

The Three Schools – Fluency progression - Early Years, KS1 and KS2

Fluency is at the centre of the updated National Curriculum for maths. In this context, “fluency” refers to knowing key mathematical facts and methods and recalling these **efficiently**.

To become mathematically fluent children need to experience intelligent, varied, practise over time. If the children are fluent and recall key facts quickly and **accurately** it means children are also less likely to suffer from cognitive overload when faced with more complex problems.

But it is important to recognise that fluency is not solely about memorising and recalling facts; it also means being able to work **flexibly** and choose the most appropriate method for the problem at hand.

Age related expectations for the end of Reception
1. Subitise to 5 2. Recall bonds to 5 (Addition and subtraction) 3. Doubles to 5+5 4. Count to 20 5. Compare quantities to 10 6. Odds and evens to 10 7. Match numerals to amounts 8. 1 more 1 less 9. Sequence numbers to 10 10. Composition of numbers to 10
Age related expectations for the end of year 1
1. Add 0 and recognise the effect. 2. Add 1 (Eg $8+8=9$) 3. Add 2 (Eg $6+2=8$) 4. Adding 10 to numbers to ten (Eg $3+10=13$) 5. Number bonds to 10. Addition and subtraction facts (Eg $6+4=10$ $10-4=6$) 6. Doubles to 10 and related subtraction facts (Eg $6-3=3$) 7. Near doubles (Eg. $3+4$) 8. Missing numbers ($4+ \dots = 6$) 9. Odd and even numbers to 20
Age related expectations for the end of year 2
1. Addition and subtraction facts to 20, 2. Bridging within 20 (e.g. $8 + 4$ and $4 + 8$) 3. Partition numbers into tens and ones

4. Pairs of multiples of 10 adding to 100.
 $30 + 70 = 60 + \dots$
5. Number bonds to a multiple of 10.
Know what to add to make the next multiple of 10.
 $34 + \dots = 40$
6. Doubles for numbers up to 20 and related subtraction facts ($16-8=8$)
7. Doubles of multiples of 10 up to 50 and corresponding halves (Double $40=80$) Half of $20=10$)
8. Near doubles ($7+8= 15$)
9. Coin recognition up to £2
10. 2/5/10 x tables and division facts
11. Odd and even numbers to 100

Age related expectations for the end of year 3

1. Partition number – HTU
2. Addition/subtraction facts for all numbers to 20 $17 - 4 = 13$ $13 + 4 = 17$
3. Addition/subtraction of multiples of 10.
 $40 + 50 =$ $60 - 40 =$
(Using addition/subtraction facts for all numbers to 10)
4. Doubles for multiples of 10 (Upto 100 Eg Double 30)
5. Halves for multiples of 10 (Upto 100 Eg Half 30= 15)
6. Complements to 100
7. Complements of tenths to make 1
8. Complements of fractions with the same denominator to make 1
9. 3/4/8x tables and division facts.
10. Count in 50's and 100's
11. Count in 50.s and 100's.

Age related expectations for the end of year 4

1. Partition number – THHTU
2. Count in 6/7/9/25/1000
3. Find 1000 more or less
4. Addition/subtraction of multiples of 10.100.1000
 $40 + 50 =$ $60 - 40 =$ $400 - 300 =$ $3000 + 1000 =$ $8000 - 1000 =$
(Using addition/subtraction facts for all numbers to 10)
5. Addition doubles up to 100. $38 + 38 =$
And corresponding halves.

6. Add to HTU to make the next 100. Eg $157 + \dots = 200$
7. Pairs of fractions that make 1 $\frac{5}{6} + \frac{1}{6} = 1$
8. X facts and related $\div$ facts. Upto 12×12
(6/7/9/11/12)
9. Division and multiplication by 10 and 100
10. Doubles of numbers 1-100 and corresponding halves.
11. Doubles and halves of multiples of 10/100/1000
12. Complements of hundredths that make 1
13. Fraction and decimal equivalents of one half/quarters, tenths, hundredths
Eg $\frac{3}{10} = 0.3$ $\frac{3}{100} = 0.03$
14. Factors pairs for known multiplication facts.
15. Count in 25's and 1000's
16. Fraction and decimal equivalents of one half/quarters, tenths, hundredths
Eg $\frac{3}{10} = 0.3$ $\frac{3}{100} = 0.03$
17. Count in 25's and 1000's

Age related expectations for the end of year 5

1. X facts and related $\div$ facts. Upto 12×12
2. Know all factor pairs to 100 Eg $48 = 1 \times 48$ 2×24 3×16 4×12 6×8
3. Recognise all decimals that total 1 and 10 Eg $0.1 + 0.9$ $6.4 + 3.7$
4. Recall all prime numbers to 19
5. Square numbers upto 12×12 and their square roots
6. Count forwards and backwards with positive and negative numbers through 0.
7. Count in fractions forwards and backwards.
8. Round any number up to 1000 000 to nearest 10/100/1000/10,000 and 100,000
9. Round decimals with two decimal points to the nearest whole number or one decimal point
10. Doubles and halves of decimals.
Half of $5.6 = 2.8$
Double $3.4 = 6.8$
11. Add to any 4 digit number to make a multiple of 1000.
 $1734 + \dots = 2000$ ($6 + 60 + 200 = 266$)

Age related expectations for the end of year 6

1. Use all X facts and related $\div$ facts upto 12×12 to derive other facts. Eg $3 \times 7 = 21$ so $300 \times 7 = 2100$
2. Decimals that total 1 (upto 2 decimal places)
3. Recall all prime numbers to 50
4. Understand the decimal and percentage equivalents $23 = 0.23 = 23\%$
5. Calculate 1% 5% 10% 20% 50% and 75% of a number
6. Know the order of operations to carry out calculations. BODMAS/BIDMAS
7. Count on or back in 1000,100,10,1's tenths and hundredths.
8. Round any whole number or decimal number.
9. +/- facts of decimal numbers with one decimal place.
.....- 1.4 = 2.5