Essex Primary School Multiplication calculation Policy

By the end of year 6, children will have a range of calculation methods, mental and written. Selection will depend upon the numbers involved.

Children should not be made to go onto the next stage if:

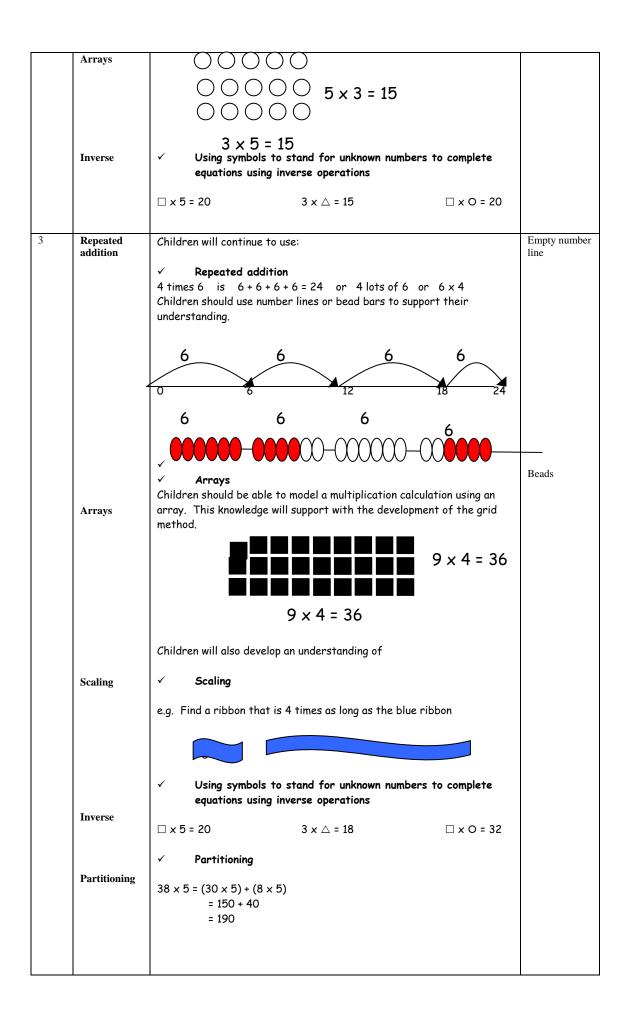
1) they are not ready.

methods.

2) they are not confident.

Children should be encouraged to **approximate** their answers before calculating. Children should be encouraged to **consider if a mental calculation** would be appropriate before using written

Yr strategy Exemplar Resource **R**/1 Mental Children will experience equal groups of objects and will count in 2s and Counters images/ 10s and begin to count in 5s. They will work on practical problem grouping solving activities involving equal sets or groups. 2 Repeated Empty Children will develop their understanding of multiplication and use addition Number line jottings to support calculation: **Repeated** addition 2 times 5 is 5+5=10 or 2 lots of 5 or 5×2 Repeated addition can be shown easily on a number line: $5 \times 2 = 5 + 5$ 5 5 2 3 7 8 9 10 Ω 1 Δ 6 and on a bead bar: 5 x 32= 5 + 5 Children should know that 3×5 has the same answer as 5×3 . This Beads can also be shown on the number line. 5 5 5 Commutative 3 12 9 10 11 3 3 3 3 3 Children should be able to model a multiplication calculation using an array. This knowledge will support with the development of the grid method.



4	Arrays		will contin hod of mult			here approprio	ite leading into the
		****** 6 ****** ****** *****	4 ********* **************************	:	= (6X10) = (60) = 84		
	Grid method	TU × U (Short m 23 × 8	ultiplicatio	n - multipl	ication	by a single digi	t)
			will approx approxima				
		×	20	3			
		8	160	24			160
							+ 24
							184
		× 9	300 2700	40 360	6 54		2700 360
						+	<u> </u>
							<u>3114</u>
		72 x 38 Children		imate firs	†	v more than a s 300	ingle digit)
		×	70	2			
		30	2100	60			2100
		8	560	16			+ 560
							+ 60
							+ 16
							2736
							decimals with one
						r, approximatin ine up under ed	
		e.g. 4.9	x 3				
		Children	will approx	imate firs	†		

	4.9 x 3	is appr	oximate	y 5 x 3	3 = 15						
	12 + 2.7 = 14.7										
	X	4		0.9							
	3	12		2.7							
Compact /short multiplication.	ThHTU x U (Short multiplication - multiplication by a single digit) 4346 x 8 Children will approximate first 4346 x 8 is approximately 4346 x 10 = 43460										
			4000		300	40	6	,			
		× 8	32000	2	2400	320	48			32000	
			52000		. 100	520	TC	, 		+ 2400	
										+ 320	
				-				_	-	<u>+ 48</u> 34768	
		L							1		
			pproximo proxima ⁺ 300			= 10000)				
		20	6000		400	40				6000	
		4	1200		280	8		_		+ 1400 + 1200	
										+ 280	
										+ 40	
	.			_						<u>+ 8</u> 8928	
	Using similar methods, they will be able to multiply decimals with up to two decimal places by a single digit number and then two digit numbers, approximating first. They should know that the decimal points line up under each other. For example: 4.92×3 Children will approximate first $4.92 \times 3 = approx 5 \times 3 = 15$ $\boxed{x \ 4 \ 0.9 \ 0.02}$										
	two dec approxi under e For exa 4.92 x 3	cimal pi imating each ot ample: 3 n will a	laces by a first. 1 her. pproxima	a single They sh	e digit i ould kr	number now that	and t the	hen t decim	wo dig nal poi	nit numbers,	
	two dec approxi under e For exa 4.92 x 3	cimal pi imating each ot ample: 3 n will a	laces by a first. 1 her. pproxima 4 (a single They sh	e digit i ould kr	number now that	and t the	hen t decim 5x3	wo dig al poi = 15	nit numbers,	
	two dec approxi under e For exa 4.92 x 3	cimal pr imating each ot ample: 3 n will a x	laces by a first. 1 her. pproxima 4 (a single hey sh he firs	e digit i ould kr st 4.92 0.02	number now that	and t the	5x3 12 + 0.	wo dig aal poi = 15 7	nit numbers,	
	two dec approxi under e For exa 4.92 x 3	cimal pr imating each ot ample: 3 n will a x	laces by a first. 1 her. pproxima 4 (a single hey sh he firs	e digit i ould kr st 4.92 0.02	number now that	and t the	hen t decim 5x3	wo dig oal poi = 15 7 <u>06</u>	nit numbers,	
	two dec approxi under e For exa 4.92 x 3	cimal pr imating each ot ample: 3 n will a x	laces by a first. 1 her. pproxima 4 (a single hey sh he firs	e digit i ould kr st 4.92 0.02	number now that	and t the	5x3 = 12 + 0. + 0.	wo dig oal poi = 15 7 <u>06</u>	nit numbers,	