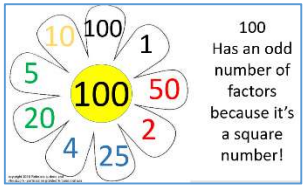
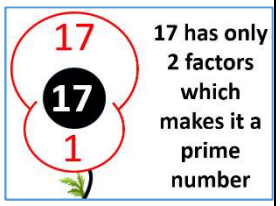
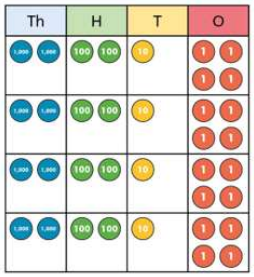
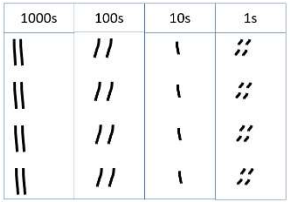
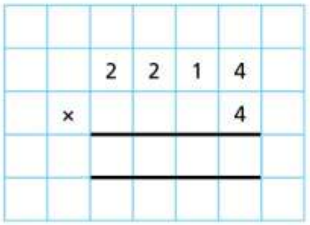
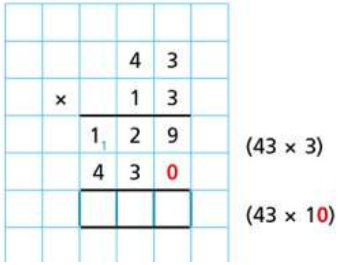
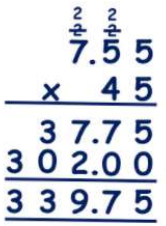
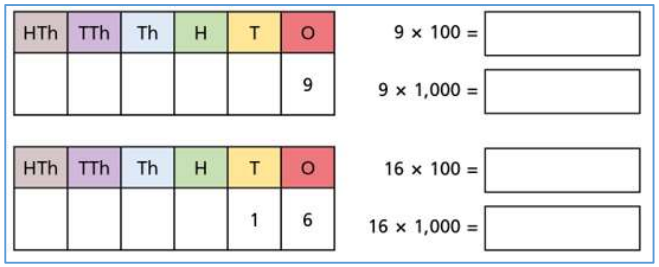
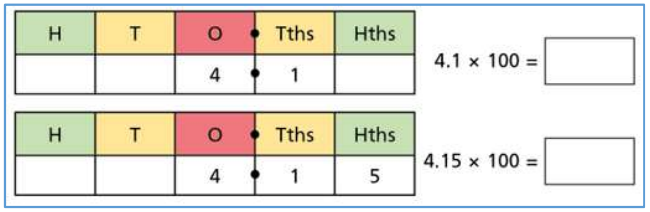
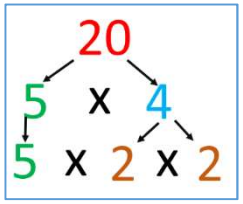
Calculation Policy

Year 5 and Year 6 Multiplication

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 5 & 6	Multiply TU X U mentally using known facts for all multiplication tables to 12 x 12 numbers Identify multiples and factors, including finding all factor pairs for numbers to 100, e.g. 30 has the factor pairs 1 × 30, 2 × 15, 3 × 10 and 5 × 6  Establish whether a number up to 100 is prime and recall prime numbers up to 19  Recognise and use square and cube numbers, and relevant notation. Multiply by 25 or 50, e.g. 48 × 25, 32 × 50 Multiply whole numbers decimals by 10, 100 and 1000 e.g. 4.3 × 10, 0.75 × 100 Multiply pairs of multiples of 10, e.g. 60 × 30, and a multiple of 100 by a single digit number, e.g. 900 × 8 30 × 80 = 3 × 8 × 10 × 10 = 3 × 8 × 100 = 2,400	**Multiply up to 4 digits by a one- number** 2214 x 4 – use counters  **Multiply up to 4 digits by a two- number** If children are working at this level – moving straight to a formal method is the best approach.	**Multiply up to 4 digits by a one- number** 2214 x 4 – can draw in a place value grid  **Multiply up to 4 digits by a two- number** If children are working at this level – moving straight to a formal method is the best approach.	**Multiply up to 4 digits by a one- number** Use formal short method  **Multiply up to 4 digits by a two- number**  	As above factor product multiple ten times the size hundred times the size a tenth the size a hundredth the size scaling adjacent multiples prime square cubed	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones Arrow Cards Gattegno chart Place Value Grid

	Use divisibility tests to identify multiples of 3, 6, 9 8 and revise 2, 4, 10 and 5 **Year 6** Multiply two-digit decimals such as 0.8 × 7 and pairs of multiples of 10 and 100, e.g. 50 × 30, 600 × 20 Double decimals with units and tenths, e.g. double 7.6 Scale up and down using known facts, e.g. given that three oranges cost 24p, find the cost of four oranges Identify numbers with an odd number of factors (square numbers), even numbers of factors and no factor pairs other than 1 and themselves (prime numbers) Explore the order of operations using brackets; eg. 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9. Use multiplication facts to solve ratio and proportion problems.	Multiplying whole numbers by 10, 100 and 1000 using place value grids  Multiplying decimals by 10 and 100 using place value grids  Express a product as a multiple of three factors  		
	Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html		