(Maths) AT PLECKGATE
YEAR (9) LEARNING JOURNEY

YEAR 10

Graphs the basics
- Find the equations of a line given 2 points
- Calculate the length of a line segment
- Interpret straight line graphs
- Use multipliers to solve percentage problems
- Calculate surface area and volume of cylinders
- Calculate area under curves and graphs
- Draw and interpret distance time and velocity time graphs
- Plot coordinates in all 4 quadrants
- Solve percentage problems incl reverse and repeated percentage changes

Percentages
- Find percentage of quantities
- Convert between fractions decimals and percentages
- End of year consolidation

Perimeter, Area and 3D
- Solve problems involving circles
- Calculate surface area
- Recall and use the formula for various 2d shapes
- Calculate the LCM and HCF of values
- Recall prime number facts
- Change the subject of the formula when x appears more than once

Factors, multiples and Primes
- Fractions and equations consolidation
- Change the subject of simple formula
- Write numbers in terms of their prime factors
- Calculate the LCM and HCF of algebraic terms
- Calculate area of compound shapes
- Calculate area and perimeters
- Calculate lengths of sectors and arcs

Rearranging And Solving Equations
- Set up and solve simple equations
- Add, divide, multiply and subtract whole numbers and decimals
- Solve equations with integer and fractional coefficients

Fraction Calculations
- Convert recurring decimals to fractions
- Work with fractions, decimal and percentage equivalents
- Add, subtract, divide and multiply fractions
- Calculate equivalent fractions
- Simplify fractions

Polygons and Angles
- Solve problems involving all types of polygons
- Use algebraic knowledge to set up and solve geometric problems
- Understand all angle conventions
- Solve problems involving all types of angles
- Draw lines of symmetry

Indices and reciprocals
- Know how to factorise expressions
- Work with and apply difference of 2 squares
- Apply the index laws
- Know squares, cubes and their respective roots
- Be able to form and solve equation by equating base numbers and their respective powers
- Angles, Indices and Algebra consolidation

Understanding Algebra
- Algebra and Number consolidation
- Collect like terms to form expressions
- Substitute positive and negative number
- Expand brackets
- Apply index law to fractional and negative powers
- Factorise quadratics written in the form $ax^2 + bx + c$

Calculations and rounding
- Answer given that questions
- Round numbers to decimal places and significant figures
- Estimate and approximate calculations
- Multiply and divide by decimals

Data Handling
- Data Handling Consolidation
- Add, subtract, multiply and divide decimals and whole numbers

Represent and Interpret data
- Draw and interpret all types of charts
- Interpret grouped data

Data Handling
- Calculate averages from stem and leaf diagrams
- Draw frequency polygons and compare distributions
- Construct and interpret 2 way tables
- Calculate averages and range for discrete and continuous data