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| **LEWIS STREET LOGO NO LINE** | **Year 6****Mathematics Skills Sheet** | **NEW CHRIST CHURCH LOGO NO LINE** |
| **Number and Place Value** |
| Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. |
| Round any whole number to a required degree of accuracy. |
| Use negative numbers in context, and calculate intervals across 0. |
| Solve number and practical problems that involve all of the above. |
| **6NPV-1 - *Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).*** |
| **6NPV-2 - *Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.*** |
| **6NPV-3 - *Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.*** |
| **6NPV-4 - *Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.*** |
| **Addition, subtraction, multiplication, and division** |
| Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. |
| Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. |
| Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. |
| Perform mental calculations, including with mixed operations and large numbers. |
| Identify common factors, common multiples and prime numbers. |
| Use their knowledge of the order of operations to carry out calculations involving the 4 operations. |
| Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |
| Solve problems involving addition, subtraction, multiplication and division. |
| Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. |
| **6AS/MD-1 - *Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).*** |
| **6AS/MD-2 - *Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.*** |
| **6AS/MD-3 - *Solve problems involving ratio relationships.*** |
| **6AS/MD-4 - Solve problems with 2 unknowns.** |
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| **Fractions (including decimals and percentages)** |
| Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. |
| Compare and order fractions, including fractions >1. |
| Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. |
| Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8 ]. |
| Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6 ]. |
| Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8 ]. |
| Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. |
| Multiply one-digit numbers with up to 2 decimal places by whole numbers. |
| Use written division methods in cases where the answer has up to 2 decimal places. |
| Solve problems which require answers to be rounded to specified degrees of accuracy. |
| Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |
| **6F-1 - *Recognise when fractions can be simplified, and use common factors to simplify fractions.*** |
| **6F-2 - *Express fractions in a common denomination and use this to compare fractions that are similar in value.*** |
| **6F-3 - *Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.*** |
| **Ratio and proportion** |
| Solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts. |
| Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison. |
| Solve problems involving similar shapes where the scale factor is known or can be found. |
| Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |
| **Algebra** |
| Use simple formulae. |
| Generate and describe linear number sequences. |
| Express missing number problems algebraically. |
| Find pairs of numbers that satisfy an equation with 2 unknowns. |
| Enumerate possibilities of combinations of 2 variables. |
| **Measurement**  |
| Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate. |
| 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 3 decimal places. |
| Convert between miles and kilometres. |
| Recognise that shapes with the same areas can have different perimeters and vice versa. |
| Recognise when it is possible to use formulae for area and volume of shapes. |
| Calculate the area of parallelograms and triangles. |
| Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]. |
| **Properties of shapes** |
| Draw 2-D shapes using given dimensions and angles. |
| Recognise, describe and build simple 3-D shapes, including making nets. |
| Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. |
| Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. |
| Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |
| **6G-1 - *Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.*** |
| **Position and directions** |
| Describe positions on the full coordinate grid (all 4 quadrants). |
| Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| **Statistics** |
| Interpret and construct pie charts and line graphs and use these to solve problems. |
| Calculate and interpret the mean as an average. |