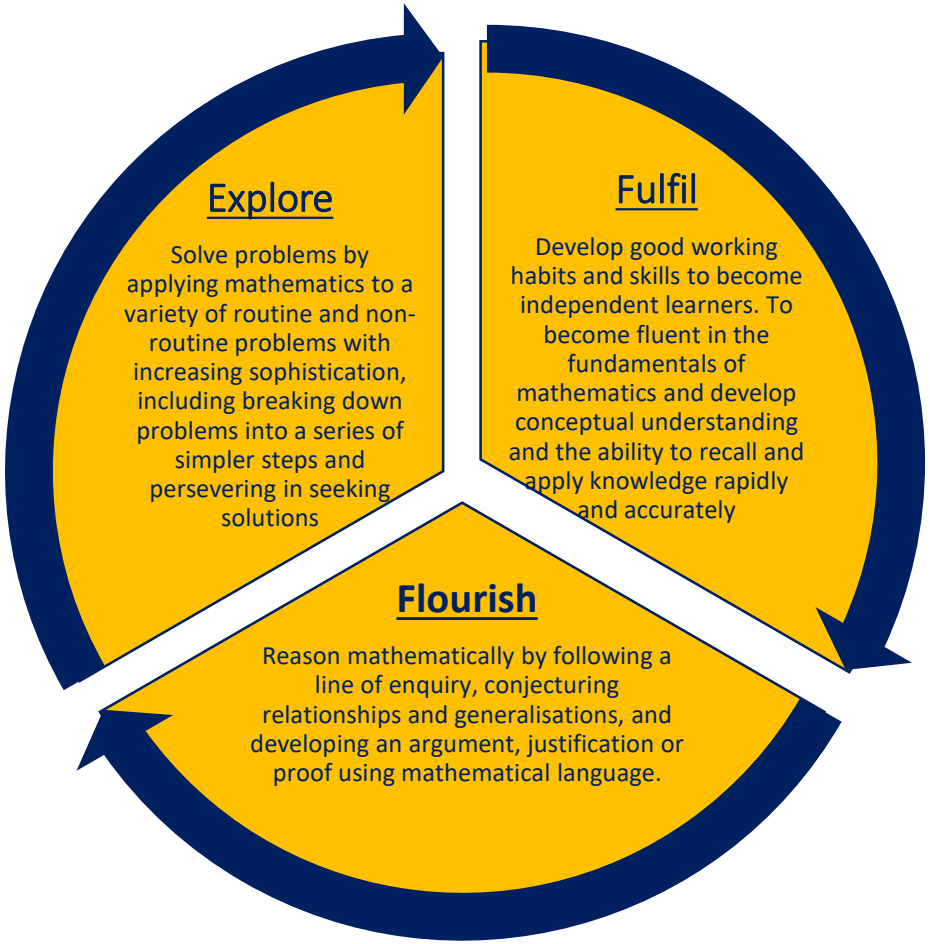
Mathematics Curriculum – GCSE - Edexcel

Intent:

The programme of study for key stage 4 is organised into 6 key areas, but pupils should develop and consolidate connections across mathematical ideas. Students should build on learning from key stage 3 to further develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge wherever relevant in other subjects and in financial contexts and develop the numeracy skills to prepare themselves for the working world and further studies beyond GCSE.



Topics: Broad topic headings below:
(Depending on tier of entry, the depth of topic)

Number :
Structure and calculation of integers and decimals
Measure and accuracy
Fractions, decimals and percentages

Algebra :
Notation, vocabulary and manipulation
Graphs
Solving equations and inequalities
Sequences

Ratio, proportion and rates of change :
Compound measures
Ratio
Proportionality

Geometry and measures :
Properties of Shapes
Angles
Constructions
Scale drawing and bearings
Area and perimeter
Volume
Circle Theorems
Pythagoras and Trigonometry
Transformations
Vectors

Probability :
Probability of events
Experiments and Sample diagrams
Theoretical and relative frequencies
Probability Trees Venn diagrams

Statistics:
Sampling
Charts, tables and diagrams
Calculating averages and spread
Scatter graphs

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Newport

Key skills and concepts developed in Mathematics

Numeracy skills,
Developing memory and recall
Resilience and risk taking
Problem solving skills and how to link topics and transfer their knowledge to unknown contexts in maths and other subjects such as science, geography and business studies etc.
How to set out workings and logically work through problems.
Deeper knowledge and understanding of the 6 key areas of the curriculum:
Number, algebra, ratio, Proportion and rates of change, Geometry and measures, Probability and statistics

Wider Impact

Contribution to Cultural Capital/British Values and Wider Society/Careers/SMSC

Mathematics underpins the world around us. Just by paying bills, measuring home improvements and making everyday decisions, people do maths, often without realising. Maths helps shape our understanding of computing, art, music, science, nature and the world at large. It is used in everyday life and is used in many careers: Actuary, Accountant, Data analyst, Maths teacher, Statistician, Systems developer, Financial trader, Insurance underwriter, Meteorologist, Quantity surveyor, Software tester.