# St Michael & St. John's RC Primary School
# Progression Through Mental Calculation Strategies - Multiplication and Division

| | Rapid Recall | Expectations |
|---|---|---|
| | Children should be able to recall rapidly or derive: | Children should be able to calculate mentally: *(using concrete objects and pictorial representations)* |
| **Year R** | Count in steps of one, forwards and backwards | Solve problems involving doubling, halving and sharing |
| **Year 1** | Count in multiples of twos, fives and tens<br>Recall and use doubles of all numbers to 10 and corresponding halves | Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with support |
| **Year 2** | Count in steps of 2, 3 and 5 from 0<br>Recall and use multiplication facts for the 2, 5 and 10 multiplication tables<br>Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10)<br>Derive and use halves of simple tw0-digit even numbers (numbers in which the tens are even)<br>Recognise odd and even numbers | Calculate mathematical statements for multiplication and division within the multiplication tables |
| **Year 3** | Count in multiples of 4, 8, 50 and 100<br>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br>Derive and use doubles of all numbers to 100 and corresponding halves<br>Derive and use doubles of all multiples of 50 to 500 | Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including two-digit numbers times one-digit numbers |
| **Year 4** | Count in multiples of 6, 7, 9, 25 and 1000<br>Recall multiplication and division facts for multiplication tables up to 12 x 12<br>Use partitioning to double or halve any number, including decimals to one decimal place<br>Recognise and use factor pairs | Use place value, known and derived facts to multiply and divide mentally, including:<br>- multiplying by 0 and 1<br>- dividing by 1<br>- multiplying together three numbers |

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| **Year 5** | Recall and derive related tables facts for multiples of 10 (70 x 6 = 420 because 7 x 6 = 42)<br>Using times tables, identify related unit fractions, e.g. 7 × 9 = 63 so one-ninth of 63 is 7 and one-seventh of 63 is 9<br>Use partitioning to double or halve any number, including decimals to two decimal places<br>Recall prime numbers up to 19<br>Recall square ($^2$) numbers up to 12 x 12 | Multiply and divide numbers mentally drawing upon known facts<br>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes |
| **Year 6** | Recall and derive related tables facts for decimal numbers (0.7 x 6 = 4.2 because 7 x 6 = 42)<br>Use partitioning to double or halve any number<br>Recall prime numbers up to 100<br>Recall squares of the corresponding multiples of 10 (i.e. $40^2$ is 1600) | Perform mental calculations, including with mixed operations and large numbers |