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**Year 6 – Discrete Mathematical Knowledge**

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| **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Recognise greater than / less than inequality symbols / order numbers in ascending and descending order  Know the part – relationship and use this to write number sentences  Suggest other parts that make the whole e.g. 100 tens is the same as 1 thousand  Recap number bonds to 10, 100 and 1000  Be fluent in multiplication facts to 12 x 12 and know the corresponding division facts  Be able to accurately write multiples of any double digit numbers  Use knowledge of multiples to see which multiples lie either side of a number  To know and be able to find common factors and multiples  Recognise prime numbers up to 100  Know squared and cubed numbers  Know the rule of BIDMAS  Know and recognise Roman Numerals  Know what parallel, perpendicular and intersecting lines are | Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.  Know what a fraction is, what the denominator is and what the numerator is  Identify and change improper and mixed number fractions  Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.  Identify x and y axis and know which part is positive and which part is negative  Describe translations using directional language e.g. direction, translation, rotation, vertex  How many seconds in a minute? How many minutes in a hour? How many hours in a day? How many days in a week? How many weeks in a year? How many days in a year? How many days in each month? | Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.  Know the number bonds to 1 using tenths and hundredths.  Identify the value of each digit in numbers given to 3 decimal places  Know the relationship when exchanging between columns e.g. 3 tenths is the same as 30 hundredths.  They discover that digits move to the left when they are multiplying and use zero as a place value  holder . The decimal point does not move.  Be able to write fractions as decimals.  Know that ‘percent’ means ‘out of 100’.  Convert from 12 hour clock time to 24 hour clock and vise versa | Know the input and output, in order to find functions  Substitute into formulae  Know the difference between capacity (the amount an object can  contain) and volume (the amount actually in an object).  Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3dp e.g. cm kg km g tonnes ml mm litres  Know what the area and perimeter are.  Calculate the area of 2d shapes e.g. rectangles, parallelograms, triangles  Recognise and use the perpendicular height to calculate area  Know how to calculate the volume of cubes and cuboids  Name and identify the properties of 2d shapes including the 3 different types of triangle  Name and identify the properties of 3d shapes including triangular based pyramid, square based pyramid, pentagonal based pyramid, triangular prism, hexagonal prism, cone, sphere, hemisphere and octahedron  Know what a polygon, regular polygon and irregular polygon are. | Name and describe the 4 different types of angles?  (right angle, obtuse, acute and reflex)  Know that there are two right angles on a straight line and four right angles around a point.  Know how many degrees are in a whole, quarter, half and three quarter turns  Know the interior angles in triangles, quadrilaterals - parallelogram, rhombus, trapezium etc. and regular polygons.  Know that vertically opposite angles share a vertex and are equal  Name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.  Know how to calculate the mean, median and mode. | Consolidation |