Scheme of Learning - Mathematics – Year 7

Year 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content	Students will focus on Number Sense for the full half term, this will include basic arithmetic, understanding Fractions, Decimals and Percentages and building on the work done in Primary School to ensure all students consolidate the basics to allow for knowledge to be built upon. The students will look further at place value, using number lines, powers/roots and order of operations. There will be prevailing concepts of arithmetic developed this half term before moving onto arithmetic with decimals, ensuring that students can multiply and divide decimals.	This Half Term covers algebra manipulation, starting off with understanding the algebraic vocabulary and understanding algebraic notation such as 2xa = 2a. Students will then develop an understanding of expressions and collecting like terms, moving toward substitution and the maths team will explore real-life formulae students may of seem or will see in cross-curricular subjects such as science. In this half term year 7 will also cover measures and units, looking deeper at time, using clocks, and converting units of length, mass and capacity linking further to the real-life applications of maths.	Half Term 3 has a real focus on geometry; the first topics are 2D shapes and the properties of shapes explore key vocabulary such as parallel and perpendicular. Perimeter and area are also covered this half term, students will explore the difference between perimeter and area of shapes and then move onto exploring compound shapes. Additionally, this half term year 7 start to look at coordinates and axes in algebra to prepare them with secure building blocks for algebraic graphs that are taught in year 8.	Building on from the foundations learnt in Half Term 1 in this Half Term, students will be exploring factors and multiples, understanding concepts such as highest common factor (HCF) and lowest common multiple (LCM) then moving onto prime numbers and prime factor decomposition. Additionally, Year 7 will be investigating fractions, understanding how to simplify, compare, convert fractions to then further understanding looking at adding and subtracting fractions. The last topic covered this half term expanding algebraic brackets and factorising expressions.	During Half Term 5 students will develop their understanding of angles, being able to identify types of angles, estimate/measure/draw angles and use problem solving skills to be able to find unknown angles. Students will spend a large proportion of this half term handling data and understanding statistical diagrams. Students will be able to understand averages, start to collect/analyse data and be able to draw tables and charts such as bar charts to represent data. The remainder of the term will be spent on problem solving proportion word problems with the aim to develop the students' deciphering skills.	The final Half Term focuses on fractions, decimals, and percentages. Building on what the students learnt in Half Term 4 with fraction they will learn how to multiply and divide fractions, inspect how to find fractions of amounts. Then students will further investigate equivalence between fractions, decimals and percentages aiming to compare and order them. Finishing off year 7 exploring probability and the vocabulary that surrounds probability and mutually exclusive events and understanding what sample space diagrams are.
Why?	Students need to have a clear understanding of key fundamental concepts such as place value and basic arithmetic to allow knowledge to be built upon these concepts further into KS3 and 4. Place value is an example of how the foundational knowledge is important as it is used in many topics within maths such as standard form which is explored in year 8 and then even further in year 9.	Algebraic manipulation underpins large chunks of content taught throughout secondary school and it is crucial students have a strong grounding in this area of the subject. Understanding the fundamental concepts of Algebra is important and the Maths team will prompt an understanding though Algebra tiles to aid understanding of Algebraic Expressions and Equations. Time and units also link heavily to real-life and reading clocks is a key skill students need.	Students need to understand key Geometry vocabulary to enable them to access Geometry concepts taught further into KS3. Understanding properties of 2D Shapes also underpin students' ability to finding missing Angles in Polygons for example. Additionally Coordinate Geometry and understanding axes are vital for understanding Linear graphs taught in year 8 and Quadratic graphs in year 9.	Fractions are an important aspect of Maths and are used throughout the Maths curriculum and the wider school curriculum also. Students will build on their Fraction knowledge from KS2 and develop their next steps such as Multiplying and Dividing Mixed Numbers. Fractions are used in Financial Maths and are explored in aspects of Business.	Analysing, collecting, and representing data is studied further in Key Stage 3 and 4. Analysing is a key skill students need to develop and can be uses in many jobs such as Software Developers, Economists, Accountants, Chemical Engineers, and Technical Writers. Proportion is also the building blocks for ratio, direct and inverse proportion which is studied during KS4.	Percentages work is used throughout KS3 and 4 which is built upon every year, it is important students start their developmental knowledge of percentages so that they can build up to percentage change and interest. Having a strong understanding of to convert between fractions, decimal and percentages will help the students in Geography, Sciences and DT.

Assessments	Students will complete a class Sparx Feedback activity as well as being assessed on a year 7 baseline test looking at assessing their foundational knowledge. Students will Peer Assess each other's work on the sparx class feedback. Students will have a QLA (question level analysis) which breaks down the topics and colour codes each topic for the student (red, amber and green). Students will then have a topic list of areas they need to work on. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.	Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.	Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.	Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.	Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.	Students will complete their end of Year 7 Exams during this Half Term; these will be papers to assess students' current position and to help identify gaps in their knowledge. Students will have a QLA (question level analysis) which breaks down the topics and colour codes each topic for the student (red, amber and green). Students will then have a topic list of areas they need to work on. The assessments also help the Maths Team make informed decisions about set moves before Year 8.