

Times Tables Policy

Aims

The National Curriculum 2014 states that:

"The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers."

And

"By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work."

The importance of times tables and their links across other mathematical concepts is clear and at Ridgeway, we also understand the importance of reducing cognitive load to enable all children to access the learning with confidence and efficiency. Research suggests that if times tables are embedded in long term memory, the cognitive load of mathematical questions are reduced, therefore it is important that children develop their efficiency in recalling times tables facts.

Teaching and Learning Approach

Times table facts should be taught explicitly through a variety of methods **(NOT JUST TESTING!)** to support all children's capacity to recall and apply this knowledge.

At Ridgeway the following methods are used (see appendix for ideas and further guidance):

1. Active Maths
2. Games
3. Songs
4. Concrete Resources
5. Online Platforms (J2Blast, Hit the Button)
6. Focus Groups

Times table 'checks' and multiplication grids should only be used to inform assessment if it cannot be gauged through other methods, not as a replacement.

Application of Times Tables in Calculations

In line with the Maths intent, children's understanding of times tables should not only be taught as standalone facts but must also relate and apply to real life contexts in order to develop their wider mathematical understanding.

In class, children should only be solving calculations using the times tables they have previously learnt or been exposed to.

Importance of Implementing Commutativity When Teaching Times Tables Facts

Commutativity is when 2 numbers can be multiplied and the same answer will be found no matter what order they are in. This understanding reduces the number of times table facts to learn (77) and should be at the heart of all teaching of times table (multiplication) facts. Using this approach also reduces cognitive load and will allow the children to change the order operation to suit their preference and aid their times tables recall.

Overview

	Year 1	Year 2	Year 3	Year 4
Progression of learning	Number patterns Arrays Concrete objects Pictorial representations	Introduce multiplication, division and equals symbols Introduce language of commutativity (multiplication only). x2, x5, x10 New learning: x3 Division facts to be learnt alongside times tables once children have an understanding of division	Recap: x3 New learning: x11, x4, x8, x6 Division facts to be learnt alongside times tables	New learning: x12, x9, x7 Division facts to be learnt alongside times tables
Language	Lots of Equal groups of Array Sharing equally (for division)	Multiply Times Equal groups of Repeated addition Array Share equally Divide Multiplication facts Division facts Commutative	Multiply Times Share equally Divide Multiplication facts Division facts Commutative	Multiply Times Share equally Divide Multiplication facts Division facts Commutative
Number of facts to learn		42	26	9
New times tables in the order they should be learnt		x1, x2, x5, x10, x3	x11, x4, x8, x6	x12, x9, x7

Times Tables Facts Progression

The facts highlighted in green in the grids below are times tables they have already previously learnt. The times tables grids below should be used as a guide to support the digits chosen for calculations involving multiplication and division (for fluency and problem solving). *E.g. Year 3 Aut 2, teaching multiplication will predominantly involve using the x2, x5, x3, x10 and x11 times table facts. However, by Sum 2, multiplication and division calculations can also include x4, x8 and x6 times table facts.*

Year 2

Y2 Aut1	Y2 Aut2	Y2 Spr1	Y2 Spr2	Y2 Sum 1&2
1x2	1x5	1x10	1x3	Recap and consolidate times tables facts and division facts.
2x2	2x5	2x10	2x3	
3x2	3x5	3x10	3x3	
4x2	4x5	4x10	4x3	
5x2	5x5	5x10	5x3	
6x2	6x5	6x10	6x3	
7x2	7x5	7x10	7x3	
8x2	8x5	8x10	8x3	
9x2	9x5	9x10	9x3	
10x2	10x5	10x10	10x3	
11x2	11x5	11x10	11x3	
12x2	12x5	12x10	12x3	
12	11	10	9	

How to teach times tables:

1. Numerical order (1-12)
2. Random order
3. Division facts:
 - Numerical order (1-12)
 - Random order
4. Increase speed gradually until known with rapid recall

= 42 new facts

Year 3

Y3 Aut 1	Y3 Aut2	Y3 Spr1	Y3 Spr2	Y3 Sum1	Y3 Sum1	Y3 Sum2
Recap x2, x5, x10, x3 including division facts. Recap x3 explicitly before x6, to demonstrate number patterns.	1x11	1x4	1x8	1x3	1x6	Recap and consolidate x11, x4, x8, x6 and division facts.
	2x11	2x4	2x8	2x3	2x6	
	3x11	3x4	3x8	3x3	3x6	
	4x11	4x4	4x8	4x3	4x6	
	5x11	5x4	5x8	5x3	5x6	
	6x11	6x4	6x8	6x3	6x6	
	7x11	7x4	7x8	7x3	7x6	
	8x11	8x4	8x8	8x3	8x6	
	9x11	9x4	9x8	9x3	9x6	
	10x11	10x4	10x8	10x3	10x6	
	11x11	11x4	11x8	11x3	11x6	
	12x11	12x4	12x8	12x3	12x6	
	8	7	6	0	5	

=26 new facts (not including x3 recap)

Year 4

Y4 Aut1	Y4 Aut1	Y4 Aut2	Y4 Aut2	Y4 Spr 1&2
Recap and consolidate all times tables and division facts learnt in Year 2 and 3.	1x12	1x9	1x7	Recap ALL times tables and division facts. Preparation for times table check.
	2x12	2x9	2x7	
	3x12	3x9	3x7	
	4x12	4x9	4x7	
	5x12	5x9	5x7	
	6x12	6x9	6x7	
	7x12	7x9	7x7	
	8x12	8x9	8x7	
	9x12	9x9	9x7	
	10x12	10x9	10x7	
	11x12	11x9	11x7	
	12x12	12x9	12x7	
	4	3	2	

= 9 new facts

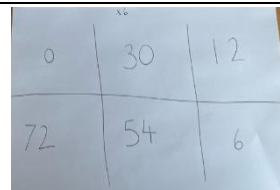
Appendix

1. Active Maths

Activity	What to do
Jumping cards	Give children one card from a deck of cards. Spread other cards around the room. Jog/dance round the room to music When the music stops find a partner or pick up two cards from around the room Do 5 star jumps! Then multiply your two cards together Swap cards Continue to jog/dance round the room. This can also be done with Uno Cards/ lolly sticks with numbers on

2. Games

Activity	What to do
Counting in	Use cards from the 2, 5, 10 or 3 times table Put them at one end of a space outside (or hide them!) Find the first card in the sequence/times table Put it down and then run back to get the next card How quickly can you do this?
Dominoes	Share the dominoes between 2 players. Aim of the game is to get the greatest number. Multiply the 2 numbers together and challenge your partner e.g. $6 \times 6 = 36$. Your partner chooses one. The person with the greatest answer keeps the dominoes. The person with the most dominoes wins.
Card game	Use a pack of playing cards without the jack, kings or queens. Take turns to take a card and roll a dice or take two cards. Multiply the numbers. Write down the answer and keep a running total. First person to go over 301 wins.
Race your partner	Write the numbers 1-12 on your whiteboards/paper. Choose a times table you're learning. Race to see how quickly you can write the multiple facts down. Try this where you write 1-12 randomly. You could also try this with division facts.
Bingo	Children choose a times table. Choose 6 multiples and place them in a grid. Teacher says a multiplication calculation and if children have the product they cross it out until all 6 are crossed out and the child shouts BINGO!



3. Songs

2x table	https://www.youtube.com/watch?v=AUL_4lzT06I Number Blocks https://www.youtube.com/watch?v=8hN9Ur_xdm0 Silly school songs https://www.youtube.com/watch?v=3yf3xqE8wMc Numberjacks https://www.youtube.com/watch?v=BGWMPqh04o4 Jack Hartmann
3x table	https://www.youtube.com/watch?v=uV0ZL2h8IRg Jack Hartmann https://www.youtube.com/watch?v=1OPTfVcoCO4 Numberjacks https://www.youtube.com/watch?v=uFmbB2vileA Number Blocks
4x table	https://www.youtube.com/watch?v=lZ4oolN7Bmo Reggae https://www.youtube.com/watch?v=LT3t-uLB9qs Jack Hartmann https://www.youtube.com/watch?v=4SXctAyxZf0 Numberjacks
5x table	https://www.youtube.com/watch?v=gfRVYPcfecE Todd and Ziggy https://www.youtube.com/watch?v=2KyDZ7f1RfE Numberjacks https://www.youtube.com/watch?v=TFcwMi8IO40 Jack Hartmann
6x table	https://www.youtube.com/watch?v=iLln96C-BxY Todd and Ziggy https://www.youtube.com/watch?v=1CGnFEp9k24 Numberjacks https://www.youtube.com/watch?v=f3cEpwUSN7g Jack Hartmann
7x table	https://www.youtube.com/watch?v=t4xU4CiaGvg Todd and Ziggy

	https://www.youtube.com/watch?v=LcSwgZ48ph8 Silly school songs https://www.youtube.com/watch?v=wwekMlqb55s Numberock
8x table	https://www.youtube.com/watch?v=TdqAA9Ky2DY Numberock https://www.youtube.com/watch?v=SNFXWEXaCQw Jack Hartmann https://www.youtube.com/watch?v=kN3RG5lKpo Todd and Ziggy
9x table	https://www.youtube.com/watch?v=NCofSkG3XqI Todd and Ziggy https://www.youtube.com/watch?v=3p-ZlcTtixw Jack Hartmann https://www.youtube.com/watch?v=SmRr86Y188w Numberock
10x table	https://www.youtube.com/watch?v=zGxsCk2ppcl Number Blocks https://www.youtube.com/watch?v=8yxMJUHbslY Todd and Ziggy https://www.youtube.com/watch?v=8q6EJX_gLSU Jack Hartmann
11x table	https://www.youtube.com/watch?v=dNHC-oU8tt8 Todd and Ziggy https://www.youtube.com/watch?v=muv9-tRzFmk Jack Hartmann
12x table	https://www.youtube.com/watch?v=9TSbNpPW1E4 Todd and Ziggy https://www.youtube.com/watch?v=ojkdEdLnlaA Jack Hartmann

4. Concrete Resources



5. Online Platforms (J2Blast, Hit the Button)

Hit the Button	https://www.topmarks.co.uk/maths-games/hit-the-button
J2Blast	https://www.j2e.com/j2blast

6. Focus Groups

Similar to a rotation where children focus on the timetables they know they need to work on. This could be adult supported or independent.