Securing Times Tables Fluency

Our Thinking

- We don't want maths to be all about rote learning facts to recall.
- We don't want maths to be all about 'passing' tests.
- We do want our children to **LOVE** maths and **SUCCEED** within the maths curriculum.
- Time and time again, our children who can recall facts **enjoy** and are able to **secure** the maths curriculum easier than the children who can't recall these facts.
- The reality is the children who can't recall these facts inevitably find maths more challenging because these facts are the building blocks of so many other aspects of maths.
- E.g. If I don't know 7 x 3 then I won't know 70 x 3 17 x 3 21 ÷3 247 x 3 etc.
- There are not many facts: 36 'building block' facts (up to 9 x 9). There are roughly 39 weeks in a school year, equating to essentially 1 fact a week, every year. **It is achievable for the vast majority of children to learn these facts.**

36 Essential Facts to Learn

×2	×3	×4	×5	×6	×7	×8	×9
2 × 2 = 4							
3 × 2 = 6	3 × 3 = 9						
4 × 2 = 8	4 × 3 = 12	4 × 4 = 16					
5 × 2 = 10	5 × 3 = 15	5 × 4 = 20	5 × 5 = 25				
6 × 2 = 12	6 × 3 = 18	6 × 4 = 24	6 × 5 = 30	6 × 6 = 36			
7 × 2 = 14	7 × 3 = 21	7 × 4 = 28	7 × 5 = 35	7 × 6 = 42	7 × 7 = 49		
8 × 2 = 16	8 × 3 = 24	8 × 4 = 32	8 × 5 = 40	8 × 6 = 48	8 × 7 = 56	8 × 8 = 64	
9 × 2 = 18	9 × 3 = 27	9 × 4 = 36	9 × 5 = 45	9 × 6 = 54	9 × 7 = 63	9 × 8 = 72	9 × 9 = 81

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Reducing the Cognitive Load

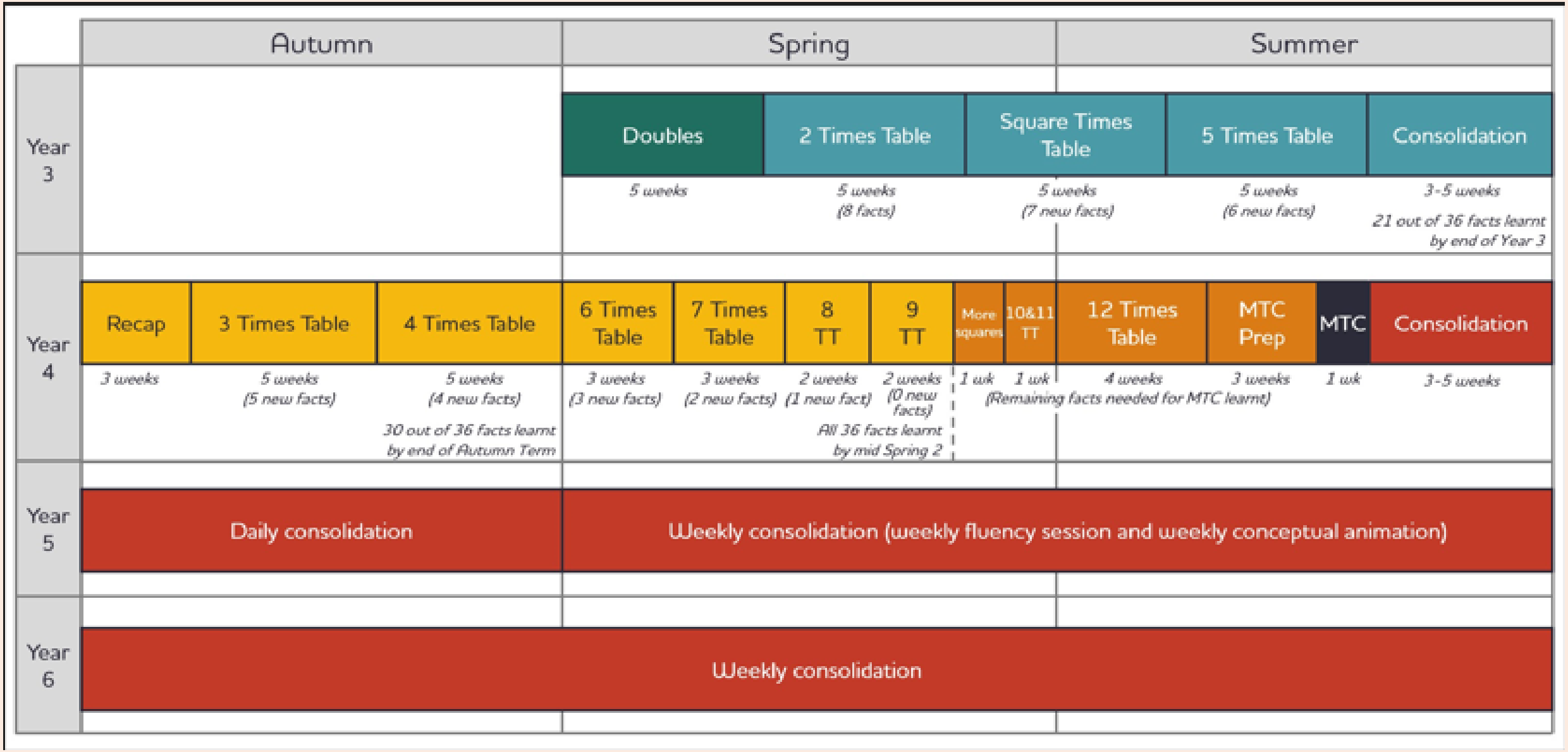
If multiplication facts are learnt and stored, rather than being calculated or by skip counting repeatedly, then they will require less activity from the brain, reducing the 'cognitive load' and essentially 'freeing up' space to focus brain activity on the application of the facts NOT the facts themselves.

How is it taught?

- Times table fluency is taught **separately** from application of these facts.
- We cover **teaching of relationships** and **deriving facts** separately to times table fluency although the relationships of multiplicative commutativity (3x7 = 7x3) and linked relationships to division (7x3= 21 21÷3 =7) are reinforced in our 'Times Tables' approach.
- We, of course, explicitly link to multiplication facts when deriving facts, such as 30 x 70, but within a place value context (in this case). "We know seven threes are ____ so we know..."
- Our Year 2 children enter Year 3 with **no times table recall** but they do have a deep understanding of the commutativity of multiplication and of multiplication as repeated addition, using manipulatives and pictures to calculate products. E.g. 7 x 5 as 7 groups of 5 sweets. We have made a conscious decision to not teach nor expect multiplication recall in Year 2.

How is it taught?

- Systematic, whole class approach to learning the times tables.
- Aims to break down the learning of the times tables into manageable chunks learning a times table at a time(see overview document on next slide).
- Importance of the commutative law and the relationship with division facts.
- Rote learning in which children learn the number facts AND a sound pattern (this is important).
- Little and often -A two minute times table test, once or twice a day.
- 40 questions in each test. The children have two minutes to complete the test. An average of 3 seconds per question.


Autumn
Spring
Summer
Year 3
Doubles
2 Times Table
Square Times Table
5 Times Table
Consolidation
5 weeks
5 weeks
(8 facts)
5 weeks
(7 new facts)
5 weeks
(6 new facts)
3-5 weeks
21 out of 36 facts learnt by end of Year 3
Year 4
Recap
3 Times Table
4 Times Table
6 Times Table
7 Times Table
8 TT
9 TT
More squares
10&11 TT
12 Times Table
MTC Prep
MTC
Consolidation
3 weeks
5 weeks
(5 new facts)
5 weeks
(4 new facts)
30 out of 36 facts learnt by end of Autumn Term
3 weeks
(3 new facts)
3 weeks
(2 new facts)
2 weeks
(1 new fact)
2 weeks
(0 new facts)
All 36 facts learnt by mid Spring 2
1 wk
1 wk
4 weeks
3 weeks
1 wk
3-5 weeks
(Remaining facts needed for MTC learnt)
Year 5
Daily consolidation
Weekly consolidation (weekly fluency session and weekly conceptual animation)
Year 6
Weekly consolidation

Timeline for Learning

- **End of Key Stage 1**: Children should have an understanding of multiplying as repeated addition.

  e.g. 7 x 5 drawing images 7 groups of 5 drawn
- Children should have a knowledge of the x2 –x5 –x10 times table.
- The Reality -No actual times table recall.
- •**Year 3**: Introduce Times Tables Challenge.
- Children become fluent in x2 , square and x5 (Learn 21 facts)
- **Year 4**: Revising Year 3 content (inevitable summer holiday dip)
- Children learn x3 -x4 –x6 –x7 –x8 –x9 (Learn remaining facts)
- x11 –x12

How we introduce a new times table

- Let's look at the 6 times table.
- It is important to highlight what the children already know as known facts (KF). Through the knowledge of commutative law they can really see even at this stage how much they already know.
- Write up the associated division facts alongside the times table facts so that the children can see the clear relationship between multiplication and division.
- Learn a fact at a time. We do one a day.
- Introduce times tables alongside another activity

E.g. Jill Mansergh – tables with a number stick (youtube)

The Key Principles

1) Learn each number sentence as a memorised phrase by repeating the sound pattern out loud.

2) Learn each fact one way round only.

4 x 6 = becomes six fours are twenty four.

We always state the larger number first. The children very quickly become attuned to this and it just helps in the learning process.

3) Learn one new fact at a time. We will look at 6 x 6 = 36 one day.

Then 7 x 6 = the following day.

4) Don't think. We want them to become known facts.

Leave the answers on display.

5) 6 times table booklet will contain x2 –x3 –x4 –x5 –x6 facts but will be weighted with additional six times table facts.

Reading out the answers

- The children mark their own booklets so that they can fill in any gaps if necessary.
- The full times table fact is read out. We always say the larger number first so that they are only learning one sound pattern for each fact. For example, if the number fact is 6 x 7 = 42, we say seven sixes are forty two.
- The children then repeat that fact back to you. It's important that every child does this.
- For division facts, we say the following. For 18 divided 3, we say MMM threes are eighteen. The children then say the learnt times table fact. Six threes are eighteen.
- Once marked the children then record their scores on score sheets

What about the children who aren't moving as quickly?

- Important to identify those children that are 'stuck' and unpick the barrier. What is the one fact they will learn that day?
- Envelope system- which can also be used to support at home.

The envelope system

- Individual 1-1 intervention for those children who are struggling to remember number facts.
- Guidance provided to parents as to how they can support the individual's learning.
- Start by conferencing the child to identify the number facts they can recall/known facts (green) and unknown facts (red). They then pick two **different** unknown facts to learn at a time.

Multiplication Tables Check

Multiplication tables check

Do you have a child in year 4 at primary school?

If so, your child will be participating in the multiplication tables check (MTC) in June.

The purpose of the check is to determine whether your child can fluently recall their times tables up to 12, which is essential for future success in mathematics. It will also help your child's school to identify if your child may need additional support.

What is the multiplication tables check?

It is an on-screen check consisting of 25 times table questions. Your child will be able to answer 3 practice questions before taking the actual check. They will then have 6 seconds to answer each question. On average, the check should take no longer than 5 minutes to complete.

How can you help at home?

- Ask your children the times table that they are learning.
- Practise it at home.
- Talk about times tables.
- https://www.timestables.co.uk/multiplication-tables-check/ works on desktop or phone/ tablet