MTS Year 9 Maths Learning Journey 2023 - 24

Y10

GCSE preparation
- **Label a right angled triangle**
- **Find sides using SOHCAHTOA**
- **Find angles using SOHCAHTOA**
- **Pythagoras Theorem**

Algebraic Representation
- Substitution
- Quadratic graphs
- Cubic graphs
- Reciprocal graphs
- **Use graphs for simultaneous equations**
- Inequalities on a number line
- Regions on a graph

Data Handling
- Stem and Leaf
- Mean, Median, Mode & Range
- Averages from Frequency tables including grouped frequency.
- Draw a frequency polygon

Rates
- Speed, distance, time
- Units of time
- Distance/time graphs
- Density, mass and volume
- Rates of change
- **Compound units**

Ratio and Proportion
- Direct proportion
- Conversion graphs
- Inverse proportion
- **Graphs with inverse relationships**
- Share in a ratio
- Best buy
- **Ratio and algebra**

Enlargement and Similarity
- Recognise enlargement
- Enlarge by positive SF
- Enlarge by fractional SF
- **Enlarge by negative SF**
- Describe an enlargement
- Similar shapes
- **Similar triangles**

Using Percentages
- Increase and decrease
- Percentage change
- Reverse percentage
- Repeated Percentage change

Probability
- **Probability scale**
- **Experimental probability**
- **Estimated outcomes**
- Sample spaces
- **Tree diagrams**
- Venn diagrams
- Two way tables

Maths and Money
- Bills and bank statements
- Simple interest
- Compound interest
- VAT
- Wages and tax
- Exchange rates
- Best buys

Deduction
- Angles in parallel lines
- Form and solve equations
- Conjectures
- Reasoning

Rotation and Translation
- Symmetry
- Rotate a shape
- Translate a shape
- Reflect a shape
- Compare transformations
- **Combine and describe transformations**

Pythagoras Theorem
- Squares and square roots
- Calculate hypotenuse
- Calculate shorter side
- Prove a triangle is right angled
- **3D Pythagoras**

Numbers
- Rationality
- Surds
- Negative numbers
- 4 operations
- Multiples, Factors & Primes
- Product of Primes
- HCF and LCM
- Fractional arithmetic
- Standard Form

Construction and Congruency
- Draw and measure angles
- Scales drawing
- Loci
- Construction
- Congruency
- Congruent triangles

3D Shapes
- Name 2D and 3D shapes
- Nets
- Plans and elevations
- Surface area
- Volume
- **Volume of cones, pyramids and spheres**

Form and Solve Equations
- Solve equations and inequalities with unknown on one side
- Solve equations and inequalities with unknowns on both sides
- Form and solve equations and inequalities
- Substitution
- Changing the subject
- Expand a double bracket.

Straight Line Graphs
- Graphs parallel to axes
- Straight line graphs
- Y=mx+c
- Equation of a straight line
- Real life graphs
- **Perpendicular lines**

Y8