

Year 8 Mathematics – Outline Programme of Study

| | Term 1 | Term 2 | Term 3 | Term 4 | Term 5 | Term 6 |
|----------------------|--|--|--|--|--|---|
| Big ideas/ topics | Number skills Area & volume | Statistics, graphs & charts Algebra – Expressions & Equations | Straight line and real-life graphs Decimals & Ratio | Lines & angles | Calculating with fractions Proportion and graphs | Percentages, decimals & fractions |
| Key Knowledge | Apply the four operations and BIDMAS. Recognise and use relationships between operations, including inverse operations. Prime factor decomposition and factorisation. Know and apply formula to calculate area and volume for a variety of shapes. | Interpret and construct diagrams, table, charts and graphs. Interpret, analyse and compare the distributions of data sets. Understand and use the concepts of algebraic vocabulary. Simplify and manipulate expressions. Expand & factorise algebraic fractions. | Plot graphs of equations that correspond to straight line graphs. Identify and interpret gradients and intercepts of linear functions. Plot and identify real life graphs from kinematic problems, such as speed, distance, time and acceleration. | Apply the properties of angles at a point; angles on a straight line; vertically opposite angles; alternate, co-interior and corresponding angles for parallel lines. Derive and apply angle properties of triangles and special quadrilaterals. | Use the four operations with fractions. Change recurring decimals into their fractions and vice versa. Solve problems using direct and inverse proportion, including graphical and algebraic representations. Rates of change. | Interpret fractions and percentages as operators. Interpret percentages and percentage changes as a fraction or decimal and interpret these multiplicatively. Solve problems involving percentage change, including increase/decrease and original value. |

Further information and reading list

- Our Key Stage 3 programme links in prepare students for the Edexcel examination syllabus for GCSE mathematics.
- There are a range of support books and revision guides available for KS3 maths for example CGP or Letts & Collins.
- Sparx Maths homework platform has help videos for students on all topics. These are accessed with the homework questions or independently using the independent learning button from the Sparx Maths homescreen.
- Useful websites for Year 7 are: <https://corbettmaths.com/contents/>, <https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/maths> (Oak Academy, KS3, Maths) <https://www.bbc.co.uk/bitesize/subjects/zqhs34j> (BBC bitesized, ks3, maths).

Ways to support and extend student learning in this subject

Support Guidance:

- Students need to be secure in their timetables knowledge which underpins mathematical methods. Continue to practice these at home, or utilising programmes such as TT rockstars, which will help with students build confidence in mathematics. There is a regular timetable question support available as part of Sparx Maths homework platform for all year 8 students.
- Have fun with maths! There are lots of games which work on mental maths, for example card games or darts.
- Access support programmes for key stage 2 and 3 via mathsfactor.com for a paid subscription help service, alternatives are available or by working through the free website resources listed above together with the school provided subscription of mathswatch.
- Ensure that Sparx Maths compulsory homework is being completed and use the XP boost button for extra practice questions together with the independent learning button to look forward to what is coming next in class and get a head start.

High-achieving guidance:

- Utilise the Sparx Maths Target button to provide extension and challenge questions in addition to the compulsory homework set each week.