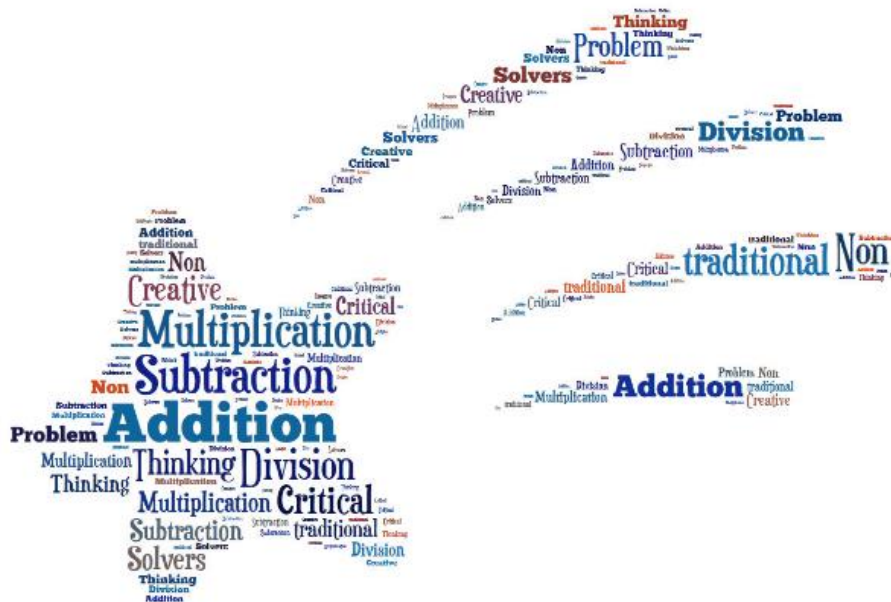# Netherlee Primary School

Core Numeracy Skills

Progression Framework

P1 to P7

For Parents / Carers

Core Numeracy Skills and Strategies

Dear Parents and Carers,

In response to parents' requests for more information to support their children's learning, we have developed this booklet which summarises the core numeracy skills. Please note that children also learn more widely about mathematics however, this document relates only to the numeracy aspect of their learning.

Core numeracy skills are fundamental to supporting children to be successful learners. This document details the core numeracy skills and strategies, for each stage, that we aim for every child to master. As children's learning progresses at different rates, some may master certain core skills earlier than others. There will be many opportunities in school for drill and practice and applying this knowledge. Homework will also focus on the skills and strategies.

Further information about 'how we teach' key concepts can be found on our website under the 'Curriculum' tab, including links to maths videos and our Handy Hints booklet.

Curriculum tab link - blogs.glowscotland.org.uk/er/Netherlee/curriculum-2/

The maths videos which have been developed, along with our cluster colleagues, cover aspects such as: addition, subtraction, multiplication and division. These can be accessed through the following links:

- Subtraction - www.youtube.com/watchv=cG2XeTE48aI
- Addition - www.youtube.com/watchv=RoCGRQZ4UCg
- Division - www.youtube.com/watchv=QpPJel7aNO8
- Multiplication Part 1 - www.youtube.com/watch?v=H7aX2zNpDI
- Multiplication Part 2 - www.youtube.com/watch?v=Y4-0SWNlQoY

We hope you find this information helpful in supporting your children's learning and continued success.

Netherlee Primary School

Primary 1

- ✓ **Count on** when adding up to 10

  (8 + 2 = ?, start with 8 and count on 2)

- ✓ **Reorder** addition calculations to start with the larger number up to 10

  (2 + 8 = 10 → 8 + 2 = 10)

- ✓ **Count back** when subtracting up to 10

  (6 – 3= ?, start with 6 and count back 3)

- ✓ Recall **doubles** up to 10

  (3 + 3 = 6, 5 + 5 = 10)

- ✓ **Link** addition and subtraction **facts** up to 10

  (7 + 3 = 10, 3 + 7 = 10) links to (10 - 7 = 3, 10 – 3 = 7)

- ✓ **Rapid recall** of number bonds up to 10

  (6 + 3 = 9, 8 + 1 = 9, 7 – 3 = 4, 5 – 3 = 2)

- ✓ **Rapid recall** of two numbers which total 10

  (6 + 4 = 10, 9 + 1 = 10)

- ✓ **Skip count** in 2s

  (2, 4, 6, 8, 10)

Primary 2

- ✓ When adding three numbers, **reorder** the calculation to find **friendly numbers** up to 20

  (In 7 + 5 + 3, 7 and 3 are friendly numbers as they add to make 10. Reorder to 7 + 3 + 5 = 10 + 5 = 15)

- ✓ **Round** numbers to the nearest 10

  (To round to the nearest 10 look at the units digit. If it is 1-4, round down. If it is 5-9, round up. For example, 13 rounds to 10, 16 rounds to 20)

- ✓ Recall **doubles** up to 20

  (For example, 5 + 5, 7 + 7, 6 + 6, etc.)

- ✓ Know to use their knowledge of doubles to calculate **near double** calculations up to 20

  (Because 5 + 5 = 10, 5 + 6 = 11)

- ✓ Find the difference between two numbers by **counting on** from the smaller number up to 20.

  (For 17 – 14, start at 14 and count on to 17)

- ✓ **Halve** even numbers up to 10

  (½ of 4 = 2, ½ of 6 = 3)

Primary 2

- ✓ **Partition** a number within 100 into tens and units

  (56 = 5 tens and 6 units)

- ✓ **Add 10** to one and two digit numbers

  (21 + 10 = 31)

- ✓ When adding and subtracting, be able to **bridge** through ten, up to 20

  In 7 + 5, split 5 into 3 and 2, so you can add 3 to 7 to make 10. Then add 2

  to make 12.

- ✓ **Rapid recall** of number bonds up to 20

  (5 + 7 = 12, 4 + 12 = 16 etc.)

- ✓ **Multiplication facts** for the 2, 5 and 10 x multiplication tables

  (2 x 3 = 6, 5 x 4 = 20, 10 x 7 = 70)

- ✓ Calculate multiplication calculations through **repeated addition** (5x, 10x)

  (5 x 4 = 5 + 5 + 5 + 5 = 20)

- ✓ **Skip count** in 5s and 10s

  (5, 10, 15, 20, 25… / 10, 20, 30, 40, 50, 60…)

Primary 3

- ✓ Recall **doubles** up to 30

  (12 + 12 = 24, 14 + 14 = 28)

- ✓ Know to use their knowledge of doubles to calculate **near doubles** up to 30

  (Because 13 + 13 = 26, 13 + 14 = 27)

- ✓ **Halve** even numbers up to 20

  (½ of 14 = 7, ½ of 18 = 9, ½ of 20 = 10)

- ✓ **Partition** two numbers up to 100 into tens and units and add / subtract them

  (43 + 21 = 40 + 3 + 20 + 1 = 64)

- ✓ **Add multiples of 10** to one and two digit numbers

  (54 + 20 = 74)

- ✓ **Compensation –** add 9 to one and two digit numbers by adding 10 and subtracting 1, up to 100

  (43 + 9 = 43 + 10 – 1 = 52)

- ✓ **Compensation -** subtract 9 from two digit numbers by subtracting ten and adding one, up to 100

  (43 – 9 = 43 – 10 + 1 = 34)

- ✓ **Compensation -** add 11 to one and two digit numbers by adding ten and adding one, up to 100

  (43 + 11 = 43 + 10 + 1 = 54)

Primary 3

- ✓ **Compensation** - subtract 11 from two digit numbers by subtracting ten then subtracting one, up to 100

  (43 − 11 = 43 − 10 − 1 = 32)

- ✓ **Rapid recall** of the 2, 3, 4, 5 and 10 multiplication tables

  (2 x 4 = 8, 3 x 8 = 24, 5 x 3 = 15, 10 x 2 = 20)

- ✓ **Rapid recall** of division facts for the 2, 5 and 10 multiplication tables

  (20 ÷ 4 = 5, 24 ÷ 8 = 3, 15 ÷ 5 = 3, 20 ÷ 10 = 2)

- ✓ **Link** multiplication and division **facts** for 2, 5 and 10 multiplication tables

  (2 x 5 = 10 so 10 ÷ 5 = 2)

- ✓ Calculate multiplication calculations through **repeated addition** (3x, 4x)

  (3 x 4 = 3 + 3 + 3 + 3 = 12)

- ✓ **Skip count** in 3s and 4s

  (3, 6, 9, 12…/4, 8, 12, 16…)

✓ **Halve** multiples of 10 up to 100

(½ of 30 = 15, ½ of 50 = 25)

✓ **Round** numbers to the nearest 100

(To round to the nearest 100, look at the tens digit. If it is 1-4, round down.

If it is 5-9, round up. For example 123 rounds to 100, 167 rounds to 200)

✓ Recall **doubles** up to 50

(22 + 22 = 44)

✓ Know to use their knowledge of doubles to calculate **near doubles** up to 50

(If 22 + 22 = 44 then 22 + 23 = 45)

✓ **Double** multiples of 5 up to 100

(Double 20 = 40)

✓ **Order/sequence** 4 digit numbers

(5632, 5634, 5636, 5638)

✓ **Partition** a three digit number into hundreds, tens and units

(363 = 300 + 60 + 3)

✓ **Partition** two numbers within 1000 into hundreds, tens and units and add /

subtract them

(234 + 123 = 200 + 30 + 4 + 100 + 20 + 3 = 357)

Primary 4

✓ To find a quarter, **halve and halve** again

(¼ of 44→ is ½ of 44 = 22 then ½ of 22 = 11)

✓ **Rapid recall** of the 2, 3, 4, 5, 6, 7, 8, 9 and 10 multiplication tables

(2 x 6 = 12, 3 x 9 = 27, 4 x 2 = 8 etc)

✓ **Rapid recall** of division facts for the 2, 3, 4, 5 and 10 multiplication tables

(10 ÷ 2 = 5, 32 ÷ 4 = 8 etc)

✓ **Link** multiplication and division **facts** for the 2, 3, 4, 5 and 10 multiplication

tables

(3 x 9 = 27 so 27 ÷ 3 = 9)

✓ Calculate multiplication calculations through **repeated addition**

(6x, 7x, 8x, 9x)

(6 x 6 = 6 + 6 + 6 + 6 + 6 + 6 = 36)

✓ **Skip count** in 6s, 7s, 8s and 9s

(6, 12, 18…/7, 14, 21…/8, 16, 24…/9, 18, 27…)

Primary 5

✓ Round numbers to nearest 1000.

(To round to the nearest 1000, look at the hundreds digit. If it is 1-4, round down. If it is 5-9, round up. For example 1233 rounds to 1000, 1607 rounds to 2000)

✓ Partition 4 digit numbers into thousands, hundreds, tens and units.

(8947 = 8000 + 900 + 40 + 7)

✓ Use **partitioning** when adding and subtracting 2 or 3 digit numbers

(267 + 123 = 200 + 60 + 7 + 100 + 20 + 3 = 390)

✓ Use **factors** to multiply and divide

(15 x 6 = (15 x 2) x 3)

✓ **Rapid Recall** of **doubling** 2 digit numbers and **halving** 2 digit even numbers up to 100

(Double 42 = 84, ½ of 62 = 31)

✓ Know to use their knowledge of **doubles** to calculate **near double** calculations of 2 digit numbers up to 100

(If double 46 = 92 then 46 + 47 = 93)

✓ When adding several small numbers or multiples of 10 **reorder** the calculation to find **friendly numbers**

(In 20 + 50 + 80, 20 and 80 are friendly numbers as they add to make 100. Reorder to 80 + 20 + 50 = 100 + 50 = 150)

✓ Find a small difference between a pair of numbers through addition by '**counting on**' from the smaller number

(In 76 – 73, count on from 73 to 76 to give you the answer 3)

Primary 5

- ✓ **Compensation -** add or subtract 9, 19 or 29 to/from any 2 digit number by adding or subtracting 10, 20 or 30 and adjusting by 1

  $(36 + 19 = 36 + 20 - 1 = 55)$

- ✓ **Compensation -** add or subtract 11, 21, 31 to/from any 2 digit number by adding or subtracting 10, 20 or 30 and adjusting by 1

  $(36 + 21 = 36 + 20 + 1 = 57)$

- ✓ **Multiply** and **divide** 2 digit numbers by 10

  $(65 \times 10 = 650, 65 \div 10 = 6.5)$

- ✓ Use knowledge of **linked addition and subtraction facts** to solve more complex calculations

  $(70 + 90 = 160$ so $160 - 90 = 70)$

- ✓ Identify quickly **2 digit pairs** that total 100

  $(80 + 20, 60 + 40$ etc$)$

- ✓ **Rapid Recall** of all multiplication tables up to 10 and linked division facts

  $(9 \times 8 = 72$ so $72 \div 8 = 9)$

Primary 6

- ✓ **Multiply** a 3 digit number by a single digit, multiplying hundreds first

  (6 x 125 = (6 x 100) + (6 x 20) + (6 x 5) = 600 + 120 + 30 = 750)

- ✓ Use **factors** to multiply two 2 digit numbers

  (35 x 18 = (35 x 6) x 3)

- ✓ Use knowledge of the **pattern of number** to solve calculations

  (700 + 400 = 1100 because you **recall** 7 + 4 = 11)

- ✓ **Add** and **subtract** a single digit to or from a 3 digit number, crossing the tens boundary

  (378 + 7 = 378 + 2 + 5= 385, 495 – 9 = 495 – 5 – 4 = 486)

- ✓ **Add** and **subtract** 10 to or from any 2 then 3 digit number and explain the method

  (96 + 10, 408 – 10)

- ✓ **Add** and **subtract** 100 to or from any 3 digit number up to 1000 and explain the method

  (124 + 100 = 224, 786 – 100 = 686)

- ✓ **Multiply** and **divide** 3 digit numbers by 10

  (343 x 10 = 3430, 480 ÷ 10 = 48)

- ✓ **Link** multiplication and division **facts** to fractions and fractions of quantities

  (If 32 ÷ 4 = 8 then ¼ of 32 is 8)

- ✓ Calculate **halves** and **doubles** of 2 digit numbers up to 100.

  (Double 47 = 94, ½ of 47 = 23.5)

- ✓ **Partition** a 6 digit number into hundreds of thousands, tens of thousands, thousands, hundreds, tens and units

  (198,947 =100000 + 90000 + 8000 + 900 + 40 + 7)

- ✓ Identify quickly **pairs** of multiples of 50 that total 1000

  (250 + 750, 150 + 850)

Primary 6

- ✓ Know by heart all **pairs** of multiples of 100 that total 1000

  (700 + 300, 800 + 200 etc)

- ✓ Identify quickly **doubles** of multiples of 10

  (10 + 10 to 1000 + 1000)

- ✓ **Rapid recall** of all multiplication and linked division facts for 2,3,4,5,6,7,8,9

  and 10 x tables

  (4 x 8 = 32 so 32 ÷ 4 = 8, 9 x 9 = 81 so 81 ÷ 9 = 9 etc)

- ✓ **Rapid recall** 11 and 12 multiplication tables

  (11 x 3 = 33, 12 x 2 = 24)

Primary 7

✓ **Count on** and backwards to 1 000 000 and beyond

(900 000, 900 001…999 998, 999 999, 1000 000, 1000 001…)

✓ Have **recall** of addition and subtraction facts to 100 and beyond.

(32 + 45 = 77, 123 + 45 =168, 103 – 7 = 96, 216 – 102 = 114)

✓ **Add** and **subtract** a multiple of 10 to or from a 2 digit number, up to and

beyond 100, and explain method

(52 + 60 = 112, 82 – 30 = 52)

✓ **Add** a 2 digit number to a multiple of 100 and explain method

(400 + 18 = 418)

✓ Find what must be added to a 3 digit multiple of 10 to make the **next**

higher multiple of 100 explaining method

(What must be added to 730 to make 800?)

✓ Identify quickly **tenths** with a **total of one**

(0.7 + 0.3 = 1, 0.6 + 0.4 = 1, 0.1 + 0.9 = 1)

✓ Identify quickly **tenths** with a **total of ten**

(3.7 + 6.3 = 10, 8.2 + 1.8 = 10)

✓ **Double** any multiple of 5 up to 500

(250 + 250 = 500)

Primary 7

- ✓ **Halve** any 2 or 3 digit multiple of 10 and explain method

    (½ of 70 = 35, ½ of 300 = 150)

- ✓ **Multiply** and **divide** by a multiple of 10, 100 or 1000

    (400 ÷ 20 = 20)

- ✓ **Rapid recall** of all multiplication tables up to 12 and linked division facts

    (11 x 3 = 33 and 33 ÷ 11 = 3)