Times Tables Progression Document

Online Resources

Website/App	Link
Times Tables Rockstars	Times Tables Rock Stars (ttrockstars.com)
Matific	Matific | Math Games & Worksheets Online, Designed by Math Experts
Hit the Button	Hit the Button - Quick fire maths practise for 6-11 year olds (topmarks.co.uk)
Maths Splat App	Math Splat on the App Store (apple.com)
Times tables games	Times tables games - Timestables.co.uk
Times tables games	Free multiplication games at Timestables.com

Key Concepts:

Repeated addition

4 x 5 is the same as 5+5+5+5

Children need experience of using maths manipulatives such as counters or multilink cubes and pictorial representations of objects, forming arrays.

Multiplication is commutative

4 x 5 is the same as 5 x 4

Children build on their existing understanding using arrays, turning the arrays around to show that you now have 5 groups of 4 and they will still total 20. This can then be linked to recalling multiplication facts, i.e. if they know their 5 times table facts but not their 4 times table, they can use 4 x 5 to work out 5 x 4.

Multiplication is the inverse of division

20 ÷ 5 = 4 can be worked out because 5 x 4 = 20

Again, the use of arrays is key. Children need experience of pulling arrays apart into groups or sharing. After basic experience has been gained, the children should start to 'see' and array structure as 5 groups of 4 equal 20 and 20 can be split into 5 groups of 4.

Number families

4 x 5 =20, 5 x 4 =20, 20 ÷ 5 =4, 20 ÷ 4 =5

Due to their commutative understanding, by now children should also be able to explore this in its abstract form but if in doubt, go back to arrays.

The 10 times table

1	×	10	=	10
2	×	10	=	20
3	×	10	=	30
4	×	10	=	40
5	×	10	=	50
6	×	10	=	60
7	×	10	=	70
8	×	10	=	80
9	×	10	=	90
10	×	10	=	100
11	×	10	=	110
12	×	10	=	120

Children spot the pattern of putting a zero on the end of the number that is multiplied by 10. This can be useful to help them quickly answer 10 times tables calculations, but it is important for them to understand that although it looks like we have just put a zero on the end of the number, we have actually moved its digits to the left and filled the gap with a 0:

The 5 Times Table

(0 × 5 = 0)
1 × 5 = 5
2 × 5 = 10
3 × 5 = 15
4 × 5 = 20
5 × 5 = 25
6 × 5 = 30
7 × 5 = 35
8 × 5 = 40
9 × 5 = 45
10 × 5 = 50
11 × 5 = 55
12 × 5 = 60

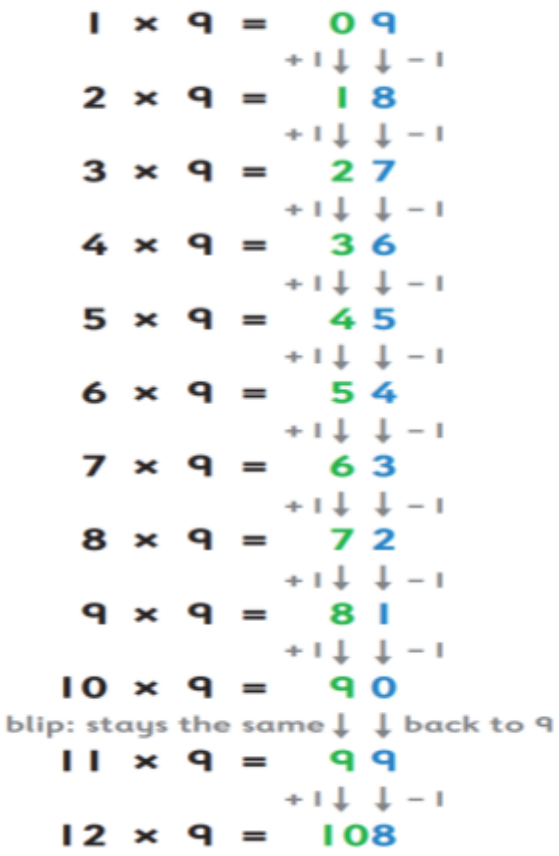
Pattern = 0 5 repeated If we include 0 × 5, the digits 0 and 5 repeat themselves over and over again in the units column: 0 5, 0 5, 0 5 ... The digit in the tens column goes up by 1 each time this pattern starts again.

The 2 times table

(0 × 2 = 0)
1 × 2 = 2
2 × 2 = 4
3 × 2 = 6
4 × 2 = 8
5 × 2 = 10
6 × 2 = 12
7 × 2 = 14
8 × 2 = 16
9 × 2 = 18
10 × 2 = 20
11 × 2 = 22
12 × 2 = 24

Pattern = 0 2 4 6 8 repeated
Including 0 × 2, the digits 0 2 4 6 8 repeat over and over again in the units column: 0 2 4 6 8, 0 2 4 6 8. The digit in the tens column goes up 1 each time this string starts again. Another pattern for the 2 times table is counting in steps of 2: count a number, miss a number, count a number, miss a number and so on.

The 9 Times Table



There's also a number pattern in the 9 times table that some children find helps them: the unit number goes down in ones and the tens number goes up in ones. (You'll notice that there's a blip at 11 × 9, but then the pattern picks up again)

Doubling

The 2 times table and doubling Multiplying by 2 is so useful, and is used so often, that it's got its own name – doubling. Think of how often you need two lots of something. Children learn that multiplying by 2 is doubling.

Doubling and the 4 and 8 times tables Children are eventually introduced to all of the times tables up to 12. They are often shown how doubling, or multiplying by 2, can help with multiplying by 4 and by 8

Year Group	Teaching Methodologies	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
EYFS							
Year One	• Count pairs of objects • Count straws bundled in tens • Sing counting songs • Hundred square • Number lines • Pictorial representations on display • Rolling Numbers	Count in 2's up to 24, linking with even numbers and supporting doubles	Count in multiples of 10 in order up to 120	Focus on counting in multiples of 5 up to 60, linking with knowledge of counting in 10s	Continue to develop fluency of counting in 2's and 10's	Count in multiples of 10, 2 and 5 in order with growing fluency	Count in multiples of 10, 2 and 5 in order fluently
Year Two **2 x** **5 x** **10 x**	• Counting objects in groups of 2, 5, 10 & 3 • Sing counting songs • Hundred square • Number lines • Array with concrete resources	Consolidate counting in steps of 2, 5 and 10 in order from 0 up to 12x	Count in steps of 2 and 5 from 0 up to 12x fluently Recall multiples of 10 up to 12x10 in any order,	Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts	Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts	Count in multiples of 3 to 12x3 in order from 0 Recall multiples of 2 up to 12x2 in any order,	Count in multiples of 3 to 12x3 in order from 0 with growing fluency Recall multiples of 5 up to 12x5 in

	• Pictorial representations on display • Rolling Numbers		including missing numbers and related division facts with growing fluency	Recall multiples of 10 up to 12x10 fluently	Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts with growing fluency.	including missing numbers and related division facts fluently Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts with growing fluency	any order, including missing numbers and related division facts fluently
Year Three **3 x** **4 x** **8 x**	• Counting objects in groups of 3, 4 and 8 • Hundred square • Number lines • Array with concrete resources • Pictorial representations on display • Rolling Numbers	Count in multiples of 3 to 12x3 in order from 0 fluently	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts with growing fluency Count in multiples of 4 to 12x4 in order from 0 with growing fluency Introduce (relating to x4) and begin to count in multiples of 8 from 0 to 12x8	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts fluently Count in multiples of 4 to 12x4 in order from 0 with fluently Count in multiples of 8 to 12x8 in order from 0 with growing fluency	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts with growing fluency. Count in multiples of 8 to 12x8 in order from 0 fluently	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts fluently Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts with growing fluency	Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts fluently

Year Four **6 x** **7 x** **9 x** **11 x** **12 x**	• Hundred square • Number lines • Pictorial representations on display • Rolling Numbers	Recall multiples of 3,4 and 8 up to 12x in any order, including missing numbers and related division facts fluently Fluently count in 6's in order up to 12x6, using multiples of 3 to support	Recall multiples of 6 in any order, including missing numbers and related division facts with growing fluency Fluently count in 7's in order up to 12x7	Recall multiples of 6 in any order, including missing numbers and related division facts fluently Recall multiples of 7 in any order, including missing numbers and related division facts with growing fluency	Recall multiples of 7 in any order, including missing numbers and related division facts fluently Fluently count in 9's in order up to 12x9. Fluently count in 11's in order up to 12x11	Recall multiples of 9 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by 1 group to find 9x as a strategy) Recall multiples of 11 in any order, including missing numbers and related division facts fluently. Fluently count in 12's in order up to 12x12	Recall multiples of 9 in any order, including missing numbers and related division facts fluently Recall multiples of 12 in any order, including missing numbers and related division facts with growing fluency (using 10x and adjusting by adding 2 more groups).
Year Five	Recall multiples of 12 in any order, including missing numbers and related division facts fluently.						
Year Six	Recall multiples of all times tables up to 12x12 in any order, including missing numbers and related division facts with growing fluency						