

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### Nursery

A key priority of Newdale's maths curriculum is to ensure that all children develop a strong sense of number and place value. Children will continually encounter numbers in the world around them. But the ability to recognise the symbols connected to numbers, and name it, is very different from understanding the 'number sense' of it, and it is the development of this latter skill that is crucial to a child's mathematical ability.

It is important to recognise that just because a child can recite number names in order, does not necessarily mean that they can count.

As with learning the alphabet, children can recall a sequence of numbers by rote without any real grasp or understanding of what they mean (hence young children often leave out numbers as they count). Gaining familiarity with number names through songs and rhymes is of course helpful, but emphasis should be placed on helping children make links between these number names and the number of objects they represent.

In the Nursery, as well as teaching the children to count objects, significant attention is given to helping the children to recognise number and the development of mental representations. In order to do this, much of their experience with number play in the early years will involve concrete, movable objects.



#### Nursery:

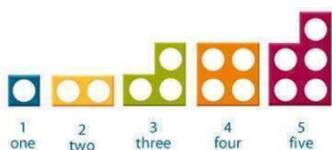
#### EYFS Development Matters 2020 Statements for Birth to 3 years – Ladybugs and Little Acorns

##### Expectations in number:

- Combine objects like stacking blocks and cups. Put objects inside others and take them out again.
- Take part in finger rhymes with numbers.
- React to changes of amount in a group of up to three items.
- Compare amounts, saying 'lots', 'more' or 'same'.
- Counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence.
- Count in everyday contexts, sometimes skipping numbers - '1-2-3-5.'

##### Representations of number:

Using concrete, physical objects.



##### Key vocabulary and knowledge shared with the children:

Concepts of quantity (How many ....?), equality (Is this the same as ....?) and inequality (Which has more ....?)

Modelling combining sets of small quantities.

Modelling adding to a quantity to make it bigger.

##### Abstract – activities that demonstrate knowledge and skills:

Spoken number names - *One, once, alone, first.*

*Number rhymes to secure the order of the numbers. 1,2,3,4,5, /One two buckle my shoe etc.*

Mark making and graphics to represent a small number in the context of play.

Mark making and graphics to represent a small quantity to compare in the context of play.

Opportunities to identify numbers in the environment . What happens when I add more blocks to the tower?

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### EYFS Development Matters Statements for 3-4 Years – Mighty Oaks

#### Expectations in number:

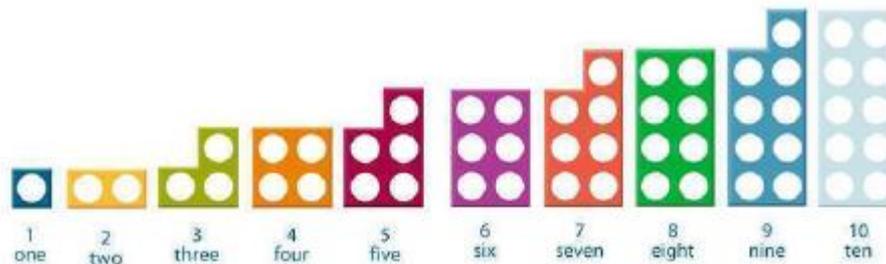
Fast recognition of up to 3 objects, without having to count them individually ('subitising').

- Recite numbers past 3.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.

Know that addition can be done in any order (commutative)

#### Representations of number:

Using Numicon to support in number recognition.



#### Key vocabulary and knowledge shared with the children:

Comparing numbers 1,2,3, 4, 5 – 'bigger' and 'smaller'

Stable ordering numbers 1 to 3.

Using counting strategies and subitising to identify the number of concrete objects in the set.

Saying the number names in order from 1-5.

Using counting strategies and subitising to identify the number of concrete objects in the set.

Using language of more/fewer. Adults to model language.

#### Abstract – activities that demonstrate knowledge and skills:

Subitise quantities up to the value of 3. Show children multiple representations of the number 3. (Linea, dice, Numicon.)

Understand that the quantity gets smaller when we subtract( Use of real life and counting objects).

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### EYFS Development Matters Statements for 3-4 Years : End of Mighty Oaks and Beginning of the year in Reception.

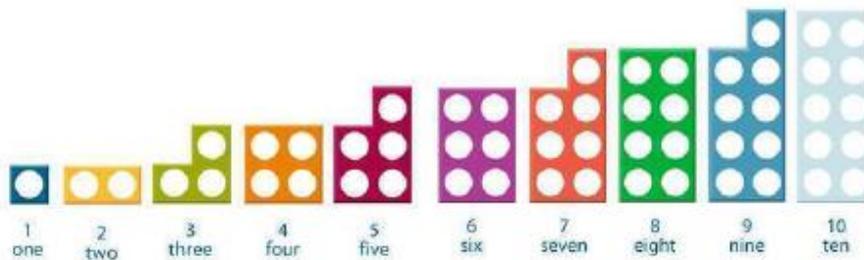
#### Expectations in number:

- Fast recognition of up to 5 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.

In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.

#### Representations of number:

Using Numicon to support in number recognition.



#### Key vocabulary and knowledge shared with the children:

Quantity and Number recognition to 5.

Number order.

Children know the quantity is linked to the number. To 5 to begin with extend to 10 when confident.

Number structure.

Subitising to 5.

Modelling the combining of sets, recognising that the quantity has increased.

Using counting strategies and subitising to identify the number of concrete/pictorial objects in the set.

To understand that the set gets bigger the more you add to it.

#### Abstract – activities that demonstrate knowledge and skills:

Represent a quantity by drawing or by using graphics. (using drawings to show a resource)

Mark making and graphics to represent numbers to 10 and beyond in their play.

Graphics and attempts at numerals in the correct orientation.

Mark making and numerals to replicate the concrete and pictorial model.

Graphics and numerals to show the addition

Counting in order to 10 and beyond.

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

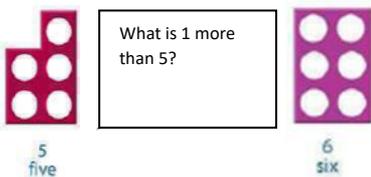
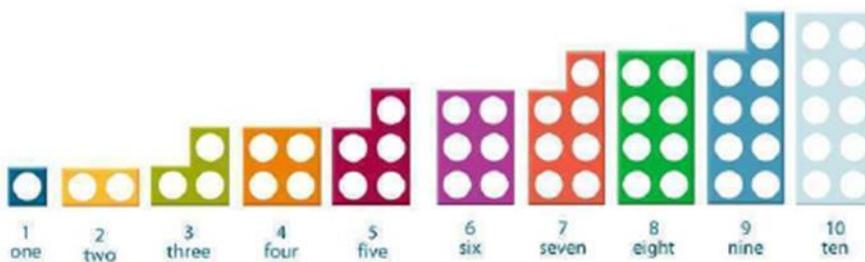
### EYFS Development Matters Statements for Reception

**Expectations in number:**

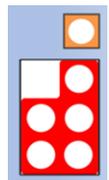
- Count objects, actions and sounds.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Count beyond ten.
- Compare numbers.
- Understand the 'one more than/one less than' relationship between consecutive numbers.
- Explore the composition of numbers to 10.
- Automatically recall number bonds for numbers 0–10. Automatically recall number

**Representations of number:**

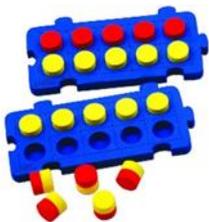
To use Numicon to get a greater understanding of numbers to 10. It will help children to be more confident when subitising and finding bonds to 10.



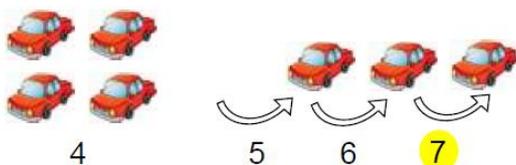
Say which numbers are 1 more than , using representations where appropriate Use of Numicon to 1 more than.



Provide 'staircase' patterns which show that the next counting number includes the previous number plus one.



Using tens frames to begin to understand numbers and how they are made.  
 What happens if I need to add 6 to 4.. How many will I have altogether.  
 Knowledge of number bonds and to look for relationships between addition subtraction facts.  
 Know that addition can be done in any order. Undertadn that addition problems are easier when you start with the largest number.



Using counting on strategies to combine sets of numbers.

$$4 + 3 = 7$$

Once secure with combining 2 sets of objects, children will learn how to add on a number line jumping forward the correct amount of jumps.

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### EYF5 Development Matters Early Learning Goals

#### Expectations in Number and Number Sense

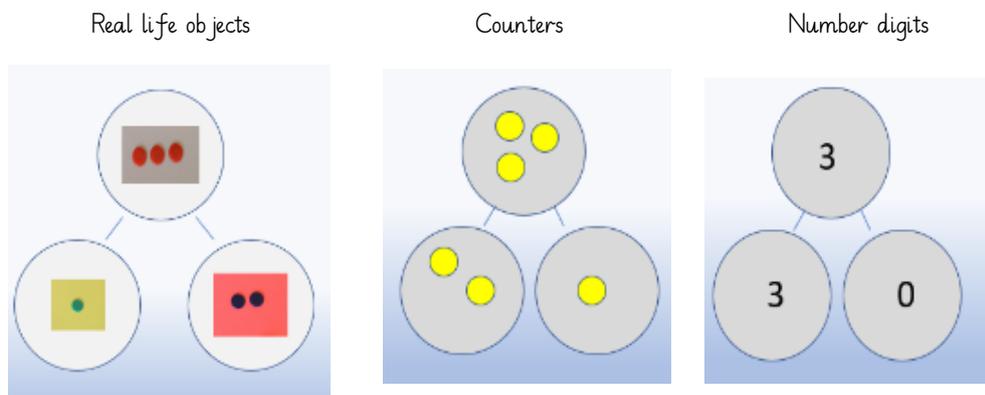
##### Number

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

##### Numerical Patterns

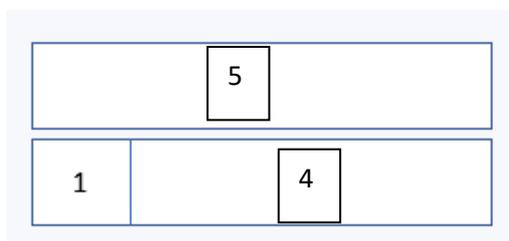
- Verbally count beyond 20, recognising the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts

Introduction to the part / part whole model

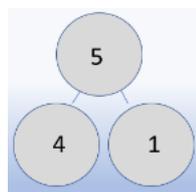


Children will initially use objects to understand the commutativity of the numbers in an addition number sentence. To understand that addition can be done in any order.

To use a bar model to show the equality and the relationships in addition and subtraction, doubling, halving and sharing.



Part / Part whole model



Missing number problems with alternative placement of the equals sign.

$$6 = 6 + \square$$

$$6 = \square + 5$$

$$6 = 2 + \square$$

$$6 = \square + 3$$

$$6 = \square + \square + 3$$

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### Key vocabulary and knowledge shared with the children:

Count verbally beyond 20, pausing at each multiple of 10 to draw out the structure, for instance when playing hide and seek, or to time children getting ready.

Counting using cardinality and subitising with amounts up to 10. Start to become confident with teen numbers.

Concepts of commutativity, effect of zero and inverse relationships.

Using patterns and systematic models.

Conceptual and procedural variation.

Model with concrete mathematical resources how to add two groups by counting or by counting on.

To see numerals and pictures of numbers (how many are in the set) to add.

### Abstract – activities that demonstrate knowledge and skills:

Represent a quantity by using graphics. (using drawings to show a resource e.g. Numicon, counters)

Writing numerals in order.

Graphics and attempts at numerals in the correct orientation.

Graphics and numerals to show the addition and the strategy used.

To represent additions with graphics and then with numerals and symbols. Become secure writing the number sentence.

Graphics and numerals.

Numicon to solve addition /number bond questions.

Bar Model representations.

Part / Part Whole diagrams

### By the end of Reception

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding – such as using manipulatives, including small pebbles and ten-frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

Year 1

### Expectations in number and addition

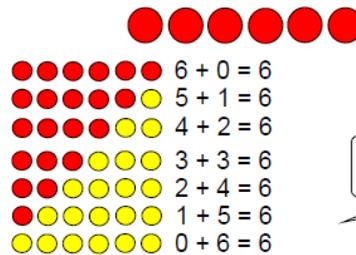
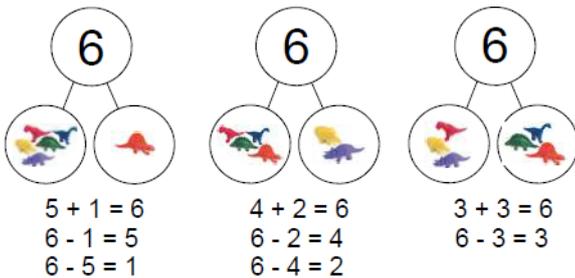
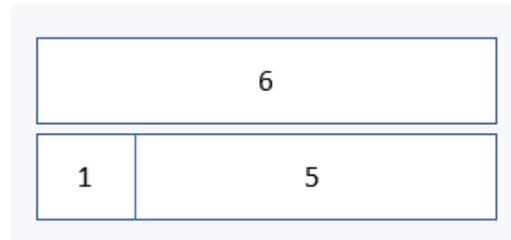
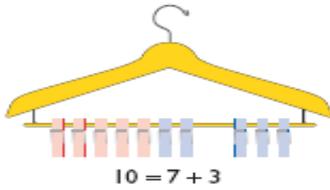
Know and recall all number bonds to 20

Add one and two digit numbers to 20, including 0

Solve 1 step problems involving addition e.g.  $7 = \square + 5$

Once a basic number sense has developed for the numbers up to ten (see the Foundation Stage section of the calculation policy), children must establish a **strong sense of 'ten'**. Children will become familiar with the **'tenness'** of ten using a variety of practical resources:

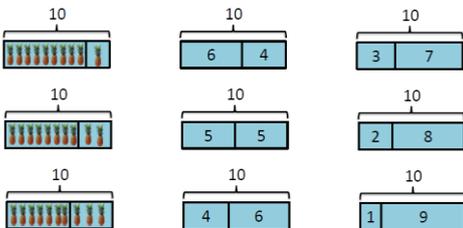
### Representations of number:



How can we arrange these counters to make the number 6?

Can you use these to help you write some **take away** number sentences?

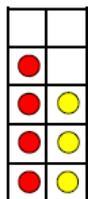
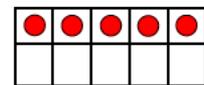
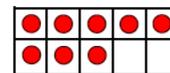
### Number Bonds



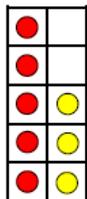
Use of bar model to represent bonds to 10 and 20.

### Ten-Frames:

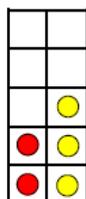
A ten-frame is a great tool for embedding an understanding of ten. By placing counters in different arrangements on the frame, children can begin to generate various mental images of the number ten, as well as how other numbers relate to it.



$4 + 3 = 7$   
 $7 - 3 = 4$   
 $7 - 4 = 3$

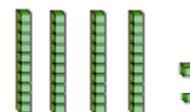


$5 + 3 = 8$   
 $8 - 3 = 5$   
 $8 - 5 = 3$



$2 + 3 = 5$   
 $5 - 2 = 3$   
 $5 - 3 = 2$

Introduction to dienes to represent tens and ones



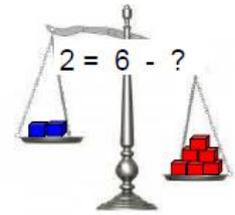
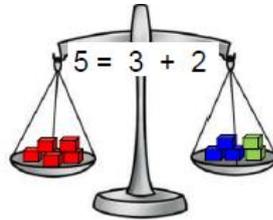
# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

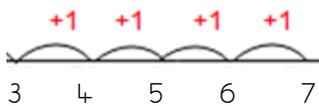
**Understand that the equals sign (=) is a sign of equivalence.**

Many children develop the misconception that the answer to a calculation is on the right hand side of the equals sign. Scales can be used to help children explore the idea that both sides of a calculation must balance

It is important that the children experience the equals sign (=) in different positions. By writing calculations either side of the equals sign (e.g.  $2+4=5+1$ ), the children will not just interpret it as meaning 'the answer'

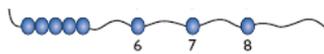


**Informal written strategies for addition**

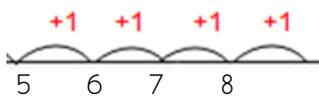


Record addition by counting forwards on a number line in steps of 1 e.g.  $3 + 4 =$

**Know that addition can be done in any order (commutative)**



Reorder the calculation so that the largest number is first.  $3 + 5 =$



Begin to understand that addition is the inverse or opposite of subtraction.

Use shapes to represent missing numbers.

$$\square + \square = \triangle$$

$$6 + 6 = 12$$

Add more than 2 single digit numbers mentally.

$$5+3+1=9$$

Reorder a calculation to find number bonds to 20 and then combine

$$6+3+2+7+4=$$

$$6+4+7+3+2=22$$

**Key vocabulary and knowledge shared with the children:**

Number bonds, number line

Add, addition, more, plus, make, sum, total, altogether

Inverse

Double, near double

Equals, is the same as (including equals sign)

How many more to make..?, how many more is..than..?, how much more is..?

Bar

Number bonds/ pairs

Missing number

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### Year 2

#### Expectations in number and addition

Key skills: Recall addition facts to 20 and 100; add two-digit number and units, two-digit number and tens, two two-digit numbers; adding 3 one digit numbers; show that addition can be done in any order 'Commutative';

$$TU + TU = TU$$

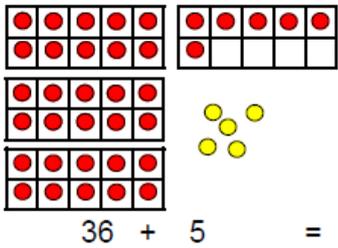
and when secure moving on to

$$TU + TU = HTU$$

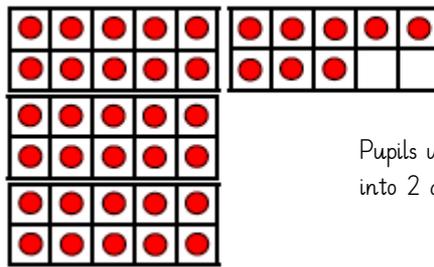
In Year 1, a great deal of emphasis is placed on generating different mental images and internal representations of number, with a view to build up a bank of facts about them. In order to achieve this, a wide variety of concrete and pictorial resources are used to support the children's investigations.

The expectation in Year 2 is that children should now be able to recall these number facts to 20 from memory, no longer requiring concrete resources, as frequently, to support them.

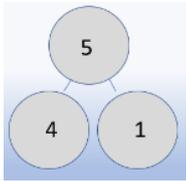
#### Representations of number:



Following on from Year 1, multiple ten-frames can be used as a starting point to add a single-digit number to a 2-digit number.

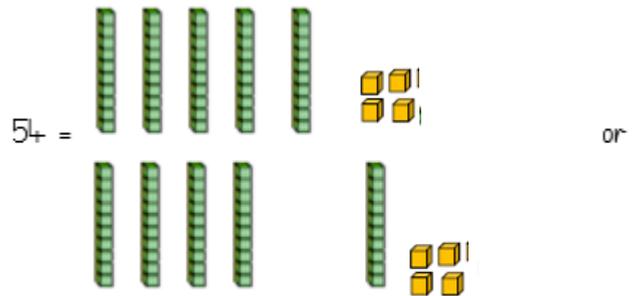


$$38 + 6 = ?$$



Pupils use number sense to mentally partition the 6 into 2 and 4 to calculate.

Introduced to rearranging with Dienes TU numbers so that 54 is seen as 5 tens and 4 units and also a 40 and 14.



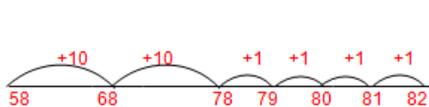
#### Informal written methods

$$24 + 58$$

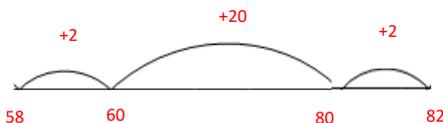
Add 10 and 10, then add the 1s

adding in 10s and 1s

add 20, bridge the 10



Partition the 4 into related bond facts



# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

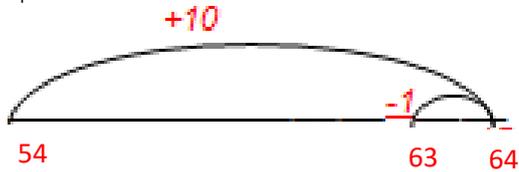
Add or subtract 9 or 11, by adding/ subtracting 10 and then *adjusting* by 1.

$54 + 9 = ?$

By adding 10, there is 1 too many so I need to adjust

So.....

Represented on a number line as:



Add two 2-digit numbers

Initially, the children might use dienes resources to **partition** the numbers into their **tens** and **units** and then add them separately.

$35 + 22 =$

$30 + 5 + 20 + 2 = 50 + 7$

Bridging the 10s

$40 + 9 + 30 + 2 = 70 + 11$

Ten of the ones / units may then be exchanged for a 10

$80 + 1 = 81$

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

Fill in the missing numbers. What do you notice?

|    |   |
|----|---|
| 27 |   |
| 15 | ? |

|    |    |
|----|----|
| 12 | 15 |
| ?  |    |

Use of the bar model to represent known facts

|    |   |
|----|---|
| 37 |   |
| 15 | ? |

|    |    |
|----|----|
| 23 | 14 |
| ?  |    |

|    |    |
|----|----|
| 13 | 14 |
| ?  |    |

|    |   |
|----|---|
| 57 |   |
| 15 | ? |

### Formal written methods

|   |   |   |   |   |    |
|---|---|---|---|---|----|
| 5 | 0 | + | 6 |   |    |
| - | 2 | 0 | + | 4 |    |
| 3 | 0 | + | 2 | = | 32 |

Expanded written method to ensure secure knowledge of place value

**Vertical notation** for non-crossing of boundaries calculations to start with.

Introduce column addition without crossing the boundary

$$\begin{array}{r}
 24 \\
 +53 \\
 \hline
 7 \text{ (} 4 + 3 \text{)} \\
 +70 \text{ (} 50 + 20 \text{)} \\
 \hline
 77
 \end{array}$$

### Start with least significant digit

$$\begin{array}{r}
 67 \\
 + 24 \\
 \hline
 11 \text{ (} 7+4 \text{)} \\
 + 80 \text{ (} 60+20 \text{)} \\
 \hline
 91
 \end{array}$$

Recognise that subtraction is the inverse of addition – please see subtraction for Year 2 guidance for examples

### Key vocabulary and knowledge shared with the children

Numbers to one hundred / two hundred / one thousand

Hundreds

Partition, recombine

Count in 3s, 4s and so on

Sequence

Continue

1/2/3 digit numbers

Place / place value

Number facts

Tens boundary

Repeated addition

Share, share equally

Row

Column

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

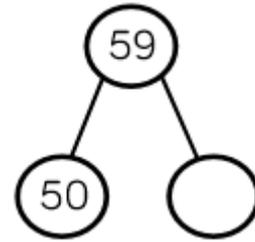
Year 3

Expectations in number and addition

Key skills: add mentally a three digit number and units, a three digit number and tens, a three digit number and hundreds; add numbers with up to three digits using column addition; use addition as the inverse to check subtraction calculations

Representations of number:

$30 + 5 + 20 + 2 = 50 + 7$



|   |   |   |          |   |   |   |
|---|---|---|----------|---|---|---|
| 4 | 2 | 6 | → +100 → | 5 | 2 | 6 |
| 4 | 0 | 0 | → +10 →  | 4 | 3 | 6 |
| 4 | 0 | 0 | → +1 →   | 4 | 2 | 7 |

Move to place value counters as a visual representation

Formal written methods

|       |      |     |   |     |  |
|-------|------|-----|---|-----|--|
| 500   | + 30 | + 8 |   |     |  |
| + 200 | + 40 | + 7 |   |     |  |
| <hr/> |      |     |   |     |  |
| 700   | + 80 | + 5 | = | 785 |  |
|       |      | 10  |   |     |  |

Expanded written method to ensure secure knowledge of place value

Adding:

HTU + HTU = HTU  
 and when secure moving on to  
 HTU + HTU = ThHTU

$$\begin{array}{r}
 538 \\
 + 247 \\
 \hline
 15 \text{ (8+7)} \\
 70 \text{ (30 + 40)} \\
 + 700 \text{ (500 + 200)} \\
 \hline
 \underline{785}
 \end{array}$$

Calculations can be modelled using place value counters

Note the exchange of 10 ones for a 10 counter

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

### Compact addition – carrying

Carry numbers below the line under the appropriate column and refer to the carried digit as a ten or hundred 'Carry one ten, carry one hundred'

$$\begin{array}{r} 47 \\ + 76 \\ \hline 123 \end{array}$$

|       |   |   |   |
|-------|---|---|---|
| 4     | 1 | 9 |   |
| +     | 5 | 7 | 6 |
| <hr/> |   |   |   |
| 9     | 9 | 5 |   |
| 1     |   |   |   |

Here  $9 + 6 = 15$  so the ten is carried over into the tens column.

|       |   |   |   |
|-------|---|---|---|
| 5     | 3 | 8 |   |
| +     | 2 | 4 | 7 |
| <hr/> |   |   |   |
| 7     | 8 | 5 |   |
| 1     |   |   |   |

|       |   |   |   |
|-------|---|---|---|
| 2     | 8 | 3 |   |
| +     | 4 | 6 | 2 |
| <hr/> |   |   |   |
| 7     | 4 | 5 |   |
| 1     |   |   |   |

In this example,  $80 + 60 = 140$  so a hundred is carried over.

|       |   |   |   |
|-------|---|---|---|
| 6     | 4 | 2 |   |
| +     | 5 | 5 | 9 |
| <hr/> |   |   |   |
| 1     | 2 | 0 | 1 |
| 1     | 1 |   |   |

Use of the Bar model to calculate and solve addition (and subtraction) problems

a) Jesse is trying to solve the problem:

There are 479 pupils in a school. 132 of the pupils are boys.  
How many pupils are girls?

i) Jesse draws a diagram to help.

Place a (✓) by the correct diagram.

|       |     |
|-------|-----|
| 132   |     |
| Girls | 479 |

|       |     |
|-------|-----|
| Girls |     |
| 132   | 479 |

|     |       |
|-----|-------|
| 479 |       |
| 132 | Girls |

ii) How many pupils are girls?

### Key vocabulary and knowledge shared with the children

Numbers to one thousand,  
Count in Eights, fifties and so on to hundreds  
Relationship  
One hundred more,  
Approximate, approximately  
Round, nearest, round to the nearest ten, hundred  
Column addition

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

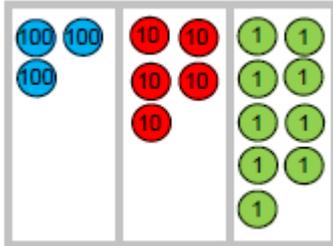
Year 4

### Expectations in number and addition

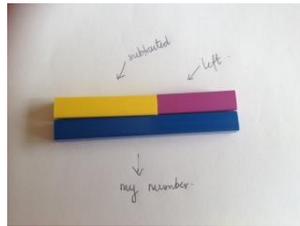
Key skills: add numbers with up to 4 digits using the formal, written method of compact column addition; use addition as the inverse to check subtraction calculations.

Check if a calculation can be solved with a mental approach first before using a written method.

### Representations of number:



Place value counters can still be used to reinforce place value



Representations using the bar model

### Formal written methods

#### Column addition – carrying

Carry numbers below the line under the appropriate column and refer to the carried digit as a ten, hundred or thousand.

Begin with 3digit numbers and then progress to 4 digit numbers:

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \small 1 \quad 1 \end{array}$$

Answer: 1431

$$\begin{array}{r} 4924 \\ + 3793 \\ \hline 8717 \\ \small 1 \quad 1 \end{array}$$

$$\begin{array}{r} 9635 \\ + 6856 \\ \hline 16491 \\ \small 1 \quad 1 \quad 1 \end{array}$$

$$\begin{array}{r} 5643 \\ + 8389 \\ \hline 14032 \\ \small 1 \quad 1 \quad 1 \end{array}$$

Teacher may choose revisit to the **expanded columnar method** at any point if the pupils are experiencing difficulty conceptualising this method.

Pupils should also be able to add numbers with up to 2 decimal places (at this stage, both numbers should have the same number of decimal places):

$$\begin{array}{r} 136.42 \\ + 344.59 \\ \hline 481.01 \\ \small 1 \quad 1 \quad 1 \end{array}$$

$$\begin{array}{r} 39.8 \\ + 27.4 \\ \hline 67.2 \\ \small 1 \quad 1 \end{array}$$

$$\begin{array}{r} 642.53 \\ + 742.67 \\ \hline 1384.20 \\ \small 1 \quad 1 \quad 1 \end{array}$$

They should also be able to use the same method to add up more than two numbers with different numbers of digits:

$$\begin{array}{r} 2751 \\ + 643 \\ + 383 \\ \hline 3777 \\ \small 1 \quad 1 \end{array}$$

$$\begin{array}{r} 317.7 \\ + 84.6 \\ \hline 402.3 \\ \small 1 \quad 1 \quad 1 \end{array}$$

$$\begin{array}{r} 4398 \\ + 874 \\ \hline 5272 \\ \small 1 \quad 1 \quad 1 \end{array}$$

## Newdale Primary

### Maths Calculation Policy – Number Sense and Addition

Children should continue to consolidate the compact columnar subtraction method using 4-digit numbers:

|   |   |              |              |   |  |
|---|---|--------------|--------------|---|--|
|   |   | 7            |              | 5 |  |
|   | 7 | <del>8</del> | <del>6</del> | 4 |  |
| - | 2 | 4            | 9            | 8 |  |
|   | 5 | 3            | 6            | 6 |  |

|   |              |   |              |   |
|---|--------------|---|--------------|---|
|   | 2            |   | 0            |   |
|   | <del>3</del> | 2 | <del>1</del> | 1 |
| - | 1            | 6 | 0            | 2 |
|   | 1            | 6 | 0            | 9 |

|   |   |              |              |   |
|---|---|--------------|--------------|---|
|   | 8 | 9            |              |   |
|   | 5 | <del>9</del> | <del>0</del> | 3 |
| - | 4 | 6            | 2            | 8 |
|   | 1 | 2            | 7            | 5 |

**Estimate and use inverse operations to check answers to a calculation.**

For the calculation  $3782 + 2136$ ...

To estimate the answer, round both numbers to the nearest thousand:  $4000 + 2000 = 6000$

or to the nearest hundred for a more accurate guess:  $3800 + 2100 = 5900$

Solve the calculation using the compact columnar addition method:

$$\begin{array}{r}
 3782 \\
 + 2136 \\
 \hline
 5918
 \end{array}$$

Key vocabulary and knowledge shared with the children

Tenths, hundredths, hundred thousand, million

Decimal (places)

Round (to nearest)

Thousand more

Negative integers

Integer

Count through zero

Count in sixes, sevens, nines, twenty fives

Next, consecutive

# Newdale Primary

## Maths Calculation Policy – Number Sense and Addition

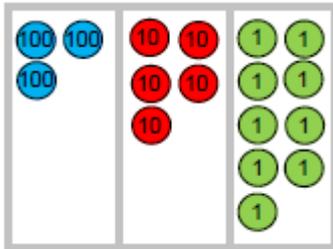
Year 5 / 6

### Expectations in number and addition

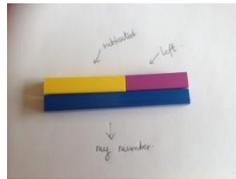
Key skills: Add whole numbers with more than 4 digits using formal compact method; extend methods to include decimals to two decimal places.

Compact method used as standard for all written calculations

### Representations of number:



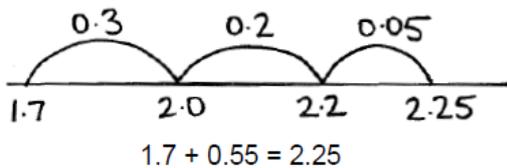
Place value counters can still be used to reinforce place value



Representations using the bar model

### Add and subtract numbers mentally with increasingly large numbers.

Children should be encouraged to use a variety of different mental maths strategies in order to solve calculations involving large whole numbers and decimals in their head. They should be able to count on and back in tenths and hundredths. They could use a number line and/or informal jottings to help them.



As an informal method.

Use the column to make it formal

### Add and subtract whole numbers with more than 4 digits.

Children should continue to consolidate their understanding of the **compact columnar addition and subtraction** methods using numbers with more than 4 digits.

$$\begin{array}{r} 65,442 \\ + 26,894 \\ \hline 92,336 \end{array}$$

$$\begin{array}{r} 87,453 \\ - 58,109 \\ \hline 26,454 \end{array}$$

$$\begin{array}{r} 4365 \\ + 2674 \\ + 3913 \\ \hline 10952 \end{array}$$

They should be able to use the same method to add decimal numbers and to add more than two numbers.

### Key vocabulary and knowledge shared with the children

Efficient written method

Ones boundary

Tenths boundary

Year 6:

Key skills: Add whole numbers with more than 4 digits using formal compact method; extend methods to include decimals to two decimal places.

Compact method used as standard for all written calculations

Newdale Primary  
Maths Calculation Policy – Number Sense and Addition

Undertake mental calculations with increasingly large numbers and more complex calculations  
Order of operations

Newdale Primary  
Maths Calculation Policy – Number Sense and Addition

