

# Oasis Media City Mathematics Curriculum Plan



**Subject:** Mathematics

**Head of Subject:** Dina Jaidy

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This document is an overview of the learning that students will experience within their subject area. This is a working document that provides teachers, students and parents with a map of key content that will be delivered during lessons in each year group.

Year	Half Term:	1 (7 weeks)	2 (8 weeks)	3 (6 weeks)	4 (6 weeks)	5 (5 weeks)	6 (7 weeks)
<b>7</b> Mathematics Mastery	Topic(s):  <i>Science Link</i>	<b>Unit 1:</b> Laws of Arithmetic (1 Week) <b>Unit 2:</b> Axioms and Arrays (2 week) (including a few lessons on division additional to the current scheme) <b>Unit 3:</b> Positive and Negative Numbers (3 Weeks) <b>Revision Week</b>	<b>Unit 4:</b> Order of Operations (1 Week) <b>Unit 5:</b> Factors and Multiples (1 Week) <b>Unit 6:</b> Introducing Sequences, Expressions and Equations (3 weeks) <b>Revision Week</b>	<b>Unit 13:</b> Prime Factor Decomposition (2 Weeks) <b>Unit 14:</b> Fractions (2 Week) <b>Unit 15:</b> All Operations acting on Fractions (2 Weeks)	<b>Unit 16:</b> Ratio (2 weeks) <b>Unit 17:</b> Percentage (3 weeks) <b>Revision</b> (1 Week)	<b>Unit 7:</b> Angles (2 weeks) <b>Unit 8:</b> Classifying 2D Shapes (2 weeks) <b>Unit 9:</b> Constructing Triangles and Quadrilaterals (2 Weeks)	<b>Unit 10:</b> Co-ordinates (2 weeks) <b>Unit 11:</b> Area of 2D Shapes (2 Weeks) <b>Unit 12:</b> Transforming 2D Figures (2 weeks)
	<b>Hegarty Skills:</b> Higher skills in red	Commutative Law 7 Associative Law 8 Addition/Subtraction 1 – 3/9 Distributive law 12 Multiplication/division 4 -6/ 10/11 Negative numbers 37 Add/Subtract Negative 39 – 41 Multiply/divide Negative 42/43	Order of operation 24/44/ <b>120/150</b> Factors 27 Multiples 33 LCM 34 HCF 31 Sequences 197/261/263 Form Expressions 151-154 Collect Like Terms 156/157 Expand 160 Factorise 168/169 <b>Solve 177 - 183</b>	Prime numbers 28 Prime Factors 29/30 HCF 32 LCM 35 Equivalent Fractions 59/61 Convert Mixed numbers/improper 63/63 Add/Subtract Like Fractions 65 Add/Subtract Unlike Fractions 66 Multiply Fractions 68/69 Divide Fractions 70 Reciprocals 71	Compare ratio 328 Writing ratio 331 Ratio/fractions 330 Equivalent Fractions 329 Divide by ratio 332 – 334 FDP 73 – 76 Percentage of amounts 84-87 Percentage increase/decrease 88 – 90 Reverse % 96 Solve problems 98	Measure angles 458 – 461 Identify angles 455 Angles in straight lines 477/478 Angles around a point 812 – 814 Vertically opposite 480 Complementary Angles 815 Angles on parallel Lines 481 – 483 Types of triangles 823 Angles in triangle 485 – 487 Quadrilaterals 824 – 826 Angles in quadrilaterals 560 Construct triangles 683	Co-ordinates 199 Midpoints 200 Area of rectangles 554 Area of triangle 557/558 Compound Shape 555 Area of parallelograms 556 Area of trapeziums 559 Enlargement 642 – 647 Rotation 648/649 Reflection 639 – 641 Translation 637/638
	Key Words(1 p/wk):	WK1: Integer WK2: Associativity WK3: Commutativity WK4: Distributivity WK5: Equality WK6: Inverse Operation WK7: Reciprocal	WK1: Equal Priority WK2: Unequal Priority WK3: Product WK4: Sum WK5: BIPS WK6: Factor WK7: Expression	WK1: Prime WK2: Product WK3: Equivalent WK4: Operation WK5: Simplest Form	WK 1: Mixed Number WK2: Ratio WK3: Quantity WK4: Percentage Wk5: Equivalent Wk6: Revise	WK1: Protractor WK2: Reflex WK3: Classify WK4: Two Dimensional WK5: Construct WK6: Quadrilateral	WK1: Co-ordinate WK2: Axis WK3: Area WK4: Squared WK5: Transform WK6: Symmetry
	Link to context/Character/creators:	Mental Strategies of addition and subtraction/Basic Numeracy	Manipulation of Decimals- Context of money and wider use of units of measure/ product design	Introduction to algebraic manipulation/coding and software engineering	Calculating with fractions/ Calculating amounts in recipes/food preparation	Properties of angles, Triangles and quadrilaterals-awareness of space/architecture and design	Percentages and data interpretation/statistical analysis

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	Assessment Type:	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Year Assessment
<b>8 Mathematics Mastery</b>	Topic(s): <i>Science Link</i>	<b>Year 7 Unit 13: Prime Factors (1 Week)</b> <b>Year 7 Unit 14: (Conceptualising and comparing fractions. (2 weeks))</b> <b>Year 7 Unit 15: All Operations acting on fractions. (2 weeks)</b> <b>Year 7 unit 17: Percentages (2 weeks)</b>	<b>Year 8 Unit 1: Sequences (2 weeks)</b> <b>Year 8 Unit 2: Forming and Solving Equations (2 weeks)</b> <b>Year 8 Unit 3: Forming and Solving Inequalities (2 weeks)</b> <b>Revision (2 weeks)</b>	<b>Year 7 Unit 12: Transforming 2-D Figures (2 weeks)</b> <b>Year 8 Unit 4: Linear Graphs (2 weeks)</b> <b>Year 7 Unit 16: Ratio (2 weeks)</b>	<b>Year 8 Unit 5: Ratio (2 weeks)</b> <b>Year 8 Unit 7: Real Life Graphs and Rates of Change (2 weeks)</b> <b>Year 8 Unit 8: Direct and inverse proportion (2 weeks)</b>	<b>Year 8 Unit 9: Univariate Data (2 weeks)</b> <b>Year 8 Unit 10: Bivariate Data (2 weeks)</b>	<b>Year 8 Unit 5: Accuracy and Estimation (2 weeks)</b> <b>Year 8 Unit 13: Area of 2D shapes (add this on) Circles and Composite Shapes. (2 Weeks)</b> <b>Year 8 Unit 14: Volume and Surface Area of Prisms. (2 Weeks)</b>
	<i>Hegarty Skill</i> <b>Higher skills in red</b>	<b>Prime numbers 28</b> <b>Prime Factors 29/30</b> <b>HCF 32</b> <b>LCM 35</b> <b>Equivalent Fractions 59/61</b> <b>Convert Mixed numbers/improper 63/63</b> <b>Add/Subtract Like Fractions 65</b> <b>Add/Subtract Unlike Fractions 66</b> <b>Multiply Fractions 68/69</b> <b>Divide Fractions 70</b> <b>Reciprocals 71</b> <b>FDP 73 – 76</b> <b>Percentage of amounts 84-87</b> <b>Percentage increase/decrease 88 – 90</b> <b>Reverse % 96</b> <b>Solve problems 98</b>	<b>Fibonacci Sequence 263</b> <b>Important Sequences 261</b> <b>Term to term 197</b> <b>Nth term 198</b> <b>Expressions, identities and formulae 154</b> <b>Form equations 176</b> <b>Solve equations 178 – 176</b> <b>Inequalities 265 – 268</b> <b>Solve inequalities 269 - 271</b>	<b>Enlargement 642 – 647</b> <b>Rotation 648/649</b> <b>Reflection 639 – 641</b> <b>Translation 637/638</b> <b>Co-ordinates 199</b> <b>Mid points 200</b> <b>Plotting graphs 205/206</b> <b>Gradient 201 – 204</b> <b>y = mx + c 207 – 213</b> <b>Compare ratio 328</b> <b>Writing ratio 331</b> <b>Ratio/fractions 330</b> <b>Equivalent Fractions 329</b> <b>Divide by ratio 332 – 334</b>	<b>Recipes 739 – 742</b> <b>Best Buys 763 – 772</b> <b>Currency conversion 707 – 708</b> <b>Convert time 709 – 710</b> <b>Speed 716 – 724</b> <b>Density 725 – 731</b> <b>Distance-time graphs 874 – 879</b> <b>Real life graphs 894 – 895</b> <b>Conversion graphs 712 – 713</b> <b>Direct proportion 339 – 341</b> <b>Algebraic direct proportion 343 – 345</b> <b>Indirect proportion 342</b> <b>Algebraic Indirect proportion 346 – 347</b> <b>Proportion graphs 348</b>	<b>Mean 405 – 408</b> <b>Mean from Frequency table 417 – 418</b> <b>Mode 404</b> <b>Mode from Frequency table 415</b> <b>Median 409</b> <b>Median from frequency table 416</b> <b>Range 410</b> <b>Range from frequency table 414</b> <b>Questionnaire 399 – 400</b> <b>Types of data 392 – 393</b> <b>Scatter Graphs 453 - 454</b>	<b>Rounding decimals 56</b> <b>Significant Figures 130</b> <b>Estimation 131</b> <b>Accuracy 132</b> <b>Area of circles 539 – 543</b> <b>Circumference 534 – 538</b> <b>3D shapes 829 – 830</b> <b>Nets 833 – 836</b> <b>Volume of cuboids 568 – 569</b> <b>Volume of prisms 570 – 571</b> <b>Volume of cylinders 572 – 574</b> <b>Part Cylinders 575</b> <b>Surface area of cuboids 584</b> <b>Surface area of prisms 585</b> <b>Surface area of cylinders 586</b> <b>Convert units of area 700 – 701</b> <b>Convert units of volume 702 – 703</b>
	Key Words(1 p/wk):	WK1: Prime WK2: Product WK3: Sum WK4: Difference WK5: Product WK6: Quotient	WK1: Term WK2: Sequence WK3: Equation WK4: Solve WK5: Integer WK6: Inequality	WK1: Draw WK2: Accuracy WK3: Parallel WK4: Unit WK5: Area WK6: Trapezium	WK1: Percentage WK2: Change WK3: Ratio WK4: Equivalent WK5: Rate WK6: Graph	WK1: Primary WK2: Construct WK3: Interpret WK4: Compare WK5: Statistical	WK1: Significant WK2: Circumference WK3: Net WK4: Surface Area WK5: Volume WK6: Composite

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		Wk7: Percent	Wk7: Solution Wk8:				Wk7: Solid
	Link to context/Character:	All Numbers are built from multiplying primes/foundation of Mathematics	Pattern spotting (banking and investment trend identification) Problem solving algebraically	Properties of shapes around us/Design	Relationship between quantities- Recipes- culinary skills, construction	Collecting and representing data-when is data misleading?/Statistical analysis	Estimation and how it corresponds to Area and volume of solids/Engineering
	Assessment Type:	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment
9 Mathematics Mastery	Topic(s): <i>Higher Topics in red</i>  <i>Science Link</i>	<b>Unit 1:</b> coordinates (1 week) <b>Unit 2:</b> linear graphs (2 weeks) <b>Unit 3:</b> direct and inverse proportion (1 week) <i>Algebraic direct and indirect</i>  + 2 lessons on number <b>15.1</b> I can round numbers to decimal places <b>15.2</b> I can round numbers to significant figures	<b>Averages (3 lessons)</b> <b>18.1</b> I can find the mean of a set of data <b>18.2</b> I can find the mode and median of simple data sets <b>18.3</b> I can find the mean from a frequency table <b>Unit 5:</b> sequences (1.5 weeks) <b>Unit 6:</b> expanding and factorising brackets (2 weeks) <i>Expanding Triple brackets</i> <b>Unit 7:</b> changing the subject of a formula (2 weeks)	<b>Unit 8:</b> constructions (1 week) <b>Unit 9:</b> congruence and similarity (2 weeks) <b>Unit 10:</b> triangles and quadrilaterals (1 week) <b>Unit 11:</b> angles in polygons (1 week)  + add faces, vertices edges, nets and names of 3D shapes added to the Knowledge Organisers	<b>Unit 12:</b> linear equations and inequalities (2 weeks) <b>Unit 13:</b> simultaneous equations (1 week) <i>Graphical representation</i> <b>Unit 14:</b> quadratic and other graphs (2 weeks)	+6 lessons on geometry (including lots of semicircles, quarter circles and compound shapes questioning on perimeter and area)  <b>16.1</b> I can recognise and label parts of a circle <b>16.2</b> I can find the circumference of a circle <b>16.5</b> I can find the area of a circle <b>18.1</b> I can find volume by counting cubes <b>18.2</b> I can understand volume and capacity <b>18.3</b> I can find the volume of prisms and cylinders  <b>Unit 16:</b> transformations (2 weeks) <i>Negative and fractional enlargement</i> <b>Unit 17:</b> probability (Week 1 of 2)	<b>Unit 17:</b> probability (Week 2 of 2) <b>Unit 18:</b> simple proof (1 week) <b>Unit 19:</b> mean from grouped data (1 week) <b>Unit 20:</b> comparing distributions (2 weeks) (Include pictograms and tally Charts) <b>Unit 21:</b> scatter graphs (1 week)
	<b>Hegarty Skills:</b> <i>Higher skills in Red.</i>	Co-ordinates 199 Mid points 200 Plotting graphs 205/206 Gradient 201 – 204 $y = mx + c$ 207 – 213 parallel lines 214 Perpendicular lines 215/216 Real Life 894/895 Recipes 739 – 742 Direct Proportion 339/430/341 <b>Algebraic Direct proportion</b> 343 – 345 Indirect proportion 342	Averages Mean 405-408 Mean from a table 417-418 Mode 404 Mode from a table 415 Median 409 Median from a table 416 Important sequences 197/264/261/263 Nth term 198 Picture sequences 196 Expand Linear 160/161 Expand Double 162 – 164	Perpendicular bisector 660/662/663 Angle bisector 661 Triangles 683 Congruency 680/681/682 Congruent Triangles 684 – 690 Enlargement 642 – 645 <b>Negative Enlargement</b> 646/647 Similar Shapes 608 – 613 Similar Problems 614 Types of triangle 823	Form Equations 176 Solve Equations 178 – 186 Inequalities 265 – 268 Solve inequalities 269 – 271 Solve Simultaneous Equations 190 – 195 Graphical Simultaneous Equations 218/219 Plot Quadratic Graphs 251 Plot Reciprocal 300/301 Plot Exponential 302	Parts of a Circle 592 Circumference 537 Area of a Circle 541 Volume counting cubes 567 Volume of a cuboids 568-569 Volume of Prisms 570-571 Volume of Cylinders 572-575 Translation 637/638 Reflection 639/640/641 Rotation 648/649 Describe Transformations 650 – 654 Combine Transformations 656/ 657 Probability language 349/350 Experimental/Reflective Frequency 355/356/357	Discrete/continuous 393 Estimate Mean 417/418 Stem and Leaf 430 – 433 Scatter Graphs 453/454

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		<b>Algebraic Indirect proportion</b> 346/346	<b>Expand triple</b> 166 <b>Factorise Linear</b> 168/169 <b>Expressions, identities and formulae</b> 154 <b>Substitution</b> 780 – 787 <b>Rearranging Formulae</b> 280 – 286	<b>Properties of Quadrilaterals</b> 824 – 826 <b>Interior angles in polygons</b> 561/562 <b>Exterior angles in polygons</b> 563/564		<b>Listing Outcomes</b> 352/670 <b>Venn Diagrams</b> 377 – 380 <b>Probability using Venn Diagrams</b> 383 – 391	
	<i>Key Words(1 p/wk):</i>	WK1: Coordinate WK2: Linear WK3: Gradient WK4: Inverse WK5: Scale WK6: Direct Proportion Wk7: Indirect Proportion	WK1: Averages WK2: Sequence WK3: Difference WK4: Expand WK5: Factorise WK6: Formula WK7: Subject Wk8: Simplify	WK1: Construct WK2: Congruent WK3: Similar WK4: Quadrilateral WK5: Polygons WK6: Sum	WK1: Inequality WK2: Linear WK3: Simultaneous WK4: Quadratic WK5: Graph WK6: Substitute	WK1: Circumference WK2: Volume WK3: Transformation WK4: Translation WK5: Probability	WK1: Sum to one WK2: Proof WK3: Interval WK4: Compare WK5: Distribution WK6: Correlation Wk7: Positive
	<i>Link to context/Character/Careers:</i>	Proportion and scale/ Hair dressing, food preparation, Design	Algebra in real life-coding and software engineering	Spatial awareness and dexterity through construction/ architecture	Resilience and problem solving/relates to all careers	Ancient Egyptian architecture links to trigonometry/ architecture and design	Comparison of data through averages-how data can be misleading/statistical analysis
	<i>Assessment Type:</i>	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment	End of Unit topic tests+Growth lessons and Mathematics Mastery End of Half Term Assessment
<b>10 Foundation Mathematics Mastery</b>	<i>Topic(s):</i>  <i>Science Link</i>	<b>Unit 1:</b> factors, multiples and primes <b>Unit 2:</b> powers and roots <b>Unit 3:</b> indices	<b>Unit 4:</b> standard form <b>Unit 6:</b> sequences <b>Unit 6:</b> algebra (KS3 review) <b>Unit 7:</b> quadratics <b>Unit 8:</b> quadratic graphs	<b>Unit 9:</b> simultaneous equations <b>Unit 10:</b> fractions, decimals and percentages <b>Unit 11:</b> percentages <b>Unit 12:</b> probability, sets and Venn diagrams	<b>Unit 13:</b> transformations <b>Unit 14:</b> 2D shapes including circle geometry <b>Unit 15:</b> 3D shapes <b>Unit 16:</b> volume and surface area	<b>Unit 17:</b> ratio review <b>Unit 18:</b> compound measure and direct and indirect proportion <b>Unit 19:</b> Pythagoras' Theorem review <b>Unit 20:</b> similarity and Trigonometry	<b>Unit 21:</b> averages and range <b>Unit 22:</b> data collection and sampling <b>Unit 23:</b> presenting data including scatter graphs
	<i>Hegarty Skills:</i>	<b>Factors 27</b> <b>Primes 28</b> <b>Multiples 33</b> <b>Calculating with roots</b> 100- 103 <b>Surds</b> 111- 115 <b>Index Laws</b> 104 -110	<b>Standard Form</b> 122 -124 <b>Calculate with Standard Form</b> 125-127 <b>Nth term linear</b> 198 <b>Nth term quadratic</b> 247 – 250 <b>Geometric Sequences</b> 264 <b>Expand brackets</b> 162 – 164 <b>Expand Triple brackets</b> 166 <b>Factorise quadratics</b> 223/224/226 <b>Solve Quadratics</b> 230 – 233 <b>Quadratic Formula</b> 241/242 <b>Quadratic Worded</b> 245	<b>Solve simultaneous Equations</b> 190 – 193 <b>Form Simultaneous equations</b> 195 <b>Graphical Simultaneous equations</b> 218/219 <b>FDP 149</b> <b>Percentages (Increase Decrease, reverse and percentage change)</b> 88-97 <b>Relative Frequency</b> 357 <b>Mutually Exclusive</b> 354 <b>Sample Space</b> 359 <b>Frequency trees</b> 368/369 <b>Tree diagrams (with replacement)</b> 361 – 363 <b>Tree diagrams (without replacement)</b> 364 – 367 <b>Harder Tree Diagrams</b> 389/390 <b>Venn diagrams</b> 372/373 <b>Set notation</b> 374 – 380	<b>Enlargement</b> 642 – 647 <b>Rotation</b> 648/649 <b>Reflection</b> 639 – 641 <b>Translation</b> 637/638 <b>Combine Transformations</b> 656/657 <b>3D Shapes</b> 829 – 836 <b>Plans &amp; Elevations</b> 837 – 844 <b>Volume of prisms</b> 570 -574 <b>Surface area of prisms</b> 584 – 586 <b>Volume of spheres</b> 580/581 <b>Volume of cones</b> 576/577 <b>Volume of pyramids</b> 579 <b>Surface area of cones and spheres</b> 587/588	<b>Ratio 328-338</b> <b>Distance Time Graphs</b> 876-878 <b>Pythagoras</b> 497 – 504 <b>Trigonometry</b> 508 – 515 <b>Exact Values</b> 845 – 849 <b>3D Pythagoras</b> 505 – 507 <b>3D Trigonometry</b> 854 – 863 <b>Similarity</b> 608 – 614 <b>Similar area/volume</b> 615 – 62 <b>Congruency</b> 680 – 682 <b>Prove congruency</b> 684 – 690	<b>Averages</b> <b>Mean</b> 405-408 <b>Mean from a table</b> 417-418 <b>Mode</b> 404 <b>Mode from a table</b> 415 <b>Median</b> 409 <b>Median from a table</b> 416 <b>Data Collection Tally</b> 401 <b>Sampling</b> 394/395 <b>Stratified Sampling</b> 396 – 398 <b>Scatter Diagrams</b> 453-454 <b>Two way Tables</b> 422 – 424

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				Venn diagrams probability 383 – 388 Harder Venn Diagrams 391			
	Key Words(1 p/wk):	WK1: Multiple WK2: Factor WK3: Prime WK4: Root WK5: Index WK6: Indices WK7: Reciprocal WK8: Revision	WK1: Standard Form WK2: Sequence WK3: Quadratic WK4: Expand WK5: Factorise WK6: Graph WK7: Root	WK1: Simultaneous WK2: Equation WK3: Percentage WK4: Decimal WK5: Probability WK6: Venn	WK1: Transformation WK2: Translation WK3: 2D WK4: 3D WK5: Volume WK6: Surface Area	WK1: Ratio WK2: Direct Proportion WK3: Pythagoras Theorem WK4: Similarity WK5: Congruence WK6: Trigonometry	WK1: Mean WK2: Sampling WK3: Stratified WK4: Data WK5: Scatter Diagram WK6: Two Way Table Wk7: Statistical
	Assessment Type:	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE
<b>10 Higher (Set 1 and Set 2 Only) Mathematics Mastery</b>	Topic(s): <i>Science Link</i>	<b>Unit 1:</b> powers and roots <b>Unit 2:</b> surds and irrational numbers <b>Unit 3:</b> indices	<b>Unit 4:</b> standard form <b>Unit 5:</b> sequences <b>Unit 6:</b> quadratics <b>Unit 7:</b> quadratic graphs <b>Unit 8:</b> algebraic fractions	<b>Unit 9:</b> simultaneous equations <b>Unit 10:</b> fractions, decimals and percentages <b>Unit 11:</b> percentages <b>Unit 12:</b> probability, sets and Venn diagrams	<b>Unit 13:</b> transformations <b>Unit 14:</b> upper and lower bounds <b>Unit 15:</b> 2D shapes including circle geometry <b>Unit 16:</b> 3D shapes <b>Unit 17:</b> volume and surface area	<b>Unit 18:</b> ratio review <b>Unit 19:</b> compound measure and direct and indirect proportion <b>Unit 20:</b> Pythagoras' Theorem review <b>Unit 21:</b> similarity and Trigonometry <b>Unit 22:</b> 3D Trigonometry and Pythagoras	<b>Unit 23:</b> averages and range <b>Unit 24:</b> data collection and sampling <b>Unit 25:</b> presenting data including scatter graphs <b>Unit 26:</b> further statistical diagrams
	<b>Hegarty Skills:</b>	Calculating with roots 100- 103 Surds 111- 115 Expand Surds 116/117 Rationalise the denominator 118/119 Index Laws 104 -110	Standard Form 122 -124 Calculate with Standard Form 125-127 Nth term linear 198 Nth term quadratic 247 – 250 Geometric Sequences 264 Expand brackets 162 – 164 Expand Triple brackets 166 Factorise quadratics 223/224/226 Solve Quadratics 230 – 233 Quadratic Formula 241/242 Quadratic Worded 245 Roots 253 Y- intercept 252 Turning point 255/256 Symmetry 254 Plot Quadratics and find solutions 251/260 Plot reciprocal 300/301 Simplify Algebraic Fractions 229	Solve simultaneous Equations 190 – 193 Form Simultaneous equations 195 Graphical Simultaneous equations 218/219 Quadratic Simultaneous equations 246 FDP 149 Percentages (Increase Decrease, reverse and percentage change) 88-97 Relative Frequency 357 Mutually Exclusive 354 Sample Space 359 Frequency trees 368/369 Tree diagrams(with replacement) 361 – 363 Tree diagrams (without replacement) 364 – 367 Harder Tree Diagrams 389/390 Venn diagrams 372/373 Set notation 374 – 380	Enlargement 642 – 647 Rotation 648/649 Reflection 639 – 641 Translation 637/638 Combine Transformations 656/657 3D Shapes 829 – 836 Plans & Elevations 837 – 844 Bounds 137 – 139 Volume of prisms 570 -574 Surface area of prisms 584 – 586 Volume of spheres 580/581 Volume of cones 576/577 Volume of pyramids 579 Frustums 578 Surface area of cones and spheres 587/588	Ratio 328-338 Distance Time Graphs 876-878 Similarity 608 – 614 Similar area/volume 615 – 62 Congruency 680 – 682 Prove congruency 684 – 690 Bearings 492 – 496 Pythagoras 497 – 504 Trigonometry 508 – 515 Exact Values 845 – 849 3D Pythagoras 505 – 507 3D Trigonometry 854 – 863 1/2abSinC 517 – 519 Sine Rule 520 -525 Cosine Rule 526 - 530 Combined 531-533	Averages Mean 405-408 Mean from a table 417-418 Mode 404 Mode from a table 415 Median 409 Median from a table 416 Data Collection Tally 401 Sampling 394/395 Stratified Sampling 396 – 398 Scatter Diagrams 453-454 Two way Tables 422 – 424

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			<b>Expressions with algebraic fractions</b> 172 <b>Solve Algebraic fractions</b> 187	<b>Venn diagrams probability</b> 383 – 388 <b>Harder Venn Diagrams</b> 391			
	Key Words(1 p/wk):	WK1: Index WK2: Root WK3: Surd WK4: Irrational WK5: Rationalise WK6: Indices WK7: Reciprocal WK8: Revision	WK1: Standard Form WK2: Sequence WK3: Quadratic WK4: Expand WK5: Factorise WK6: Graph WK7: Algebraic Fraction	WK1: Simultaneous WK2: Equation WK3: Percentage WK4: Decimal WK5: Probability WK6: Venn	WK1: Transformation WK2: Bound WK3: 2D WK4: 3D WK5: Volume WK6: Surface Area	WK1: Ratio WK2: Direct Proportion WK3: Pythagoras Theorem WK4: Similarity WK5: Congruence WK6: Trigonometry	WK1: Mean WK2: Sampling WK3: Stratified WK4: Data WK5: Scatter Diagram WK6: Two Way Table Wk7: Statistical
	Assessment Type:	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons Mathematics mastery end of topic test AQA Mock Papers during PPE
<b>11 Foundation AQA (AllAbout Maths) (Set 3,4,5)</b>	Topic(s):  Continue with AQA SOW then move on to QLA topics for individual classes from Pinpoint Learning  <a href="#">Science Link</a>	<b>Inequalities</b> ( 1 week) <b>265-277</b> Simultaneous Equations (2 weeks) <b>190-195</b> Algebra and Graphs (2 weeks) <b>solving linear equations 176-195</b> <b>Solving Equations and straight lines 217-220</b> Sketching Graphs (1 week) <b>Straight line graphs 206-216</b> Direct proportion (1 week) <b>339-341 and 343-345</b>	Inverse Proportion (1 week) <b>342, 346, 347</b> Trigonometry including exact trig values(2 week) <b>508-515</b> <b>Exact Trig 845 (Youtube hand trick)</b> Solving Quadratic Equations (2 week) <b>230-234</b> Quadratic Graphs (1 week) <b>251-256</b> Growth and Decay (1 week) <b>88-98</b> Revision (1 week- as per PPE timetable)	Vectors (2 weeks) <b>622-627</b> Congruence and Similarity (2 weeks) <b>680-682, 611-614</b> Properties of Polygons (1 week) <b>560-565</b>  Move on to Revision using QLA from November PPEs for individual classes using Pinpoint Learning	Revision using QLA from November PPEs Pinpoint Learning	Revision using QLA from March PPEs Pinpoint Learning	Revision using QLA from March PPEs Pinpoint Learning
	Hegarty Skills:	Straight line graphs 206-216 Direct proportion (1 week) 339-341 and 343-345					
	Key Words(1 p/wk):	WK1: Inequality WK2: Simultaneous	WK1: Inverse WK2: Trigonometry	WK1: Vector WK2: Notation			

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		<p>WK3: Solve WK4: Graph WK5: Coordinates WK6: Substitute Wk7: Proportion</p>	<p>WK3: Trigonometric Ratios WK4: Solve WK5: Quadratic WK6: Compound/Depreciate Wk7: Revision</p>	<p>WK3: Similar WK4: Congruent WK5: Polygon WK6: Revision</p>			
	<p>Assessment Type:</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>
<p><b>11 Higher AQA (AllAbout Maths) (Set 1)</b></p>	<p>Topic(s): Continue with AQA SOW then move on to QLA topics for individual classes from Pinpoint Learning</p> <p><i>Science Link</i></p> <p><b>Hegarty Skills:</b></p>	<p>Numerical Methods (1 week) <b>321-323</b> Algebraic Fractions (2 weeks) <b>172, 187, 229, 244</b> Equation of a circle (1 week) <b>314-320, 778,779</b> Further equations of graphs (2 weeks) <b>252-260</b> <i>Scatter graphs</i> (1 week)<b>453-454</b></p>	<p>Circle Theorems (1 week) <b>592-606, 816-820</b> Simultaneous equations (2 weeks) <b>Linear 190-195, Graphically 218,219, With quadratics 246 Graphically with quadratics 259</b> Direct and inverse proportion (1 week) <b>339-348</b> Pythagoras Theorem and basic Trigonometry (2 weeks) <b>Pythagoras 498-507</b> <b>Right angle Trigonometry 508-515</b> <b>Exact trig 845 (Youtube hand trick)</b> Sine and Cosine Rules (1.5 week) <b>Non-Right Angle Trigonometry 516-533</b></p> <p>Revision (1 week) as per PPE timetable</p>	<p><i>Sketching graphs</i> (1 week) <b>298-305</b> <i>Inequalities</i> (1 week) <b>265-272</b> Growth and Decay (1 week) <b>88-98</b> Vectors (1 week) <b>622-636</b> Transforming functions (1 week) <b>307-313</b></p>	<p><i>Gradient and rate of change</i> (2 weeks) <b>887-890</b> Pre-calculus and area under the curve ( 2 weeks) <b>891-893</b></p> <p>Move on to Revision using QLA from November PPEs for individual classes using Pinpoint Learning</p>	<p>QLA from March PPEs and PinPoint Learning</p>	<p>QLA from March PPEs and Pinpoint Learning</p>

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	Key Words(1 p/wk):	WK1: Iteration WK2: Equivalent WK3: Solve WK4: Equation WK5: Reciprocal WK6: Correlation Wk7: Line of best fit	WK1: Theorem WK2: Simultaneous WK3: Solutions WK4: Constant of Proportionality WK5: Trigonometric Ratios WK6: Sine Wk7: Cosine Wk8: Revision	WK1: Substitute WK2: Inequality WK3: Compound/Depreciate WK4: Vector Notation WK5: Transformation	WK1: Gradient WK2: Rate of Change WK3: Area		
	Assessment Type:	End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE	End of Unit topic tests+GROWTH lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE	End of Unit topic tests+GROWTH lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE	End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE	GCSE Examination
<b>11 Higher AQA (AllAbout Maths) (Set 2- DJA Only)</b>	Topic(s): Continue with AQA SOW then move on to QLA topics for individual classes from Pinpoint Learning  <a href="#">Science Link</a>  <b>Hegarty Skills:</b>	Numerical Methods (1 week) <b>321-323</b> Algebraic Fractions (2 weeks) <b>172, 187, 229, 244</b>  <b>Assessment Week</b>  <a href="#">Scatter graphs</a> (1 week) <b>453-454</b>	Pythagoras Theorem and basic Trigonometry (2 weeks)  <b>Pythagoras 498-507</b> <b>Right angle Trigonometry 508-515</b> <b>Exact trig 845 (Youtube hand trick)</b>  Sine and Cosine Rules (1 week)  <b>Non-Right Angle Trigonometry 516-533</b>  Circle Theorems (1 week) <b>592-606, 816-820</b>  Simultaneous equations (2 weeks)  <b>Linear 190-195, Graphically 218,219, With quadratics 246 Graphically with quadratics 259</b>	<a href="#">Sketching graphs</a> (1 week) <b>298-305</b>  <a href="#">Inequalities</a> (1 week) <b>265-272</b>  Growth and Decay (1 week) <b>88-98</b>  Vectors (1 week) <b>622-636</b>  Move on to Revision using QLA from November PPEs for individual classes using Pinpoint Learning  <u>Topics for Independent Study</u>  Equation of a circle (1 week) <b>314-320, 778,779</b>  Further equations of graphs (2 weeks) <b>252-260</b>  Pre-calculus and area under the curve (2 weeks) <b>891-893</b> Transforming functions (1 week) <b>307-313</b>	QLA from March PPEs and PinPoint Learning	QLA from March PPEs and PinPoint Learning	QLA from March PPEs and Pinpoint Learning



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			<p><i>Direct and inverse proportion (1 week)</i> <b>339-348</b></p> <p><i>Revision (1 week) as per PPE timetable</i></p>	<p><i>Gradient and rate of change (2 weeks)</i> <b>887-890</b></p>			
Key Words(1 p/wk):	<p>WK1: Iteration WK2: Equivalent WK3: Solve WK4: Equation WK5: Reciprocal WK6: Correlation Wk7: Line of best fit</p>	<p>WK1: Pythagoras Theorem WK2: Trigonometric Ratios WK3: Non-Right Angle WK4: Circle Theorem WK5: Simultaneous WK6: Direct Proportion Wk7: Inverse Proportion Wk8: Revision</p>	<p>WK1: Graph WK2: Inequality WK3: Compound/Depreciate WK4: Vector Notation</p>				
Assessment Type:	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+GROWTH lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+GROWTH lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>	<p>End of Unit topic tests+Growth lessons AQA Practice Papers pre PPE and AQA Mock Papers during PPE</p>		

## Key Questions:

1. What is the overarching intent for your curriculum?

To develop knowledge, enthusiasm and a love of Maths in our students that will enable them to be successful in their GCSE examinations, go on and achieve their chosen career paths with a specific emphasis on encouraging the learning of Maths post-GCSE.

2. How does this curriculum build student's knowledge of the world around them both locally and nationally?

The KS3 Mathematics Mastery Curriculum gives our students the skills they need to be numerate and financially aware of their surroundings through context-based learning. This develops their ability to spot the Maths around them and to carry this through to KS4 where their results for practice examinations are input into Pinpoint Learning that compares their progress against other schools nationally thus enabling our students to see how they fit in the bigger picture both compared to other schools in the area and national basis.

3. How is this curriculum designed to engage students and develop a passion for the subject?

Mathematics Mastery is a prescribed Scheme of work for Oasis Academy that encourages a depth of understanding and knowledge of Mathematical concepts. This at KS3 gives our students a promising start to their secondary Mathematics education as it is designed to show the beauty of Maths by exposing our students to Mathematics in context; an example of this is showing our students a variety of number systems that have either been used historically or are still in use around the world. This steps away from just learning Maths by rote as it encourages our students to see that Maths is an exciting companion to every day life through furthering their knowledge of Maths and as this develops through to KS4 the added parameter of GCSE preparation opens the door for our students to not only pass but to excel in the subject and continue their Maths education post 16.

4. How does this curriculum cater for the needs of our students?

Our curriculum enables all our students to access the Maths curriculum through differentiated outcomes and challenges in addition to exam style questioning and preparation at KS4. Mathematics Mastery at KS3, and Year 10. The Continuation of the AQA Scheme of Work for Year 11 are all differentiated by our teachers to suit our students' individual needs, be they SEN related (supported by our SENCO), designed to enable access of our LPA and MPA students in addition to providing challenge to our HPA students. The linear setting of our groups this year and the reassessing of these sets following data capture windows will help to make sure our students are all taught at a level and pace that is right for them.

5. How is assessment used to improve learning?

End of topic assessments to identify key areas of improvement and allocated Growth Lesson time to respond to growth tasks are two formative assessment methods that we employ on a day-to-day basis. These tie in with End of Term assessments that are used in data capture windows to grade students and ensure they are both accurately set and supported. Pixl and Pinpoint learning are tools we use at KS4 to identify individual areas of weakness for our students following End of Term Assessments for year 10 and PPE examinations for year 11. Resources are then produced to help students overcome these weaknesses, quality first teaching of these problem areas is then employed to address these areas for improvement.

6. What skills will students develop that can be used in other subject areas and beyond their school life?

Our curriculum provides our students with arithmetic skills that enable them to be financially numerate; these skills are transferable across all subject areas and are essential for everyday life. Reasoning and Problem solving is built in within all our schemes of work as it is of high priority for the Maths GCSE- this skill promotes resilience across all areas of the curriculum and will see our students in good stead beyond their school life. Cross-curricular topics are shared with other departments such as Speed Distance and Time with Science as it is important for us to mirror our teaching of these cross-curricular topics. Statistical analysis and the use of averages is another area that is transferable to Geography and History in addition to the Statistics Programme of study that we offer our year 11 students.

7. How is learning planned to progressively develop pupil's knowledge and understanding over time?

Mathematics Mastery at KS3, and Year 10 then the continuation of the 2<sup>nd</sup> year of the AQA SOW at year 11 provide the layering of knowledge, and the interleaving and overlearning of mathematical concepts that develop over time; these progressively offer opportunities for depth of understanding. During our differentiated lessons we focus highly on planning lessons that start with Do Now Activities designed for the recall of knowledge and encouraging students to overlearn by seeing the same style of targeted questions for a week. The main part of the lesson relies on modelling how questions should be answered with high level questioning to check understanding throughout. Students are then required to work independently and practice the skills they are taught- Maths is a subject where practice is key for Mastery and it is highly emphasised within our department. Students are required to self/peer assess every lesson to make sure they have instant feedback and they are required to reflect on their learning at the end of each lesson.

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8. How is learning sequenced over time to ensure students retain knowledge and are more successful at recalling?

We use Knowledge Organisers for all year groups for home learning to encourage students to recall key concepts from a half term. These are also shared on the school website in addition to the curriculum overview so that students have access to what we are learning and that parents and carers are involved in their children's Learning.

KS3 starters that target areas of development provide the opportunity to both recall and improve learning of essential topics.

End of topic assessments ensure that students do not forget a topic at the end of the lesson as this is revisited at the end of a topic and then again at the end of a term. Students are also given the opportunity to reflect and respond to feedback that is given to them during Growth Task lessons.

9. How is this curriculum adapted to cater for the needs of students with different starting points?

The curriculum is scaffolded through differentiated outcomes by our teachers, and tasks are used to develop the learning of all our students enabling them to take pride in what they have achieved each lesson. The Do Now activities promote the recall of knowledge and the students are given the opportunity to improve on a daily basis. Modelling is also key to help students achieve our high expectations of them and what they can achieve. We agree as a department on the importance of providing all our students regardless of their starting points with tangible outcomes for every lesson; this keeps our students motivated and develops a love for the subject.

10. How will you ensure teachers have the relevant knowledge, expertise and practical skills to deliver your curriculum effectively?

For KS3 we all use the same resources provided by our OCL NLP and these are saved centrally- ideas on delivery are discussed and agreed upon during JPPA.

KS4 resources are also saved centrally for teachers to adapt but the MediaCity Lesson is followed by all teachers in the department to maintain consistency across the school. Any problem areas are discussed during JPPA.

Following regular learning walks, lesson observations, and book scrutiny staff will be given personalised feedback to help them improve their practice and if CPD needs arise these will be addressed to further support members of the department deliver the curriculum effectively.

Attending Whole School CPD is a requirement for all staff and I will ensure department staff attend.

The regular analysis of data will ensure that where students are underperforming intervention is introduced through our TA and that if it is a whole class issue I will provide coaching support to the teacher by identifying problem areas and providing achievable action steps to follow. This will be monitored to ensure progress is made.