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| **Name: Year group joined/date: SEND/EI PP: Yes/No** | | |
| **MATHS** | | |
|  | Year 6 Expected | Year 6 Greater Depth |
| Number | Read, write compare and order numbers to at least 10 000 000  The pupil can demonstrate an understanding of place value, including large numbers and decimals (e.g. what is the value of the ‘7’ in 276,541?; find the difference between the largest and smallest whole numbers that can be made from using three digits; 8.09 = 8 + 9/? ; 28.13 = 28 + + 0.03). | Read, write compare and order numbers to  at least 10 000 000 in context   * House prices, rich list |
| Use negative numbers in context and calculates intervals across zero |  |
| Use prior knowledge to solve multistep problems |  |
| Round any whole number to a required degree of accuracy | Round numbers to an appropriate degree of accuracy to a number of decimal places or significant figures |
| use formal methods to solve multi-step problems  (e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55) |  |
| Identify the value of each digit in numbers with up to 3 decimal places.  Multiply and divide by 10, 100 and 1000 where the answer is up to 3 decimal places | Understand and use place value for decimals |
| Calculations | Identify common factors and common multiples.  Identify the prime numbers. | Reason about common factors, multiples and prime numbers. |
| Multiply 4 digit numbers by 2 digit numbers using long multiplication.  Divide up to 4 digit numbers by 2 digit numbers using long division interpreting remainders as whole numbers and fractions. | Find missing numbers in multiplication and division calculations involving remainders. |
| Calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation (e.g. 53 – 82 + 47 = 53 + 47 – 82 = 100 – 82 = 18; 20 × 7 × 5 = 20 × 5 × 7 = 100 × 7 = 700; 53 ÷ 7 + 3 ÷ 7 = (53 +3) ÷ 7 = 56 ÷ 7 = 8). |  |
| Recognise and recall factors of numbers up to 100 and corresponding multiples of 100 |  |
| Know by heart all the squares of numbers up to 12 x 12 | Know by heart all square roots of numbers up to 12 x 12 |
| Know by heart all the cube numbers up to 12 x 12 x 12 | Know by heart all cubed roots of numbers up to 12x12x12 |
| Use knowledge of place value and x facts to 12 x 12 to derive related multiplication and division facts involving decimals 0.6 x 8 = 4.8 |  |
|  | Know by heart tests of divisibility for multiples of 2, 3, 4, 5, 6, 9 and 10 |
| Fractions | Use common factors to simplify fractions.  Multiply simple pairs of proper fractions and write answer in simplest form and divide proper fractions by whole numbers. | Use common factors to simplify fractions. Multiply simple pairs of proper fractions and write answer in simplest form and divide proper fractions by whole numbers. All in context. |
| Use prior knowledge of rounding to solve problems involving decimals | Use rounding to reason and solve problems:  Mary and 5 friends went out for lunch. They divided the bill and each paid £x. What could the total bill have been? |
| Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions |  |
| Compare and order fractions including fractions > < and = 1 | Order positive and negative integers, decimals and fractions using ≥ ≤ ≠ |
| Recognise the relationship between fractions, decimals and percentages  and can express them as equivalent quantities  (e.g. one piece of cake that has been cut into 5 equal slices can be expressed as 15 or 0.2 or 20% of the whole cake). | Work interchangeably with corresponding decimals and fractions |
| Calculate using fractions, decimals or percentages (e.g. knowing that 7 divided by 21 is the same as 7/21 and this equal to 1/3 |  |
| Use written division and multiplication methods where an answer has up to 2 dp and solve problems which have to be rounded to any degree of accuracy |  |
| Measurement | Use, read, write and convert between standard units (including miles and kilometres), using decimal notation up to 3 decimal place |  |
| Recognise that shapes with the same area can have different perimeters.  Recognise when it is possible to use formulae to find area and volume.  Calculate the area of parallelograms and triangles | Calculate the area of composite shapes, containing parallelograms and triangles |
| Solve problems involving the calculation and conversion of units of measure |  |
| Calculate, estimate and compare volume of cubes and cuboids using standard units |  |
| Calculate with measures (e.g. calculate length of a bus journey given start and end times; convert 0.05km into m and then into cm). |  |
| Geometry | Compare and classify geometric shapes based on properties |  |
| Find unknown angles in triangles, quadrilaterals and regular polygons.  Recognise angles where they meet at a point – on a straight line, vertically opposite and find missing angles. |  |
| Draw 2D shapes using given dimensions and angles  Recognise, describe and build 3D shapes including making nets |  |
| Substitute values into a simple formula to solve problems (e.g. perimeter of a rectangle or area of a triangle) |  |
| Statistics | Interpret and construct pie charts and line graphs, using them to solve problems | Use a scatter graph to explain the correlation between two sets of results.  Design, trial and refine methods of collection if necessary.  Design and use a grouped frequency table. |
| Calculate and interpret the mean, average and range. |  |
| Position and direction | Describe how coordinates move using appropriate language e.g. half and quarter turns | Plot coordinates which satisfy a rule and describe what happens to the resulting graph |
| Identify, describe and represent the position of a shape following a reflection or translation. Know that the shape has not changed | Reflect shapes on graph paper given the equation of the mirror line |
| Fully describe the rotation of a shape |  |
| Ratio and Proportion | Solve problems involving the relative sizes of 2 quantities where missing values can be found using integer multiplication and division facts |  |
| Solve problems involving the calculation of percentages such as 15% of 360 and the use of percentages for comparison | Solve problems involving the calculation of a percentage of a proportion   * Mary won the lottery. She was one of 6 winners, who would share 38% of the total. What would she get? |
| Solve problems involving similar shapes where the scale factor is known or can be found | Confidently solve ratio and proportion problems applying the Expected skills, including dividing quantity into 2 or more parts in a given ratio |
| Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples |  |
| algebra | Express missing number problems algebraically |  |
| Use simple formulae expressed in words |  |
| Generate and describe linear number sequences |  |
| Generate and describe linear number sequences |  |
| Enumerate all possibilities of combinations of two variables |  |