

#	Unit title	Time (HRS.)	Key concept	related concept	global context	Statement of Inquiry	Content based Objectives	ATL skills	Content	Resources
1	<p>Unit 1</p> <p>2D, 3D & complex Shapes</p> <p>Measurement of spaces in different dimensions</p>	20	Relationships	Measurement, Space	Personal and cultural expression	Generalizing relationships between measurements enables the construction and analysis of activities for ritual and play	<ul style="list-style-type: none"> Finding the area and perimeter of any 2D shapes (polygons) Finding the area and circumference of a circle. Finding the area, perimeter, & circumference of any 2D complex shapes Nets of 3D shapes Finding the surface area of any 3D shape (including pyramids, cones and spheres) Finding the volume of any 3D shape (including pyramids, cones and spheres) 	<p>Communication</p> <p>Creative thinking</p>	<p>Perimeter, area and volume</p> <p>Finding the perimeter (circumference), area and volume of regular and irregular two dimensional (2D) and three dimensional (3D) shapes including spheres (Space)</p> <p>Circle geometry</p> <p>Lengths of chords (Measurement)</p>	<p>241, 242, 245, 249</p> <p>310,315</p>
2	<p>Unit 2</p> <p>Circle geometry (7.3, 9.1)</p> <p>(Justifying circle theorems)</p>	25	Logic	Justification	Personal and cultural expression	Logic can justify generalizations that increase our appreciation of the aesthetic.	<ul style="list-style-type: none"> Finding angles and lengths using circle theorems Proving results using circle theorems Using circle theorems to find lengths of chords Finding lengths using the intersecting chord theorems Finding the perimeter and area of a sector of a circle Finding the length of an arc of a circle Finding the angle in a sector of a circle Finding the radius of a circle using arc length and sector area formulae 	<p>Critical-thinking</p> <p>Draw reasonable conclusions and generalizations</p> <p>Critical-thinking</p> <p>Test generalizations and conclusions</p> <p>Communication</p> <p>Make inferences & draw conclusions</p> <p>Social skills (collaboration skills)</p> <p>Accepting responsibilities</p> <p>Group decision making</p> <p>Respecting others cooperation</p> <p>Resolving conflicts</p>	<p>Circle geometry:</p> <p>Using circle theorems to find lengths of chords.</p> <p>Measurement of angles and arcs</p>	<p>495, 496, 497, 498</p> <p>509,511,512</p>
3	<p>Unit 3</p> <p>Linear Programming (14.3)</p>	20	Form	Equivalence, Models	Identities and relationships	Modelling with equivalent forms of representation can improve decision making.	<ul style="list-style-type: none"> Solving systems of inequalities algebraically and graphically Modelling real-life problems with linear programming 	<p>Communication</p> <p>(Communication skills)</p> <ul style="list-style-type: none"> Find information for disciplinary and interdisciplinary inquiries, using a variety of media Organize and depict information logically (Reference page # 564) Structure information in summaries, essays and reports 	<ul style="list-style-type: none"> Graphing linear inequalities Linear programming using graphic solutions (algebraic solutions in extended mathematics) 	<p>Textbook (14.3) Pg# 557</p> <p>myimaths.com</p> <p>Corbetmaths.com</p> <p>Khan academy</p> <p>Youtube</p> <p>Mathisfun</p> <p>CK-12 foundation</p> <p>Kuta software</p> <p>Kahoots</p> <p>Desmos online (Graphing)</p>

4	<p>Unit 4</p> <p>Quadratic Functions</p> <p>(Equivalent forms of quadratic equations)</p>	25	Form	Patterns, Space, Equivalence	<p>Globalization and sustainability</p> <p>Exploration: human impact on the environment</p>	<p>Using models to represent forms can help us understand the human impact on the environment</p>	<p>Factorizing quadratic expressions, where the coefficient of x^2 is 1, including the difference of two squares</p> <ul style="list-style-type: none"> Factorizing quadratic expressions where the coefficient of x^2 is not 1 (might be starting from here) Finding the axis of symmetry and vertex of a quadratic function Expressing a quadratic function in three different forms: standard, factored and vertex Finding a quadratic function given three distinct points on its graph Finding a function to model a real-life parabola Solving quadratic equations algebraically and graphically Solving real-life problems by creating and using quadratic models 	<p>Self - management</p> <p>Thinking (critical)</p> <p>Thinking (critical)</p>	<p>Quadratic Solving quadratic equations (Equivalence)</p> <p>Factorization of quadratic functions Factorizing quadratic expressions (patterns)</p> <p>Quadratic Solving quadratic equations (space)</p>	<p>324, 325, 328, 329</p> <p>291,</p> <p>428, 429</p>
5	<p>Unit 5</p> <p>Sequences</p> <p>8.1,12.1,12.2 (Exploring patterns and generalizing solutions)</p>	20	Form	Patterns, Generalization	<p>Scientific and technical innovation</p>	<p>Using different forms to generalize and justify patterns can help improve products, processes and solutions</p>	<p>Sequences Investigation - Waiters Nightmare (B,C,& D)</p> <p>Investigation using functional example of how a waiter can best seat people in different table combinations - can be differentiated from finding basic table combinations to finding nth terms and using this to predict for a large function.</p>	<p>Critical Thinking - Identity trends and forecast possibilities</p> <p>Thinking (critical)</p> <p>Thinking (critical)</p>	<p>Number sequences: Predicting the next term (Patterns)</p> <p>Patterns and sequences: Finding and justifying or proving general rules / formulae for sequences (Generalization)</p>	<p>https://www.tes.com/teaching-resource/sequences-investigation-waiters-nightmare-6124948</p> <p>272, 278, 279, 281, 283 285, 463, 465, 246, 471 472, 451,458 myimaths.com Textbook : myp 4 & 5 Corbetmaths.com Khan academy Youtube Mathisfun CK-12 foundation Kuta software Kahoots https://teacher.desmos.com/activitybuilder/custom/588f4e8443bf36702afc281a#oreview/9e927baa-92a2-442a-9941-0a6ef9f2c16</p>

6	<p>Unit 6</p> <p>Probability</p> <p>(Time to take a chance)</p>	20	Logic	Representation, Systems	Identities and relationships	<p>Understanding health and making healthier choices result from using logical representations and systems.</p>	<ul style="list-style-type: none"> • Representing sample spaces in tables, lists and diagrams • Drawing tree diagrams, Venn diagrams and two-way tables • Calculating probabilities from Venn diagrams and two-way tables • Using tree diagrams to calculate probabilities with and without replacement • Understanding informal ideas of randomness • Understanding and using formal probability notation • Calculating probabilities of independent, mutually exclusive and combined events • Proving probability theorems • Determining whether or not events are mutually exclusive and/or independent 	<p>Communication</p> <p>Communication</p>	<p>Probability of an event Calculating probabilities of simple events, with and without replacement (Representation)</p> <p>Probability of independent, mutually exclusive and combined events Calculating probabilities of independent events, mutually exclusive events and combined events (Representation)</p> <p>Probability of independent, mutually exclusive and combined events Calculating probabilities of independent events, mutually exclusive events and combined events (Systems)</p> <p>Probability of an event Calculating probabilities of simple events, with and without replacement Representation</p>	<p>140, 146</p> <p>578, 582, 586</p>
7	<p>Unit 7</p> <p>Transformations</p> <p>Transformations can change models</p>	20	Form	Change, Models	Orientation in space and time	<p>Relationships model patterns of change that can help clarify and predict duration, frequency and variability</p>	<ul style="list-style-type: none"> • Understanding how various parameters affect the shape and position of a graph • Applying translations, reflections and dilations to graphs • Describing the transformation of a function algebraically and graphically • Describing combinations of transformations of a function algebraically and graphically • Writing the equation of a graph following one or more transformations • Recognizing exponential functions • Using exponential functions to model real-life problems • Identifying and using translations, reflections and dilations with exponential functions 	<p>Creative thinking</p> <p>Critical-thinking</p>	<p>Types of functions Describing transformed linear, functions (Change)</p> <p>Types of functions Translating, reflecting and dilating functions (Change)</p> <p>Types of functions Exponential (Models)</p>	<p>370,</p> <p>519, 520</p>