Mathematics Assessment– Year 4 – Autumn Term

Working Towards	On Track	Greater Depth
Count up in 3s, 6s, 25s and 1000s from 0.	Count in 6s, 7s, 9s 25s and 1000s from 0 (up/back).	Generalise using knowledge of 6s, 7s, 9s 1000s and beyond (e.g.I know that 18 is a multiple of 6 therefore is must also be a multiple of 3, I know that 77 is multiple of 7 therefore 7777 will be too). Know why other tables can't help with 7s and 11s.
Find 1000 more than any given number.	Find 1000 more or less than any given number mentally.	Justify their method when adding and subtracting multiples of 1000s mentally (e.g. 4000).
Know how to partition 3-digit and 4-digit numbers.	Recognise the value of each digit in a 4 digit number.	Justify how larger and smaller numbers can be created using the same 4 digits.
Order a set of 4-digit numbers.	Compare and order a set of numbers beyond a 1000 (e.g. using number lines and <>).	
Read 4-digit numbers in numerals.	Read and write 4-digit numbers in numerals and words (including accurate spelling).	
Begin to use strategies to estimate larger sets of objects.	Identify, represent and estimate numbers using groupings (tallies, groups of 25, 50, 100).	Explain how their methods make estimating and grouping of larger sets of objects more efficient.
Round to the nearest 10 using number lines.	Round any number to the nearest 10, 100 and 1000 (using number lines).	Use rounding as part of problem solving.
Read Roman Numerals to 10 (X).	Read Roman numerals to 100 (I to C).	Argue which system is more effective - Roman numerals or the Arabic system we use today.
Know that our number system has changed over time.	Know that over time, the numeral system changed to include the concept of zero and place value.	
	Solve number and practical problems using all of the above and with increasingly larger positive numbers.	
Effectively choose when it is more efficient to calculate mentally rather than use a written method (e.g. 1000+9 or 1020-19).	Add and subtract numbers with up to 4 digits using the formal written methods of addition and subtraction where appropriate.	Explain how their approach to a calculation depends on the context and range of numbers.
Add and subtract 3-digit numbers using formal written methods in a range of real life contexts and single step problems.	Solve addition and subtraction two-step problems in contexts.	Use formal methods of addition and subtraction accurately in a range of real life contexts.
Use inverse operations to check their answers.	Estimate and use inverse operations to check answers to a calculation.	Justify their approaches to multi-step addition and subtraction problems and use inverse operations across the steps to check their answers.
Solve missing number addition and subtraction problems.	Decide which operations and methods to use and why within problem solving.	Spot calculations within real life scenarios and role play (e.g. shop or bank corner).
Recall and use multiplication facts for the 2s, 3s, 4s, 5s, 6s and 10s in a range of real life contexts and role play.	Recall multiplication and division facts for multiplication tables up to 12 × 12.	Explain links between known tables and other multiples (e.g. 24s, 20s, 18s, 33s etc.).
Use a multiplication square for remaining tables to help solve problems.	Use place value, known and derived facts to multiply and divide mentally.	Explain what happens when you multiply by 0 and divide by 1,using examples to explain]their reasoning.
	Multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	
	Recognise and use factor pairs.	Identify common factors within a set.
Use commutativity to make mental multiplication easier.	Understand commutatively in mental calculations.	
Use partitioning with written multiplication including 2-digit by 1-digit numbers.	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding.	Solve multi-step problems that involve mixed calculations and explain their methods.

Use multiplication and division to solve problems in a range of contexts.		
	Use the distributive law to multiply two digit numbers by one digit.	Reason about their methods when using the distributive law and explain how this makes mental calculation easier.
Spot relationships between integer ratios based on 2,3,5 and 10 (i.e. 1:2 or 3:9)	Solve harder correspondence problems such as n objects are connected to m objects.	Prove an hypothesis using scaling as evidence using n:m notation.
	Find the area of rectilinear shapes by counting squares.	Explain how to find a range of different areas all with the same perimeter.

Number	Calculation	Fractions	Measures	Geometry	Statistics	Once an objective has been covered it becomes Bold It is assumed child has achieved this objective at 'on track' unless they are indicated at either WT or GD

Mathematics Assessment– Year 4 – Spring Term

Working Towards	On Track	Greater Depth
Spot equivalence involving $^{1}/_{3}$ s, ½s, ¼s and $^{1}/_{10}$ s.	Recognise and show, using diagrams, families of common equivalent fractions.	
Count up and down in taught fractions, including hundredths.	Count up and down in hundredths.	Create problems involving hundredths.
Know that $^{1}/_{100}$ arises by dividing an object or quantity by 100.	Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	
	Use fractions to divide quantities, including non-unit fractions where the answer is a whole number.	Explain the link between fractions and multiplication (e.g. 20 x ¼ = 5 is equivalent to $^{20}/_{4}$ = 5).
Add and subtract fractions with the same denominator where the answer goes beyond one whole (e.g. $1\ ^{1}/_{3}$).	Add and subtract fractions with the same denominator.	
Know that fractions have a decimal equivalent.	Recognise and write decimal equivalents of any number of tenths or hundredths.	Explain how to calculate decimal equivalents of simple fractions.
	Recognise and write decimal equivalents to ½, ¼, ¾.	
	Find the effect of dividing a one- or two-digit number by 10 and 100.	Reason about what happens to the value of numbers as they pass the decimal point when multiplying or dividing by 10 and 100.
	Round decimals with one decimal place to the nearest whole number.	
	Compare numbers with the same number of decimal places up to two decimal places.	Compare numbers with different decimal places and explain their reasoning.
Know the function of the decimal point and relate this to measures and money.	Solve simple problems involving increasingly harder fractions and some decimals (e.g. time, money, measures)	
Identify the context of a measure problem	Estimate, compare and calculate different measures, including money in pounds and pence in order to solve problems.	Justify and explain their approach to solving problems that involve mixed measures.

	Convert between different units of measure [e.g hour to minute].	Explain the relationships between different units of measure and the calculations needed to convert between them
Know that time can be displayed in different ways.	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.	Calculate and explain differences in time involving a mix of 12 and 24 hour clocks.
Know there are 60 seconds in a minute. Know how many minutes in ½ hour, ¼ hour and ¾ hour.	Know the number of seconds in a minute and the number of days in each month, year and leap year.	Explain wider time groupings (e.g. decade and century).
Know what 'duration' means	Compare durations of events [for example to calculate the time taken by particular events or tasks.)	Record and compare time with mixed seconds, minutes and hours.

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Mathematics Assessment Tracking – Year 4 – Summer Term

Working Towards	Met	Greater Depth
Sort measures into the correct families (e.g. cm, mm, m = length / mg, g, kg = mass / ml, cl, l = volume etc.).	Convert between different units of measure [e.g., kilometre to metre].	Explain the relationships between different units of measure and the calculations needed to convert between them (e.g. I need to multiply a length in m by 100 to measure it in cm).
Measure the perimeter of a simple shape using cm.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Articulate the difference between perimeter and area using mathematical terminology. Use their knowledge of squares and oblongs to calculate perimeters.
	Find the area of rectilinear shapes by counting squares.	Explain how to find a range of different areas all with the same perimeter.
Explain why a shape is a quadrilateral. Know that triangles is a family of shapes and there are different types of triangles, beyond the right angled triangle.	Compare and classify geometric shapes, including different quadrilaterals and different triangles, based on their properties and sizes.	Explain the similarities and differences between isosceles, scalene, right angled and equilateral triangles. Sort and re-sort within families of shapes using changing criteria explaining why some shapes have moved groups and other remained the same (e.g. a range of triangles or a set of quadrilaterals).
Know that there are different types of angles beyond right angles and begin to use the terms acute angles, obtuse angles and right angles.	Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Explain strategies for comparing and ordering angles using correct mathematical language.
Identify single simple lines of symmetry in shapes.	Identify lines of symmetry in 2-D shapes presented in different orientations.	Create symmetrical figures based on more than one line of symmetry and explain relationships between the reflections.
	Complete a simple symmetric figure with respect to a specific line of symmetry.	Explain the relationship between the number of sides in a regular polygon and its lines of symmetry.
Plot coordinates in the first quadrant using (x, y) [e.g. (2,4)].	Describe positions on a 2-D grid as coordinates in the first quadrant.	Complete shapes using coordinates (links to quadrilaterals and triangles), explaining their method.
Know what translation means; understand that while the shape's location will change, the overall form will remain the same (e.g. 'stamping').	Describe movements between positions as translations of a given unit to the left/right and up/down.	Explain translation using algebraic formula (e.g. (x+4 , y-2))
	Plot specified points and draw sides to complete a given polygon.	
Know the difference between discrete and continuous data.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Justify choices when using graphs, including how this is influenced by continuous or discrete data. (e.g. I wouldn't use a line graph to show the results of a poll on favourite pet)

With support answer questions about bar charts, pictograms and tables.	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Justify choices when using graphs, including how this is influenced by continuous or discrete data. (e.g. I wouldn't use a line graph to show the results of a poll on favourite pet)

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