

Year 10 Spring 1

Foundation

Higher

Pythagoras' theorem and Trigonometry

- Recall the Pythagoras' theorem in 2D
- Examine whether a triangle is a right angle or not
- Calculating the hypotenuse given the other two sides
- Calculating a shorter side
- Distance between two points
- Understand and apply trigonometric ratio
- Find missing sides using SOHCAHTOA
- Find missing angles using SOHCAHTOA
- Solve 2D problems using trigonometry
- Angle of elevation and depression
- Exact Trig ratios

Multiplicative reasoning

- Proportion and unitary method
- Best buy
- Repeated proportional change
- Compound interest
- Compound measure: density, volume and mass
- Kinematics
- Direct and proportion
- Inverse proportion
- Graphs and direct and inverse proportion
- Worded problems and proportionality

Probability

- Language of probability
- Probability scale
- Calculate the probability of events
- Probability of an event happening or not happening
- Probability from frequency and two-way tables
- Listing all possible outcomes
- Addition law of probability
- Mutually exclusive events
- Experimental probability

Similarity and congruence in 2D and 3D

- Prove congruence using SSS, SAS, ASA and RHS.
- Similar shapes
- Find missing sides of similar shapes
- Prove similarity using AAA
- Similarity and area/volume
- Solve problems involving area and volume of similar shapes
- Similarity and more problems such as cones and frustum

Probability II

- Relative frequency
- Sample space diagrams
- Expectation

Graphs of Trigonometric functions

- Sketch graphs of trigonometric functions
- Exact trigonometric ratios (revision)
- Translation of trigonometric functions

<ul style="list-style-type: none"> - Venn Diagram - Union and intersect of Venn diagram - Compare theoretical and experimental probability - Probability tree diagram - Probability of two independent events 	<ul style="list-style-type: none"> - Reflection of trigonometric functions - Stretch and trigonometric functions -
<p>Multiplicative reasoning</p> <ul style="list-style-type: none"> - Distance, time and speed - Volume, density, and mass - Pressure area and force - Kinematic formula - Convert between metric speed measures - Part as a percentage of another - Percentage profit and loss - Reverse percentage change - Compound interest - Growth and decay - Equations that describe direct and inverse proportion 	<p>Further Trigonometry</p> <ul style="list-style-type: none"> - Area of triangle - Sine rule - Cosine rule - 3D trigonometry and sine and cosine rules - Pythagoras' theorem and 3D - Trigonometry and 3D - Calculate angle between a line and a plane
<p>Plans and elevation</p> <ul style="list-style-type: none"> - Draw circles and arcs with given radius - Measure and draw angles to scale - Sketch and draw 2Ds and 3D solids - Properties of 3Ds: face, edge and vertices - Planes of symmetry - Scale drawing of triangles - Plan and elevation 	<p>Collecting Data</p> <ul style="list-style-type: none"> - Kinds of data - Data bias and minimising it - Sample and population - Representative sample
	<p>Cumulative Frequency, box plot and histogram</p> <ul style="list-style-type: none"> - Know appropriate use of cumulative frequency - Calculate cumulative frequency - Construct and interpret cumulative frequency - Estimate frequency less than or greater than a certain value

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| | <ul style="list-style-type: none">- Find median and quartiles (IQR)- Interpret box plot to find median, quartiles, range and IQR- Draw box plot- Know the use of histogram- Construct and interpret histogram- Estimate mean, median and quartiles from histogram |
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Assessment 3
