5.2	Fluency Focus	NC Objectives	Remember (Prior knowledge)	Know (New knowledge)	Mathematics Guidance June 2020 Ready-to-progress criteria
1	Column addition Equivalent fractions, decimals and percentages	*'Add and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, 0.83 + 0.17 = 1*	Nothing on NCETM	LO: Recap knowledge of place value up to 2dp LO: Know how to add decimals within 1 (concrete / pictorial) LO: Know how to subtract decimals within 1 (concrete / pictorial) LO: Know complements to 1 (concrete / pictorial) LO: Know how to add numbers less than 1 when the sum bridges one whole (concrete / pictorial)	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).
2	Column subtraction Equivalent fractions, decimals and percentages	*'Add and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, 0.83 + 0.17 = 1*	Nothing on NCETM	LO: Know how to add numbers with the same amount of decimal places (formal) LO: Know how to subtract numbers with the same amount of decimal places (formal) LO: Know how to add numbers with different amounts of decimal places (formal) LO: Know how to subtract numbers with different amounts of decimal places (formal)	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).

3	Multiplying any given number by 10, 100 and 1000.	*'Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.'*	Nothing on NCETM recognise and use factor pairs and commutativity in mental calculations	LO: know how to add and subtract wholes and decimals (take your time on subtracting from wholes – this could be over two lessons, with adding only taking half a lesson) LO: identify numbers with a decimal sequence LO: know how to multiply and divide decimals by 10, 100 and 1000	Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.
4	Recognise right angles as a property of a shape. Identify right angles in 2D shapes Identify whether the interior angles of a polygon are equal or not.	*'Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees. Identify: angles at a point and one whole turn (total 360). Angles at a point on a straight line and 2 1 a turn (total 180degrees). Other multiples of 90 degrees.'*	complete a simple symmetric figure with respect to a specific line of symmetry	LO: identify angles are smaller or larger than a right angle and use the language of acute and obtuse LO: Compare and order angles (based on knowledge from previous lesson) LO: Know angles within a compass (per 45 degrees) LO: Know how to measure angles with a protractor LO: Know how to draw angles with a protractor	Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.

5	Recognise right angles as a property of a shape. Identify right angles in 2D shapes Identify whether the interior angles of a polygon are equal or not.	*'Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees. Identify: angles at a point and one whole turn (total 360). Angles at a point on a straight line and 2 1 a turn (total 180degrees). Other multiples of 90 degrees.'*	identify right angles, recognise that two right angles make a halfturn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify lines of symmetry in 2-D shapes presented in different orientations	LO: Know how to calculate missing angles on a straight line and angles that meet at one point LO: Know how to classify triangles and quadrilaterals LO: Reason about lengths and angles in shapes LO: Know the difference between regular and irregular polygons LO: Know how to identify 3d shapes based on their 2d projections	Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size. Compare areas and calculate the area of rectangles (including squares) using standard units.
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1		'Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.'	Nothing on NCETM	LO: Know how to describe positions and plot coordinate in the first quadrant LO: Know how to translate shapes LO: Know how to translate coordinates LO: Identify lines of symmetry in shapes LO: Know how to plot symmetrical patterns	Compare areas and calculate the area of rectangles (including squares) using standard units.
2		*'Pupils should be taught to: identify 3-D shapes, including cubes and other cuboids, from 2-D representations. know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.* *draw given angles, and measure them in degrees (o) Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and 2 1 a turn (total 180o), other multiples of 90o* *Use the properties of rectangles to deduce related facts and find missing lengths and angles. distinguish between regular and irregular polygons based on reasoning about equal sides and angles.'* *'convert between different units of metric measure.'*	Nothing on NCETM convert between different units of measure (e.g. kilometre to metre; hour to minute) solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days read, write and convert time between analogue and digital 12 and 24-hour clocks	LO: Know how to reflect shapes LO: Know how to reflect coordinates LO: Convert metric units LO: Convert metric to imperial LO: Convert units of time and read timetables	Compare areas and calculate the area of rectangles (including squares) using standard units.

3		*'calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. solve problems involving converting between units of time.* *use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.'*	estimate, compare and calculate different measures, including money in pounds and pence	LO: Know how to read volume in cubes (make 3d shapes, and count the cubes) LO: Compare volumes using cubes LO: Know how to estimate volume LO: Know how to estimate capacity	
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