Times Tables

Being fluent in calculation and knowing times tables by heart are a maths essential and an 'educational entitlement'.

Knowing the times tables (and their associated division facts) supports mathematical learning and understanding and those children who have a strong grasp of them tend to be more self-assured when learning new concepts. In an ideal world, every pupil will start secondary school with a fluent, accessible and automatic knowledge of their tables.

Times Tables Progression

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	Over the year children will experience counting in 1s, 2s, 5s and 10s as part of the addition teaching.					
2	1x	2x (1x)	5x	10x (5x)	0x	Revision
3	4x (2x)	8x (4x)	3x	6x (3x)	12x (6x)	Revision
4	9x	7x	11x	Squares	Revision	MTC in June
5	2x, 4x, 8x	3x, 6x, 9x	5x, 7x, 12x	Using multiplication facts with larger numbers and decimals	Table facts via common multiples and factors, primes, squares and cubes	Revision
6	Regular revision of multiplication facts and practise using facts to problem solve.					

The Holland Park Approach to Times Tables

Improving Children's Understanding of Multiplication Facts and Times Tables Recall

At Holland Park we take a whole school approach to teaching times tables, with a close focus in Years 1, 2, 3, 4 and 5 (based on the research and findings of Professor Jenny Field, at the University of Greenwich). We aim to go further than just memorization, rote learning or learning by heart (which are still important for revision but are not key teaching methods).

'Memorization of basic facts usually refers to committing the result of operations to memory so that thinking is unnecessary…Teaching facts for automaticity in contrast relies on

thinking. Answers to facts must be automatic, but thinking about the relationships among the facts is critical. A child can then think of 9 x 6 as (10 x 6) – 6.' (Fosnot and Dolk)

'We want children not only to recall that 7 × 4 = 28, but more important know commutative and inverse facts, mini and mega facts, e.g. 70 × 4 = 280 and 0.7 × 4 = 2.8; the distributive law, e.g. (5 × 4) + (2 × 4) = 7 × 4; doubling and halving facts, and also know that 4 × 7 is the same as (5 × 7) – 7'.   (Professor Field)

<u>The shape of this whole school approach:</u>

An entire half term is devoted to a new times table in each year group (see progression table) .
There are to be three whole lessons per half term devoted explicitly to teaching times tables. The focus of these lessons is to develop conceptual fluency through arrays, hundred squares and other manipulatives, exploring patterns and structures, seeing connections between the times tables and allowing children to represent and manipulate multiplication facts.

Times tables 'retrieval practice' sessions (5-10minutes) would occur at least three times a week, maintaining children's fluency and would include techniques such as: counting stick work, step-counting using manipulatives, chanting (include full verbal patterning as well as step-counting), quick reaction exercises.

We have a consistent approach across the school to key teaching components:

- The order that each class encounters each new times table (see progression table).
- How multiplications are presented in writing   e.g. is the 7 times tables seen as 1x7, 2x7 3x7 or 7x1, 7x2, 7x3…
- Each new table is linked to the real world from the outset e.g. What comes in 2s…legs, scissors hands.   What comes in 3s…traffic lights etc.
- Focus on one new times table each half term – with opportunities built in to also practise those learned previously.

<u>Why only one times table per half term?</u>

The plasticity of the brain requires approximately 8 weeks of repetition to create the necessary neuro pathways so that a new table can be considered 'learnt'. So each new table would last for half a term – with opportunities built in to also practise those learned previously.

The mastery approach to the teaching of times tables is supplemented by the use of fun retrieval games (such as the use of Times Tables Rock Stars) but it is the foundation laid through high quality teaching and exploration of the tables which will embed these crucial facts into the minds of the learners.