## Knowledge What pupils will know

## Foundation Tier

- Negative numbers including decimals and BIDMAS
- Comparing numbers, rounding and estimating
- Simplifying and substitution into expressions
- Substitution into expressions
- Expanding and Factorising expressions
- Solving equations (one step, two step, with brackets and with unknows on both sides) and rearranging formulae
- Plotting and interpreting co-ordinates in all four quadrants
- Four rules of operations with fractions
- Angles on straight lines, at a point and in polygons
- Angles on parallel lines


## Higher Tier

- Negative numbers including decimals and BIDMAS
- Comparing numbers, rounding and estimating
- Simplifying and substitution into expressions
- Substitution; Expanding and Factorising expressions
- Solving equations (one step, two step, with brackets and with unknows on both sides) and rearranging formulae
- Straight line graphs including perpendicular lines, estimating gradients
- Plot and solve quadratic graphs - including turning points, roots
- Surds
- Four rules of operations with fractions


## Knowledge What pupils will know

## Foundation Tier

- Transformations: Reflect, Rotate, Enlarge and Translate
- Percentages of an amount, increase, decrease, reverse and change
- Ratio: Simplify, 1:n, share an amount into a give ratio, compare ratios, overlapping ratios and mixed questions that involve fractions, percentages and ratios
- 2D and 3D shapes: area, perimeter, surface area, volume, general properties, plans of elevation
- Draw and interpret linear graphs
- Convert and calculate in standard form


## Higher Tier

- Solve simultaneous equations
- Percentages of an amount, increase, decrease, reverse and change
- Ratio: Simplify, 1:n, share an amount into a give ratio, compare ratios, overlapping ratios and mixed questions that involve fractions, percentages and ratios
- Convert and calculate in standard form
- 2D and 3D shapes: area, perimeter, surface area, volume, general properties, plans of elevation
- Pythagoras
- Trigonometric ratios


## Knowledge What pupils will know

## Foundation Tier

- Formulae for circle area and circumference. Solve problems that involving circles, semi-circles and sectors
- Pythagoras
- Trigonometric ratios
- Special sequences: arithmetic, geometric and Fibonacci. Nth term of a sequence. Finding missing terms.
- Calculating averages- including from tables
- Interpreting and displaying data: pie charts, stem and leaf diagram, scatter graphs, frequency polygons


## Higher Tier

- Calculating averages- including interquartile range
- Interpreting and displaying data: pie charts, stem and leaf diagram, scatter graphs, frequency polygons, cumulative frequency, boxplots and histograms
- Compound Measures and Kinematics
- Simplifying Algebraic Fractions
- Further trigonometry including in 3D
- Transformations
- Maps and Bearings


## Skill What pupils will be able to do

- Substitution
- Use a calculator
- Use multipliers
- Use visual representation for example: bar modelling


## KS4 Module 4 <br> (Year 11 Module 1 of 3 - start date W.C. 05.09.22)

- Use inverse operations
- Plot in all four quadrants
- LCM and HCF
(Year 11 Module 2 of 3 - start date W.C. 09.01.23)

Knowledge What pupils will know

## Foundation Tier

- Know the difference between similarity and congruence
- Understand the aim of collecting Data, by looking at methods, bias and sample sizes.
- Calculating averages- including from tables
- Representing and interpreting data from graphs: bar charts, composite bar charts, pie charts, stem and leaf diagrams, pictograms and scatter graphs
- Construction of accurate triangles
- Trail and Improvement
- Algebraic Reasoning
- Describe translations as 2 D vectors; apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors


## Higher Tier

- Interpret simple expressions as functions with inputs and outputs. Interpret the reverse process as the "inverse function"
- Construction
- Transformations- including transformation of graphs
- Find approximate solutions to equations numerically using iteration
- Solving and representing inequalities


## Skill What pupils will be able to do

- Substitution

Knowledge What pupils will know
KS4 Module 6:
(Year 11 Module 3 of 3 - start date W.C. 17.04.23)

## Knowledge What pupils will know

- Revision of bespoke topics identified from mock exams
- Walk and talking exam coaching
- Completion of past papers
- Completion of predicted papers


## Higher Tier

- Collecting and displaying data - including Histograms
- Algebraic proof
- Problems involving area and circumference of circles
- Circle Theorems
- Probability including AND/ OR rules
- Further graphs
- Proportion
- Set notation
- 2D ad 3D shapes including Pythagoras, volume surface area
- Use a protractor accurately
- Similarity and Congruence


## Skill What pupils will be able to do

- Fluently convert between fractions, decimals and percentages
- Use the multiplier method on the calculator to work out percentage increase and decrease
- Use a probability model to predict the outcomes of future experiments
- Substitute into formulae
- Use protractors and compass accurately
- Use the calculator effectively to work out trigonometric ratios
- Calculating bounds
- Use vectors to construct geometric arguments and proof


## Skill What pupils will be able to do

- Planning multi- step questions to maximise exam results
- Interpret mark schemes

