Times Tables Progression Document

Intent

At Raglan, we strive to provide our pupils with a strong foundation in numerical fluency, problem-solving skills, and mental arithmetic. We believe that a solid grasp of times tables lays the groundwork for success in various mathematical concepts and real-life situations. Our intention is to create confident and competent mathematicians, who are able to apply their understanding of times tables effectively. Importantly, 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.

Progression

The skills of times tables are built cumulatively over the course of the academic year in the following structures:

Building up skills:
Step 1 – 'Root facts'
Step 2 – 'Root facts' mixed up - 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 (Mega Facts)
Step 6 – Missing number problems.

The embedding of these steps are key. Children will progress at different speeds and will not be rushed onto the next step if they are not yet fluent.

Overview:

EYFS	Children to be exposed to counting in 2s, 5s and 10s when ready
Year 1	Multiples of x2, x10, root facts, commutative and inverse
Year 2	Multiples of x5, x3, x4 root facts, commutative and inverse
Year 3	Multiples of x6, x7, x8, x9 root facts, commutative and inverse
Year 4	Multiples of x11, x12 root facts, commutative and inverse Doubles and halves of 20-50
Year 5	Multiplying single digit numbers by 10, 100 and 1000. Dividing up to 4 digit numbers by 10, 100, 1000. Related multiples of 10/100/1000. Squared numbers and square roots. Doubles and halves of 50 -100. Multiplying decimals.
Year 6	Cubed numbers and cube roots Revision of all skills and maths fluency

*A more detailed breakdown of the content can be found at the end of the document.

Implementation

Curriculum Planning and Sequencing

To ensure effective implementation of times tables learning, we have developed an ambitious, well-structured and sequenced curriculum that is at least in line with the latest National Curriculum requirements. Our planning incorporates the following strategies:

Progressive Approach: We introduce times tables, at least in line with the recommended progression. Starting with the concept of multiplication in KS1 and gradually building on this in KS2

Cumulative Learning: We emphasise the cumulative nature of times tables by regularly revisiting and extending prior knowledge, enabling our pupils to reinforce their understanding over time.

Practical and Contextualised Learning: We provide ample opportunities for practical, hands-on activities to help pupils connect times tables to real-life situations. This enhances their understanding and makes learning relevant and engaging.

High-Quality Teaching and Learning

We ensure high-quality teaching and learning experiences by implementing the following strategies:

Teach – Class teacher/TA to use teaching strategies for specific times table/concept/part of tables

Practise – Children given the chance to explore through activities, this may be more than 1 session

Apply – Can be in the form of a quiz, starters, learning or home learning.

Modelling and Explicit Instruction: Our teachers use explicit modelling and demonstration techniques to scaffold understanding and demonstrate effective times tables strategies. This helps pupils develop systematic approaches to problem-solving.

Differentiated Instruction: We recognise that pupils have varying learning needs and provide differentiated instruction to cater to their individual abilities. This includes targeted intervention and extension activities to ensure each pupil makes progress.

Active and Collaborative Learning: We foster a collaborative learning environment where pupils work together, solving problems collaboratively, discussing strategies, and explaining their thinking. This promotes deeper understanding and peer support.

Effective Use of Resources and Technology: We use a range of resources, including concrete manipulatives, interactive tools, and educational technology, to enhance pupil engagement and facilitate exploration of times tables concepts.

Assessment and Feedback

To track pupil progress, identify gaps in understanding, and provide personalized feedback, we use the following assessment practices:

Formative Assessment: Our teachers regularly use formative assessment strategies, such as questioning, observation, and discussion, to gauge pupil understanding during lessons. This allows for immediate feedback and ensures misconceptions are addressed promptly.

Regular Times Tables Quizzing and Home Learning challenges: We conduct regular times tables quizzes to assess pupils' fluency and recall. This helps identify areas where additional support may be required.

Personalised Feedback: Pupils receive constructive feedback on their times tables work, including specific advice on overcoming difficulties or improving strategies. This feedback is aimed at promoting self-reflection and supporting pupils in becoming independent learners.

Tracking: At each data drop, teachers will submit their times table tracking on Arbor.

Developing – able to recall few facts and has limited use of any strategies
Beginning – can recall most basic / root facts
Secure– can recall basic facts, division facts, related number facts and missing number problems

Any children deemed working below or towards the standard in relation to the fluency objective to be targeted through intervention.

Impact

Our commitment to the implementation of Maths - Times Tables has a profound impact on the pupils, promoting their mathematical fluency and overall development. The impact can be observed through the following outcomes:

Secure Times Tables Knowledge: Pupils achieve a high level of automaticity and fluency in times tables, enabling them to confidently apply this knowledge in various mathematical contexts and everyday life.

Problem-Solving Skills: Pupils develop problem-solving skills through times tables activities, enhancing their ability to solve mathematical problems efficiently and making connections between different mathematical concepts.

Increased Numerical Confidence: Pupils develop a positive attitude towards Mathematics and gain confidence in their numerical abilities, reducing any anxiety associated with Maths learning and reducing the mental load of questions that require multiplication and division.

Improved Mathematical Achievement: The strong foundation in times tables learning serves as a basis for success in other mathematical areas, leading to improved overall mathematical achievement across the curriculum.

Continued Progression: Pupils' progress in times tables learning is regularly monitored, and any gaps in understanding are identified and addressed promptly to ensure continuous growth and achievement.

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 4 6 8 10 12 14 16 18 20 22 24	1x2=2 2x2=4 3x2=6 4x2=8 5x2=10 6x2=12 7x2=14 8x2=16 9x2=18 10x2=20 11x2=22 12x2=24 2x1=2 2x2=4 2x3=6 2x4=8 2x5=10 2x6=12 2x7=14 2x8=16 2x9=18 2x10=20 2x11=22 2x12=24	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 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 20 30 40 50 60 70 80 90 100 110 120	1x10=10 2x10=20 3x10=30 4x10=40 5x10=50 6x10=60 7x10=70 8x10=80 9x10=990 10x10=100 11x10=110 12x10=120 10x1=10 10x2=20 10x3=30 10x4=40 10x5=50 10x6=60 10x7=70 10x8=80 10x9=90 10x10=100 10x11=110 10x12=120	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 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=10 110÷11=10 120÷12=10

YEAR 2					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
x5	**÷5**	**x3**	**÷3**	**x4**	**÷4**
Counting in Multiples of 5:	**Root facts and commutative:**	**All linked division facts for x3**	**Counting in multiples of 3:**	**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**
Root facts and commutative:	**Root facts and commutative:**	**Revise all linked division facts for x6, x7 and new facts:**	**Root facts and commutative:**	**Root facts and commutative:**	**Revise all linked division facts for x8, x9 and new facts:**
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. 6x6=36 7x6=42 8x6=48 9x6=54 11x6=66 12x6=72 6x7=42 6x8=48 6x9=54 6x11=66 6x12=72	*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.* 7x7=49 8x7=56 9x7=63 11x7=77 12x7=84 7x8=56 7x9=63 7x11=77 7x12=84	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	*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.* 8x8=64 9x8=72 11x8=88 12x8=96 8x9=72 8x11=88 8x12=96	*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.* 9x9=81 11x9=99 12x9=108 9x11=99 9x12=108	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

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**
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. 11x11=121 11x12=132 12x11=132 12x12=144	Revise all linked division facts for x11 x12 and learn new facts: 121÷11=11 132÷11=12 132÷12=11 144÷12=12	All multiplication and division facts mixed up to 12x12	All multiplication and division facts mixed up to 12x12	All multiplication and division facts mixed up to 12x12 DFE Times tables check	21x2 31x2 22x2 32x2 23x2 33x2 24x2 34x2 25x2 35x2 26x2 36x2 27x2 37x2 28x2 38x2 29x2 39x2 30x2 40x2 41x2 42x2 43x2 44x2 45x2 46x2 47x2 48x2 49x2 50x2

YEAR 5					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
X10, 100, 1000	÷10, 100, 1000	Related Multiples of 10/100/1000 (Mega Facts)	Squared numbers and square root facts	Doubles and halves of numbers 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 decimals eg. 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 cubed roots	Revise and revisit all skills learnt. Focus on fluency of arithmetic calculations.				
$1^3 = 1$ $2^3 = 8$ $3^3 = 27$ $4^3 = 64$ $5^3 = 125$ $6^3 = 216$ $7^3 = 343$ $8^3 = 512$ $9^3 = 729$ $10^3 = 1000$ Ensure chn are aware that cubed numbers are a number times itself, times itself.					