# Year 4 Maths Medium Term Plan

| National Curriculum | | | |
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| **Number - Number and Place Value**<br>Count in multiples of 6, 7, 9, 25 and 1000<br>Find 1000 more or less than a given number<br>Count backwards through zero to include negative numbers<br>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br>Order and compare numbers beyond 1000<br>Identify, represent and estimate numbers using different representations<br>Round any number to the nearest 10, 100 or 1000<br>Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br>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 | **Number – Addition and Subtraction**<br>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br>Estimate and use inverse operations to check answers to a calculation<br>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | **Number – Multiplication and Division**<br>Recall multiplication and division facts for multiplication tables up to 12 × 12<br>Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers<br>Recognise and use factor pairs and commutativity in mental calculations<br>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects | **Number – Fractions (including decimals)**<br>Recognise and show, using diagrams, families of common equivalent fractions<br>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten<br>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number<br>Add and subtract fractions with the same denominator<br>Recognise and write decimal equivalents of any number of tenths or hundredths<br>Recognise and write decimal equivalents to ¼, ½, ¾<br>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths<br>Round decimals with one decimal place to the nearest whole number<br>Compare numbers with the same number of decimal places up to two decimal places<br>Solve simple measure and money problems involving fractions and decimals to two decimal places |
| **Measurement**<br>Convert between different units of measure [for example, kilometre to metre; hour to minute]<br>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br>Find the area of rectilinear shapes by counting squares<br>Estimate, compare and calculate different measures, including money in pounds and pence<br>Read, write and convert time between analogue and digital 12- and 24-hour clocks<br>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days | **Geometry – Properties of Shape**<br>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>Identify acute and obtuse angles and compare and order angles up to two right angles by size<br>Identify lines of symmetry in 2-D shapes presented in different orientations<br>Complete a simple symmetric figure with respect to a specific line of symmetry | **Geometry – Position and Direction**<br>Describe positions on a 2-D grid as coordinates in the first quadrant<br>Describe movements between positions as translations of a given unit to the left/right and up/down<br>Plot specified points and draw sides to complete a given polygon | **Statistics**<br>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs<br>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs |

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 |
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| **Term 1<br>Problem Solving: Reasoning Logically** | | | | | | | |
| PA Maths | Number and place value<br>To represent 4 digit numbers (concrete- place value counters)<br>To recognise the place value of each digit in a four digit number<br>To identify, represent and estimate numbers using different representations (NC) | Number and place value<br>To find 1, 10, 100 or 1000 more or less than a given number (concrete)<br>Order and compare numbers beyond 1000<br>Solve problems involving place value | Addition<br>To add four digit numbers (no regrouping) (written column method) *also add 4 digit no and a 3 digit no*<br>To add with regrouping in the 100s<br>To add with regrouping in the 100s, 10s and 1s<br>To add with regrouping in the 1000s, 100s, 10s, 1s<br>To identify common misconceptions in column addition | Subtraction<br>To subtract up to 4 digit numbers (no regrouping)<br>To subtract with regrouping in 100s and 1000s<br>To subtract with regrouping in 1s, 10s, 100s, 1000s<br>To subtract with numbers that have zeros<br>To identify common misconceptions in column subtraction | Multiplication<br>To multiply by 10 (and 100) using place value grids and dienes<br>To multiply two digit numbers by one digit number (using diennes)<br>To multiply three digit numbers by one digit number (using diennes) | Division<br>(To divide by 10 and 100 using place value grids and dienes)<br>To use number bonds for factor and products (to solve missing number sentences)<br>To make the link between sharing, arrays and short division (no regrouping)<br><br>Measurement – Time<br>To read and write time on analogue clocks (NC) | Measurement – Time<br>To convert units of time between analogue and digital clocks (12 and 24 hour) |
| Fact of the Week | 3x6=18<br>6x3=18 | 4x6=24<br>6x4=24 | 6x6=36 | 7x6=42<br>6x7=42 | 8x6=48<br>6x8=48 | 9x6=54<br>6x9=54 | 12x6=72<br>6x12=72 |
| **Term 2<br>Problem Solving: Working Systematically** | | | | | | | |
| PA Maths | Fractions, decimals and percentages<br>To identify equivalent fractions<br>Show equivalent fractions pictorially (and calculate equivalent fractions)<br>To use factors and multiples to recognise equivalent fractions | Fractions, decimals and percentages<br>To calculate the fraction of numbers and quantities<br>To compare (and order) fractions | Geometry-properties of shape<br>To compare and classify geometric shapes based on their properties (2D shapes)<br>To compare length to decide if a polygon is regular or irregular<br>To classify different triangles | Geometry-properties of shape<br>To classify different quadrilaterals<br>To name and describe 3D shapes | Statistics<br>To interpret and present data in a bar chart<br>To interpret and present data in a time graph<br>To understand the recording of change over time<br>To record change over time | Measurement – length<br>To estimate compare and calculate measures (length)<br>To convert units of measure<br>To solve problems involving length<br>To measure and calculate the perimeter of rectilinear shapes<br>To find the area of rectilinear shapes (by counting squares) | Measurement – mass<br>To estimate compare and calculate measures (mass)<br>To convert units of measure<br>To solve problems involving mass |
| Fact of the Week | 3x7=21<br>7x3=21 | 4x7=28<br>7x4=28 | 7x7=49 | 8x7=56<br>7x8=56 | 9x7=63<br>7x9=63 | 12x7=84<br>7x12=84 | |
| **Term 3<br>Problem Solving: Visualising** | | | | | | | |
| PA Maths | Number and place value | Addition and subtraction<br>To round off numbers to the nearest 10 / 100 to estimate to check answers | Multiplication<br>To use the distributive law: 32x3 = (30x3) + (2x3) = 90+6 = 96 | Division<br>To divide a two digit number using short division | Fractions, decimals and percentages | Fractions, decimals and percentages<br>Find the effect of dividing a one or two | |

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| | Round any number to the nearest 10, 100 or 1000<br>To identify and count in negative numbers<br>Solve problems involving place value | to addition and subtraction calculations<br>Use inverse operations to check answers to a calculation (NC) | To use associative law to multiply three numbers<br>To solve problems using scaling | (regrouping in tens and ones)<br>To divide a three digit number using short division (regrouping in tens, ones and hundreds)<br>To solve two step word problems | Add and subtract like fractions (fractions with the same denominator)<br>Solve problems with fractions (NC) | digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths, hundredths (NC)<br>Recognise and write decimal equivalents of any number of tenths of hundredths<br>Recognise and write decimal equivalents to ¼, ½ and ¾ | |
| Fact of the Week | 3x8=24<br>8x3=24 | 4x8=32<br>8x4=32 | 8x8=64 | 9x8=72<br>8x9=72 | 12x8=96<br>8x12=96 | 3x9=27<br>9x3=27 | |
| **Term 4<br>Problem Solving: Working Backwards** | | | | | | | |
| PA Maths | Statistics<br>To solve comparison problems using information presented (in a range of tables/graphs)<br>To solve sum problems using the information presented (in a range of tables/graphs)<br>To solve finding the difference problems using the information presented (in a range of tables/graphs) | Geometry – position and direction<br>(To draw a pair of axes)<br>Describe movements between positions as translations (left, right, up, down) | Measurement – volume/capacity<br>To estimate compare and calculate measures (volume/capacity)<br>To convert units of measure<br>To solve problems involving volume/capacity | Fractions, decimals and percentages<br>Compare numbers with the same number of decimal places (up to 2 decimal places)<br>Round decimals with one decimal place to the nearest whole number<br>To solve problems involving decimals | Measurement – time<br>To convert time between analogue and digital clocks (12 hour and ***24 hour***)<br>To solve problems involving converting time | Geometry – position and direction<br>To recognise that two right angles make a half turn, three make three quarters and four complete<br>To describe position on a 2-D grid as co-ordinates.(2,5)<br>To plot specified points and draw sides to complete a given polygon | |
| Fact of the Week | 4x9=36<br>9x4=36 | 12x9=108<br>9x12=108 | 11x11=121 | 12x11=132<br>11x12=132 | 2x12=24<br>12x2=24 | 3x12=36<br>12x3=36 | |
| **Term 5<br>Problem Solving: Trial and Improvement** | | | | | | | |
| PA Maths | Geometry – properties of shape<br>To identify acute and obtuse angles<br>To compare and order angles up to two right angles, by size<br>To compare length and angles to decide if a polygon is regular or irregular | Number and place value<br>To understand the history of different numeration systems and how they have changed to include the concept of 0 and place value<br>To read and understand Roman numerals up to 100 | Number and place value<br>To understand the place value of decimals and fractions<br><br>Addition and subtraction<br>To add and subtract decimals up to 2 decimal places<br>Solve one step addition word problems with decimals | Measurement – money<br>To estimate, compare and calculate money in pounds and pence<br>To solve money word problems<br><br>Addition and subtraction<br>To use the bar model to solve 2 step word problems involving addition and subtraction | Multiplication<br>To multiply decimals<br>To recognise factors of a number<br>To recognise square numbers<br>To recognise prime numbers | Division<br>To use known facts to derive facts involving 3 digit numbers (If I know 2x3 = 6 I can work out that 600÷3=200)<br>To use the distributive property strategy to divide 'friendly' numbers<br>To solve two step word problems | |

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| Fact of the Week | 4x12=48<br>12x4=48 | 5x12=60<br>12x5=60 | 6x12=72<br>12x6=72 | 7x12=84<br>12x7=84 | 8x12=96<br>12x8=96 | 9x12=108<br>12x9=108 | |
| **Term 6<br>Problem Solving: Looking for Patterns and Conjecturing** | | | | | | | |
| PA Maths | Subtraction<br>Use take away and comparing models to solve subtraction word problems | Measurement –<br>To convert units of measurement<br>To solve problems involving measures and converting (4 operations; length, mass, volume/capacity) | Multiplication<br>To multiply a 2 digit x 2 digit numbers<br>To solve two step problems | Measurement – time<br>To calculate time durations that pass through the hour<br>To solve problems involving converting time | Geometry – properties of shapes<br>To identify lines of symmetry in 2-D shapes presented in different orientations<br>To create a simple symmetric figure<br>To compare and classify geometric shapes based on their properties (2D shapes) | Geometry – properties of shapes<br>To use a tree diagram to classify shapes (including 2D and 3D shapes)<br><br>Statistics<br>To record data into Venn and Carroll diagrams (including 2D and 3D shapes) | Transition |
| Fact of the Week | 12x12=144 | Recap the facts found tricky | Recap the facts found tricky | Recap the facts found tricky | Recap the facts found tricky | Recap the facts found tricky | Recap the facts found tricky |

| Year 4 - Mental Maths | |
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| Number and Place Value<br>To count in multiples of 6, 7 and 9<br>To count in multiples of 25 and 1000<br>To count backwards through zero to negative numbers | To notice a pattern when counting from zero in 2s, 4s then 8s (4s are double 2s, 8s are double 4s)<br>Extend and explain number sequences (48, 41, 34, 27…) continuing beyond zero<br>To recognise odd and even numbers up to 10,000 and make general statements about them (if you add odd numbers the answer is even. Check. Explain why?)<br>To find 1,10, 100, 1000 more than any given number (with 4 or more digits)<br>To find 1,10, 100, 1000 less than any given number (with 4 or more digits)<br>To multiply by 10, 100 and 1000 (understanding that digits move to the left when multiplied by 10…).<br>To know what the value of each digit is up to 10,000<br>To count on from any given number crossing boundaries (count on 7 in ones from 669, 70 in tens from 669, 700 in hundreds from 669, 7000 in thousands from 2669)<br>To round any two or three digit number to the nearest 10 or 100<br>To round measurements in seconds, minutes, hours, metres, kilometres, litres to the nearest 10 or 100 units<br>Estimate calculations by approximating (608+297 = 610+300= approximately 910)<br>Approximate multiplications (19x16 = 20x16 = (2x16) x10= 320) |
| Addition | Rapid recall of all addition facts to 20. (e.g. all pairs of numbers to 15)<br>Derive quickly related facts: e.g. 9+6=15, 90+60=150, 900+600=1500<br>Derive quickly number pairs that make 100 e.g. 34 + □ = 100 , □ + 45=100<br>Derive pairs of multiples of 50 that total 1000: e.g. 250+750<br>Derive quickly addition doubles from: 1+1 to 50+50 e.g. double 46<br>Multiples of 10 from 10+10 to 500+500: e.g. double 280<br>Multiples of 100 from 100+100 to 5000+5000: e.g. double 17000<br>Count on from any given number in repeated steps of 1,10,100,1000<br>Partition into hundreds, tens and ones to add mentally<br>Add the nearest multiple of 10, 100 or 1000 and adjust: add 9, 19, 29 or 11, 21, 31 to any number. e.g. 48+ 61 = 48+60+1<br>Identify addition and subtraction facts for any given algorithm???? |

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| | Add three numbers mentally (two digit and one digit)<br>Add three digit multiples of 10: e.g. 430+360 or 570+260<br>Find what to add to a three digit number to make the next higher multiple of 100 e.g. 246+ □ = 300<br>Add numbers to 1 decimal place to make the next whole number 3.4 +□ = 4.0 |
| Subtraction | Know by heart all subtraction facts to 20 e.g all the pairs for 15:15-5=10, 15-10=5, 15-6=9, 15-9=6, 15-7=8, 15-8=7 etc<br>Derive quickly related facts: 160-90=70 therefor 1600-900=700 (1.6-0.9=0.7)<br>Find the difference by counting up through the next multiple of 10, 100 or 1000. i.e. count from smaller to larger number i.e. 483-386<br>Count back in repeated steps of 1, 10, 100, 1000 from any given number. i.e. 2003-8=1995 (counting back in 1s from 2003) or 387-50=337 (counting back in 10s from 387)<br>Partition into hundreds tens and ones to subtract: 98-43 = 98-40-3= 55<br>Subtract the nearest multiple of 10, 100 or 1000 and adjust. i.e. 9, 19, 29 or 11, 21, 31 etc (84-19= 65 because 84-20+1=65) (128-67=61 because it is 128-70+3=58+3=61)<br>Use the relationship between addition and subtraction (If I know 36+19=55 then I also know: 19+36=55, 55-36=19, 55- 19=36)<br>Work out mentally one fact: (91-25=□) and then state the other three related facts<br>Subtract 2 digit multiples of 10 (130-50=□)<br>Subtract a pair of multiples of 100, crossing 1000 (□-600=900)<br>Subtract a multiple of ten from a 2 or 3 digit number without crossing hundreds ( 76-□=36)<br>Subtract a single digit from a multiple of 10 or 100 (4000-3=□ or □-3=4997)<br>Subtract a single digit from a 3 or 4 digit number crossing tens ( 7003-6899=□ or 5952-□=5949)<br>Find a small difference between a pair of numbers lying either side of a multiple of 1000 (7003-6988=15 by counting up 2 from 6988 to 6990 then 10 to 7000, then 3 to 7003). |
| Multiplication<br>Rapid recall of all multiplication and division facts up to 12 x 12<br>To understand what happens when multiplying by 1 and 0<br>To multiply together three numbers | Rapid recall of all numbers multiplied by 10, 100, 1000<br>To know by heart all doubles and halves (double 34 is double 30 + double 4 = 60+8= 68)<br>To multiply by 4 (double and double again: 7x4 = double 7= 14. Double 14 = 28)<br>To multiply by 5 (multiply by 10 and halve: 5x9 = 10x9= 90 halved = 45)<br>To multiply by 20 (multiply by 10 and double)<br>Work out 8 times table by doubling four times table<br>Use doubling to work out multiples of 15 (1x15= 15, 2x15= 30, 4x15=60, 8x15=120, 16x15=240)<br>Use combinations of these facts to find e.g. 11x15 (8x15 + 2x15 + 1x15 = 120 +30+15 = 165)<br>Work out the six times table by adding 2 times table facts and 4 times table facts<br>To multiply a number by 9 or 11, multiply it by 10 and add/subtract the number (14x9 = 140-14 = 126 and 14x11= 140+14= 154)<br>To know the three corresponding number facts when given a multiplication number sentence |
| Division<br>Rapid recall of all multiplication and division facts up to 12 x 12<br>Recognise and use factor pairs | To know all related division facts when given a multiplication fact (8x4 = 32 therefore 32÷4 = 8 and 32÷8 = 4)<br>To give statements about odd and even numbers (an odd digit cannot be divided exactly by two)<br>To know the divisibility of numbers (ring the numbers that divide exactly by four: 3, 8, 20, 27, 34, 36, 48, 50)<br>Recognise that a whole number is divisible by: 100 if the last two digits are 00; 10 if the last digit is 0; 2 if the last digit is 0,2,4,6,8; 4 if the last two digits are divisible by 4; 5 if the last digit is 5 or 0<br>Find all the pairs of factors of any number to 100 (i.e. pairs of factors of 24 are: 1 and 24, 2 and 12, 3 and 8, 4 and 6)<br>Relate division to fractions (of 10 is the same as 10÷2 and of 12 is the same as 12÷4)<br>To divide a whole number of pounds by 2, 4, 5 or 10 (£29 divided between 4 people = £7 each + £1÷4= 25p = £7.25 each)<br>Understand halving as the inverse of doubling (if double 37 is 74 then half 74 is 37)<br>To use related facts to half (i.e. half of 28 = half of 20 is 10 and half of 8 is 4 = 10+4=14)<br>To find quarters and eighths by halving (2/4 of 56 is the same as half of 56 = 28 half again is 14, half again is 7 = 7)<br>To divide a four digit multiple of 1000 by 10 or 100 (8000÷ 100 = 80) (to find one tenth, one hundredth etc) |
| Fractions and Decimals<br>Count up and down in hundredths<br>Recognise that hundredths arise when dividing an object by one hundred and tenths from dividing one by ten | Count from zero in steps of one tenth<br>Start at 5.1 (for example) and count on or back in steps of 0.1<br>To count in fractions forwards and backwards & to count in decimals forwards and backwards<br>Divide one digit numbers by 10 and 100 (identifying the value of the digits in the answer as ones, tenths & hundredths)<br>Divide two digit numbers by 10 and 100 (identifying the value of the digits in the answer as ones, tenths & hundredths)<br>Round decimals with one decimal place to the nearest whole number (and to round to the nearest £)<br>To multiply whole numbers by ten (and explain that the digits move one place to the left)<br>To divide whole numbers by ten (and explain that the digits move one place to the right)<br>To multiply integers less than 1000 by 100 (800x100=)<br>To know that finding half is equivalent to dividing by 2: half 16 is 16 ÷ 2 = 8<br>To know that when sharing a cake/pizza etc between 4 you divide by four and each person receives a quarter<br>To use multiplication facts to find: one tenth of 100, 30, 500 etc one fifth of 15, 10, 35 etc one tenths, one quarter, one fifth of £1 or 1m<br>To know that 0.5 = ½ that 0.25 = ¼ that 0.75 = ¾ and that 0.1 = 1/10 (particularly in context of money and measures) |

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| Statistics | To count 'up' a counting stick in intervals of: 2, 3, 5; in intervals of any number; in decimal intervals 0.5, 1.0, 1.5...<br>To quickly count up scores when voting takes place<br>To interpret data from a pictogram using multiplicative reasoning. (i.e. if each image represents 5 people and there are 4 images then 5x4 = 20 = 20 people)<br>To sort numbers using rapid recall into Venn and Carroll diagrams |
| Measurement | To express a relationship in words: -how to find the number of days in any number of weeks -how to find change from £1 after buying two items -how to work out the perimeter of a rectangle<br>To solve problems involving money: A game costs £4. Peter saves 40p a week. How many weeks will it take to save?<br>To convert pounds into pence and vice versa: How many pence is: £1.57, £10.50, £31.60 In pounds: 356p, 970p, 2040p<br>To calculate fractions: Harry spent 1/4 of his saving on a book. What did the book cost if he spent £4, £5, £10, £20<br>To solve problems involving measures: A full jug holds 2 litres. A full glass holds 1/4 of a litre. How many glasses full of water will the jug be?<br>To double a recipe: 125g flour, 50g fat, 75g sugar, 30ml treacle, 1 teaspoon of ground ginger. (to scale by four…)<br>To calculate time duration: Lunch takes 40 minutes. It ends at 1:10pm what time does it start? Jan went swimming on Wed 14th January. She went swimming 4 weeks later. What date was it?<br>To know that: 1 kilometre= 1000 metres, 1 metre= 100cm or 1000millimetres, 1 centimetre = 10 millimetres, 1 kilogram= 1000 grams, 1 litre = 1000 millimetres<br>To know fractions of measures: 500g is half of 1kg, 75cm is three quarters of 1m<br>To write: 1.6m in cm (160cm), 5 litres in millilitres (5000ml), 8km in m (8000m), 3cm in mm (30 mm) etc<br>To suggest areas you would measure in $mm^2$, $cm^2$, $m^2$<br>Time: To recite the rhyme– 30 days has September… To know that a leap year has 366 days |
| Geometry – Properties of shape | To complement work on congruence, triangles, & mathematical language<br>How many different triangles can you draw (make if you have a geoboard) on a 3x3 grid |
| Geometry – Position and Direction | Practise pointing and chanting negative and positive numbers on a scale, using a 'counting stick' (forwards and backwards) (Hold stick horizontally & vertically to link to both the x and the y axes)<br>To count along (x-axis) and up (y-axis) a counting stick as a scale in intervals of 1<br>To count around a clock face in quarter turn, half turn, three quarter turn, full turn and in 90', 180', 270' and 360'<br>To have rapid recall of positions of the compass– north, south, east, west and N, NE, E, SE, S, SW, W, NW<br>Refer to the 'symmetrical' quality of the numbers with 0 as the middle value<br>Describe and find the position of a square on a grid of squares with the rows and columns labelled<br>Play noughts and crosses telling partner where to place on grid<br>Tell a story including the words north, ascend, clockwise, left, horizontal<br>To visualise and explain route from home to schools<br>To recognise horizontal and vertical lines in the classroom environment |