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| **Subject: Maths** |
|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year 7** | **Unit Name: Exploring Sequences** **Unit Description:**Pupils will explore sequences including the difference between linear and non-linear sequences and be able to predict subsequent terms.**Unit Name: Understanding and using algebraic notation** **Unit Description:**Pupils will develop an understanding of the basic algebraic forms. Function machines will be used alongside letter notation, link these concepts with inverse operations**Unit Name: Equality & Equivalence****Unit Description:**Pupils will be collecting like terms forming and solving on-step linear equations. They will consider the difference between equivalence and equality. | **Unit Name: Place value & ordering integers and decimals****Unit Description:**Pupils will explore integers up to one billion and decimals to hundredths. They will learn what is meant by rounding to the nearest power of ten and to one s.f.**Unit Name: Fraction, Decimal and Percentage Equivalence (3 wks)****Unit Description:**In this unit pupils will gain a deep understanding of the links between fractions, decimals and percentages so that they can convert between those most seen in real life. They will also be introduced to pie charts. | **Unit Name: Problem Solving with addition and subtraction** **Unit Description:**Pupils will build on the formal method of addition and subtraction in the context of solving real-life problems.**Unit Name: Problems solving with multiplication and division** **Unit Description:**Pupils will be forming and exploring two-step equations to solve problems. They will be expected to distinguish between multiples and factors, substitution and simplification.**Unit Name: Fractions and Percentages of amounts** **Unit Description:**Pupils will work out fractions and percentages of amounts and the link between the two. | **Unit Name: Operations & equations with directed number )****Unit Description:**To build on pupils' limited experience with directed numbers and appreciate the meaning behind operations with negative numbers.**Unit Name: Addition and Subtraction of Fractions****Unit Description:**This block builds on Autumn term. It will provide more experience of equivalent fractions and introduce the addition and subtraction of fractions. | **Unit Name: Constructing, measuring & using geometric notation** **Unit Description:**Pupils will build on KS2 skills using rulers, protractors etc to construct and measure increasingly complex diagrams using correct mathematical notation, including letter notation for angles, hatch marks for equality and arrows for parallel lines.**Unit Name: Geometric Reasoning****Unit Description:**Pupils will learn basic geometric language, names and properties of types of triangles, quadrilaterals and names of other polygons. Angle rules will be introduced and used to form short chains of reasoning. | **Unit Name: Developing number sense** **Unit Description:**Pupils will extend their mental strategies using a known fact to find other facts. **Unit Name: Sets and Probability (2 weeks)****Unit Description:**Fractions, decimals and percentages will be revisited in the study of probability. Pupils will learn about sets, set notation and systematic listing strategies.**Unit Name:****Prime Numbers and Proof (2 weeks)****Unit Description:**Factors and multiples will be revisited to introduce the concept of prime numbers. Odd, even, prime, square and triangular numbers will be used as the basis of forming conjectures. |
| **Year 8** | **Unit Name: Ratio and scale Unit Description**Pupils will learn the meaning of ratio. They will share in a ratio given the whole or one of the parts. They will simplify ratios and understand equivalent ratios. **Unit Name: Multiplicative change Unit Description:**Ratio and scaling will be covered in this unit, including direct proportion, converting currency and problems solving. Pupils will use conversion graphs.**Unit Name: Multiplying and dividing with fractions** **Unit Description:**Pupils will deepen their understanding of multiplying and dividing fractions by both integers and fractions. They will also be introduced to the reciprocal and its uses.  | **Unit Name: Working in the Cartesian Plane** **Unit Description**Pupils will look at algebraic rules for straight lines, starting with lines parallel to the axes and moving on to the more general form. They will be introduced to gradient and the intercept.**Unit Name: Representing data Unit Description:**Pupils are introduced to bivariate data and the idea of linear correlation. They will explore graphs and charts to deal with discrete and continuous data.**Unit Name: Table and Probability Unit Description:**Pupils are reminded of the ideals of probability, in particular looking at sample spaces and the use of tables to represent these. | **Unit Name: Bracket, Equations and Inequalities** **Unit Description:**Pupils will explore expanding over a single bracket and factorising by taking out common factors. They will cover solving equations with unkowns on both sides. We will cover how to solve inequalities.**Unit Name: Sequences Unit Description:**We will be reinforcing pupils learning from year 7 and explore how to find the rule for the nth term in a linear sequence.**Unit Name: Indices** **Unit Description:**Pupils will be exploring the ideas between the addition and subtraction of laws of indices. | **Unit Name: Fractions and percentages Unit Description:**We will be looking at the relationship between fractions and percentages including decimal equivalence and using this to calculate percentage increase and decrease. **Unit Name: Standard Index Form** **Unit Description:**We will be looking at what is meant by standard form, how to convert numbers into standard form and manipulate standard form.**Unit Name: Number Sense****Unit Description**Estimation and the use of mental strategies are the key focus of this unit. It will also cover the conversion of metric units. Pupils will be solving problems using time and the calendar. | **Unit Name: Angles in parallel lines and polygons****Unit Description:**Pupils will explore angles in a parallel line and find missing angles. Links will be made to connect properties of polygons and quadrilaterals. Pupils will also start to explore constructions **Unit Name:** **Area of Trapezia and Circles****Unit Description:**Pupils will investigate how to calculate the area of a trapezium and a circle. Pupils will need to choose the correct formula for the correct shape, reinforcing the names and properties of shapes.**Unit Name: Line symmetry and reflection** **Unit Description:**Pupils will be taught the mathematical definitions of rotation and translation. They will be investigating how they can describe objects and identify image and congruency. | **Unit Name: Data Handling** **Unit Description:**Pupils will be building on their prior knowledge of plotting charts and graphs. They will be comparing distributions and exploring when and how graphs can be misleading. Collection of data will also be covered along with the designing and criticising of questionnaires and analysing data.**Unit Name:** Measures of location (2 weeks)**Unit Description:**Pupils revisit median and mean and be introduced the mode. They will investigate when each of the averages should be used. Pupils will build on the previous unit, comparing distributions and use the averages and range. They will also investigate the impact of outliers on the averages and consider whether they should be included or excluded in calculations. |

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| **Year 9** | **Unit Name: Number****Unit Description:**Pupils will develop their knowledge of the number system to include rational and real numbers. Pupils will revisit their number skills with/out a calculator. Standard form and LCM/HCF will also be revisited.**Unit Name: Using percentages.** **Unit Description:**Pupils will be linking fractions, decimals and percentages. Pupils will be learning to calculate percentage increase and decrease and using their skills to solve problems. Both calculator and non-calculator methods will be utilised.**Unit Name:** **Maths and money** **Unit Description:****Pupils will practice their number skills in various financial contexts. They will look utilise their knowledge of percentages to investigate simple ideas of tax and wages.** | **Unit Name: Deduction** **Unit Description:**Pupils will extend their knowledge of angles rules, property of shapes and applying them to increasingly complex problems. The unit also builds on the ideas of testing conjectures looking at deduction.**Unit Name: Rotation and Translation** **Unit Description:**Building on their knowledge, pupils will look at rotational symmetry and rotation. They will investigate translations, which are described in vector form. **Unit Name: Three-Dimensional Shapes** **Unit Description:**Pupils will study 3-D shapes. They will be exploring what is meant by surface area, volume, plans and elevation. | **Unit Name: Three-Dimensional Shapes (1 week continuation from work prior to Christmas)****Unit Description: See Autumn 2** **Unit Name: Constructions and congruency** **Unit Description:**Pupils will be introduced to locus and the standard constructions using a straight edge and a pair of compasses. Congruence will also be explored from a practical approach. **Name: Enlargement and Similarity** **Unit Description:**Pupils will develop their knowledge of transformations to include enlargement and the definition of similar. Pupils will be expected to find an unknown side of a similar shape and this can be extended to formal similar triangle problems. | **Unit Name: Pythagoras Theorem** **Unit Description**Pupils will revise squares and square roots before investigating the relationship between the sides of a right-angled triangle. Pupils will explore the theorem in a variety of context.**Unit Name: Solving ratios and proportion problems** **Unit Description:****Pupils will solve all types of ratio problems and make the link between direct proportion and graphs. They will study inverse proportion.** **Unit Name: Rates** **Unit Description:**Students will develop their knowledge of inverse relationship to explore, speed, distance and time in detail. They will look at graphs and the link between SDT and density, mass and volume.  | **Name: Straight Line Graphs** **Unit Description:****Pupils will plot simple straight line graphs. They will study y=mx+c recognising that m is the gradient and c is the intercept.****Unit Name: Equations and inequalities -Forming and solving equations** **Unit Description:**Pupils will extend their knowledge of forming and solving linear equations and inequalities. They will explore rearranging formulae and how this links to solving equations. **Unit Name: Testing conjecture** **Unit Description:**In this unit there is the opportunity to revisit prime, factors and multiples in order to make and test conjuncture. Students will develop their algebraic skills through developing chains of reasoning and learning how to expand binomials. | **Unit Name:** Probability **Unit Description:**Pupils will be expected to calculate the probabilities of a single and combined event. They will be introduced to independent event and the use of the multiplication rule for these. Pupils will look at a variety of diagrams that support probability e.g. Ven diagrams, two way tables and tree diagrams.**Unit Name: Algebraic Representation** **Unit Description:**Pupils will look at interpretation and creation of different types of graphs. They will explore non-linear graphs e.g quadratic and not the symmetry and read of x and y values. They will also explore reciprocal and exponential graphs. Pupils will also learn how to plot graphs and look at inequalities.**Unit Name: Revision of intervention****Unit Description:*** To address any gaps in student’s knowledge from years learning.
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| **Year 9** | **Unit Name:** Number including prime numbers (2 weeks)**Unit Description:** | **Unit Name:**Deduction (2 weeks)* U
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