Medium Term Plans for Mathematics (revised 2016) - Year Three (Autumn Term)

Suggested oral mental starters (ongoing, throughout the term):
- Count on and back in multiples of 2, 3, 5 and 10 up to the 12th multiple; begin to count on and back in multiples of 4 up to the 12th multiple
- Recall and use multiplication and division facts for the 2, 3, 5 and 10 times tables up to the 12th multiple
- Recall and use addition and subtraction facts to 20 fluently (from Y2 programme of study)
- Derive and use addition and subtraction facts for multiples of 10 to 100 e.g. 40 + 60 = 100, 100 – 70 = 30
- Count on and back in 10s from any one- digit or two- digit number within 200 (refer to the 200 grid)
- Find ten more or ten less than a given number within 200
- Add/subtract 9 by adding/subtracting 10 and adjusting (within 200)
- Read and write numbers up to 200 in numerals **and** words
- Compare and order numbers up to 200 (use 200 grid to support); make estimates of quantities within 200
- Mentally add and subtract a 3-digit number and ones **or** tens up to and including 200 e.g. 126 + 8; 154 – 30
- Count in fractions up to 10 e.g. ½, 1, 1 ½ , 2 …
- Tell the time from an analogue clock in steps of 5 minutes, including quarter past/ quarter to (use daily routines to support this)

Areas of Study	No of days	Statutory requirements and non-statutory guidance	Suggested Key Vocabulary
Number Number and place value **Week 1**	3 - 5	Read, write, compare and order (using < and > signs) numbers to 200, in numerals **and** words Identify the number that comes between two numbers within 200 Given a number, identify the number that is 10 more or less within 200 Recognise the place value of each digit in a three-digit number to 200 Partition three-digit numbers to 200 e.g. 138 = 100 + 30 + 8; use place value cards and Dienes to support Solve missing number problems using knowledge of place value e.g. 165 = 100 + ☐ + 5; 189 = ☐ + 80 + 9 Represent numbers using different representations such as the empty number line or 200 grid e.g. position numbers in the correct place on a 0 – 200 number line or a 200 grid Reason about number and place value e.g. If you wrote these numbers in order starting with the smallest, which number would be third? 150, 59, 115, 95, 105. Explain how you ordered these numbers	Order Partition, place value Digit, numerals Hundred, tens, ones/units Between More than, greater than, less than < and > signs

Number Addition **Week 2**	5	Add a three-digit number and ones (within 200); add a three-digit number and tens (within 200), mentally **and** with jottings, such as an empty number line	Digit Hundred, tens, ones/units Add, sum of, total of, addition, + Plus, altogether Partition Estimate Calculate, calculation
		Add 9 by adding 10 and adjusting (within 200), mentally **and** with jottings, such as an empty number line	
		Consolidate addition of two two-digit numbers, including bridging 100, using **informal written methods** such as partitioning and empty number lines e.g. 86 + 43; 97 + 24 **(See Calculation Policy)**; use estimation to check that answers are reasonable	
		Solve one-step addition word problems which involve the above; extend with two-step problems **Reason** about addition e.g. True or false? The sum of three odd numbers is always an odd number. How do you know?	
Number Subtraction **Week 3**	5	Subtract a three-digit number and ones (within 200); subtract a three-digit number and tens (within 200), mentally **and** with the use of jottings, such as an empty number line	Digit Hundreds, tens, ones/units Subtract, minus, subtraction, **-** Difference Partition Estimate Inverse Calculate, calculation
		Subtract 9 by subtracting 10 and adjusting (within 200) mentally **and** with the use of jottings, such as an empty number line	
		Consolidate subtraction of two two-digit numbers and a two- digit numbers from a three- digit number within 200, using **informal written methods** such as an empty number line e.g. 128 - 35 **(See Calculation Policy)**; use estimation to check that answers are reasonable	
		Solve one-step subtraction word problems which involve the above; extend with two-step problems Understand **inverse** operations; use inverse operations to check answers	
Geometry Properties of shape **Week 4**	5	Consolidate names and properties of common 2-D shapes; introduce the terms **quadrilateral** and **polygon** Consolidate the term right angle and relate to common 2D shapes and shapes in the environment	All vocabulary from previous year: including 2-D, square, rectangle, triangle, circle, pentagon, hexagon, right angle, line of symmetry Extend with: quadrilateral, polygon, symmetrical and non-symmetrical
		Recognise line symmetry, in a vertical line, in 2-D shapes; use the terms symmetrical and non-symmetrical	
		Describe 2D shapes including the number of sides, lines of symmetry and number of right angles and **reason** about shapes e.g. what is the same about these three polygons?	
		Sort 2-D shapes using simple Venn diagrams or Carroll diagrams using known properties e.g. polygons with right angles/ polygons without right angles; symmetrical 2-D shapes/ non-symmetrical 2-D shapes; quadrilaterals/ not quadrilaterals	
		Identify **horizontal** and **vertical** lines; link to known 2D shapes	Horizontal, vertical (lines)

Number Multiplication **Week 5**	5	Recall and use multiplication facts for the 2, 5 and 10 times tables (consider as oral/mental starters) Begin to recall and use multiplication facts for the 3 times table Write and calculate mathematical statements for multiplication using 3 times table and other known tables Develop informal methods for multiplication – arrays (taken from Y2 programme of study) and empty number lines **(See Calculation Policy)** **Extend** by multiplying a teen number by a one- digit number using informal methods such as partitioning **(See Calculation Policy)** Solve simple word problems using known multiplication tables (including 3x table) Solve missing number problems using known times tables e.g. 5 x ☐ = 15 ; ☐ x 10 = 80	Multiply, multiplication, times, multiples, groups of Array Empty number line Count forwards
Number Division **Week 6**	5	Recall and use division facts for the 2, 5 and 10 times tables (consider as oral/mental starters) Begin to recall and use division facts for the 3 times table Write and calculate mathematical statements for division using the 3 times table and other known times tables Develop informal methods for division – arrays (taken from Y2 programme of study) and empty number lines; count forwards to make the link with multiplication; count backwards to make the link with repeated subtraction **(See Calculation Policy)** Solve simple word problems involving division using known multiplication tables (including 3x table) Solve missing number problems involving division using known times tables e.g. 30 ÷ ☐ = 3 Solve a problem using knowledge of multiplication/division facts and known multiples; consider using the problem **'Spaceship'**.	Divide, division Groups of Array Empty number line Count forwards, count backwards Problem, solution

Number Fractions **Week 7**	5	**Consolidate** recognising, finding, naming and writing fractions of shapes (using fraction notation and words) half, third, quarter, two quarters, and three quarters **Consolidate** recognising that 2/4 is equivalent to 1/2, using diagrams to support Compare two unit fractions, such as 1/4 and 1/3, using < and >, **using diagrams such as a simple fraction wall to support**	Half, quarter 1/2, 1/4, 2/4, 3/4 Third, 1/3 Tenth, 1/10 Whole
		Connect finding **unit fractions** to division e.g. connect finding a third of a number with dividing by 3; 1/3 of 15 = 5	Unit fraction, non-unit fraction
		Solve simple problems involving fractions. I have 12 stickers. I give 1/3 of them to Bob. How many stickers do I give to Bob? How many stickers do I have left?	Divide, part, equal parts
		Reason about fractions e.g. would you rather have 1/3 of £18 or 1/4 of £20? Why?	Compare, <, >
		Introduce the term tenth (and the notation 1/10) and recognise that tenths arise from dividing an object or shape into ten equal parts; count up and back in tenths (consider using a counting stick)	
		Find one tenth of a number, quantity or length (multiples of ten) e.g. 1/10 of 50 = 5; 1/10 of 80cm = 8 cm	
		Introduce the term **non-unit fraction** using diagrams to support understanding; find non-unit fractions of shapes e.g. shade 2/3 of the rectangle blue and 1/3 of the rectangle red	
		Begin to find non-unit fractions, with small denominators, of a number and a discrete set of objectsusing resources to support e.g. find 2/3 of 12	
Measurement Time **Week 8**	1 4	**Introduce** Roman numerals from I to XII **Consolidate** telling the time using an analogue clock: o'clock, half past, quarter past/quarter to using an analogue clock (including clocks with Roman numerals) Tell the time to the nearest five minutes on an analogue clock; know that there are 60 minutes in an hour and 60 seconds in a minute	Roman numerals I,V,X Analogue, 12 hour digital clock, minutes, hour O'clock, half past, quarter past, quarter to, five to, five past etc
		Relate analogue time to 12 hour digital clocks and **begin** to convert between analogue and digital time using simple examples e.g. half past two = 2.30; ten past eight = 8.10	a.m. p.m. noon, midday, midnight
		Introduce a.m. (morning) and p.m. (afternoon), noon and midnight; use this vocabulary when telling the time	
		Solve problems set in the context of time e.g. I leave the house at ten past eight and arrive at school at half past eight. How long is my journey to school? My favourite TV programme starts at 7.15 PM and lasts for one hour and five minutes. What time does the programme finish?	

Geometry Angles **&** **Measurement** Length **Week 9**	2	Recognise angles as a property of shapes or description of turns (consider using hands on a clock to illustrate)	Angle, right angle Less than, greater than
		Recognise that one right angle is a quarter turn and two right angles make a half turn	
		Identify angles that are right angles, less than a right angle and greater than a right angle (terms acute and obtuse introduced later in the year)	
	2	Consolidate metre (m) and centimetre (cm) as units of measurement of length and height and the relationship between them (1m = 100cm; 2m = 200cm)	Length, measure, ruler Millimetre, centimetre, metre mm, cm, m
		Estimate and then measure using appropriate equipment and units, progressing to using mixed units e.g. I am 1m 45cm tall. How many cm is this?	
		Compare two lengths/heights under 100 cm e.g. my beanstalk/ your beanstalk, my foot/your foot **(possible link to the science curriculum)**	
	1	**Introduce millimetre (mm)** as a unit of measurement for length and relate to tenths of a cm Measure small objects to the nearest mm	Perimeter, sides, total Distance all the way around
		Introduce the term **perimeter** and measure the perimeter of simple polygons using cm	
Measurement Money **&** **Number** Addition and Subtraction (mental methods) **Week 10**	2	**Consolidate** recognition of the value of **all** coins and notes (from Y2 programmes of study) Consolidate pound and pence and the relationship between them (£1 = 100p; £2 = 200p) **Begin** to use decimal notation related to money e.g. £1.45 = 145p (from Y4 programme of study)	Coins Pence (p), penny Pound (£) Change, pay, costs How much?
		Add and subtract amounts of money within £2 in practical contexts and in word problems, including giving change	
	3	Consolidate pairs of multiples of ten that total 100 e.g. 70 + 30 = 100, and give related subtraction facts; derive pairs of multiples of 5 that total 100 e.g. 85 +15 = 100, and give related subtraction facts (consider using a 100 grid to support); use knowledge of inverse operations	Digit, hundreds, tens, ones/units Estimate Calculate, calculation Inverse
		Solve missing number problems, using number facts and place value e.g. ☐ + 65 = 100; 100 - ☐ = 25	
		Mentally add a three-digit number and ones and a three-digit number and tens within and beginning to bridge 200, including the use of jottings such as a number line; use estimation to check that answers are reasonable	

Statistics Data handling **Week 11**	5	Collect, present and interpret data using bar charts, pictograms, tallies and tables Use simple scales e.g. 2 units per square in bar charts and where one face represents two children in pictograms, with increasing accuracy Use information presented in scaled bar charts, pictograms and tables to answer one-step questions e.g. How many more? How many fewer? How many altogether? Follow a line of enquiry e.g. when planning a party identify which fillings children want to eat in their sandwiches; collect and present data; answer questions about the data **(Possible link to science curriculum)**	Table Bar chart Pictogram Tally chart Data Scale, interval
Number Multiplication and Division (facts) **Week 12**	5	Recall and use multiplication and division facts for the 2, 3, 5 and 10 times tables Through doubling, connect the 2 and 4 times tables **Begin** to recall and use multiplication and division facts for the 4 times table Recognise the **inverse** relationships between multiplication and division and use this to solve missing number problems involving known multiplication and division facts e.g. $3 \times \boxed{} = 24$, $24 \div \boxed{} = 3$; $\boxed{} \times 5 = 35$, $35 \div \boxed{} = 5$ Solve word problems using known multiplication and division facts	Multiply, multiplication, times Divide, division, 'goes into' Groups of Inverse

Additional weeks

To be used for:
- assessment, consolidation and responding to AfL
- additional using and applying activities
- Christmas maths activities

Produced for Southwark Primary Schools by a working party led by Diane Andrews, maths consultant