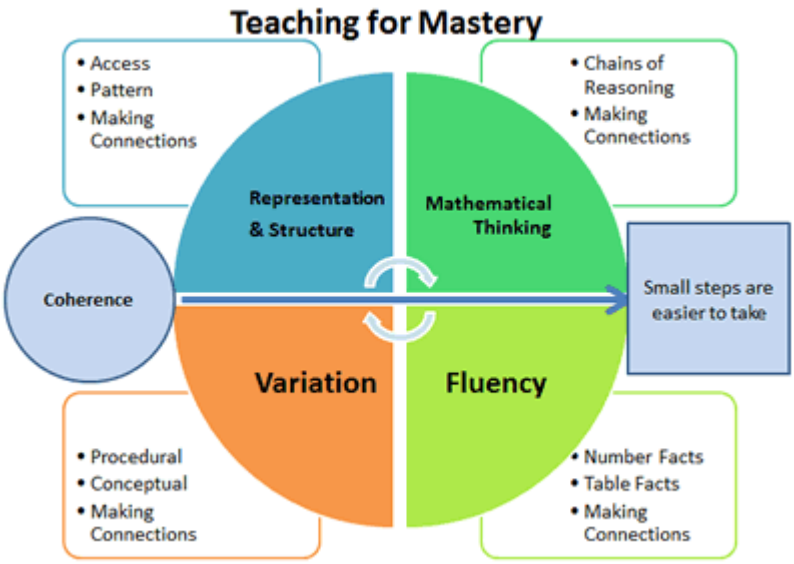
# Rapid Recall Progression




**Becoming fluent in the rapid recall facts enables children to recall and apply knowledge rapidly and accurately when solving problems and carrying out written calculations.**

**<u>Why do children need to be fluent?</u>**

*To the person without number sense, arithmetic is a bewildering territory in which any deviation from the known path may rapidly lead to being totally lost.* Dowker (1992)

The phrase 'number sense' is often used to mean conceptual fluency – understanding place value and the relationships between operations. Children need to be both procedurally and conceptually fluent – they need to know both how and why. Children who engage in a lot of practice without understanding what they are doing often forget, or remember incorrectly, those procedures. Further, there is growing evidence that once students have memorised and practised procedures without understanding, they have difficulty learning later to bring meaning to their work (Hiebert, 1999).

(NCETM)

# Reception

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| Recite numbers in order to 10 |
| Recognises numerals 1 to 5 |
| Counts up to three or four objects by saying one number name for each of them |
| Counts out up to six objects from a larger group |
| Selects the correct number to represent 1 to 5 |
| Selects the correct number to represent 1 to 10 |
| Counts objects to 10 |
| Count beyond 10 |
| **Say the numbers 0-20 accurately** |
| **Read the numbers 1 to 20 in numerals** |
| **Say 1 more than any number between 0-20** |
| **Say 1 less than any number between 0-20** |

# Year 1

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| Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number |
| Say 1 more and 1 less than any two digit number |
| To count in twos *2, 4, 6, 8, 10, 12, 14, 16, 18, 20…22, 24 (develop an understanding of even numbers)* |
| To count in fives *5, 10, 15, 20, 25, 30, 35, 40, 45, 50…55, 60* |
| To count in tens *10, 20, 30, 40, 50, 60, 70, 80, 90, 100…120* |
| Know by heart all number bonds to 10, so 7 + 3, 2 + 8, 4 + 6… |
| Know the days of the week, months of the year and seasons |
| To know by heart all addition and subtraction facts for each number up to 5, *so 5 + 0, 5 – 0, 4 + 1, 4 – 1, 3 + 1, 3 – 1, 2 + 1, 2 – 1…* |
| Recall the doubles of all numbers to at least 10, *so double 7 = 14, Double 3 = 6, double 9 = 18* |

# Year 2

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| Count in 10s, 2s and 5s fluently |
| Know by heart all number bonds that total 20 |
| Know by heart all addition and subtraction facts for each number up to 10 |
| Know by heart all bonds of multiples of 10 to 100 |
| Know by heart doubles and halves of all numbers to 20 |
| Count in tens from any number, forward or backward |
| Know by heart addition and subtraction facts for each number up to 20 |
| Know by heart all multiplication facts, and division facts, for 2, up to 2 x 12 |
| Know by heart all multiplication facts, and division facts, for 5, up to 5 x 12 |
| Know by heart all multiplication facts, and division facts, for 10, up to 10 x 12 |
| Count in 3s up to 36 |

# Year 3

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| Know by heart all number bonds that total 100 |
| Know by heart all sums and differences of multiples of 10 up to 100 |
| Know by heart all doubles of multiples of 5 up to 100…*double 45, double 15* |
| Know by heart all doubles of multiples of 10 up to 100…*double 30, double 5* |
| Know by heart all halves of all multiples of 10 up to 100…*halve 60, halve 70* |
| Know by heart all multiplication facts, and division facts, for 3, up to 3 x 12 |
| Know by heart all multiplication facts, and division facts, for 8, up to 8 x 12 |
| Know by heart all multiplication facts, and division facts, for 4, up to 4 x 12 |
| Know the number of seconds in a minute, minutes in an hour and hours in a day |
| Know the number of days in a week, month and year, including leap years |
| Know the number of g in kg, ml in l, mm in cm, cm in m and m in km |
| Count from zero in steps of 4 |
| Count from zero in steps of 8 |
| Count from zero in steps of 50 |
| Count from zero in steps of 100 |
| Recognise multiples of 2, 5, 10 up to 1000 |

# Year 4

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| Double any 2-digit number…*double 42, double 67, double 88* |
| Halve any 2-digit number…*halve 50, halve 86, halve 98* |
| Know by heart all multiplication facts for 7, up to 7 x 12 |
| Know by heart all division facts, for 7, up to 7 x 12 |
| Know by heart all multiplication facts for 6, up to 6 x 12 |
| Know by heart all division facts for 6 up to 6 x 12 |
| Know by heart all multiplication facts for 9, up to 9 x 12 |
| Know by heart all division facts, for 9, up to 9 x 12 |
| Count from any number in steps of 6 |
| Count from any number in steps of 7 |
| Count from any number in steps of 9 |
| Count from zero in steps of 25 |
| Count from zero in steps of 1000 |
| Know by heart all multiplication facts for 11, up to 11 x 12 |
| Know by heart all division facts for 11 up to 11 x 12 |
| Know by heart all multiplication facts for 12, up to 12 x 12 |
| Know by heart all division facts, for 12, up to 12 x 12 |

# Year 5

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| Use knowledge of time facts to write equivalent times to multiples of 1/4 of a unit e.g. 180 seconds = 3 minutes, 5 ¼ hours = 5 hours 15 mins |
| Use knowledge of mass and weight facts to write equivalent measures e.g. 3.75kg = 3750g, 5678g = 5.678kg |
| Use knowledge of volume and capacity facts to write equivalent measures e.g. 7.45l = 7450ml, 3278ml = 3.278l |
| Use knowledge of length facts to write equivalent measures e.g. 5.2km = 5200m, 22mm = 2.2cm |
| Count forward and backwards in steps of powers of 10 from any given number up to 1 000 000 |
| Count forwards and backwards with positive and negative whole numbers, including through zero |
| Count up and down in tenths from any given number |
| Know by heart 1 tenth more and 1 tenth less than any given number |
| Add and subtract 2 fractions with the same denominator within one whole |
| Add and subtract 2 fractions with the same denominator |
| Starting at any given number count forwards and backwards in steps of any number, including through zero to include negative numbers |
| Double and halve any number with up to 1 decimal place |
| Recall pairs of decimals that total 1 and 10 (up to 1 d.p) |
| Recall pairs of decimals that total 1 (up to 2 d.p) |
| Recall quickly multiplication facts up to 12 x 12 and use them to multiply pairs of multiples of 10 and 100, for example 30 x 70, 40 x 200 |
| Recall quickly division facts of all tables up to 12 x 12 and use them to divide pairs of multiples of 10 and 100, for example 240 ÷ 40 = 60 |

# Year 6

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| Identify pairs of factors for all 2-digit whole numbers |
| Know by heart all the squares of numbers up to 12 x 12 |
| Know by heart all the cubes numbers up to $12^3$ |
| Recognise and recall factors of numbers up to 100 and corresponding multiples of 100 |
| Use knowledge of place value and x facts to 12 x 12 to derive related multiplication and division facts involving decimals… *0.8 x 7 = 5.6* |
| Know by heart tests of divisibility for multiples of 2, 3, 4, 5, 6, 9 and 10 |
| Recall decimal, fraction and percentage equivalences |
| Doubles and halves of all multiples of 10 to 10.000 |

# Online Resources to Support Learning

| | Suitable For… | | | | | | |
|---|---|---|---|---|---|---|---|
| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Times Table Rockstars | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Numbots | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Sumdog | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Hit the Button | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Conker Maths | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Top Marks | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ICT Games | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Splat Square | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |