## Avonwood Fluency Policy, 2022

Date: 20.07.22

EYFS

| Summary: outcomes | Key facts | CFU: ready to progress if.. |
| :--- | :--- | :--- |
| Addition within 5 | $0: 0+0$ | Fluent with all addends to |
|  | $1: 0+1,1+0$ | $1,2,3,4$, and 5 |
|  | $2: 0+2,1+1,2+0$ |  |
|  | $3: 0+3,1+2,2+1,3+0$ |  |
|  | $4: 0+4,1+3,2+2,3+1,4+0$ |  |
| $5: 0+5,1+4,2+3,3+2,4+1,5+0$ | *Ensure these are understood commutatively, i.e. $\mathbf{0 + 1}=\mathbf{1 + 0}$ |  |
|  | $0: 0-0$ |  |
| Subtraction within 5 | $1: 1-0$ |  |
|  | $2: 2-0,2-1,2-2$ |  |
|  | $3: 3-0,3-1,3-2,3-3$ | $1,2,3,4$, and 5 |
|  | $4: 4-0,4-1,4-2,4-3,4-4$ |  |
|  | $5: 5-0,5-1,5-2,5-3,5-4,5-5$ |  |

Representations
Part Part Whole:
Numicon:
Number track:
5 frame:
Rekenrek:


## Avonwood Fluency Policy, 2022

Year 1

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :--- | :--- | :--- |
| Addition within 10 | As EYFS, plus: | Fluent with all addends to |
|  | $6: 0+6,1+5,2+4,3+3,4+2,5+1,6+0$ | $1,2,3,4,5,6,7,8,9$ and 10 |
|  | $7: 0+7,1+6,2+5,3+4,5+2,6+1,7+0$ |  |
|  | $8: 0+8,1+7,2+6,3+5,4+4,5+3,6+2,7+1,8+0$ | *Ensure these are understood commutatively, i.e. $0+1=1+0$ |
|  | $9: 0+9,1+8,2+7,3+6,4+5,5+4,6+3,7+2,8+1,9+0$ |  |
|  | $10: 0+10,1+9,2+8,3+5,4+6,5+5,6+4,7+3,8+2,9+1,10+0$ |  |
| Subtraction within 10 | As EYFS, plus: |  |
|  | $6: 6-0,6-1,6-2,6-3,6-4,6-5,6-6$ | $1,2,3,4,5,6,7,8,9$ and 10 |
|  | $7: 7-0,7-1,7-2,7-3,7-4,7-5,7-6,7-7$ |  |
|  | $8: 8-0,8-1,8-2,8-3,8-4,8-5,8-6,8-7,8-8$ |  |
|  | $9: 9-0,9-1,9-2,9-3,9-4,9-5,9-6,9-7,9-8,9-9$ |  |
|  | $10: 10-0,10-1,10-2,10-3,10-4,10-5,10-6,10-7,10-8,10-9,10-10$ |  |

Representations


Number track:


## 10 frame:



Numicon:


Rekenrek:


## Avonwood Fluency Policy, 2022

Year 2

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :---: | :---: | :---: |
| Doubling | As EYFS \& Y1, plus: <br> Addends for 11, 12, 13, 14, 15 <br> Double 1, 2, 3, 4, 5 <br> Double 6, 7, 8, 9, 10 <br> Double 11, 12, 13, 14, 15 | Fluent with all addends for 1-20 <br> *Ensure these are understood commutatively, i.e. 0+1 $=\mathbf{1 + 0}$ <br> Able to double 1-20 <br> *Ensure these are understood multiplicatively, i.e. "double" $=2 x$ |
| Halving | As EYFS \& Y1, plus: <br> Halve 2, 4, 6, 8, 10 <br> Halve 12, 14, 16, 18, 20 <br> Halve 22, 24, 26, 28, 30 | Fluent with all subtrahends for 1-20 <br> Able to halve 1-20 <br> *Ensure these are understood multiplicatively, i.e. "double" $=\div \mathbf{2}$ |
| Times Tables | 2xT, 5xT, 10xT | Able to recall all products \& quotients for $2 \times \mathrm{T}, 5 \mathrm{xT}, 10 \times \mathrm{T}$ Example: $3 \times 2=6 \rightarrow$ "three twos are six" |

Representations


Numicon:


10 frames:


## Rekenrek:



Hundred square:


## Avonwood Fluency Policy, 2022

Year 3

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :---: | :---: | :---: |
| Doubling \& Halving | As EYFS \& KS1, plus: <br> Double 16, 17, 18, 19, 20 <br> Halve 32, 34, 36, 38, 40 | Able to recall doubles for $16,17,18,19,20$ <br> Able to recall all halves of $32,34,36,38,40$ |
| Complements to 100 | As EYFS \& KS1, plus: <br> Addends \& subtrahends for $16,17,18,19,20$ <br> Complements (pairs) to make 100 from multiples of 10 : $\begin{aligned} & 0+100,10+90,20+80,30+70,40+60,50+50,60+40,70+30,80+20, \\ & 90+10,100+0 \end{aligned}$ <br> Complements (pairs) to make 100 from multiples of 5: $\begin{aligned} & 0+100,5+95,15+85,25+75,35+65,45+55,55+45,65+35,75+25, \\ & 85+15,95+5 \end{aligned}$ | Fluent with addends for $16,17,18,19,20$ <br> Fluent with complements to 100 from multiples of 10 <br> Fluent with complements to 100 from multiples of 5 <br> *Ensure the main error is understood: $\mathbf{3 5 + 7 5}=100$ (because the <br> Tens make 100 already, the Ones produce an extra 10) |
| Times Tables | As Y2, plus: <br> $4 \mathrm{xT}, 8 \mathrm{xT}, 3 \mathrm{xT}, 6 \mathrm{xT}$ | Able to recall all products \& quotients for $2 \mathrm{xT}, 5 \mathrm{xT}, 10 \mathrm{xT}, 4 \mathrm{xT}, 8 \mathrm{xT}$, 3xT, 6xT <br> Example: $3 \times 2=6 \rightarrow$ "three twos are six" |

Representations

Hundred Square:


10 frames with Place Value 'Tens' counters:


## Avonwood Fluency Policy, 2022

Year 4

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :---: | :---: | :---: |
| Doubling \& Halving | As EYFS to Y3, plus: <br> Double 15, 25, 35, 45, 55 <br> Halve of $90,70,50,30$ <br> Halve of $9,7,5,3$ | Able to recall doubles for $15,25,35,45,55$ <br> Able to recall all halves of $90,70,50,30$ <br> Able to recall all halves of $9,7,5,3$ |
| Complements to 100 | As EYFS to Y3, plus: <br> Complements (pairs) to make 100 from all integers, such as $51+49,52+48$, $53+47,54+46$, etc. <br> Complements (pairs) to make 100 from all Hundredths, such as $0.51+0.49$, $0.52+0.48,0.53+.047,0.54+0.46$, etc. | Fluent with complements to 100 from integers <br> *Ensure the main error is understood: $\mathbf{3 4 + 7 6 \neq 1 0 0 \text { (because }}$ the Tens make 100 already, the Ones produce an extra 10) Fluent with complements to 1 from Hundredths |
| Times Tables | As EYFS to Y3, plus: 7xT, 9xT, 11xT, 12xT | Able to recall all products \& quotients for all xT Example: $3 \times 2=6 \rightarrow$ "three twos are six" |

Representations


## Avonwood Fluency Policy, 2022

Year 5

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :--- | :--- | :--- |
| Doubling \& Halving | As EYFS to Y4, plus: <br> Double 2-digit numbers through flexible partitioning, such as: <br> double $27=(2 \times 25)+(2 \times 2)=(2 \times 20)+(2 \times 2)$ <br> Halve 2-digit numbers through flexible partitioning, such as: <br> half of $73=(70 \div 2)+(3 \div 2)=(60 \div 2)+(13 \div 2)$ | Fluent with doubling any 2-digit number |



## Avonwood Fluency Policy, 2022

Year 6

| Summary: outcomes | Key facts | CFU: ready to progress if... |
| :---: | :---: | :---: |
| Doubling \& Halving | As EYFS to Y4, plus: <br> Double 3-digit numbers through flexible partitioning, such as: double $327=(2 \times 300)+(2 \times 25)+(2 \times 2)=(2 \times 300)+(2 \times 20)+(2 \times 2)$ <br> Halve 2-digit numbers through flexible partitioning, such as: <br> half of $373=(300 \div 2)+(70 \div 2)+(3 \div 2)=(300 \div 2)+(60 \div 2)+(13 \div 2)$ | Fluent with doubling any 3-digit number <br> Fluent with halving any 3-digit number |
| Complements to 1,000 | As EYFS to Y5, plus: <br> Complements (pairs) to make 1 from all Thousandths, such as <br> Thousandths adjust: $0.551+0.449,0.552+0.448 \ldots$ <br> Hundredths adjust: $0.552+0.448, .0562+0.438 \ldots$ <br> Tenths adjust: $0.662+.0338,0.762+0.238 \ldots$ | Fluent with complements to 1 from adjusted Thousandths <br> *Ensure the main error is understood: <br> $0.341+0.769 \neq 100$ (because the Hundreds make 1,000 already, the Tens produce an extra 100 and the One produce an extra 10) |
| Times Tables | All xT | Able to recall all products \& quotients for all xT Example: $3 \times 2=6 \rightarrow$ "three twos are six" |
| Fractions, Decimals \& Percentages | Y6 Common FDP: <br> Quarters: $\frac{1}{4}=0.25=25 \% \quad \frac{3}{4}=0.25=75 \%$ <br> Fifths: $\frac{1}{5}=0.2=20 \% \quad \frac{2}{5}=0.4=40 \% \quad \frac{3}{5}=0.6=60 \% \quad \frac{4}{5}=0.8=80 \%$ <br> Tenths: $\quad \frac{1}{10}=0.1=10 \% \quad \frac{2}{10}=0.2=20 \% \quad \frac{3}{10}=0.3=30 \% \quad \frac{4}{10}=0.4=40 \%$ | Able to recall equivalences between Y6 Common FDP Set |



## Avonwood Fluency Policy, 2022

## Appendix

Appendix 1: Factual fluency progression summary table from the DFE non-statutory Mathematics guidance: key stages 1 and 2

|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Additive <br> factual <br> fluency | Addition and <br> subtraction within 10. | Addition and <br> subtraction across <br> 10. | Secure and maintain <br> fluency in addition <br> and subtraction <br> within and across 10, <br> through continued <br> practice. |  |  |
| Multiplicative <br> factual <br> fluency |  |  | Recall the 10 and 5 <br> multiplication tables, <br> and corresponding <br> division facts. | Recall the 3, 6 and 9 <br> multiplication tables, <br> and corresponding <br> division facts. | Secure and maintain <br> fluency in all <br> multiplication tables, <br> and corresponding <br> division facts, <br> through continued <br> practice. |
|  |  |  | Recall the 2, 4 and 8 <br> multiplication tables, <br> and corresponding <br> division facts. | Recall the 7 <br> multiplication table, <br> and corresponding <br> division facts. |  |
|  |  |  |  | Recall the 11 and 12 <br> multiplication tables, <br> and corresponding <br> division facts. |  |

## Avonwood Fluency Policy, 2022

Appendix 2: Addition and subtraction facts from the DFE non-statutory Mathematics guidance: key stages 1 and 2

| $\mathbf{+}$ | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{0}$ | $0+0$ | $0+1$ | $0+2$ | $0+3$ | $0+4$ | $0+5$ | $0+6$ | $0+7$ | $0+8$ | $0+9$ | $0+10$ |
| $\mathbf{1}$ | $1+0$ | $1+1$ | $1+2$ | $1+3$ | $1+4$ | $1+5$ | $1+6$ | $1+7$ | $1+8$ | $1+9$ | $1+10$ |
| $\mathbf{2}$ | $2+0$ | $2+1$ | $2+2$ | $2+3$ | $2+4$ | $2+5$ | $2+6$ | $2+7$ | $2+8$ | $2+9$ | $2+10$ |
| $\mathbf{3}$ | $3+0$ | $3+1$ | $3+2$ | $3+3$ | $3+4$ | $3+5$ | $3+6$ | $3+7$ | $3+8$ | $3+9$ | $3+10$ |
| $\mathbf{4}$ | $4+0$ | $4+1$ | $4+2$ | $4+3$ | $4+4$ | $4+5$ | $4+6$ | $4+7$ | $4+8$ | $4+9$ | $4+10$ |
| $\mathbf{5}$ | $5+0$ | $5+1$ | $5+2$ | $5+3$ | $5+4$ | $5+5$ | $5+6$ | $5+7$ | $5+8$ | $5+9$ | $5+10$ |
| $\mathbf{6}$ | $6+0$ | $6+1$ | $6+2$ | $6+3$ | $6+4$ | $6+5$ | $6+6$ | $6+7$ | $6+8$ | $6+9$ | $6+10$ |
| $\mathbf{7}$ | $7+0$ | $7+1$ | $7+2$ | $7+3$ | $7+4$ | $7+5$ | $7+6$ | $7+7$ | $7+8$ | $7+9$ | $7+10$ |
| $\mathbf{8}$ | $8+0$ | $8+1$ | $8+2$ | $8+3$ | $8+4$ | $8+5$ | $8+6$ | $8+7$ | $8+8$ | $8+9$ | $8+10$ |
| $\mathbf{9}$ | $9+0$ | $9+1$ | $9+2$ | $9+3$ | $9+4$ | $9+5$ | $9+6$ | $9+7$ | $9+8$ | $9+9$ | $9+10$ |
| $\mathbf{1 0}$ | $10+0$ | $10+1$ | $10+2$ | $10+3$ | $10+4$ | $10+5$ | $10+6$ | $10+7$ | $10+8$ | $10+9$ | $10+10$ |

The full set of addition calculations that pupils need to be able to solve with automaticity are shown in the table above. Pupils must also be able to solve the corresponding subtraction calculations with automaticity.

Pupils must be fluent in these facts by the end of year 2, and should continue with regular practice through year 3 to secure and maintain fluency. It is essential that pupils have automatic recall of these facts before they learn the formal written methods of columnar addition and subtraction.

## Avonwood Fluency Policy, 2022

Appendix 3: Addition and subtraction facts from the DFE non-statutory Mathematics guidance: key stages 1 and 2

| $1 \times 1$ | $1 \times 2$ | $1 \times 3$ | $1 \times 4$ | $1 \times 5$ | $1 \times 6$ | $1 \times 7$ | $1 \times 8$ | $1 \times 9$ | $1 \times 10$ | $1 \times 11$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $2 \times 1 \times 12$ |  |  |  |  |  |  |  |  |  |  |
| $2 \times 1$ | $2 \times 2$ | $2 \times 3$ | $2 \times 4$ | $2 \times 5$ | $2 \times 6$ | $2 \times 7$ | $2 \times 8$ | $2 \times 9$ | $2 \times 10$ | $2 \times 11$ |
| $3 \times 1$ | $3 \times 2$ | $3 \times 3$ | $3 \times 4$ | $3 \times 5$ | $3 \times 6$ | $3 \times 7$ | $3 \times 8$ | $3 \times 9$ | $3 \times 10$ | $3 \times 11$ |
| $4 \times 12$ |  |  |  |  |  |  |  |  |  |  |
| $4 \times 1$ | $4 \times 2$ | $4 \times 3$ | $4 \times 4$ | $4 \times 5$ | $4 \times 6$ | $4 \times 7$ | $4 \times 8$ | $4 \times 9$ | $4 \times 10$ | $4 \times 11$ |
| $5 \times 1$ | $5 \times 2$ | $5 \times 3$ | $5 \times 4$ | $5 \times 5$ | $5 \times 6$ | $5 \times 7$ | $5 \times 8$ | $5 \times 9$ | $5 \times 10$ | $5 \times 11$ |
| $6 \times 1$ | $6 \times 2$ | $6 \times 3$ | $6 \times 4$ | $6 \times 5$ | $6 \times 6$ | $6 \times 7$ | $6 \times 8$ | $6 \times 9$ | $6 \times 10$ | $6 \times 11$ |
| $7 \times 1$ | $7 \times 2$ | $7 \times 3$ | $7 \times 4$ | $7 \times 5$ | $7 \times 6$ | $7 \times 7$ | $7 \times 8$ | $7 \times 9$ | $7 \times 10$ | $7 \times 11$ |
| $8 \times 1$ | $8 \times 2$ | $8 \times 3$ | $8 \times 4$ | $8 \times 5$ | $8 \times 6$ | $8 \times 7$ | $8 \times 8$ | $8 \times 9$ | $8 \times 10$ | $8 \times 11$ |
| $8 \times 12$ |  |  |  |  |  |  |  |  |  |  |
| $9 \times 1$ | $9 \times 2$ | $9 \times 3$ | $9 \times 4$ | $9 \times 5$ | $9 \times 6$ | $9 \times 7$ | $9 \times 8$ | $9 \times 9$ | $9 \times 10$ | $9 \times 11$ |
| $10 \times 1$ | $10 \times 2$ | $10 \times 3$ | $10 \times 4$ | $10 \times 5$ | $10 \times 6$ | $10 \times 7$ | $10 \times 8$ | $10 \times 9$ | $10 \times 10$ | $10 \times 11$ |
| $11 \times 1$ | $11 \times 2$ | $11 \times 3$ | $11 \times 4$ | $11 \times 5$ | $11 \times 6$ | $11 \times 7$ | $11 \times 8$ | $11 \times 9$ | $11 \times 10$ | $11 \times 11$ |
| $12 \times 1$ | $12 \times 2$ | $12 \times 3$ | $12 \times 4$ | $12 \times 5$ | $12 \times 6$ | $12 \times 7$ | $12 \times 8$ | $12 \times 9$ | $12 \times 10$ | $12 \times 12$ |
|  |  |  |  |  |  | $12 \times 12$ |  |  |  |  |

Pupils must be fluent in these facts by the end of year 4, and this is assessed in the multiplication tables check. Pupils should continue with regular practice through year 5 to secure and maintain fluency.

The 36 most important facts are highlighted in the table. Fluency in these facts should be prioritised because, when coupled with an understanding of commutativity and fluency in the formal written method for multiplication, they enable pupils to multiply any pair of numbers

