|  |  |  |
| --- | --- | --- |
| **LEWIS STREET LOGO NO LINE** | **Year 5****Mathematics Skills Sheet** | **NEW CHRIST CHURCH LOGO NO LINE** |
| **Number and Place Value** |
| Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. |
| Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. |
| Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0. |
| Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000. |
| Solve number problems and practical problems that involve all of the above. |
| Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals. |
| **5NPV-1 - *Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.*** |
| **5NPV-2 - *Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.*** |
| **5NPV-3 - *Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.*** |
| **5NPV-4 - *Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts*** |
| **5NPV-5 - *Convert between units of measure, including using common decimals and fractions.*** |
| **Addition and Subtraction** |
| Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). |
| Add and subtract numbers mentally with increasingly large numbers. |
| Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |
| **Multiplication and Division** |
| Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers. |
| Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. |
| Establish whether a number up to 100 is prime and recall prime numbers up to 19. |
| Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. |
| Multiply and divide numbers mentally, drawing upon known facts. |
| Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. |
| Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. |
| Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³). |
| Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. |
| Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. |
| Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. |
| **5NF-1 - *Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.*** |
| **5NF-2 - *Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth)*** |
| **5MD-1 - Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.** |
| **5MD-2 - *Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.*** |
| **5MD-3 - *Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.*** |
| **5MD-4 - *Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.*** |
| **Fractions (including decimals and percentages)**  |
| Compare and order fractions whose denominators are all multiples of the same number. |
| Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. |
| Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5 ]. |
| Add and subtract fractions with the same denominator, and denominators that are multiples of the same number. |
| Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. |
| Read and write decimal numbers as fractions [for example, 0.71 = 71/100 ]. |
| Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. |
| Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place. |
| Read, write, order and compare numbers with up to 3 decimal places. |
| Solve problems involving number up to 3 decimal places. |
| Recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction. |
| Solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25. |
| **5-F1 - *Find non-unit fractions of quantities*** |
| **5F-2 - *Find equivalent fractions and understand that they have the same value and the same position in the linear number system.*** |
| **5F-3 - *Recall decimal fraction equivalents for ½, 1/4, 1/5 and 1/10 , and for multiples of these proper fractions.*** |
| **Measurement** |
| Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]. |
| Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. |
| Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. |
| Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes. |
| Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]. |
| Solve problems involving converting between units of time. |
| Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. |
| **Properties of Shape** |
| Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. |
| Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. |
| Draw given angles, and measure them in degrees (°). |
| Identify:* angles at a point and 1 whole turn (total 360°)
* angles at a point on a straight line and half a turn (total 180°)
* other multiples of 90°
* use the properties of rectangles to deduce related facts and find missing lengths and angles

Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. |
| **5G-1 - *Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.*** |
| **5G-2 - *Compare areas and calculate the area of rectangles (including squares) using standard units.*** |
| **Position and Direction** |
| Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. |
| **Statistics** |
| Solve comparison, sum and difference problems using information presented in a line graph. |
| Complete, read and interpret information in tables, including timetables. |