MATHEMATICS - YEAR 7

Sequences:
Recognise and categorise different types of sequence. Continue linear and non-linear sequences in different representations. Explain the term-to-term rules of a sequence in words

Algebraic thinking:
Use function machines with both numerical and algebraic values. Substitute values into an expression. Use algebraic notation. Generate sequences given an algebraic rule. Represent functions graphically.

Equality and equivalence:
Understand the meaning of equality and equivalence. Understand and use fact families.
Solve one step linear equations. Simplify algebraic expressions by collecting like terms.

Place value and ordering:
Recognise the place value, write and compare any values up to one billion. Work out intervals on a number line. Round values to the nearest power of 10 and 1 significant figure. Find the median and range of a set of values.

FDP equivalence:
Represent fractions as diagrams and on number lines. Convert between fractions, decimals and percentages. Use and interpret pie charts. Identify and use equivalent fractions.

Addition and subtraction:
Select and use appropriate mental and formal methods for the addition and subtraction of integers and decimals. Solve perimeter problems. Solve financial maths problems. Solve problems involving timetables. Solve problems involving tables, frequency trees, bar and line charts.

Multiplication and division:
Use factors and multiples. Multiply and divide by powers of 10. Use formal methods to multiply and divide integers and decimals. Convert metric units. Use BIDMAS. Solve area problems. Solve problems using the mean.

Fractions/ percentages of amounts:
Find a fraction of a given amount. Use fractions to find the whole or other fractions. Find percentages of an amount using mental methods and methods that require a calculator

Operations and equations with directed number:
Order directed numbers. Add/ subtract/ multiply and divide directed numbers. Use a calculator for directed number calculations. Solve two step equations.

Addition and subtraction of fractions:
Convert between mixed numbers and fractions. Add and subtract fractions, integers and mixed numbers. Use fractions in algebraic contexts.

Constructing, measuring and using geometric notation:
Understand labelling for geometric figures. Classify, measure and draw angles. Identify parallel and perpendicular lines.
Recognise types of triangle and quadrilateral. Construct SSS, SAS and ASA triangles. Draw and interpret pie charts using proportion and a protractor.

Developing geometric reasoning:
Understand and use the sum of angles at a point, on a straight line, in a triangle and in a quadrilateral. Understand and use vertically opposite angles. Solve angle problems using such facts.