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|  | Term One | Term Two | Term Three |
| N  U  M  B  E  R | Recognise spoken numbers beyond 99 999.  Read numbers beyond 99 999.  Write numbers beyond 99 999.  Know number “after” beyond 99 999.  Know number “before” beyond 99 999.  Know number “between” beyond 99 999.  Find missing numbers in a sequence (increasing and decreasing) beyond 99 999.  Mentally find simple fractions of quantities, using known division and multiplication facts.  (e.g. 2/5 of 35 as 35÷5x2).  Relate two decimal place numbers to hundredths.  Understand place value of 2 decimal place numbers, representing using base 10 equipment.  Recognise spoken 2 decimal place numbers.  Read 2 decimal place numbers  Write 2 decimal place numbers.  Know whole number “after” 2 decimal place numbers.  Know 1 d.p. number “after” 2 decimal place numbers.  Know 2d.p. number “after” 2 decimal place numbers.  Know whole number “before” 2 decimal place numbers.  Know 1 d.p. number “before” 2 decimal place numbers.  Know 2d.p. number “before” 2 decimal place numbers.  Know number “between” 2 decimal place numbers.  Find missing numbers in a sequence of 2 decimal place numbers (increasing and decreasing)  Order a set of consecutive 2d.p. numbers (increasing and decreasing) within 99 999.  Order a set of non-consecutive 2d.p. numbers (increasing and decreasing) within 99 999.  Demonstrate value of digits in any 2 d.p. number within 99 999 in terms of ten thousands, thousands, hundreds, tens, ones (units).  Round 2d.p. numbers to the nearest whole number, and to 1 d.p.  Add fractions and mixed numbers, with different denominators, using knowledge of equivalence.  Mentally find what must be added to a 1 d.p. decimal number to make the next whole number.  Mentally add decimal numbers to 1 d.p. without bridging the unit (e.g. 4.6 + 12.3).  Use standard written and calculator methods to add numbers of any size, including decimal numbers to 2d.p., estimating the answer before calculating.  N  U  M  B  E  R  Mentally add 4 or more single digit numbers.  Mentally add any number to a multiple of 1000.  Mentally add two 2 digit numbers, including bridging 10 and 100.  Subtract fractions and mixed numbers, with different denominators, using knowledge of equivalence.  Mentally subtract decimal numbers to 1 d.p. without bridging the unit (e.g. 4.6 + 12.3).  Use standard written and calculator methods to subtract numbers of any size, including decimal numbers to 2d.p., estimating the answer before calculating.  Mentally subtract a multiple of 1000 from any 4-digit number.  Use standard written and calculator methods to multiply numbers of any size by a single digit, including decimal numbers to 2d.p., estimating the answer before calculating.  Multiply any 2 or 3 -digit whole number by a “teens” number, by partitioning [e.g. 36 x 16 as (36x10)+(36x6) ]  Multiply any number, including up to 2d.p. by 10, using concept that digits move one places to the left, as the value of each digit becomes 10 times larger.  Mentally multiply a 2-digit multiple of 10 by a single digit.  (e.g. 70x6).  Mentally multiply a 3-digit multiple of 100 by a single digit (e.g. 600x7).  N  U  M  B  E  R  Use standard written and calculator methods to divide numbers of any size by a single digit, including decimal numbers to 2d.p., estimating the answer before calculating.  Divide any number by 10, including answers with up to 2d.p, using concept that digits move one places to the right, as the value of each digit becomes 10 times smaller.  Understand and use square numbers.  Know with quick recall the square of all number to 10.  N  U  M  B  E  R  Understand use of superscript 2 .  Understand other forms of money transactions, including use of cheques credit and debit cards.  Discuss and assess value for money when making choices when shopping (e.g. deciding whether to choose “3 for the price of 2” or “buy one get a second at half price”) | Order a set of consecutive numbers (increasing and decreasing) beyond 99 999.  Order a set of non-consecutive numbers (increasing and decreasing) beyond 99 999.  Demonstrate value of digits in any number beyond 99 999.  Know and use equivalence of fractions, decimals and %s.  Relate three decimal place numbers to thousandths.  Understand place value of 3 decimal place numbers.  Recognise spoken 3 decimal place numbers.  Read 3 decimal place numbers  Write 3 decimal place numbers.  Know whole number “after” 3 decimal place numbers.  Know 1 d.p. number “after” 3 decimal place numbers.  Know 2d.p. number “after” 3 decimal place numbers.  Know 3d.p. number “after” 3 decimal place numbers.  Know whole number “before” 3 decimal place numbers.  Know 1 d.p. number “before” 3 decimal place numbers.  Know 2 d.p. number “before” 3 decimal place numbers.  Know 3 d.p. number “before” 3 decimal place numbers.  Know number “between” 3 decimal place numbers.  Find missing numbers in a sequence of 3 decimal place numbers (increasing and decreasing)  Find % of quantities using written and calculator methods.  Calculate % increases and decreases using written and calculator methods.  Mentally find what must be added to a fraction to make the next whole number.  Mentally add decimal numbers to 1 d.p. including bridging the unit (e.g. 4.8 + 12.6).  Mentally addany two 2 digit numbers, including bridging 10and 100.  Mentally add a 2 or 3- digit multiple of 10 to any 3-digit number, without bridging through 100 (e.g. 458+230).  Mentally add two 3-digit multiples of 10, including bridging through 100 (e.g. 360 +380).  Mentally add two 3 digit numbers which are near multiples of 50 (e.g. 248 + 349).  Mentally subtract decimal numbers to 1 d.p. including bridging the unit (e.g. 4.8 + 12.6).  Mentally subtract a 2-digit multiple of 10 from a 3 digit multiple of 10, including bridging through 10 (e.g. 330-60)  Mentally subtract a 3-digit multiple of 10 from a 3 digit multiple of 10, including bridging through 10 (e.g. 330-260)  Mentally subtract a 2 or 3-digit multiple of 10 from any 3-digit number, without bridging through 100 (e.g. 458-30)  Mentally subtract two 3 digit numbers which are near multiples of 50 (e.g. 648 - 349).  Multiply any 2 or 3 -digit whole number by any 2-digit number, by partitioning  [e.g. 36 x 26 as (36x10x2)+(36x6) ]  Multiply any number, including up to 3 d.p., by 10, using concept that digits move one place to the left, as the value of each digit becomes 10 times larger.  Mentally multiply numbers including up to 3 d.p.,by 10.  Mentally multiply a 2 digit number by a single digit, using partitioning  (e.g. 23 x 7 as (20 x 7) + (3 x 7) = 140+21 = 161).  Divide any number by 10, including answers with up to 3d.p, using concept that digits move one places to the right, as the value of each digit becomes 10 times smaller.  Mentally divide any number by 10, with answers including decimal numbers with up to 2 d.p.  Mentally divide a 2-digit number by a single digit, within known facts, including remainders (e.g. 38÷6).  Mentally divide whole numbers by 2, 4, 8, using knowledge of halves.  Mentally divide whole numbers by 5, by dividing by 10 then doubling (e.g. 180 ÷ 5 = 180 ÷ 10 x2).  Understand that a letter can be used to stand for a variable quantity, and solve simple equations.  Understand and use concept of prime numbers, based on knowledge of factors.  Understand and use cube numbers, using link with calculated volumes of cubes.  Understand use of superscript 3  Understand advantages and disadvantages of borrowing money, including interest rates.  Understand the concept of earning, and managing spending through budgeting. | Order a set of consecutive 3d.p. numbers (increasing and decreasing)  Order a set of non-consecutive 3d.p. numbers (increasing and decreasing)  Demonstrate value of digits in any 3 d.p. number  Round 3d.p. numbers to the nearest whole number, and to 1 d.p. and 2d.p.  Mentally calculate multiples of 10% of quantities (e.g. 30% of 140 as (10% of 140) x 3).  Mentally calculate %s of multiples and factors of 100  (e.g. find 18% of 300 as 18 x 3).  Use standard written and calculator methods to add numbers of any size, including decimal numbers to 3 d.p., estimating the answer before calculating.  Mentally find what must be added to a 2 d.p. decimal number to make the next 1 d.p.number.  Mentally find what must be added to a 2 d.p. decimal number to make the next whole number.  Mentally add a 2 or 3-digit multiple of 10 to any 3-digit number, including bridging through 100 (e.g. 478+360).  Use standard written and calculator methods to subtract numbers of any size, including decimal numbers to 3 d.p., estimating the answer before calculating.  Mentally subtract a 2 or 3-digit multiple of 10 from any 3-digit number, including bridging through 100 (e.g. 428-160)  Use standard written and calculator methods to multiply numbers of any size by a single digit, including decimal numbers to 3d.p., estimating the answer before calculating.  Multiply any 2 or 3 -digit whole number by any 2-digit number, using standard written method.  Multiply any number, including up to 3 d.p. by 100, using concept that digits move two places to the left, as the value of each digit becomes 100 times larger.  Multiply any number, including up to 3 d.p. by 1000, using concept that digits move three places to the left, as the value of each digit becomes 1000 times larger.  Mentally multiply numbers including up to 3 d.p.,by 100.  Mentally multiply whole numbers by 2, 4, 8, using knowledge of doubles.  Mentally multiply whole numbers by 5, by multiplying by 10 then halving (e.g. 38 x 5 = 38 x 10 ÷2).  Use standard written and calculator methods to divide numbers of any size by a single digit, including decimal numbers to 3d.p., estimating the answer before calculating.  Divide any number by 100, including answers with up to 3 d.p, using concept that digits move two places to the right, as the value of each digit becomes 100 times smaller.  Divide any number by 1000, including answers with up to 3 d.p, using concept that digits move three places to the right, as the value of each digit becomes 1000 times smaller.  Mentally divide any number by 100, with answers including decimal numbers with up to 2 d.p.  Mentally divide by 50, 25 , with whole number answers only, by counting up in 50’s or 25’s.  Use negative numbers in calculations in everyday contexts.  Understand triangular numbers through spatial arrangements.  Understand the effect of using brackets in calculations.  Use understanding of different ways of funding large purchases to decide on most cost effective choice e.g. calculating total cost of a holiday using different payment schemes. |
| PROCESSES | Select and use effectively materials and equipment required for their work. Decide what information is required for a task and how to obtain it. Decide whether the information gathered is appropriate and sufficient for the task. Select and use appropriate methods and strategies. Plan and organise work in a systematic and efficient way. Decide how to present findings. Recognise and apply mathematics in contexts across the curriculum. Choose a format to record work and give reasons for the choice. Present findings using prose, numbers and symbols, to show how the problem was solved/investigation was carried out.Use appropriate language to describe orally their work. Discuss and respond to open-ended questions. Use mathematical language and symbols to record findings. Use the language of mathematics to express mathematical ideas precisely. Use a range of problem solving strategies, trying different strategies when difficulties are encountered. Independently review own way of working. Independently use a variety of ways of checking results of calculations. Independently investigate a general statement. Make general statements based on findings and check using new examples. Recognise and use mathematical connections. Make and justify estimations and approximations. | | |
|  | Term One | Term Two | Term Three |
| M  E  A  S  U  R  E  S | Estimate, measure and calculate length, selecting most appropriate unit and measuring equipment.  Understand that measurement of length is continuous and selecting an appropriate degree of accuracy for different contexts.  Estimate, measure and calculate weight, selecting most appropriate unit and measuring equipment.  Understand that measurement of weight is continuous and selecting an appropriate degree of accuracy for different contexts.  Estimate, measure and calculate capacity, selecting most appropriate unit and measuring equipment.  Understand that measurement of capacity is continuous and selecting an appropriate degree of accuracy for different contexts.  Calculate areas of right angled triangles.  Develop a formula for calculating the volume of cubes and cuboids, based upon the area of each layer and the number of layers of cubes.  Understand the system of different time zones across the world. | Convert between all metric units of length, involving up to 2 d.p.  Apply knowledge of metric units of length to real life contexts, involving up to 2 d.p.  Interpret given scale plans and diagrams, calculating corresponding real-life lengths.  Convert between all metric units of weight, involving up to 2 d.p.  Apply knowledge of metric units of weight to real life contexts, involving up to 2 d.p.  Convert between all metric units of capacity, involving up to 2 d.p.  Apply knowledge of metric units of capacity to real life contexts, involving up to 2 d.p.  Investigate the relationship between area and perimeter.  Use standard formula to calculate volume of cubes and cuboids.  Calculate time differences between different places in the world. | Convert between all metric units of length, involving up to 3d.p.  Apply knowledge of metric units of length to real life contexts, involving up to 3d.p.  Construct scale plans and diagrams using given or measuring real-size lengths.  Convert between all metric units of weight, involving up to 3d.p.  Apply knowledge of metric units of weight to real life contexts, involving up to 3d.p.  Convert between all metric units of capacity, involving up to 3 d.p.  Apply knowledge of metric units of capacity to real life contexts, involving up to 3 d.p.  Use standard formula to calculate volume of composite shapes involving cubes and cuboids. |
|  | Term One | Term Two | Term Three |
| S S  H P  A & A  P C  E E | Classify quadrilaterals according to their properties: square, rectangle, rhombus, trapezium, parallelogram, kite.  Understand angle properties of regular 2D shapes – e.g. the relationship between the size of each angle and the number of sides.  Estimate given angles to an accuracy of 10o. | Understand concepts of similarity and congruence.  Calculate the sum of the interior angles of a range of 2D shapes.  Understand concept of rotational symmetry  Measure given angles using a protractor to an accuracy of 1o.  Use programmable language (e.g. LOGO) to generate mathematical shapes and designs, including use of Procedures. | Investigate and test the general rule relating number of faces, edges and vertices of 3D shapes (V+F) = E+2.  Find the order of rotational symmetry of a range of 2D shapes.  Construct angles using a protractor to an accuracy of 2o .  Understand angle relationships associated with parallel lines. |
| H  A  N D  D A  L T  I A  N  G | Design and construct computer databases, and interrogate using 2 criteria.  Record data in tables, deciding own class intervals, understanding that class intervals are equal in range and have no gaps or overlaps with adjacent class intervals.  Display information from table as a grouped frequency diagram, with own class intervals. | Use given spreadsheet to investigate different options, e.g. finding the best way to spend a given budget when planning a school celebration day.  Construct and interpret line graphs showing continuous data, e.g. time, temperature or distance. | Design formulae for a spreadsheet to investigate a particular issue.  Use numeric system to develop idea of chance based upon number of possible outcomes. E.g. chance of getting “heads” when spinning a coin: one flip , two possible outcomes - chances are 1 out of 2. |