



CASTLETOWN PRIMARY SCHOOL



Numeracy - Year 4

Children will work towards achieving the following learning outcomes.

NUMBER: NUMBER & PLACE VALUE			
Counting	Comparing Numbers	Understanding place value	Rounding
1. Count backwards through zero to include negative numbers (KPI) 2. Count in multiples of 6 (KPI) 3. Count in multiples of 7 (KPI) 4. Count in multiples of 9 (KPI) 5. Count in multiples of 25 6. Count in multiples of 1000 7. Find 1000 more than a given number 8. Find 1000 less than a given number	10. Compare and order numbers beyond 1000 (KPI) 11. Compare numbers with the same number of decimal places up to two decimal places.	14. Know that over time, the numeral system changed to include the concept of zero and place value. 15. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) 16. Identify the value of each digit in numbers given to one decimal place.	18. Round any number to the nearest 10 (KPI) 19. Round any number to the nearest 100 (KPI) 20. Round any number to the nearest 1000 (KPI) 21. Round decimals with one decimal place to the nearest whole number (KPI)
Identifying, representing & estimating	Reading	Writing	Problem Solving
9. Identify, represent and estimate numbers using different representations.	12. Read Roman numerals (I to C). 13. Read numbers up to two decimal places.	17. Write numbers up to two decimal places.	22. Solve number and practical problems that involve all of the Y4 number criteria and with increasingly large positive numbers.

NUMBER: ADDITION & SUBTRACTION			
Number Bonds & Rapid Recall Skills	Mental calculation	Written calculation	Problem Solving
1. Derive and recall sums and differences of pairs of multiples of 10, 100 and 1000. 2. Derive and recall addition doubles for numbers 1 to 100 and the corresponding halves. 3. Derive and recall what must be added to any three-digit number to make the next multiple of 100.	4. Add near doubles. 5. Add a near multiple of 10 or 100 to any two-digit or three-digit number. 6. Subtract a near multiple of 10 or 100 to any two-digit or three-digit number. 7. Find the difference between near multiples of 1000.	9. Add numbers with up to four digits using the formal written methods of column addition where appropriate. 10. Subtract numbers with up to four digits using the formal written methods of column subtraction where appropriate.	11. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
	Inverse operations, estimating and checking answers		
	8. Estimate and use inverse operations to check answers to a calculation.		

NUMBER: MULTIPLICATION & DIVISION		NUMBER: FRACTIONS	
Multiplication & Division Facts	Inverse operations, check	Counting in Fractional Steps	Add / Sub fractions
1. Recall multiplication and division facts for multiplication tables up to 12 x 12.	15. Estimate and use inverse operations to check answers to multiplication and division calculations with Y4 content.	1. Count up and down in hundredths (KPI)	5. Add fractions with the same denominator. 6. Subtract fractions with the same denominator.
Rapid recall and mental calculation	Written Calculation	Equivalence	Problem Solving
2. Derive and recall doubles of all numbers from 1 to 100 and corresponding halves. 3. Derive and recall doubles of all multiples of 10 and 100 and corresponding halves. 4. Double any two-digit number. 5. Double any multiple of 10 or 100 and halve the corresponding multiples. 6. Halve any even number to 200. 7. Multiply a two-digit number by a one digit number including by 0 and 1. 8. Multiply three numbers. 9. Divide a two-digit number by a single digit number including by 1. 10. Recognise and use factor pairs and commutativity in mental calculations. 11. Multiply whole numbers by 100. 12. Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten (KPI) 13. Find the effect of dividing a one or two digit number by 10, identifying the value of the digits in the answer as ones, tenths and hundredths. 14. Find the effect of dividing a one or two digit number by 100, identifying the value of the digits in the answer as ones, tenths and hundredths.	16. Multiply two digit numbers by a one digit number using formal written layout. 17. Multiply three digit numbers by a one digit number using formal written layout.	2. Recognise and show, using diagrams, families of common equivalent fractions (KPI) 3. Recognise and write decimal equivalents of any number of tenths or hundredths. 4. Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$	7. Solve problems that involve increasingly harder fractions to calculate quantities, including non-unit fractions where the answer is a whole number.
	Problem Solving		
	18. Solve problems involving multiplication and division.		

MEASUREMENT			
Comparing & Estimating	Measuring & Calculating	Telling the Time	Converting
1. Estimate and compare different measures including money in pounds and pence.	2. Calculate different measures including money in pounds and pence. 3. Measure the perimeter of a rectilinear figure (including squares) in centimetres and metres. 4. Calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. 5. Find the area of a rectilinear shape by counting squares.	6. Read time from analogue. 7. Read time from digital 12 and 24 hour clocks. 8. Write time from analogue 9. Write time from digital 12 and 24 hour clocks.	10. Convert time between analogue and digital 12 and 24 hour clocks. 11. Convert between different units of measure for length (KPI) km to m 12. Convert between different units of measure for time (KPI) hour to minute 13. Solve time problems involving converting from hours to minutes, minutes to seconds; years to months; weeks to days.

GEOMETRY: PROPERTIES OF SHAPE	GEOMETRY: POSITION & DIRECTION	STATISTICS
Identifying their shapes and properties.	Position, direction and movement	Interpreting, constructing & representing data.
1. Identify lines of symmetry in 2D shapes presented in different orientations (KPI)	1. Describe positions on a 2D grid as co-ordinates in the first quadrant.	1. Interpret discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
	2. Describe movements between positions as translations of a given unit to the left/right and up/down.	2. Present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
Comparing and Classifying		Problem Solving
2. Compare and classify geometric shapes (KPI)	3. Plot specified points and draw sides to complete a given polygon (KPI)	3. Solve comparison, sum and difference problems using information presented in bar charts (KPI)
Drawing and constructing		4. Solve comparison, sum and difference problems using information presented in pictograms.
3. Complete a simple symmetric figures with respect to a specific line of symmetry.		5. Solve comparison, sum and difference problems using information presented in tables (KPI)
Angles		6. Solve comparison, sum and difference problems using information presented in other graphs (KPI)
4. Identify acute and obtuse angles.		
5. Compare and order angles up to two right angles by size.		

trial and improvement		working systematically	pattern spotting	visualising	working backwards	conjecturing	generalising and proving	reasoning: step 1: describing, step 2: explaining, step 3: convincing, step 4: justifying step 5: proving
Stage	Year Group	Problem Solving			Communicating		Reasoning	
Stage 3	Y3 into Y4	<ul style="list-style-type: none"> • use classroom discussion as support to break into a problem and make connections to previous work <ul style="list-style-type: none"> - put the problem into their own words - use mathematical content from previous year groups and their own year group to solve problems and investigate • work systematically from the beginning • choose concrete and visual equipment appropriate to the task • pattern spot in results and use patterns to then find other possibilities 			<ul style="list-style-type: none"> • organise and represent work using pictorial and abstract representations <ul style="list-style-type: none"> - working systematically • independently check results <ul style="list-style-type: none"> - look for repeats, errors and ways to improve - make reference to recording system used • use and interpret diagrams (pictorial representations) and mathematical symbols (abstract) • discuss mathematical work and begin to explain thinking <i>(REASONING STEP 1 & STEP 2)</i> <ul style="list-style-type: none"> - use appropriate mathematical vocabulary - talk about their findings by referring to their work • reflect on others' explanations/methods/strategies and use this to improve their own 		<ul style="list-style-type: none"> • provide a convinced argument for methods/solutions (REASONING STEP 3) <ul style="list-style-type: none"> - confident that their chain of reasoning is right and may use words such as: 'I reckon' or 'without doubt' - the underlying mathematical argument may or may not be accurate - the argument is likely to have more coherence and completeness than the explaining stage • respond to 'What if?' questions • when they have solved a problem, pose a similar problem for a partner • with support understand a general statement by finding particular examples that match it <ul style="list-style-type: none"> - with assistance of probing questions and prompts 	