# Times Tables at St. Andrew's

## Intent:

At St. Andrew's, it is our intention that times tables are explicitly taught to allow all children the chance to shine with their mathematics. Children will be able to make connections between different concepts and be supported with fluency when solving increasingly challenging mathematical problems. Our children become fluent in this fundamental skill, through varied and frequent practice, developing conceptual understanding and the ability to recall and apply this knowledge rapidly and accurately.

> *"Quick retrieval of number facts is important for success in mathematics. It is likely that pupils who have problems retrieving addition, subtraction, multiplication, and division facts, including number bonds and multiples, will have difficulty understanding and using mathematical concepts they encounter later on in their studies."*
> ***EEF Guidance Report, 2017***

## Impact:

Quick and accurate recall of times table facts support children when working on a variety of problems, including multiplication, division and fractions. This quick, automatic recall reduces the load on the working memory, allowing children to focus on the process of problem solving rather than mental calculations. We aim for all children to leave St.Andrew's secondary ready and being equipped with times table fluency and automatic recall will ensure they have numeracy skills for life.

## Implementation:

At St Andrew's, we teach times tables during lessons in Year 3 and 4, in line with the curriculum objectives. Teachers expose connections between different multiples to support children's deep understanding. Times tables are practised at least 3 times per week in Year 3 and Year 4 using the Clare Christy 'Number Sense' scheme. Five minutes at a time is enough to have a positive impact on the children's ability to make connections and recall facts. This in turn will support children to develop fluency.

The NCETM Project: Mastering Number at Key Stage 2 is a significant part of daily maths at St. Andrew's and takes place every afternoon in Year 3, 4 and Year 5 (additional to our 1 hour Maths lessons in the morning). Year 3 are taking part in the pilot Y3 Mastering Number project where children build on the number sense they built during Mastering Number Reception, Year 1 and Year 2 at Hatfield Peverel Infant School. Both our Year 4 and Year 5 cohorts are currently taking part in the Year 4 Mastering Number programme (as advised by NCETM and the local Maths Hub). This focuses on 36 key times table facts.

> *Knowledge of multiplication and division and its applications forms the single most important aspect of the KS2 curriculum, and is the gateway to success at secondary school. This project enables pupils in Years 4 and 5 to develop fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense.*
> ***NCETM website.***

Consolidation and continuiation of times tables is needed throughout Year 5 and 6 to allow children to apply their knowledge fluently. This is planned and based on the knowledge of the children within the class and the results of

their Multiplication Times Table Check at the end of Year 4. Year 5 teachers ensure children who didn't score above 22/25 in their Year 4 MTC check take part in a times table intervention until they can successfully achieve over 23. Our aim is that all children are able to recall the tables in any order and complete missing number facts for multiplication and related division facts.

In Year 4, children use URBrainy regularly to practise the MTC check and a report is produced for each child, assessing where their gaps are. Teachers use these reports to tailor times table practice for the children.
The school buy into the TTRockstars website and all children are issued a login with the expectation that this is used weekly at home as part of their homework. TTRockstars results in each year group are celebrated weekly in our SHINE collective worship.

**Assessment of Times Tables:**

Weekly assessment of times tables knowledge allows teachers to quickly assess gaps in children's knowledge and respond accordingly to fill these.

***Assessment Expectations:***

- All year groups complete a weekly times tables grid. The latest grid is shared at parents' evening in Autumn and Spring term
- Year 4 children regularly practice the MTC check using the URBrainy website and from January, practise fortnightly
- Year 4 and Year 5 learn, understand and practice the NCETM Mastering Number 36 key times table facts and achieve them through the 'Going for Gold' assessments
- Year 4 complete a practice MTC check for monitoring purposes in Autumn, Spring and Summer terms. These results are recorded on our Insight tracking system and monitored by the maths lead

**MTC Check Thresholds - Insight**

The table below shows the scores out of 25 that the children need to be achieving at each termly check across the academic year, before the official MTC check in June:

| Insight Descriptors | Autumn | Spring | Summer |
|---|---|---|---|
| **Working Below Year Group** | 14 | 14 | 14 |
| **Towards** | 15 | 15 | 15 |
| **On Track** | 17 | 20 | 23 |
| **Greater Depth** | 21 | 23 | 25 |

When pupils commit multiplication table facts to memory, they do so using a verbal sound pattern to associate the 3 relevant numbers, for example, "six fours are twentyfour". It is important to provide opportunities for pupils to verbalise each multiplication fact as part of the process of developing fluency. ***DfE Maths Curriculum Guidance, 2020***

***Times Tables School Plan***

**Year 3**

| | Tables to be taught | Connections to expose |
|---|---|---|
| Autumn 1 | Consolidate recall of 2, 5 and 10 (from Year 2) up to 12 x. | 2 x table is double 1s,all even numbers, even numbers can be halved equally.<br>10 x table is double 5s (5s are half 10s), 10 x table always have 0 in the ones, 5x table always have 5 or 0 in the ones. If it is divisible by 10 it is also divisible by 5. |
| Autumn 2 | Teach multiples of 3. Children need to be fluent in counting in 3s forwards and backwards from any given multiple.<br><br>Teach multiples of 4. Children need to be fluent in counting in 4s forwards and backwards from any given multiple. | Highlight patterns of odd and even multiples. Discuss doubling multiples eg 2 x 3 = 6 so 4 x 3 = 12.<br><br>4s are double 2s. To divide by 4, halve and halve again – link to quarters. |
| Spring 1 | Consolidate recall of 3s.<br>Consolidate recall of 4s. | Continue to discuss links between 2s and 4s.<br><br>Children should be fluent in 2s, 5s, 10s, 3s and 4s by February half term. |
| Spring 2 | Recall and consolidate 3s and 4s.<br><br>Teach multiples of 8. Children need to be fluent in counting in 8s forwards and backwards from any given multiple. | 8s are double 4s.<br>2s are double 4s, so 2s doubled and doubled again = 8s. |
| Summer 1 | Recall and consolidate 4s and 8s.<br><br>Teach multiples of 6. Children need to be fluent in counting in 6s forwards and backwards from any given multiple. | See above<br><br>6s are double 3s.<br>Notice the odd even pattern in 3s, but all even in the 6s – why? Is a number in the 3s always in the 6s? Is a number in the 6s always in the 3s? |
| Summer 2 | Recall and consolidate 3s and 6s.<br><br>Some children will be fluent in 6s by the end of Year 3. | Most children should be fluent in 2, 3, 4, 5, 6, 10 x tables up to x 12 by the end of Year 3. |

**Year 4**

| | Tables to be taught | Connections to expose |
|---|---|---|
| Autumn 1 | Consolidate recall of 2,5, 10, 4 and 8 up to 12 x. | It is very likely x4 and x8 will need to be re-taught after the holidays.<br><br>8s are double 4s.<br>2s are double 4s, so 2s doubled and doubled again = 8s.<br>Even multiples. |
| Autumn 2 | Recall and consolidate 3s, 4s and 8s.<br><br>Teach multiples of 6 and 7. Children need to be fluent in counting in 6s | Highlight patterns of odd and even multiples. Discuss doubling multiples e.g. 6 x 3 = 18 so 6 x 6 = 36. |

| | | |
|---|---|---|
| | and 7s forwards and backwards from any given multiple. | |
| Spring 1 | Consolidate recall of 3s, 6s, 7s.<br><br>Teach multiples of 9. Children need to be fluent in counting in 9s forwards and backwards from any given multiple. | X 9 'tricks' – putting finger down of the multiple you are finding – tens on the left, ones on the right. This works as the digits in multiples of 9 add up to 9 e.g. 18 = 1+8 = 9. |
| Spring 2 | Recall and consolidate 6s and 7s and 9s.<br><br>Teach multiples of 11 and 12. Children need to be fluent in counting in 11s and 12s forwards and backwards from any given multiple. | Look at patterns in the 11 x table, and the trickier ones to learn – x 11 and x12.<br><br>12s are double 6s. Even multiples. |
| Summer 1 | Comprehensive assessment of all multiples and recall and consolidation of those that children are finding difficult – likely to be x 6, 7 and 12. | Expose links as necessary. Regular assessment in the lead up to the MTP multiplication check in June. |
| Summer 2 | Recall and consolidate times tables up to 12 x 12. | Expose links as necessary. Regular assessment in the lead up to the MTP multiplication check in June.<br>Most children should be fluent in tables up to x 12 by the end of Year 4. |

NCETM Mastering Number: GOING FOR GOLD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 × 2 | | | | | | | |
| 2 × 3 | 3 × 3 | | | | | | |
| 2 × 4 | 3 × 4 | 4 × 4 | | | | | |
| 2 × 5 | 3 × 5 | 4 × 5 | 5 × 5 | | | | |
| 2 × 6 | 3 × 6 | 4 × 6 | 5 × 6 | 6 × 6 | | | |
| 2 × 7 | 3 × 7 | 4 × 7 | 5 × 7 | 6 × 7 | 7 × 7 | | |
| 2 × 8 | 3 × 8 | 4 × 8 | 5 × 8 | 6 × 8 | 7 × 8 | 8 × 8 | |
| 2 × 9 | 3 × 9 | 4 × 9 | 5 × 9 | 6 × 9 | 7 × 9 | 8 × 9 | 9 × 9 |

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**Year 5 and 6**

Weekly practise using a speed grid as a reminder of times tables knowledge. This should include division facts and missing number questions. Regular assessment should identify gaps for individuals as well as the cohort, and interventions as whole class or as individuals should be planned for. Year 5 also take part in Mastering Number at KS2 on a daily basis as described earlier in this document.