

Roche CP School Maths Policy

Area of Maths = Place Value

Definition: Place value is the value of a digit depending on its place in a number.

Vocabulary: Ones, tens, hundreds, thousands, ten thousands, hundred thousands, million, tenths, hundredths, thousandths, digit, number, numeral, forwards, backwards, count, read, write, greater than, less than, equal, more, less, decimal point, compare, order, estimate, round, number line,

Year 1

Year Group	National Curriculum Learning Objective	Small Step Progression	Resources
1	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Given a number, identify one more and one less. Count, read and write numbers to 100 in numerals. Read and write numbers from 1 to 20 in numerals and words. Identify and represent numbers using objects and pictorial representations including the number line, and use	Numbers 0 - 20: Step 1: Count to and across 20. Step 2: Identify one more and one less than a number between 1 and 20. Step 3: Count, read and write numbers up to 20 in numerals and words. Step 4: This is a Year 2 objective, but we want Year 1 to do it as well: Recognise the place value of each digit in a two-digit number to 20 (tens, ones). Step 5: Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Numbers 0 - 50: Step 1: Count to and across 50. Step 2: Identify one more and one less than a number between 1 and 50. Step 3: Count, read and write numbers up to 50 in numerals. Step 4: This is a Year 2 objective, but we want Year 1 to do it as well: Recognise the place value of each digit in a two-digit number to 50 (tens, ones). Step 5: Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	Dienes Tens Frames

	the language of: equal to, more than, less than (fewer), most, least.	Numbers 0 - 100: Step 1: Count to and across 100. Step 2: Identify one more and one less than a number between 1 and 100. Step 3: Count, read and write numbers up to 100 in numerals. Step 4: This is a Year 2 objective, but we want Year 1 to do it as well: Recognise the place value of each digit in a two-digit number to 100 (tens, ones). Step 5: Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	
1	Count in multiples of twos, fives and tens.	Step 1: Count in multiples of twos. Step 2: Count in multiples of tens. Step 3: Count in multiples of fives.	

Year 2

Year Group	National Curriculum Learning Objective	Small Step Progression	Resources
2	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	At the <u>start</u> of each lesson after Vocab Session - Practise counting in class before main lesson: (This does NOT need to be lessons in books). Step 1 - Count in steps of 2 forwards and backwards from zero. Step 2 - Count in steps of 2 from any even number within 100. Step 3 - Count in steps of 10 forwards and backwards from zero. Step 4 - Count in steps of 10 from any multiple of 10 within 120. Step 5 - Count in steps of 5 forwards and backwards from zero. Step 6 - Count in steps of 5 from any multiple of 5 within 100. Step 7 - Count in steps of 3 forwards and backwards from zero. Step 8 - Count in steps of 3 from any multiple of 3 within 90.	

2	Read and write numbers to at least 100 in numerals and in words.	Step 1: Read numbers to 100. Step 2: Write numerals for numbers up to 100. Step 3: Read numbers as words up to 100. Step 4: Write numbers as words up to 100. (Could this be revised somewhere in your timetable so they remember the spellings in Aut 1?)							
2	Recognise the place value of each digit in a two-digit number (tens, ones).	Step 1: Explore with dienes 0-100. Step 2: Introduce the Place Value Chart for numbers 0-100. Step 3: Abstract work e.g. 43 = ___ tens and ___ ones. Problem solving will feature in this Learning Objective.	<table><tr><td>Hundreds 100</td><td>Tens 10</td><td>Ones 1</td></tr><tr><td></td><td></td><td></td></tr></table> Dienes	Hundreds 100	Tens 10	Ones 1			
Hundreds 100	Tens 10	Ones 1							
2	Use greater than, less than and = signs.	Step 1: Compare quantities using the language more, fewer and the same/equal. Step 2: Recap the symbols for greater than, less than and = Step 3: Insert the correct symbols into number sentences. Problem solving will feature in this Learning Objective.							
2	Compare and order numbers from 0 up to 100.	Step 1: Compare numbers 0-100. Step 2: Order numbers 0-100 in ascending and descending order. Problem solving will feature in this Learning Objective.							
2	Identify, represent and estimate numbers using different representations, including the number line.	Step 1: Identify numbers in different forms up to 100. Step 2: Represent numbers in different ways. Step 3: Introduce estimation. Estimate a number of objects (up to 50) Step 4: Estimate on a number line with different intervals shown / not shown. Problem solving will feature in this Learning Objective.							
2	Use place value and number facts to solve problems.	This LO has been covered throughout this unit. Dependent on class ability, you could give a mixture of place value and number facts problems to solve.							

Year 3

Year Group	National Curriculum Learning Objective	Small Step Progression	Resources
3	Count from 0 in multiples of 4, 8, 50 and 100.	At the <u>start</u> of each lesson after Vocab Session - Practise counting in class before main lesson: (This does NOT need to be lessons in books). Step 1 - Count in multiples of 100 forwards from zero then from any multiple of 100. Step 2 - Count in multiples of 50 forwards from zero then from any multiple of 50. Step 3 - Count in multiples of 4 forwards from zero then from any multiple of 4. (Stop at 12 x 4) Step 4 - Count in multiples of 8 forwards from zero then from any multiple of 8. (Stop at 12 x 8)	
3	Recognise the place value of each digit in a three-digit number (hundreds, tens, and ones).	Step 1: Explore with dienes 0-1000. Step 2: Introduce the Place Value Chart for numbers 0-1000. Step 3: Abstract work e.g. 453 = ____ hundreds ____ tens and ____ ones. Problem solving will feature in this Learning Objective.	 Dienes
3	Read and write numbers up to 1000 in numerals and in words.	Step 1: Read numbers to 1000. Step 2: Write numerals for numbers up to 1000. Step 3: Read numbers as words up to 1000. Step 4: Write numbers as words up to 1000. (Could this be revised somewhere in your timetable so they remember the spellings in Aut 1?)	

3	Find 10 or 100 more or less than a given number.	Step 1: 10 more and less than multiples of ten. Step 2: 10 more and less than any number 0-1000. Step 3: 100 more and less than multiples of hundred. Step 4: 100 more and less than any number 0-1000. Problem solving will feature in this Learning Objective.	<table border="1"> <tr> <th>Thousands</th><th colspan="3">Hundreds, Tens and Ones</th></tr> <tr> <td>Thousands 1 000</td><td>Hundreds 100</td><td>Tens 10</td><td>Ones 1</td></tr> <tr> <td></td><td></td><td></td><td></td></tr> </table>	Thousands	Hundreds, Tens and Ones			Thousands 1 000	Hundreds 100	Tens 10	Ones 1				
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Thousands 1 000	Hundreds 100	Tens 10	Ones 1												
3	Compare and order numbers up to 1000.	Step 1: Comparing numbers up to 1000 using the language: more, less and equal. Step 2: Comparing numbers up to 1000 using the symbols for greater than, less than and equals. Step 3: Ordering numbers to 1000 in ascending and descending order. Problem solving will feature in this Learning Objective.													
3	Identify, represent and estimate numbers using different representations.	Step 1: Identify numbers in different forms up to 1000. Step 2: Represent numbers in different ways. Step 3: Recap estimation. Estimate a number of objects (up to 100) Step 4: Estimate on a number line with different intervals shown / not shown. Problem solving will feature in this Learning Objective.													
3	Solve number problems and practical problems involving working with and estimating numbers up to 1000 in a variety of units.	This LO has been covered throughout this unit. Dependent on class ability, you could give a mixture of place value and number facts problems to solve.													

Year 4

Year Group	National Curriculum Learning Objective	Small Step Progression	Resources												
4	Count in multiples of 6, 7, 9, 25 and 1000.	At the <u>start</u> of each lesson after Vocab Session - Practise counting in class before main lesson: (This does NOT need to be lessons in books). Step 1 - Count in multiples of 1000 forwards from zero then from any multiple of 1000. Step 2 - Count in multiples of 25 forwards from zero then from any multiple of 25. Step 3 - Count in multiples of 6 forwards from zero then from any multiple of 6. (Stop at 12 x 6) Step 4 - Count in multiples of 7 forwards from zero then from any multiple of 7. (Stop at 12 x 7) Step 5 - Count in multiples of 9 forwards from zero then from any multiple of 9. (Stop at 12 x 9)													
4	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	Step 1: Explore with dienes 0-10,000. Step 2: Introduce the Place Value Chart for numbers 0-10,000. Step 3: Abstract work e.g. 4593 = ___ thousands ___ hundreds ___ tens and ___ ones. Problem solving will feature in this Learning Objective.	<table border="1"> <thead> <tr> <th>Thousands</th><th colspan="3">Hundreds, Tens and Ones</th></tr> </thead> <tbody> <tr> <td>Thousands 1 000</td><td>Hundreds 100</td><td>Tens 10</td><td>Ones 1</td></tr> <tr> <td></td><td></td><td></td><td></td></tr> </tbody> </table>	Thousands	Hundreds, Tens and Ones			Thousands 1 000	Hundreds 100	Tens 10	Ones 1				
Thousands	Hundreds, Tens and Ones														
Thousands 1 000	Hundreds 100	Tens 10	Ones 1												
4	Find 1000 more or less than a given number.	Step 1: 1000 more and less than multiples of thousands. Step 2: 1000 more and less than any number 0-10,000. Problem solving will feature in this Learning Objective.													
4	Order and compare numbers beyond 1000.	Step 1: Comparing numbers up to 10,000 using the language: more, less and equal. Step 2: Comparing numbers up to 10,000 using the symbols for greater than, less than and equals. Step 3: Ordering numbers to 10,000 in ascending and descending order. Problem solving will feature in this Learning Objective.													

4	Round any number to the nearest 10, 100 or 1000.	Step 1: Round 2 digit numbers to the nearest 10. Step 2: Round 3 digit numbers to the nearest 10. Step 3: Round 3 digit numbers to the nearest 100. Step 4: Round 4 digit numbers to the nearest 100. Step 5: Round 4 digit numbers to the nearest 1000. Step 6: Round 5 digit numbers to the nearest 1000. Step 7: Round one number to the nearest 10, 100 and 1000. E.g. 2568 Problem solving will feature in this Learning Objective.	
4	Identify, represent and estimate numbers using different representations.	Step 1: Recap estimation. Estimate a number of objects (up to 1000) Step 2: Estimate on a number line with different intervals shown / not shown. Problem solving will feature in this Learning Objective.	
4	Count backwards through zero to include negative numbers.	Step 1: Count backwards within positive numbers and count backwards to zero. Step 2: Explore numbers below zero. Step 3: Count backwards from positive to negative numbers. Step 4: Identify one less with negative numbers. Step 5: Apply in real-life contexts (temperature, lifts, money). Problem solving will feature in this Learning Objective.	
4	Solve number and practical problems that involve rounding, ordering and exploring negative numbers and with increasingly large positive numbers.	This LO has been covered throughout this unit. Dependent on class ability, you could give a mixture of place value and number facts problems to solve.	

4	Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	Step 1: Understand that Roman numerals use symbols instead of digits and recognise the Roman numerals I, V and X. Step 2: Read and write numbers to 10 using Roman numerals. (Introduce the rules here where you cannot use more than 3 of the same symbol. Explanation of 4 and 9 important) Step 3: Read and write numbers from 11-30 using Roman numerals. Step 4: Introduce L = 50 and read and write numbers to 50 using Roman numerals. Step 5: Introduce C = 100 and read and write numbers from 50 - 100 using Roman numerals. Problem solving will feature in this Learning Objective.	
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Year 5

Year Group	National Curriculum Learning Objective	Small Step Progression	Resources																											
5	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	Step 1: I can read numbers to at least 1million. Step 2: I can write numbers to at least 1million. Step 3: I can determine the value of each digit up to 1million. Step 4: I can compare numbers to at least 1million using the greater than, less than and equals signs. Step 5: I can order numbers to at least 1million. Problem solving will feature in this Learning Objective.	<table><tr><th colspan="3">Millions</th><th colspan="3">Thousands</th><th colspan="3">Hundreds, Tens and Ones</th></tr><tr><td>Hundred Millions</td><td>Ten Millions</td><td>Millions</td><td>Hundred Thousands</td><td>Ten Thousands</td><td>Thousands</td><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>100 000 000</td><td>10 000 000</td><td>1 000 000</td><td>100 000</td><td>10 000</td><td>1 000</td><td>100</td><td>10</td><td>1</td></tr></table>	Millions			Thousands			Hundreds, Tens and Ones			Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	100 000 000	10 000 000	1 000 000	100 000	10 000	1 000	100	10	1
Millions			Thousands			Hundreds, Tens and Ones																								
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100 000 000	10 000 000	1 000 000	100 000	10 000	1 000	100	10	1																						
5	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	Step 1: Count forwards in steps of powers of 10 for any given number up to 1 000 000. Step 2: Count backwards in steps of powers of 10 for any given number up to 1 000 000.																												
5	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	Step 1: Round 2, 3 and 4 digit numbers to the nearest 10. Step 2: Round 3, 4 and 5 digit numbers to the nearest 100. Step 3: Round 4, 5 and 6 digit numbers to the nearest 1000. Step 4: Round 5 and 6 digit numbers to the nearest 10,000. Step 5: Round 6 digit numbers to the nearest 100, 000. Step 7: Round one number to the nearest 10, 100, 1000, 10,000 and 100,000. E.g. 256,128 Problem solving will feature in this Learning Objective.																												
5	Interpret negative numbers in context, count forwards and backwards with positive and negative whole	Step 1: Count backwards within positive numbers and count backwards to zero. Step 2: Explore numbers below zero. Step 3: Count backwards from positive to negative numbers.																												

	numbers, including through zero.	Step 4: Identify one less with negative numbers. Step 5: Apply in real-life contexts (temperature, lifts, money). Problem solving will feature in this Learning Objective.	
5	Solve number problems and practical problems that involve numbers up to 1000000, negative numbers, rounding or jumping in steps.	This LO has been covered throughout this unit. Dependent on class ability, you could give a mixture of place value and number facts problems to solve.	
5	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Step 1: Recap Roman numerals 1-100. (Include rules they will have learnt.) Step 2: Introduce D = 500 and read and write numbers to 500 using Roman numerals. Step 3: Introduce M = 1000 and read and write numbers to 1000 using Roman numerals. Step 4: Recognise years written in Roman numerals. Problem solving will feature in this Learning Objective.	

Year 6

Year 6																																																									
Year Group	National Curriculum Learning Objective	Small Step Progression	Resources																																																						
6	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.	Step 1: I can read numbers to at least 10million. Step 2: I can write numbers to at least 10million. Step 3: I can determine the value of each digit up to 10million. Step 4: I can compare numbers to at least 10million using the greater than, less than and equals signs. Step 5: I can order numbers to at least 10million. Problem solving will feature in this Learning Objective.	<table><tr><th colspan="3">Millions</th><th colspan="3">Thousands</th><th colspan="3">Hundreds, Tens and Ones</th></tr><tr><td>One million</td><td>1 000 000</td><td></td><td>One thousand</td><td>1 000</td><td></td><td>One hundred</td><td>100</td><td></td></tr><tr><td>Ten millions</td><td>10 000 000</td><td></td><td>Ten thousands</td><td>10 000</td><td></td><td>Ten thousands</td><td>10 000</td><td></td></tr><tr><td>Millions</td><td>1 000 000</td><td></td><td>Thousands</td><td>1 000</td><td></td><td>Hundreds</td><td>100</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>Tens</td><td>10</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>Ones</td><td>1</td><td></td></tr></table>	Millions			Thousands			Hundreds, Tens and Ones			One million	1 000 000		One thousand	1 000		One hundred	100		Ten millions	10 000 000		Ten thousands	10 000		Ten thousands	10 000		Millions	1 000 000		Thousands	1 000		Hundreds	100								Tens	10								Ones	1	
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6	Round any whole number to a required degree of accuracy.	Step 1: Round 2, 3 and 4 digit numbers to the nearest 10. Step 2: Round 3, 4 and 5 digit numbers to the nearest 100. Step 3: Round 4, 5 and 6 digit numbers to the nearest 1000. Step 4: Round 5 and 6 digit numbers to the nearest 10,000. Step 5: Round 6 digit numbers to the nearest 100, 000. Step 7: Round one number to the nearest 10, 100, 1000, 10,000 and 100,000. E.g. 256,128																																																							

		Problem solving will feature in this Learning Objective.	
6	Use negative numbers in context and calculate intervals across zero.	Step 1: Use negative numbers in a context. Step 2: Calculate intervals across zero.	
6	Solve number and practical problems that involve large numbers, rounding and negative numbers.	This LO has been covered throughout this unit. Dependent on class ability, you could give a mixture of place value and number facts problems to solve.	