	21 September 2020				Four operations with integers and decimals	28 September 2020				Perimeter	05 October 2020				Factors multiples and primes	12 October 2020				Sequences	19 October 2020				Sequences	26 October 2020																																																
	07 September 2020					19 October 2020					26 October 2020					02 November 2020					09 November 2020					16 November 2020					23 November 2020					30 November 2020					07 December 2020				14 December 2020				21 December 2020				28 December 2020																																				
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Understanding fractions	01 February 2021				Area and perimeter	08 February 2021				Properties of shapes	15 February 2021				Four operations with fractions	22 February 2021				Four operations with fractions	01 March 2021				Angle properties	08 March 2021				Parallel lines and angles	15 March 2021				Compare, order fractions,	22 March 2021				Coordinates and transformations	29 March 2021				Coordinates and transformations	05 April 2021				Coordinates and transformations	12 April 2021				Coordinates and transformations	19 April 2021				Coordinates and transformations	26 April 2021				Coordinates and transformations	03 May 2021				Coordinates and transformations	10 May 2021				Coordinates and transformations	17 May 2021				Coordinates and transformations	24 May 2021				Coordinates and transformations	31 May 2021			
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Year 8

Teaching Topic	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY																																																
	Date				Date				Date				Date				Date				Date				Date				Date				Date				Date				Date																																																
Simplifying and manipulating algebra	31 August 2020				Understanding percentages	07 September 2020				Fractions decimals and percentages as operators	14 September 2020				Circles	21 September 2020				Circles	28 September 2020				Plotting and interpreting graphs	05 October 2020				Introducing probability	12 October 2020				Ratio	19 October 2020				3d shape and volume	26 October 2020				Powers and roots	02 November 2020				Applied graphs	09 November 2020				Order of operations	16 November 2020				Constructions	23 November 2020				Proportion	30 November 2020				Further probability	07 December 2020				Similarity and congruence	14 December 2020				Similarity and congruence	21 December 2020				Similarity and congruence	28 December 2020			
	07 September 2020					19 October 2020					26 October 2020					02 November 2020					09 November 2020					16 November 2020					23 November 2020					30 November 2020					07 December 2020					14 December 2020					21 December 2020					28 December 2020					04 January 2021					11 January 2021					18 January 2021					25 January 2021													
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Year 9

Teaching Topic	SEPTEMBER					OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY			
	Date																																												
Geometry	31 August 2020																																												
	07 September 2020																																												
	14 September 2020																																												
	21 September 2020																																												
	28 September 2020																																												
Data	05 October 2020																																												
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Number	07 December 2020																																												
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	21 December 2020																																												
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Algebra basics	04 January 2021																																												
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	18 January 2021																																												
	25 January 2021																																												
	01 February 2021																																												
Fractions decimals and percentages	08 February 2021																																												
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	22 February 2021																																												
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Quadratics	08 March 2021																																												
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	22 March 2021																																												
Quadratics	29 March 2021																																												
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Multiplicative reasoning	03 May 2021																																												
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Multiplicative reasoning	05 July 2021																																												
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Year 10 A and B

		SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE				JULY			
		Date																																											
Teaching Topic	Teaching Topic	Fractions decimals and percentages				Equations and inequalities				Circle theorems				Data handling				Rearranging, algebraic fractions and surds				Multiplicative reasoning				Equations and graphs				Transformations and constructions				Probability				Probability				Perimeter and area			
		Fractions decimals and percentages				Multiplicative reasoning				Quadratics				Data handling				Right angled triangles				Transformations				Multiplicative reasoning				Constructions and loci				Constructions and loci				Probability				Algebra - equations and inequalities			
Date		31 August 2020				05 October 2020				02 November 2020				07 December 2020				04 January 2021				01 February 2021				01 March 2021				05 April 2021				03 May 2021				07 June 2021				07 July 2021			
Date		07 September 2020				12 October 2020				09 November 2020				14 December 2020				11 January 2021				08 February 2021				08 March 2021				12 April 2021				10 May 2021				14 June 2021				14 July 2021			
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Date		28 September 2020								30 November 2020																29 March 2021				31 May 2021								19 July 2021							

Year 11

		SEPTEMBER					OCTOBER				NOVEMBER				DECEMBER			JANUARY				FEBRUARY				MARCH				APRIL			MAY					JUNE			JULY							
Date		31 August 2020	07 September 2020	14 September 2020	21 September 2020	28 September 2020	05 October 2020	12 October 2020	19 October 2020	26 October 2020	02 November 2020	09 November 2020	16 November 2020	23 November 2020	30 November 2020	07 December 2020	14 December 2020	21 December 2020	28 December 2020	04 January 2021	11 January 2021	18 January 2021	25 January 2021	01 February 2021	08 February 2021	15 February 2021	22 February 2021	01 March 2021	08 March 2021	15 March 2021	22 March 2021	29 March 2021	05 April 2021	12 April 2021	19 April 2021	26 April 2021	03 May 2021	10 May 2021	17 May 2021	24 May 2021	31 May 2021	07 June 2021	14 June 2021	21 June 2021	28 June 2021	05 July 2021	12 July 2021	19 July 2021
Teaching Topic Route A		Recap of year 10 work	Quadratics			Perimeter, Area and Volume of more complex shapes (circles, cylinders, cones, pyramids and spheres)					Mocks		Fractions and Standard Form		Similarity and Congruence				Simultaneous equations, rearranging formulae and cubic/reciprocal graphs			Revision based on Mock analysis			Revision based on Mock analysis					Revision based on Mock analysis						Revision based on Mock analysis												
Teaching Topic Route B		Further Trigonometry, equations and graphs			Circle Theorems					MWI: Rearranging Formulae, Surds and Algebraic Fractions RCR: Vectors and Geometric Proofs		MWI: Direct and Inverse proportion, Non-linear graphs and transformations of functions RCR: Vectors and Geometric Proofs				Revision based on Mock analysis				Revision based on Mock analysis					Revision based on Mock analysis						Revision based on Mock analysis																	