

Times Tables Progression



Intent

At Wheeler we believe that it is important that children are given the opportunity to see, explore, and understand the mathematical structures and patterns of times tables for real deep, embedded learning. We want our children to know their times tables well and be able to apply these facts (and their inverse - up to 12×12). Being fluent in times tables facts means that working memory is freed up and leaves space to explore new mathematical ideas and solve more complex problems.

Implementation

- Introduce the basic facts and teach strategies for calculating and remembering them.
- Use lots of models and images so that the facts are not just abstract.
- Allow time for children to practice and memorise facts.
- Make parents aware of the half termly focus and facts their children are expected to learn.



Building up skills:

Step 1 – 'Root facts'

Step 2 – 'Root facts' mixed up so no longer relying on patterns

Step 3 - Introduce tougher time restraints to encourage rapid recall (where appropriate)

Step 4 – 'Root facts' and inverses

Step 5 – 'Root facts' and any linked facts such as multiples of 10 or 100

Step 6 – Missing number problems

<p>Year 1:</p> <p>Multiples of $\times 2$, $\times 10$, root facts, commutative and inverse.</p>	<p>Year 2:</p> <p>$\times 5$, $\times 3$, $\times 4$ root facts, commutative and inverse.</p>
<p>Year 3:</p> <p>$\times 6$, $\times 7$, $\times 8$, $\times 9$ root facts, commutative and inverse.</p>	<p>Year 4:</p> <p>$\times 11$, $\times 12$ root facts, commutative and inverse.</p> <p>Doubles and halves of 20-50.</p>
<p>Year 5:</p> <p>Multiplying single digit numbers by 10, 100 and 1000.</p> <p>Dividing up to 4 digit numbers by 10, 100, 1000.</p> <p>Related multiples of 10/100/1000.</p> <p>Squared numbers and square roots. Doubles and halves of 50-100.</p> <p>Multiplying decimals.</p>	<p>Year 6:</p> <p>Cubed numbers and cube roots.</p> <p>Doubles and halves of decimal numbers.</p>

EYFS:

When children are ready, they will be exposed to counting in multiples of 2 and 10.

Year 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
x2	x2	÷2	x10	x10	÷10
Counting in multiples of 2:	'Root facts' and commutative	All linked division facts for x2	Counting in multiples of 10:	'Root facts' and commutative	All linked division facts for x10
2	1x2=2	2÷2=1	10	1x10=10	10÷10=1
4	2x2=4	4÷2=2	20	2x10=20	20÷10=2
6	3x2=6	6÷2=3	30	3x10=30	30÷10=3
8	4x2=8	8÷2=4	40	4x10=40	40÷10=4
10	5x2=10	10÷2=5	50	5x10=50	50÷10=5
12	6x2=12	12÷2=6	60	6x10=60	60÷10=6
14	7x2=14	14÷2=7	70	7x10=70	70÷10=7
16	8x2=16	16÷2=8	80	8x10=80	80÷10=8
18	9x2=18	18÷2=9	90	9x10=90	90÷10=9
20	10x2=20	20÷2=10	100	10x10=100	100÷10=10
22	11x2=22	22÷2=11	110	11x10=110	110÷10=11
24	12x2=24	24÷2=12	120	12x10=120	120÷10=12
	2x1=2	2÷1=2		10x1=10	10÷1=10
	2x2=4	4÷2=2		10x2=20	20÷2=10
	2x3=6	6÷3=2		10x3=30	30÷3=10
	2x4=8	8÷4=2		10x4=40	40÷4=10
	2x5=10	10÷5=2		10x5=50	50÷5=10
	2x6=12	12÷6=2		10x6=60	60÷6=10
	2x7=14	14÷7=2		10x7=70	70÷7=10
	2x8=16	16÷8=2		10x8=80	80÷8=10
	2x9=18	18÷9=2		10x9=90	90÷9=10
	2x10=20	20÷10=2		10x10=100	100÷10=10
	2x11=22	22÷11=2		10x11=110	110÷11=10
	2x12=24	24÷12=2		10x12=120	120÷12=10

Year 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
x5	÷5	x3	÷3	x4	÷4
'Root facts' and commutative	All linked division facts for x5	'Root facts' and commutative	All linked division facts for x3	'Root facts' and commutative	All linked division facts for x4
1x5=5	5÷5=1	1x3=3	3÷3=1	1x4=4	4÷4=1
2x5=10	10÷5=2	2x3=6	6÷3=2	2x4=8	8÷4=2
3x5=15	15÷5=3	3x3=9	9÷3=3	3x4=12	12÷4=3
4x5=20	20÷5=4	4x3=12	12÷3=4	4x4=16	16÷4=4
5x5=25	25÷5=5	5x3=15	15÷3=5	5x4=20	20÷4=5
6x5=30	30÷5=6	6x3=18	18÷3=6	6x4=24	24÷4=6
7x5=35	35÷5=7	7x3=21	21÷3=7	7x4=28	28÷4=7
8x5=40	40÷5=8	8x3=24	24÷3=8	8x4=32	32÷4=8
9x5=45	45÷5=9	9x3=27	27÷3=9	9x4=36	36÷4=9
10x5=50	50÷5=10	10x3=30	30÷3=10	10x4=40	40÷4=10
11x5=55	55÷5=11	11x3=33	33÷3=11	11x4=44	44÷4=11
12x5=60	60÷5=12	12x3=36	36÷3=12	12x4=48	48÷4=12
5x1=5	5÷1=5	3x1=3	3÷1=3	4x1=4	4÷1=4
5x2=10	10÷2=5	3x2=6	6÷2=3	4x2=8	8÷2=4
5x3=15	15÷3=5	3x3=9	9÷3=3	4x3=12	12÷3=4
5x4=20	20÷4=5	3x4=12	12÷4=3	4x4=16	16÷4=4
5x5=25	25÷5=5	3x5=15	15÷5=3	4x5=20	20÷5=4
5x6=30	30÷6=5	3x6=18	18÷6=3	4x6=24	24÷6=4
5x7=35	35÷7=5	3x7=21	21÷7=3	4x7=28	28÷7=4
5x8=40	40÷8=5	3x8=24	24÷8=3	4x8=32	32÷8=4
5x9=45	45÷9=5	3x9=27	27÷9=3	4x9=36	36÷9=4
5x10=50	50÷10=5	3x10=30	30÷10=3	4x10=40	40÷10=4
5x11=55	55÷11=5	3x11=33	33÷11=3	4x11=44	44÷11=4
5x12=60	60÷12=5	3x12=36	36÷12=3	4x12=48	48÷12=4

Year 3

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
x6	x7	x6, x7	x8	x9	x8, x9
<p>'Root facts' and commutative</p> <p><i>Although you will revise and test all facts in each of these times tables, these are the only new facts to learn if chn are on track and have achieved fluency of multiplication facts in previous years.</i></p> <p>6x6=36 7x6=42 8x6=48 9x6=54 11x6=66 12x6=72 6x7=42 6x8=48 6x9=54 6x11=66 6x12=72</p>	<p>'Root facts' and commutative</p> <p><i>Although you will revise and test all facts in each of these times tables, these are the only new facts to learn if chn are on track and have achieved fluency of multiplication facts in previous years.</i></p> <p>7x7=49 8x7=56 9x7=63 11x7=77 12x7=84 7x8=56 7x9=63 7x11=77 7x12=84</p>	<p>Revise all linked division facts for x6 x7 and learn new facts:</p> <p>36÷6=6 42÷6=7 48÷6=8 54÷6=9 66÷6=11 72÷6=12 42÷7=6 48÷8=6 54÷9=6 66÷11=6 72÷12=6 49÷7=7 56÷7=8 63÷7=9 77÷7=11 84÷7=12 56÷8=7 63÷9=7 77÷11=7 84÷12=7</p>	<p>'Root facts' and commutative</p> <p><i>Although you will revise and test all facts in each of these times tables, these are the only new facts to learn if chn are on track and have achieved fluency of multiplication facts in previous years.</i></p> <p>8x8=64 9x8=72 11x8=88 12x8=96 8x9=72 8x11=88 8x12=96</p>	<p>'Root facts' and commutative</p> <p><i>Although you will revise and test all facts in each of these times tables, these are the only new facts to learn if chn are on track and have achieved fluency of multiplication facts in previous years.</i></p> <p>9x9=81 11x9=99 12x9=108 9x11=99 9x12=108</p>	<p>Revise all linked division facts for x8 x9 and learn new facts:</p> <p>64÷8=8 72÷8=9 88÷8=11 96÷8=12 72÷9=8 88÷11=8 96÷12=8 81÷9=9 99÷9=11 108÷9=12 99÷11=9 108÷12=9</p>

Year 4					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
x11, x12	÷11, ÷12	Revision and consolidation	Revision and consolidation	Revision and consolidation	Doubles and halves of 20-50
<p><i>Although you will revise and test all facts in each of these times tables, these are the only new facts to learn if chn are on track and have achieved fluency of multiplication facts in previous years.</i></p> <p>11x11=121 11x12=132 12x11=132 12x12=144</p>	<p>Revise all linked division facts for x11 x12 and learn new facts:</p> <p>121÷11=11 132÷11=12 132÷12=11 144÷12=12</p>	<p>All multiplication and division facts mixed up to 12x12</p>	<p>All multiplication and division facts mixed up to 12x12</p>	<p>All multiplication and division facts mixed up to 12x12</p>	<p>21x2 31x2 22x2 32x2 23x2 33x2 24x2 34x2 25x2 35x2 26x2 36x2 27x2 37x2 28x2 38x2 29x2 39x2 30x2 40x2</p> <p>41x2 42x2 43x2 44x2 45x2 46x2 47x2 48x2 49x2 50x2</p>

Year 5					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
x10 x100 x1000	÷10 ÷100 ÷1000	Related multiples of 10/100/1000	Squared numbers and square roots	Doubles and halves of 50-100	Multiplying decimals
Multiplying single digit numbers by 10, 100 and 1000.	Dividing up to 4 digit numbers by 10, 100, 1000.	Revision of all x tables; mixed up, using related multiples of 10/100/1000 Eg. 20x4 4x600 70x50	Chn should already know facts when shown as 2x2 or 9÷3 etc. Focus on language and symbol for squared and square root Include; 13 ² 14 ² 15 ²	There are many so relate back to strategies and already known doubles facts.	Revision of all x tables; mixed up, using decimalseg. tenths, hundredths, thousandths Eg. 3x0.7 0.08x2 0.4x0.6
Year 6					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cubed numbers and cube roots	Doubles and halves of decimal numbers	Revision / drill and skill of all Maths Fluency Objectives			
1 ³ = 1 2 ³ = 8 3 ³ = 27 4 ³ = 64 5 ³ = 125 6 ³ = 216 7 ³ = 343 8 ³ = 512 9 ³ = 729 10 ³ = 1000 Ensure chn are aware that cubed numbers are a number times itself, times itself.	Doubles and halves of decimal numbers using doubling of whole number facts already learnt 3.5 x 3 4.6 x 7 7.5 ÷ 5 6.4 ÷ 8				