Curriculum Outline 2019/20 – Year 9 Mathematics (SJD & MAM)

Autumn 2019
Principal Text: *None, most work will be based on worksheets produced by JWLH, with the GCSE textbooks for support.*
Solving problems through multiplication (scale factors). Applications in geometry and algebra, percentage changes, composite problems and overall percentage change, trigonometry as scale factors. Direct and inverse proportion problems. Geometry and mensuration.
Algebra: Equations, simultaneous equations, factorising and expanding and index notation.

Spring 2020
Algebra: from first principles as a tool to solve problems; formulating expressions and equations. Solution of equations, and simultaneous equations, phrased in word form. Factorisation.
Geometry and proof.
Set notation.

Summer 2020
Solving quadratics through factorisation.
Algebraic fractions.
Using spreadsheets and data handling.
Percentage revision, including reverse percentages without a calculator.
Tree diagrams.
3D Pythagoras and trigonometry.

This is a key area for curriculum development; by building on the advanced position of 13+ and bypassing KS3, the groundwork can be laid to enable students to reach their true potential at GCSE and beyond.

Links with fundamental values
The maths curriculum promotes the British values of tolerance and resilience on a daily basis through problem solving and understanding of complex concepts. We encourage students to persevere and try different methods to arrive at a correct solution whilst at the same time be open for other ways of thinking and respecting others.

Social, moral, spiritual and cultural content
Moral, Spiritual, Social and Cultural themes
There are few opportunities in Mathematics for discussion of Moral or Spiritual matters, despite the National Curriculum's spurious suggestion that Mathematical Truth has a moral value, or that there is some spiritual aspect to the idea of an infinite set.

Where we can contribute is in equipping children to use quantitative reasoning in social contexts and our teaching of Statistics in particular should use examples where data can be used to support inferences in worthwhile real-world contexts. We should also, where appropriate, use financial and economic contexts in arithmetic and graph work so that students get an opportunity to learn something about tax, mortgages, inflation and so on.

Mathematics lessons also offer good opportunities for students to learn to be realistic in assessing their own achievements; to set targets for their learning and plan to attain these; to learn to work co-operatively; to manage feelings of frustration when faced with difficulties; in general, to acquire a learning mentality. However, students do not easily transfer learning from one context to another, and it is important to draw their attention to what they might implicitly be learning – or they won't.

We do not think mathematics lessons are usually the appropriate place to discuss undoubtedly interesting cultural questions.