Times Tables at Cove Junior School

Intent

At Cove Junior School, 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 really well and be able to apply these facts - and their inverse - up to 12x12, by the end of Year 4, which is a National Curriculum requirement. Times tables are fundamental to many maths topics, and need to be given as much focus as we do to learning spellings. 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

Year 3 and Year 4 have a clear breakdown of which tables facts are taught when, building on the knowledge that they are bringing from Year 1 and Year 2. This will involve a variety skills and experiences to help the children embed the knowledge, including:

1. Counting - counting will start before beginning to develop understanding and reasoning but will continue long after, until all times tables can be counted through sequentially at speed.
2. Drilling! - Some drilling is inevitable when developing counting, initially alongside concrete and pictorial manipulatives but quickly moving to chanting '3 times 7 is 21, 4 times 7 is 28' etc.
3. Deeper understanding of multiplication facts and times tables – working on working on children's deeper understanding of what multiplication is, how it is related to division and number families.
4. Understanding the links between multiplication and addition - *4 x 5 is the same as 5 + 5 + 5 + 5.*
5. Understanding that multiplication is commutative - *4 x 5 is the same as 5 x 4.*
6. Knowing that multiplication is the inverse of division.

The path to learning a times table should be:

Learn ▸ rehearse ▸ recall ▸ play / apply / assess

Overview

<table>
<tr><td colspan="2">Year 2
Recall multiples of 2, 5 and 10 up to 12x5 in any order, including missing numbers and related division facts.</td></tr>
<tr><td>Year 3
Revisit multiples of 5 and 10 up to 12x5 in any order, including missing numbers and related division facts.
Recall multiples of 4 and 8 by beginning with a revisit of the multiples of 2 up to 12x5 in any order, including missing numbers and related division facts.
Explore commutativity, inverse and multiplicative reasoning
Sticker Chart</td><td>Year 4
Revisit multiples of 2, 4 and 8 up to 12x5 in any order, including missing numbers and related division facts.
Use multiples of 3 to build up multiples of 6 and 9 up to 12x5 in any order, including missing numbers and related division facts.
Then explore remaining facts from 7x table that haven't already been covered
Continue to explore commutativity, inverse and multiplicative reasoning.
Factor pairs
Sticker Chart</td></tr>
<tr><td>Year 5
Recall multiples of all times tables up to 12x12 in any order, including missing numbers and related division facts with growing fluency and efficiency.
Relate table facts to decimals and multiples of 10.
Understand and recall square and cube numbers in context.
Heat Maps on TTRS</td><td>Year 6
Prime numbers
Highest and lowest common factors
Application to area
Heat Maps on TTRS</td></tr>
</table>

Multiplication Tables – when facts are covered at Cove Junior School

X	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3		9	12	15	18	21	24	27	30	33	36
4			16	20	24	28	32	36	40	44	48
5				25	30	35	40	45	50	55	60
6					36	42	48	54	60	66	72
7						49	56	63	70	77	84
8							64	72	80	88	96
9								81	90	99	108
10									100	110	120
11										121	132
12											144

Year Group	Tables Covered	Colour code	Number of Facts
2	5, 10		21
3	2, 4, 8		24
4	3, 6, 9, 7		18

Links to relevant documents:

third space learning.docx

Times tables.docx

Times tables learning from HIAS.pptx