Oasis Media City Mathematics Curriculum Plan

Subject: Mathematics **Head of Subject**: Dina Jaidy **Date updated**: 12.7.2022

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:	**Half Term**	**1** (7 weeks)	**2** (8 weeks)	**3** (7 weeks)	**4** (6 weeks)	**5** (5 weeks)	**6 (7 weeks)**
7 **Mathematics Mastery**	*Topic(s):* *Science Link*	***Unit 1 – numbers and numerals*** ***Unit 2 – axioms and arrays*** ***Unit 3 – factors and multiples*** ***Unit 4 – order of operation***	***Unit 5: Positive and Negative Numbers Practice Lessons needed*** ***Unit 6: Introducing Sequences, Expressions and Equations***	***Unit 7 – angles*** ***Unit 8 – classifying 2D shapes*** ***Unit 9 – constructing triangles and quadrilaterals***	***Unit 10 – co-ordinates*** ***Unit 11 – area of 2D shapes*** ***Unit 12 – transforming 2D figures***	***Unit 13 – prime factor decomposition*** ***Unit 14 – equivalent fractions*** ***Unit 15 All operations acting on fractions***	**Unit 16 – introduction to ratio** **Unit 17 – percentage**
	Hegarty Skills: Higher skills in red	**Commutative Law** 7 **Associative Law** 8 **Addition/Subtraction** 1 – 3/9 **Distributive law** 12 **Multiplication/division** 4 -6/ 10/11 **Order of operation** 24/44/120/150 **Factors** 27 **Multiples** 33 **LCM** 34 **HCF** 31	**Negative numbers** 37 **Add/Subtract Negative** 39 – 41 **Multiply/divide Negative** 42/43 **Sequences** 197/261/263 **Form Expressions** 151-154 **Collect Like Terms** 156/157 **Expand** 160 **Factorise** 168/169 **Solve** 177 – 183	**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** 68	**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** 637/63	**Prime numbers** 28 **Prime Factors** 29/30 **HCF** 32 **LCM** 35**Measure angles** 458 – 461 **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
	Key Words	*Integer, Associativity, Commutativity, Distributivity, Equality, Equal Priority, Unequal Priority, Product, Sum*	*Equal Priority, Unequal Priority, Product, Sum, BIPS, Factor, Expression*	*Protractor, Reflex, Classify, Two-Dimensional, Construct, Quadrilaterals*	*Co-ordinate, Axis, Area, Squared, Transform, SymmetrY*	*Prime, Product, Equivalent, Operation, Simplest Form*	*Mixed Number, Ratio, Quantity, Percentage, Equivalent, Revise*
	Link to context/Character /careers:	*Mental Strategies of addition and subtraction/Basic Numeracy*	*introduction to algebraic manipulation/coding and software engineering*	*Properties of angles, Triangles and quadrilaterals-awareness of space/architecture and design*	*Calculating with fractions/ Calculating amounts in recipes/food preparation*	*Calculating with fractions/ Calculating amounts in recipes/food preparation*	*Understanding ratio as a comparison of two or more quantities, in recipes, sharing and measurements* *Percentages and data interpretation/statistical analysis*

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	Assessment Type:	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year.*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*
8 **Mathematics Mastery**	*Topic(s):* *Science Link*	***Unit 1: Sequences*** ***Unit 2: Forming and Solving Equations-*** ***Unit 3: Inequalities***	***Unit 4: Linear Graphs*** ***Unit 5: Accuracy and Estimation***	***Unit 6: Ratio and problem solving*** ***Unit 7: Real Life Graphs and Rates of Change*** ***Unit 8: Direct and inverse proportion***	***Unit 9: Univariate Data*** ***Unit 10: Bivariate Data***	***Unit 11-Angles in parallel lines and polygons*** ***Unit 12-Bearings***	***Unit 13-Circles and composite shapes*** ***Unit 14-volume of prisms*** ***Unit 15 – surface area of prisms***
	Hegarty Skill Higher skills in red	**Fibonacci Sequence** 263 **Important Sequences** 261 **Term to term** 197 **Nth term** 198 **Expressions, identities and formulae** 154 **Form equations** 176 **Solve equations** 178 – 176 **Inequalities** 265 – 268 **Solve inequalities** 269 - 271	**Enlargement** 642 – 647 **Rotation** 648/649 **Reflection** 639 – 641 **Translation** 637/638 **Co-ordinates** 199 **Mid points** 200 **Plotting graphs**205/206 **Gradient** 201 – 204 **y = mx + c** 207 – 213 **Rounding decimals** 56 **Significant Figures** 130 **Estimation** 131 **Accuracy** 132	**Compare ratio** 328 **Writing ratio** 331 **Ratio/fractions** 330 **Equivalent Fractions** 329 **Divide by ratio** 332 – 334 **Recipes** 739 – 742 **Best Buys** 763 – 772 **Currency conversion** 707 – 708 **Convert time** 709 – 710 **Speed** 716 – 724 **Density** 725 – 731 **Distance-time graphs** 874 – 879 **Real life graphs** 894 – 895 **Conversion graphs** 712 – 713 **Direct proportion** 339 – 341 **Algebraic direct proportion** 343 – 345 **Indirect proportion** 342 **Algebraic Indirect proportion** 346 – 347 **Proportion graphs** 348	**Mean** 405 – 408 **Mean from Frequency table** 417 – 418 **Mode** 404 **Mode from Frequency table** 415 **Median** 409 **Median from frequency table** 416 **Range** 410 **Range from frequency table** 414 **Questionnaire** 399 – 400 **Types of data** 392 – 393 **Scatter Graphs** 453 - 454 **Pie Charts** 427 – 429 **Bar Charts** 425 **Pictograms** 426 **Two-way tables** 422 - 424	**Vertically opposite angles** 480 **Alternate angles** 481 **Co interior angles** 482 **Corresponding angles** 483 **Bearings** 492 - 496	**Area of circles** 539 – 543 **Circumference** 534 – 538 **3D shapes** 829 – 830 **Nets** 833 – 836 **Volume of cuboids** 568 – 569 **Volume of prisms** 570 – 571 **Volume of cylinders** 572 – 574 **Part Cylinders** 575 **Surface area of cuboids** 584 **Surface area of prisms** 585 **Surface area of cylinders** 586 **Convert units of area** 700 – 701 **Convert units of volume** 702 – 703
	Key Words	*Sequences, Term, Identity, equations, Solve, inequalities*	*Linear, gradient, Coordinates, Plane, graph*	*Ratio, equivalence, rate of change, speed, distance, time, density*	*Averages, mean, median, mode, range, questionnaire, secondary data, primary data, qualitative, quantitative*	*Alternate, co interior, Corresponding, bearing*	*Circumference, diameter, ratio, area, arc, sector, segment, tangent, volume, surface area, prism, net*

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	Link to context/Character :	*Pattern spotting (banking and investment trend identification) Problem solving algebraically*	*Properties of shapes around us/Design Comparing quantities. Accountancy*	*Relationship between quantities- Recipes- culinary skills,*	*Collecting and representing data-when is data misleading? /Statistical analysis*	*Construction*	*Estimation and how it corresponds to Area and volume of solids/Engineering*
	Assessment Type:	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*
9 Mathematics Mastery	*Topic(s):* *Science Link*	***Unit 1: coordinates*** ***Unit 2: linear graphs Parallel and Perpendicular lines*** ***Unit 3: direct and inverse proportion (Algebraic direct and indirect for Higher)*** ***Unit 4: Standard Form***	***Unit 5: Simplifying Algebraic Expressions & Expanding and factorising brackets (Expanding Triple brackets for Higher)*** ***Unit 6: Linear Equations*** ***Unit 7: Algebraic manipulations*** ***Unit 8- Probability***	***Unit 9: constructions*** ***Unit 10: congruence and similarity*** ***Unit 11: triangles and quadrilaterals*** ***Unit 12: Upper and Lower Bounds***	***Unit 13: inequalities*** ***Unit 14: simultaneous equations*** ***Unit 15: quadratic and other graphs***	***Unit 16: Pythagoras*** ***Unit 17: trigonometry*** ***Unit 18: proof (Higher only)***	***Unit 19 – Mean from Grouped Data*** ***Unit 20 – Cumulative Frequency and Box Plots***
	Hegarty Skills: Higher skills in Red.	**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 **Algebraic Direct proportion** 343 – 345 **Indirect proportion** 342 **Algebraic Indirect proportion** 346/346 **Standard form** 121-128	**Intro to algebra** 151-155 **Collecting like terms** 156-157 **Simplifying expressions** 158-159 **Expand Linear** 160/161 **Expand Double** 162 – 164 **Expand triple** 166 **Factorise Linear** 168/169 **Expressions, identities and formulae** 154 **Substitution** 780 – 787 **Rearranging Formulae** 280 – 286 **Perpendicular bisector 660/662/663** **Angle bisector 661** **Construct triangles** 683 **Probability language** 349/350 **Experimental/Reflective Frequency** 355/356/357	**Similar Shapes** 608 – 613 **Similar Problems** 614 **Congruency** 680/681/682 **Types of triangle** 823 **Properties of Quadrilaterals** 824 – 826 **Interior angles in polygons** 561/562 **Exterior angles in polygons** 563/564 **Area of 2D shapes** 553-559 **Parts of a Circle 592** **Circumference 537** **Area of a Circle 541** **Upper and Lower Bounds- 137-139**	**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 Graphs** 302	**Pythagoras 497-504** **Trigonometry 508 - 515** **Proof** • **Angle facts 484** **Congruent triangles 684 - 690**	**Discrete/continuous** 393 **Estimate Mean** 417/418 **Stem and Leaf** 430 – 433 **Scatter Graphs** 453/454 Averages Mean 405-408 Mean from a table 417-418 Mode 404 Mode from a table 415 Median 409 Median from a table 416 Cumulative frequency 437 – 439 Box plot - 440

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			Listing Outcomes 352/670				
	Key Words:	*Coordinate, Linear, Gradient, Inverse, Scale, Direct Proportion, Indirect Proportion*	*Expand, Factorise, Formula, Subject, Simplify, construct*	*Congruent, Similar, Quadrilateral, Polygons, Sum, Circumference, Diameter, radius, Volume*	*Inequality, Linear, Simultaneous, Quadratic, Graph, Substitute*	*Hypotenuse, Opposite, adjacent, squared, Proof*	*Probability, Sum to one, Interval, Compare, Distribution, Correlation, averages*
	Link to context/Character /Careers:	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
	Assessment Type:	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*	*End of Unit topic tests+Growth lessons and OCL Standardised Assessments prior to Assessment points in the year*
10 Foundation	*Topic(s):* *Science Link*	***Unit 1: factors, multiples and Primes*** ***Unit 2: powers and roots*** ***Unit 3: indices*** ***Unit 4: standard form*** ***Unit 5: sequences***	***Unit 6: fractions, decimals and percentages*** ***Unit 7: percentages*** ***Unit 8: probability, sets and Venn diagrams.***	***Unit 9: algebra (KS3 review)*** ***Unit 10: quadratics*** ***Unit 11: quadratic graphs*** ***Unit 12: simultaneous equations - Recap solving equations first.***	***Unit 13: transformations*** ***Unit 14: 2D shapes including circle geometry*** ***Unit 15: 3D shapes*** ***Unit 16: volume and surface area***	***Unit 17: Compound measure and direct and indirect proportion*** ***Unit 18: Pythagoras' Theorem review*** ***Unit 19: similarity and Trigonometry***	***Unit 20 – averages and range*** ***Unit 21 – data collection and sampling*** ***Unit 22 – presenting data including scatter graphs***
	Hegarty Skills:	**Factors 27** **Primes 28** **Multiples 33** **Calculating with roots** 100- 103 **Surds** 111- 115 **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	**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 **Venn diagrams probability** 383 – 388 **Harder Venn Diagrams**	**Expand brackets** 162 – 164 **Expand Triple brackets** 166 **Factorise quadratics** 223/224/226 **Solve Quadratics** 230 – 233 **Quadratic Formula** 241/242 **Quadratic Worded** 245 **Solve simultaneous Equations** 190 – 193 **Form Simultaneous equations** 195 **Graphical Simultaneous equations** 218/219 39 1	**Enlargement** 642 – 647 **Rotation** 648/649 **Reflection** 639 – 641 **Translation** 637/638 **Combine Transformations** 656/657 **3D Shapes** 829 – 836 **Plans & Elevations** 837 – 844 **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 **Surface area of cones and spheres** 587/588	**Distance Time Graphs 876-878** **Pythagoras** 497 – 504 **Trigonometry** 508 – 515 **Exact Values** 845 – 849 **3D Pythagoras** 505 – 507 **3D Trigonometry** 854 – 863 **Similarity** 608 – 614 **Similar area/volume** 615 – 62	**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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	Key Words:	*Multiple, Factor, Prime, Root, Index, Indices, Reciprocal, Revise, Standard Form, Sequence, Quadratic*	*Percentage, Interest, Probability, Sum, Venn, Universal set.*	*Expand, Factorise, Graph, Root, Equation, Solution, Quadratic, Simultaneous, Intersect*	*Transformation, Translation, 2D, 3D, Volume, Surface Area*	*Distance, Time, Speed, Density, Mass, Volume, Pressure, Force, Area, Hypotenuse, trigonometry, Similar, Adjacent*	*Mean, Mode, Median, Range, Sampling, Stratified, Data, Scatter Diagram, Two Way Table, Statistical*
	Assessment Type:	*End of Unit topic tests+Growth lessons AQA Mock Papers during PPE*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*
10 Higher (Set 1 and Set 2 Only)	*Topic(s):* *Science Link*	***Unit 1: powers and roots*** ***Unit 2: surds and irrational Number*** ***Unit 3: Indices*** ***Unit 4: standard form*** ***Unit 5: sequences***	***Unit 6: fractions, decimals and percentages*** ***Unit 7: percentages*** ***Unit 8: probability, sets and Venn diagrams.***	***Unit 9 – quadratics*** ***Unit 10 – quadratic graphs*** ***Unit 11 – algebraic fractions*** ***Unit 12 – simultaneous equations***	***Unit 13 – transformations*** ***Unit 14 – 2D shapes including circle geometry*** ***Unit 15 – 3D shapes*** ***Unit 16 – volume and surface area***	***Unit 17– compound measure and direct and indirect proportion*** ***Unit 18 – Pythagoras' Theorem review*** ***Unit 19 – similarity and trigonometry*** ***Unit 20: 3D Trigonometry and Pythagoras***	***Unit 21: averages and range*** ***Unit 22: data collection and Sampling*** ***Unit 23: presenting data including scatter graphs*** ***Unit 24: further statistical diagrams***
	Hegarty Skills:	**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	**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 **Venn diagrams probability** 383 – 388 **Harder Venn Diagrams**	**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 **Expressions with algebraic fractions** 172 **Solve Algebraic fractions** 187 **Solve simultaneous Equations** 190 – 193 **Form Simultaneous equations** 195 **Graphical Simultaneous equations** 218/219 **Quadratic Simultaneous equations** 246 **FDP 149**	391**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	**Distance Time Graphs 876-878** **Pythagoras** 497 – 504 **Trigonometry** 508 – 515 **Exact Values** 845 – 849 **3D Pythagoras** 505 – 507 **3D Trigonometry** 854 – 863 **Similarity** 608 – 614 **Similar area/volume** 615 – 62	**Pythagoras** 497 – 504 **Trigonometry** 508 – 515 **Exact Values** 845 – 849 **Similarity** 608 – 614 **Similar area/volume** 615 – 62 **Congruency** 680 – 682 **Prove congruency** 684 – 690 **Bearings** 492 – 496 **3D Pythagoras** 505 – 507 **3D Trigonometry** 854 – 863 **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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	Key Words:	*Index, Root, Surd, Irrational, Rationalise, Indices, Reciprocal, Revise, Standard Form, Sequence, Quadratic*	*Percentage, Interest, Probability, Sum, Venn, Universal set.*	*Algebraic Fraction, Simultaneous, Equation Percentage, Decimal, Fraction*	*Transformation, Translation, 2D, 3D, Volume, Surface Area*	*Distance, Time, Speed, Density, Mass, Volume, Pressure, Force, Area, Hypotenuse, trigonometry, Similar, Adjacent*	*Mean, Mode, Median, Range, Sampling, Stratified, Data, Scatter Diagram, Two Way Table, Statistical*
	Assessment Type:	*End of Unit topic tests+Growth lessons AQA Mock Papers during PPE*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PPE*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PPE*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PPE*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*	*End of Unit topic tests+Growth lessons AQA Mock Papers during PP*
11 Foundation (Set 3, 4, 5, 6, 7, 8)	*Topic(s):*	***(Continued from Y10)*** ***Unit 18: compound measure and direct and indirect proportion*** ***Unit 19: Pythagoras' Theorem review*** ***Unit 20: similarity and Trigonometry*** ***Unit 21: averages and range*** ***Unit 22: data collection and sampling*** ***Unit 23: presenting data including scatter graphs***	***Unit 23 – vectors*** ***Unit 24 – geometric reasoning*** ***Unit 25 – bearings*** ***Unit 26 – congruence***	***Unit 27 – linear inequalities*** ***Unit 28 – linear graphs*** ***Unit 29 – non-linear graphs***	***Revision***	*Revision*	
	Hegarty Skills:	**Compound measures:** **Speed 716-724** **Density 725-733** **Pressure 734-737** **Direct proportion 339-341** **Inverse proportion 342** **Pythagoras 498-504** **Similarity 608-621** **Trigonometric Ratios 508-514** **Averages and range 413, 419-421** **Data collection 401** **Sampling 394, 395, 396-398**	**Vectors 622-636** **Angles in polygons 561-564** **Circle theorem 594- 606** **Bearings 492-496** **Congruence 680- 689** **Construction 659-669,** **Construct triangles 683** **Loci 674-679**	**Linear inequalities on a number line 265, 268** **Solving linear inequalities 269-271** **Regions 273-276** **Linear graphs- 206-216** **Quadratic graphs 251-260** **Cubic graphs 298-299** **Trigonometric graphs 303-305**			

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	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*	*End of Unit topic tests+Growth lessons* *AQA Practice Papers pre PPE and AQA Mock Papers during PPE*
11 Higher (set 1 and 2)	*Topic(s):*	*(Continued from Y10)* ***From here set 1*** ***Unit 16: 3D shapes*** ***Unit 17: volume and surface area*** ***Unit 18: ratio review*** ***From here set 2*** ***Unit 19: compound measure and direct and indirect proportion***	***Unit 20: Pythagoras' Theorem review*** ***Unit 21: similarity and Trigonometry*** ***Unit 22: 3D Trigonometry and Pythagoras*** ***Unit 23: averages and range*** ***Unit 24: data collection and sampling*** ***Unit 25: presenting data including scatter graphs*** ***Unit 26: further statistical diagrams***	***Unit 25 - vectors*** ***Unit 26 – geometric reasoning*** ***Unit 27 – circle theorems*** ***Unit 28 – bearings*** ***Unit 29 – congruence***	***Unit 30 – linear inequalities*** ***Unit 31 – linear graphs*** ***Unit 32 – non-linear graphs*** ***Unit 33 – trigonometric graphs***	***Unit 34 – algebraic proof and reasoning*** ***Unit 35 – recurrence relations*** ***Unit 36 – functions*** ***Unit 37 – transformation of graphs***	
	Hegarty Skills:	**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	**Pythagoras** 497 – 504 **Trigonometry** 508 – 515 **Exact Values** 845 – 849 **Similarity** 608 – 614 **Similar area/volume** 615 – 62 **Congruency** 680 – 682 **Prove congruency** 684 – 690 **Bearings** 492 – 496 **3D Pythagoras** 505 – 507 **3D Trigonometry** 854 – 863 **Averages** **Mean 405-408**	**Vectors 622-636** **Angles in polygons 561-564** **Circle theorem 594- 606** **Bearings 492-496** **Congruence 680- 689** **Construction 659-669,** **Construct triangles 683** **Loci 674-679**	**Linear inequalities on a number line 265, 268** **Solving linear inequalities 269-271** **Regions 273-276** **Linear graphs- 206-216** **Quadratic graphs 251-260** **Cubic graphs 298-299** **Trigonometric graphs 303-305**	**Algebraic proof 325-327** **Iteration and recurrence relations 262** **Functions 286-296** **Transformation of graphs 307-313**	

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		Ratio 328-338 **Compound measures:** **Speed 716-724** **Density 725-733** **Pressure 734-737** **Direct proportion 339-341** **Inverse proportion 342**	**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				
	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*

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Key Questions:

1. What is the overarching intent for your curriculum?

   To develop the knowledge, and love of Maths in our students that will enable them to be Numerate, Enthusiastic and Mathematically confident problem solvers who will 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?

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Mathematics Mastery at KS3, and Year 10 then the continuation of the 2nd 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.

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.