Article 12: I have a right to be listened to and taken seriously.
Article 28: I have a right to an education.
Article 29: I have a right to be supported to achieve in education.
Article 31: I have a right to relax and play._

Pipworth Community Primary School Calculation Policy

Vision (Intent)

This policy has been developed to promote a common approach to supporting young people in developing their skills, knowledge and understanding of numerical calculations. Through this policy we aim to inspire and engage children to be more confident with numbers and should be used alongside the Mathematics PoS from National Curriculum as well as the schools progression documents. Children are introduced to the processes of calculation through practical, oral and mental activities. As children begin to understand the underlying ideas, they develop ways of recording to support their thinking and calculation methods, using particular methods that apply to special cases, and learn to interpret and use the signs and symbols involved.

As we are developing a Mastery approach to the teaching and learning of Mathematics it will be expected that children in all phases will have access to manipulatives and jottings alongside the introduction of these more formal written methods in order to promote the understanding of new mathematical concepts.
Children in all phases should have the opportunity to solve a range of missing box questions for each operation, including missing boxes where the equals sign is used in different places. Children will have opportunities to practise methods of calculation as well as opportunities to apply and reason with these skills before solving more complex problems and investigations.
Children in all phases should also have the opportunity to be using all 4 operations through a variety of word problems as well as opportunities to apply their knowledge into reasoning type questions as well as mathematical investigations. Children should be able to answer ‘Prove it’ reasoning questions using a learnt method of calculation.

It is expected that children will have a sound grasp of counting and place value in order to work more fluently within each operation so a counting and place value strand has been added to the policy. We will need to use consistent vocabulary and notation – HTO (Hundreds, Tens, Ones) and when using longer written methods the calculation symbol should be on the left hand side.

We all want our children to achieve excellence in mathematics no matter what their starting points are in order to compete with others on a level playing field. All pupils to have the opportunity to experience success in learning and to excel. Children may move between the given phases within a lesson or block of lessons in order to access the learning and fully understand the concept.

The overall aim is that when children leave primary school they:

- have a secure knowledge of number facts and a good understanding of the four operations;
- are able to use this knowledge and understanding to carry out calculations mentally and to apply general strategies when using one-digit and two-digit numbers and particular strategies to special cases involving bigger numbers;
- make use of diagrams and informal notes to help record steps and part answers when using mental methods that generate more information than can be kept in their heads;
- have an efficient, reliable, compact written method of calculation for each operation that children can apply with confidence when undertaking calculations that they cannot carry out mentally;
- Use a calculator effectively, using their mental skills to monitor the process, check the steps involved and decide if the numbers displayed make sense.

Updated November 2025
Due to be updated November 2026

Maisie Squires

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
COUNTING AND PROPERTIES OF NUMBER					
Knowledge	Able to count in 2s, 5s and 10sforwards and backwards Count forwards and backwards and across 100 from any given number Give 1 more/ 1 less than any given number. Be able to partition a 2 digit number and recognise the value of each digit	**Phase 1 and…** Able to count in 2s, 3s, 5s and 10s from 0 and in tens from any number forwards or backwards. Compare and order numbers from 0 to 100, use < > and =	**Phase 1, 2 and…** Able to count in 4s, 8s, 50s and 100s from 0. Mentally find 10 or 100 more (or less) than any given number. Able to partition 3/4 digit numbers and recognise place value of each digit including up to 1 decimal place Read, write and order 3 digit numbers up to 1 decimal place	**Phase 1, 2 3 and…** Able to count in 6s, 7s, 9s, 25s and 1000s from 0. Be able to count backwards through 0 into negative numbers Find 1000 more (or less) than any number. Able to partition 4 digit numbers and recognise place value of each digit, including decimal places Round any number by 10, 100 or 1000. Recognise Roman numerals	**Phase 1, 2, 3, 4 and…** Read, write, order and compare numbers up to 10 000 000 and know the value of each digit Round any number to a required degree of accuracy to ten thousand/hundred thousand Count forwards and backwards in steps of powers of 10 up to 10 000 000 Read Roman numerals up to 1000 Partition into millions, hundred thousands, thousands, hundreds, tens and ones and recombine. Use of number line.

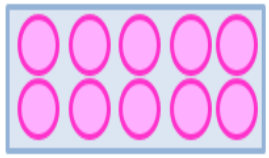
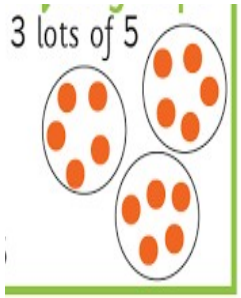
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
			ADDITION		
Mental Strategies	Know that addition can be done in any order. Give **1 more**/ 1 less than any given number.	**Phase 1 and…** Know that addition can be done in any order. Recall and use addition and subtraction facts to 20 and 100 off by heart. Compare and order numbers from 0 to 100, use < > and = Recognise the inverse relationship between + and – and use this knowledge to solve calculations	**Phase 1, 2 and…** Mentally find 10 or 100 more (or less) than any given number. Mentally find 10 or 100 more (or less) than any given number. Add numbers mentally, including – 3 digit number to ones, 3 digit number to tens, 3digit numbers to hundreds. Know mental combinations for +/- facts of ½ digit numbers	**Phase 1, 2 3 and…** Find 1000 more (or less) than any number. Able to add multiples of 1000, 100, 10 and 1 mentally (O+O, T+T) using different mental strategies. Secure understanding of place value. Add numbers mentally up to 4 digit numbers. Using nearly numbers for adding 9,19 etc., near doubles, by 'bridging through' Round any number by 10, 100 or 1000.	**Phase 1, 2, 3, 4 and…** Round any number to a required degree of accuracy. Use negative numbers within addition calculations.

Recording	Read and write numbers to 20. Introduce + = symbols Additions recorded horizontally Represent and use number bonds and related subtraction facts up to 10 and then 20. Use of number line and use of concrete apparatus. Children need to understand the concept of equality before using the '=' sign. Calculations need to be written either side of the equality sign so that it is not just interpreted as 'the answer'. E.g. 2 = 1 + 1 Teach children to put the biggest number first. Missing box questions	+ = using larger numbers. Partition into hundreds tens and ones and recombine. H T O 2 8 1 200 + 80 + 1 **Using number lines-** **Add-** Two digits to ones Two digits to tens, Two two digit numbers, three one digit numbers. e.g 23+12=23 23+10=33 33+2=35 **Partitioning-** 27+36= 20+30=50 7+6= 13 50+13=63 **And partitioning into different combinations –** **23 is** **20+3** **13+10** **12+11** Missing boxes	Partition into hundreds, tens and ones and recombine. Use of number line. Column method with HTO HTO E.g. 625 + 48 673 1 Solve 1 and 2 step problems including missing number problems Use inverse operations to solve problems Missing boxes	Partition into tens of thousands, hundreds, tens and ones and recombine. i.e. 458+72 same as 460+70 Use relationships in numbers 2.5+3.6= 25+36= 61 6.1 OR Use short column addition Including carrying. E.g.54 236 + 185 54 421 1 1 Solve 2 step problems including missing number problems	Short column addition - extend to numbers with at least four digits. E.g. 3587 + 675 4262 1 1 1 Find total of 42, 6432, 786, 4681 by ordering the numbers correctly 6432 4681 786 42 + 3 11944 And decimals with varying lengths and use 0 as a place value holder 143.60 + 14.75 158.35 3.6+0.459 3.600 +0.459 1

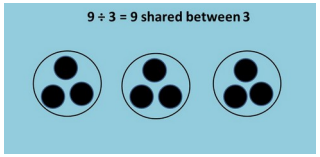
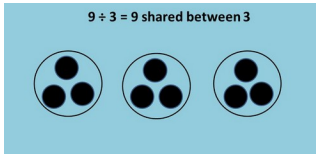
SUBTRACTION					
Mental Strategies	Give 1 more/ **1 less** than any given number. Know the biggest number should come first Recall and use addition and subtraction facts to 10 and then 20	**Phase 1 and…** Know that addition can be done in any order but subtraction cannot. Able to count in 2s, 3s, 5s and 10s from 0 and in tens from any number forwards or backwards. Recall and use addition and subtraction facts to 20 and 100 off by heart. Compare and order numbers from 0 to 100, use < > and =	**Phase1, 2 and…** Mentally find 10 or 100 (more or) less than any given number. Mentally find 10 or 100 (more or) less than any given number. Subtract numbers mentally, including – 3 digit number to ones, 3 digit number to tens, 3digit numbers to hundreds.	**Phase 1, 2 3 and…** Find 1000 (more or) less than any number. Able to subtract multiples of 1000, 100, 10 and 1 mentally (O+O, T+T) using different mental strategies. Secure understanding of place value. Subtract numbers mentally up to 4 digit numbers.	Able to subtract any multiples mentally – HTO and ThHTOusing different mental strategies. Use negative numbers with subtraction calculations

Recording	Introduce - = symbols Subtractions recorded horizontally. Use of number line. Represent and use number bonds and related subtraction facts up to 20. Use of number line and use of concrete apparatus. Teach children to put the biggest number first.	- = using larger numbers. Subtractions recorded horizontally. Use of number line. OR Partition second number. 37 – 12 = 37 – 10 = 27 - 2 = 25 Subtract- Two digits to ones Two digits to tens, Two two digit numbers, three one digit numbers Show that addition can be done in any order but subtraction cannot. Use missing boxes to show relationship between + and -	**Number lines – counting up or back to find totals.** Column subtraction with carrying tens. 51 ~~6~~4 - 26 38 Solve 1 and 2 problems including missing number problems.	Column subtraction – including borrowing, extend to lager numbers up to thousands. 5 15 165 -37 128 9.42 -6.78 2.64 Solve 2 step problems including missing number problems	Column subtraction – extend to any number of digits and decimals up to 3 places. i.e. 154.35 - 93.34 61 .01 3.657-1.394= 2.273 Use 0 as place value holder when subtracting, including decimals

MULTIPLICATION					
Mental Strategies	Know that multiplication can be done in any order. Begin to know some multiples of 2, 5 and 10. To know doubles up to 20	Recall and use multiplication facts for 2, 3, 5, and 10 including recognising odd and even numbers and know them off by heart and use this knowledge to solve simple problems Solve empty box questions	Recall and use multiplication facts for 2, 3, 4, 5, 8 and 10 Able to multiply a single digit by a multiple of 10 e.g. 50 x 6 = 300 Able to multiply a single digit by two-digit number. Solve 1 and 2 step problems including missing number problems	Know and recall multiplication facts up to 12 x 12 Use place value, known derived facts to multiply (and divide) mentally, including multiplying by 0 and 1, multiplying 3 numbers together. Recognise and use factor pairs and commutativity in mental calculations.	Know multiplication facts up to 12 x 12 If we were answering 7.2x3.8, we would make a note of how many digits in total are after the decimal point. Be able to multiply by 10,100 and 1000, including decimals. Identify multiples and factors including finding all factor pairs of a number and common factors of 2 numbers Be able to identify prime number factors Recognise squared and cubed numbers using correct notation 2^2 4^3

Recording	Vertically as repeated addition e.g. 2 + 2 + 2 Multiplications recorded through use of concrete apparatus, jottings, pictorial representations, and arrays with support.	Multiplication recorded horizontally e.g. 7 x 2 = 14 Multiplications recorded through use of concrete apparatus, jottings, pictorial representations, and arrays. Repeated addition Be able to draw arrays 5x2  Be able to group 3x5 and draw 	Partitioning - 23x3= 20x3= 60 3x3=9 60+9=69 Written short methods – 1 24 X 6 744 2	Be able to multiply 3 numbers 2x4x5= Be able to multiply 2,3,4 digit numbers by 1 digit using a formal written method 123 X 4 492 1 1256 X 7 8792 1 3 4	Be able to multiply 3 and 4 digit numbers with up to 2 decimal places by 1 digit and two digit numbers and decimals 124 X 26 2480 744 3224 11 3.72 x 2.4= to know there will be 3 digits after the decimal point. Solve multi-step problems involving multiplication and division including their knowledge of factors, squared numbers and cubed numbers

DIVISION					
Mental Strategies	Begin to know some division facts for 2, 5 and 10. To know half of each even number up to 20	Able to count in/ divide by 2, 3, 5 and 10, off by heart.	Recall and use division facts for 2, 3, 4, 5, 8 and 10 Able to divide a single digit by a multiple of 10 e.g. 60 divided by 6 = 10 Able to divide a two-digit number by single digit. Solve problems including missing number problems	Know division facts up to 12 x 12 Use place value, known derived facts to divide (and multiply) mentally, including dividing by 0 and 1, dividing 3 numbers together. Recognise and use factor pairs and commutativity in mental calculations.	Divide by 10,100, 1000 and 100,000 including decimals. Know division facts up to 12 x 12 quickly off my heart.

Recording	Recording using pictures/markings 9÷3 =  Divisions recorded through use of concrete apparatus, jottings, pictorial representations, and arrays with support	Divisions recorded horizontally e.g. 6 ÷ 2 = Calculations to be written either side of the equality sign so that it is not just interpreted as 'the answer'. Divisions recorded through use of concrete apparatus, jottings, pictorial representations, and arrays.  	Short division (bus stop) With 2 and 3 digit numbers, including remainders 1 2 3 3 6	Short division (bus stop) With 3 and 4 digit numbers divided by T + O Use remainders 3 6 7 2 5 ^{4}2 2 0 r6 12 2 $_{2}$4 6	Short division (bus stop) With 3 and 4 digit numbers with decimal places divided by T + O Use decimals 1 0. 2 11 1 1 2. $_{2}$ 2 2 0 . 5 12 2 $_{2}$4 6 Extend to long division- 432 divided by 15 28.8 15 4 3 2 30 132 120 12.0 12.0 0 Interpret remainders appropriately for the context including as fractions, decimals or rounding