This document should be used alongside the Hampshire Mathematics Planning Tool for mathematics. The concepts, knowledge and skills within National Curriculum Strand have NOT been listed in order. They are there to support bespoke planning to meet the needs of individual pupils. An individual plan would be made up from an appropriate number of different National Curriculum strands depending on the needs of the pupil. It might be appropriate to use some elements from the Year 1, Year 2 and or Year3 planning tool when developing an individual bespoke plan.

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| **Year 3: Number and Place Value**  **Review: (Date)** | | |
| **National Curriculum strands** | **Concepts, knowledge and skills (select)** | **Year 3 National Curriculum expectations** |
| Counting  Oral counting forwards  Oral counting backwards  Number sequences (inc odd/even)  Estimating and counting a set of objects inc coins | Can say any part of the number sequence from 1-200 (1-500; 1-1000)  Can say any part of the number sequence backwards from 200-1 (500-1; 1000-1)  Within the range 1- 200 (1-500; 1-1000) can count forwards from a given number to another given number  Within the range 200-1 (500-1; 1000-1) can count backwards from a given number to another given number  Can say the number after a given number in the range 1-200 (1-500; 1-1000) without dropping back to 1  Can say the number before a given number in the range 1-200 (500; 1000) without counting up through all numbers first  Recognises patterns in the number sequences from 1-20 (1-100) and uses this to say them/ self-correct  Can find 10 more than any given number (0-100) fluently then 0-200; 0-500; 0-1000  Can count accurately in multiples of 100 using concrete objects 500 (1000)  Can find 10 less than any 2 digit number (0-100) fluently then 200-0; 500-0; 1000-0  Can count in multiples of 2, 5 and 3 fluently  Uses step counting to count larger groups of objects inc coins in context of money ( all coins 1p,2p,5p,10p, 20p,50p)  Can count in multiples of 50 to 200 (500; 1000)  Can count in multiples of 4 to tenth multiple  Can count in multiples of 4 and 8 to tenth multiple (notice links) | count from 0 in multiples of 4, 8, 50 and 100; |
| find 10 or 100 more or less than a given number |
| Comparing numbers  Symbol order  Number line model  Cardinality  Ordinality  > < = symbols | Can use a structured (then empty) number line to compare position of two numbers 0-200 (0-500; 0-1000  Can say whether two numbers are close together or far apart (through oral counting or number line model)  Can use language of ‘more/ less’ to describe two sets of objects with links to > < signs  Can use structured resources eg dienes to compare numbers 1-200 (1-500; 1-1000)  Can order numbers 1-200 (1-500; 1-1000)  Can use language of ordinality up to twentieth  Can use a structured (empty) number line to compare position of two numbers (multiples of 100 ; non multiples of 100 from 0-200 (0-500; 0-1000) related to multiples of 100 | compare and order numbers up to 1 000 |
| Identifying, Representing and Estimating Numbers  counting objects, coins and structured resources  tens arrays  number lines, bar models  flexible partitioning | Makes a reasonable estimate up to 200 (500; 1000) using counting objects, coins and dienes  Can mark numbers on structured number lines 0-200;(0-500; 0-1000) showing awareness of position of multiples of 100  Can fluently systematically subitise small numbers in all different ways 3-7 (8-10) and record using + and = signs. Recognises patterns linking multiples of 10 and 100  3+8/ 30+80/ 300+800 etc  Can use tens arrays, dienes and numicon to represent same number in different ways and compare different numbers using two tens arrays and other structured resources inc place value cards  Can use structured resources eg dienes to represent any 3 digit number explaining choices  Can use structured resources to show understanding of flexible PV partitioning eg 56= 50+6/ 40+16/30+26 etc | identify, represent and estimate numbers using different representations |
| Reading and Writing Numbers (including Roman Numerals) | Read all number words to 500 (0-1000)  Show all numbers using place value cards and structured resources from oral instruction 0-200 (0-500; 0-1000)  Write all numbers using symbols and words without zero as place holder.  Write all numbers using symbols and words including with zero as place holder. Eg 904, | read and write numbers up to 1 000 in numerals and in words |
| Understanding Place Value  cardinality  ordinality  number line imagery  PV chart  zero as place holder | Can draw an empty number line and mark where 3 digit numbers would be and explain the position compared to multiples of 100 . Understands the significance of the order of digits ie 141 and 411 are in different positions on a number line related to cardinal value ( HTU) and ordinal value- position compared to other numbers  Can confidently find 2 and 3 digit numbers to 500 (1000) on a structured number line relative to multiples of 10 and 100  Can continually ‘add 10 (100) to any units number recognising the oral counting pattern eg 7,107,207,307 using structured resources eg numicon, dienes, place value cards and number lines to model the numbers and pattern  Can use a combination of a range of structured resources eg straws, dienes, place value cards, PV counters Numicon to demonstrate 1-200 (501-1000)  Can continually ‘subtract 10/100’ from a 3 digit number recognising the oral counting pattern eg 307,207,107,7 using structured resources eg numicon, dienes, place value cards and number lines to model the numbers and explain PV patterns | recognise the place value of each digit in a three digit number (hundreds, tens, and ones) |
| Rounding | Recognise and use rounding to nearest multiple of 10 fluently eg +9, +19, +29 as 10-1; 20-1, 30-1 etc  Recognise and use rounding to nearest multiple of 100 eg, +/-99, +/-999, as 10 -1, 100-1; 1000-1; 299 /300-1 etc inc in the context of money and units of measurement | N/A |
| Problem solving | Research evidence suggests that developing concepts and skills in understanding number and calculation (including number facts) through problem solving is more effective than working with ‘number’ only as an abstract concept  **Examples of types of problems used:** | solve number problems and practical problems involving these ideas |

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| **Year 3: Addition and Subtraction**  **Review: (Date)** | | |
| **National Curriculum strands**  **NCETM Progression Doc.** | **Concepts, knowledge and skills (select)** | **Year 3 National Curriculum expectations** |
| Number bonds   * Flexible partitioning * Deriving and recalling addition and subtraction facts * Knowing doubles and corresponding halves | *Can fluently subitise small numbers in different ways 3,4,5,6,7,8,9 and 10) using counting objects and structured resources eg numicon*  *Can record all the different partitions of numbers (3-20) using + and = signs and identify the linked subtraction facts*  *Understands X +1 can be interpreted as ‘next number’ and ‘1 more’ without the need to count all. (0-200; 500; 1000)inc context of money and measure*  *Understands X -1 can be interpreted as ‘number before’ and ‘1 less’ without the need to take away and then count all. (0-1000)*  *Understands X +U where X=100 (or multiple of 100) can be calculated using PV without the need to count all (0-200; 0-500; 0-1000). Eg 200+9=209*  *Knows doubles of all numbers to 50 and can show using resources and on a bar model. Relates to 3 digit numbers eg 13+13=26; 130+130=260*  *Knows halves of all numbers to 50 and can show using resources and on a bar model*  *Ensure fluency with use of number bonds to 20 relating numbers to 5 and 10, bridging through 10 and 100*  *Can use bar models and 2 part diagrams fluently to show partitions of all units numbers (10; 11-20) identifying the related subtraction fact with each addition fact relating this to multiple of 10 (100)*  *3+7/ 30+70/300+700 in context of money and measures*  *Can use bar models and part/ whole diagrams fluently to show PV partitions of 3 digit numbers*  *458= 400+50+8/ 450+8/ 400+58 etc*  *Understands 3 digit number subtract 100 and multiples of 100= 2 digit/ units digit and can use structured resources to explain eg numicon, place value cards eg 340-300= 40*  *Understands the pattern linking number bonds to 10 with number bonds to 20 (addition) 100 and 1000*  *3+7=10 / 13+7= 20 /53+47= 100/ 530+470=1000*  *Understands the pattern linking number bonds to 10 with number bonds to 20 ( addition and subtraction) and 100 (1000) eg 1+9; 11+9; 110+90; 910+90*  *Can use structured resources to show flexible partitioning of 2(3) digit numbers*  *Eg 65= 60+5/ 50+15/ 40 +25 etc*  *Relates this to finding multiples of 2/5/10/3/ 4/8 to support division* | N/A  Ensure fluency with use of number bonds to 20 relating numbers to 5 and 10, bridging through 10 (links to unit fractions and decimals) |
| Mental calculations   * Using facts to estimate and check answers | *Use recall of number bonds to 20 to check solutions (addition)*  *Group calculations into solutions > < then = to 100/ 1000*  *Use recall of number bonds to 20 to check solutions (subtraction)*  *Uses inverse to solve missing box calculations*  *Use known fact to solve related fact eg if 300+400= 700 then 300+500 must be 800; 247+200= 447 then 247 and 300 must be 547*  *Identify calculations that can be worked out easily with PV counting forwards/ backwards ie +/-10s (+/-100s)*  *show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot (HTUs)*  *Recognise and use rounding to nearest multiple of 100 eg +99, +199, +299 as 100-1; 200-1, 300-1 etc* | add and subtract numbers mentally, including:   * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds |
| Written methods   * Say, do and write when calculating * Use symbols +/-/= * Inverse * Commutativity   Relate calculations to problem context | *Use concrete resources to model and record addition and subtraction calculations (HTU+/-U; HTU+/- TU/ HTU +/-HTUs) using +/- and = signs*  *Use unstructured number lines to show addition and subtraction calculations (HTU+/-U; HTU+/-TU/ HTU+/- HTU)*  *Explain and use concrete resources to model commutativity with addition*  *Use structured number lines to show addition calculations (HTU+U/TU) bridging through 10 eg 398+6/ 398+16*  *Explain using concrete resources that subtraction is not commutative eg 90-60/ 60-90*  *Use structured number lines to show addition calculations (TU-U) bridging through 10*  *Use diagrams eg bar models and concrete resources to explain inverse (HTU+/-TU; HTU +/- HTU)*  *Identify addition number sentence to solve a simple word problem 0-1000 inc context of money*  *Identify subtraction number sentence to solve a simple word problem 0-1000 inc context of money* | add and subtract numbers with up to three digits, using **formal written methods of columnar addition and subtraction\***  **\**pupils need to know and understand KS2 curriculum by the end of key stage 2.*** |
| Inverse operations, estimating and checking answer   * Using related facts * Part/whole model * Using bar models | Use bar models to explain using correct vocabulary how an addition fact linked to a subtraction fact (bonds to 20; 100) eg  23+7= 30 so 30-23=7 and 30-7=  23  Solve missing box calculations using bar model diagrams to support reasoning about calculation as ‘part/whole’ model | estimate the answer to a calculation and use inverse operations to check answers |
| Problem solving | Research evidence suggests that developing concepts and skills in understanding number and calculation (including number facts) through problem solving is more effective than working with ‘number’ only as an abstract concept  **Examples of types of problems used:** | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction |

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| **Year 3: Multiplication and Division**  **Review: (Date)** | | |
| **National Curriculum strands**  **NCETM Progression Doc.** | **Concepts, knowledge and skills (select)** | **Year 3 National Curriculum expectations** |
| Multiplication and Division Facts   * Counting in steps forwards/backwards * Vocabulary of: ‘groups of’ * Using arrays * Using number lines * Using bar models | *Can count in 4s (8s) to tenth multiple*  *Can identify multiples of 4 (8) on a number line*  *Can recognise patterns between 4 and 8 tables*  *Can organise multiples of 4 (8) counters into an array ( grouping) recording as x (÷) number sentence*  *Can count in multiples of 50 (100) to tenth multiple and record on a number line and with structured resources eg dienes, 50p, £1 coins*  *Can record X and ÷ number sentences to describe an array ( 2,5,3,4,8)*  *Can use an array (number line) to find out how many groups of 3(4,8) are in a given multiple*  *Can use counting objects to put into groups of 3(4,8) (sharing) and record as both X and ÷ sentences*  *Can use an array (number line) to find out how many groups of 3(4,8) are in a given number ( non- multiples) to identify remainders*  *Can recognise non- multiples of 5x and 10x fluently* | *count from 0 in multiples of 4, 8, 50 and 100*  (copied from Number and Place Value) |
| recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables |
| Mental Calculations   * Recall of facts X * Recall of facts ÷ * Deriving facts | *Can recall fluently 2,5,10, 3,4,8 multiples as tables facts*  *Using arrays can use 10 multiplied by 3(4,8) to work out 9 multiplied by each number*  *Can use known facts to work out next product in 3(4,8) times tables eg 4x2 = 8 so 4x3 =12 as 4 more than 8/ 4x2* | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods\* (appears also in Written Methods)  \*ensure fluency with multiple representations for x/÷ facts before beginning work on more formal recording as an additional representation (not replacement) |
| Written Calculations   * Pictorial recording * Using signs and symbols * Missing number calculations | *Can draw an array to show any multiples of 3 (4,8)*  *Can use bar models to show sharing (grouping) for division facts 3 (4,8)*  *Can use counting objects/ dienes/ cuisenaire to show a two digit multiplied by a one digit number*  *Can use partitioning into 10s and 1s alongside arrays to multiply a two digit number by a 1 digit number ( 2,3,4,5, 8)*  *Can show repeated addition on a structured (unstructured) number line to find out how many groups of 3(4,8) there are in a given multiple up to 12th multiple*  *Can show repeated addition on a structured (unstructured) number line to find out how many groups of 3(4,8) there are in a given 2 digit number* |
| Inverse operations, estimating and checking answers | *Recognise and use patterns from knowing sequences of multiples to check answers 3(4/8)*  *Recognise multiples of 2(4,8) will be even*  *Anticipate remainders when working with non-multiples of divisor ( 2,5,10, 3,4,8)* | *estimate the answer to a calculation and use inverse operations to check answers* (copied from Addition and Subtraction) |
| Problem solving | Use problem solving contexts to develop fluency with tables facts and linked division facts and understanding of the role of each numbers in a number fact ie group or multiplier?  **Examples of types of problems used:** | Solve problems, including missing number problems involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects |



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| **Year 3: Fractions**  **Review: (Date)** | | |
| **National Curriculum strands**  **NCETM Progression doc.** | **Concepts, knowledge and skills (select)** | **Year 3 National Curriculum expectations** |
| Counting in fractional steps   * Number line | *Can record counting in any unit fractions on a number line up to one whole (beyond one whole)*  *Can record counting in tenths on a number line up to one whole (beyond one whole)* | count up and down in tenths |
| Recognising Fractions: unit fractions  (1/3; 2/4; ¾ see year 2)  (halves and quarters see Year 1)   * Shape * Number * Time * Length * Capacity and volume | *Can relate ½; ¼; 1/5; 1/10; 1/3; 1/8 with division facts*  *Knows how to find non unit fractions by counting / repeated addition eg 4/5= 1/5+1/5+1/5+1/5.*  *Knows how to find non unit fractions by subtraction eg 4/5= 5/5- 1/5*  *Can use arrays and objects for multiples of 3, 4, 8 to show fractions of an amount including non- unit fractions (eg 5/8)*  *Can use resources to show tenths by dividing into equal parts*  *Can relate finding a tenth / dividing by 10 to PV charts eg 5 to 0.5; 12 to 1.2*  *Can relate finding a tenth with measurement (eg mm/cm) and scales*  *Know ‘one tenth’ can be recorded as 1/10 and 0.1*  *Can recognise/ reason when a shape or quantity is ‘not’ the given fraction*  *Can describe diagrams ( bar models and fraction walls) and shapes using any unit fraction (non unit fraction)* | recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators |
| recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. |
| recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators |
| Comparing Fractions   * More/ less than half * How many more equal parts to one whole? | *Can use fraction wall ( bar models) families to compare fractions ( more/ less than a half?; then compared to other unit fractions)*  *Understand that when comparing unit fractions a larger denominator means that unit fractions is a smaller part of the same whole*  *Can use a number line to mark unit fractions and fractions with same denominator relative to one whole*  *Know that two halves = 1 whole; 4 quarters= 1 whole; three thirds = 1 whole* | Compare and order unit fractions and fractions with the same denominators |
| Equivalence   * Bar model * Array * Number and Shape | *Can use bar models to show families of fractions:*  *Whole, ½, ¼, 1/8*  *Whole, ½, 1/5, 1/10*  *Whole, ½, 1/3, 1/6*  *Can identify fractions = to one half and talk about relationship of numerator/ denominator in these fractions*  *Can use different rectilinear shapes and circles to show/ explain equivalent fractions eg 2/6 = 1/3* | recognise and show, using diagrams, equivalent fractions with small denominators |
| Addition and subtraction of fractions   * Bar model | *Can use bar models to write addition and subtraction number sentences eg 1/3 +2/3 =3/3= 1 whole eg 5/7 -2/7= 3/7*  *Use fraction walls to give two fractions with the same denominator that total one eg 2/5 + 3/5 = 5/5= 1*  *Know that when adding and subtracting fractions with the same denominator the denominator doesn’t change*  *Can recognise patterns with knowing number bonds to all numbers to 10 with writing fraction addition and subtraction number sentences*  *Use a fraction wall to find what is left when subtracting a fraction from 1 eg 1-1/4= 3/4* | add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) |

Hampshire Mathematics Advisory Team Year 3 version 1