	Nanpean CP School **Multiplicative Facts Progression Map**	Nanpean Community Primary School *Nurturing Children's Passion to Succeed*

"And in a year's time I hope you will know all the multiplication tables up to twelve. It will help you enormously if you do."

"What about something much harder, like two times four hundred and eighty-seven?"

"Nine hundred and seventy-four," Matilda said immediately.

Intent

At Nanpean CP 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 deep, embedded learning. We want our children to know their times tables fluently and be able to apply these facts (and their inverse - up to 12x12). Being fluent in times tables facts means that working memory is freed up and leaves space to explore new mathematical ideas such as the written method of long division, common factors and solve more complex problems.

Year 1 Count in multiples of 2, 5 and 10	**Year 2** Know facts for 1x, 2x, 5x and 10x table – commutative and inverse. Count in multiples of 3.
Year 3 Know facts for 3x, 4x and 8x tables - commutative and inverse.	**Year 4** Know facts for 6x, 7x, 9x, 11x and 12x – commutative and inverse
Year 5 Know facts for all times tables 12x12 – commutative and inverse. Squared numbers and square roots. Multiply and divide by powers of 10.	**Year 6** Cubed numbers and cube roots. Know facts for 13x to 19x where appropriate via TTRockstars

Year 1		
Autumn	**Spring**	**Summer**
Counting in 2s, forwards and backwards. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24	Counting in 10s, forwards and backwards. 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60	Counting in 5s, forwards and backwards. 10, 20, 30, 40, 50

<table>
<tr><th colspan="4">Year 2</th></tr>
<tr><th colspan="2">Autumn</th><th colspan="2">Spring</th><th>Summer</th></tr>
<tr><td colspan="2">Count in 2s, 5s and 10s forwards and backwards.
• 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24
• 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
• 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120
Begin learning 2x table facts (commutative)</td><td colspan="2">Begin learning 10x and 5x table facts (commutative)</td><td>Count in 3s forwards and backwards.

3, 6, 9, 12, 18, 21, 24, 27, 30, 33, 36

Consolidate times tables facts, commutative and invers for 2x, 5x and 10x tables.</td></tr>
<tr><td>1x2=2
2x2=4
3x2=6
4x2=8
5x2=10
6x2=12
7x2=14
8x2=16
9x2=18
10x2=20
11x2=22
12x2=24</td><td>2x1=2
2x2=4
2x3=6
2x4=8
2x5=10
2x6=12
2x7=14
2x8=16
2x9=18
2x10=20
2x11=22
2x12=24</td><td>1x10=10
2x10=20
3x10=30
4x10=40
5x10=50
6x10=60
7x10=70
8x10=80
9x10=99
10x10=100
11x10=110
12x10=120

1x5=5
2x5=10
3x5=15
4x5=20
5x5=25
6x5=30
7x5=35
8x5=40
9x5=45
10x5=50
11x5=55
12x5=60</td><td>10x1=10
10x2=20
10x3=30
10x4=40
10x5=50
10x6=60
10x7=70
10x8=80
10x9=90
10x10=100
10x11=110
10x12=120

5x1=5
5x2=10
5x3=15
5x4=20
5x5=25
5x6=30
5x7=35
5x8=40
5x9=45
5x10=50
5x11=55
5x12=60</td><td></td></tr>
<tr><td colspan="2"></td><td colspan="2">Learn the division facts for 2x, 5x & 10x tables</td><td></td></tr>
<tr><td colspan="2"></td><td>2÷2=1
4÷2=2
6÷2=3
8÷2=4
10÷2=5
12÷2=6
14÷2=7
16÷2=8
18÷2=9
20÷2=10
22÷2=11
24÷2=12

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

5÷1=5
10÷2=5
15÷3=5
20÷4=5
25÷5=5
30÷6=5
35÷7=5
40÷8=5
45÷9=5
50÷10=5
55÷11=5
60÷12=5</td><td>2÷1=2
4÷2=2
6÷3=2
8÷4=2
10÷5=2
12÷6=2
14÷7=2
16÷8=2
18÷9=2
20÷10=2
22÷11=2
24÷12=2

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

5÷5=1
10÷5=2
15÷5=3
20÷5=4
25÷5=5
30÷5=6
35÷5=7
40÷5=8
45÷5=9
50÷5=10
55÷5=11
60÷5=12</td><td></td></tr>
</table>

Year 3

Autumn		Spring		Summer
Begin learning 3x table facts (commutative and inverse)		Begin learning 4x table facts (commutative and inverse)		Begin learning 8x table facts (commutative and inverse) Although children will revise and test all facts in each of these times tables, these are the only new facts to learn if children have achieved fluency of multiplication facts in previous years..
1x3=3 2x3=6 3x3=9 4x3=12 5x3=15 6x3=18 7x3=21 8x3=24 9x3=27 10x3=30 11x3=33 12x3=36 3÷3=1 6÷3=2 9÷3=3 12÷3=4 15÷3=5 18÷3=6 21÷3=7 24÷3=8 27÷3=9 30÷3=10 33÷3=11 36÷3=12	3x1=3 3x2=6 3x3=9 3x4=12 3x5=15 3x6=18 3x7=21 3x8=24 3x9=27 3x10=30 3x11=33 3x12=36 3÷1=3 6÷2=3 9÷3=3 12÷4=3 5÷5=3 18÷6=3 21÷7=3 24÷8=3 27÷9=3 30÷10=3 33÷11=3 36÷12=3	1x4=4 2x4=8 3x4=12 4x4=16 5x4=20 6x4=24 7x4=28 8x4=32 9x4=36 10x4=40 11x4=44 12x4=48 4÷4=1 8÷4=2 12÷4=3 16÷4=4 20÷4=5 24÷4=6 28÷4=7 32÷4=8 36÷4=9 40÷4=10 44÷4=11 48÷4=12	4x1=4 4x2=8 4x3=12 4x4=16 4x5=20 4x6=24 4x7=28 4x8=32 4x9=36 4x10=40 4x11=44 4x12=48 4÷1=4 8÷2=4 12÷3=4 16÷4=4 20÷5=4 24÷6=4 28÷7=4 32÷8=4 36÷9=4 40÷10=4 44÷11=4 48÷12=4	8x8=64 9x8=72 11x8=88 12x8=96 8x9=72 8x11=88 8x12=96 64÷8=8 72÷8=9 88÷8=11 96÷8=12 72÷9=8 88÷11=8 96÷12=8

Year 4

Autumn		Spring	Summer
Begin learning 7x and 9x table facts (commutative and inverse) Although children will revise and test all facts in each of these times tables, these are the only new facts to learn if children have achieved fluency of multiplication facts in previous years.		Begin learning 11x and 12x table facts (commutative and inverse) Although children will revise and test all facts in each of these times tables, these are the only new facts to learn if children have achieved fluency of multiplication facts in previous years.	Children revise all facts taught from Year 2 – 4. All multiplication and division facts mixed up to 12x12 in previous years..
7x7=49 8x7=56 9x7=63 11x7=77 12x7=84 7x8=56 7x9=63 7x11=77 7x12=84 9x9=81 11x9=99 12x9=108 9x11=99 9x12=108	42÷7=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 72÷8=9 81÷9=9 99÷9=11 108÷9=12 99÷11=9 108÷12=9	11x11=121 11x12=132 12x11=132 12x12=144 121÷11=11 132÷11=12 132÷12=11 144÷12=12	

Year 5		
Autumn	**Spring**	**Summer**
All multiplication and division facts mixed up to 12x12 *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* *Children 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*	*Revision of all x tables; mixed up, using decimals eg. tenths, hundredths, thousandths Eg.* *3x0.7* *0.08x2* *0.4x0.6*

Year 6		
Autumn	**Spring**	**Summer**
Cube numbers and cube roots $1^3 = 1$ $2^3 = 8$ $3^3 = 27$ $4^3 = 64$ $5^3 = 125$ $6^3 = 216$ $7^3 = 343$ $8^3 = 512$ $9^3 = 729$ $10^3 = 1000$ *13x - 19x to be enabled via TTRS at class teacher discretion.*	*Consolidation and revision*	*Revision*

Strategies for implementation

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

Times Table Rockstars:

This is an essential tool for preparation for the MTC check in June of Year 4. Homework will be set through this platform via 'garage sessions' at 21 minutes a week. The class teacher should monitor progress of both fluency and effort for each child using the 'set tables' function to ensure that the work is in line with expectation. Data will be required on Insight at the end of each term using 'soundcheck' (an MTC emulator) which will be used to track progress. 'Soundcheck' take 6 minutes and 2 should be completed with the second being the score for Insight and will be used in the termly data meetings to track progress. These should be completed under test conditions with no assistance. The school will facilitate regular practice and a club is available to children weekly.

NumBots (5-7 years)

The goal of this platform is to achieve the 'triple win' of understanding, recall and fluency in mental addition and subtracting allowing them to move on from counting to calculating. On average it will take a child 2 years to complete the entirety of the NumBots programme (1300 levels) based on them using the platform for 3 minutes a day 5 days a week. It is essential that this is completed in 'Story Mode' as this will ensure that they progress through the programme correctly and the foundations are laid for moving onto TTRockstars. Progress is tracked through the programme and will be reviewed with the subject lead at termly data meetings. The school will facilitate regular practice and a club is available to children weekly.

Blooket

Blooket involves creating question sets which are used in a multiple choice format in a variety of games via the online platform. It is best suited to key instant recall facts (KIRFS) and is excellent whole class intervention due to being presented as a communal game. It works particularly well with equivalent fraction, Roman numerals, squared & cubed numbers.