**Reception and Year 1** 



# Community Primary School

Maths Parent Workshop -What we Teach, How we Teach it -Number, Addition and Subtraction November 2022

# **ELG: Number**

- up to 5.
- Automatically recall (without reference to

# Have a deep understanding of number to 10, including the composition of each number.

• Subitise (recognise quantities without counting)

rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

# **ELG: 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 and how quantities can be distributed equally.

# Concrete, Pictorial, Abstract

The children's understanding of the calculation strategies that they are taught through school will be underpinned by a secure understanding of place value.

Understanding in all areas of maths will be developed by children using concrete resources and interpreting and using pictorial representations before moving onto solve abstract calculations.

There are a range of place value and counting resources available for the children to use in each classroom. The CPA process/approach will be clearly exemplified on maths working walls for the current maths focus.



## At Lindow Community we teach through a **CPA (concrete, pictorial, abstract) approach**.







# **Useful Resources** Concrete resources are VITAL in the children's early understanding of number and calculation.



Primary School





Count everything, spot numerals around and about your home and local environment.





# Use your resources to show me

# How do you know it is 4?

# Your turn!











## **Understanding Number as Steps in a Sequence**

In reception, the children build a strong sense of what number is. They begin with understanding number as steps in a sequence. This will be from counting e.g. up and down the stairs, their toys when they are tidying etc.





Estimate then count. Encourage the children to stop counting when they run out of objects to count.

## **Recognising Amounts without Counting them**

In reception, the children build on their understanding of number by being able to recognise small amounts without even counting them(subitising). This is through many resources and images such as dice, dominoes, 5 frames - then later onto 10 frames, fingers etc.

Community

Primary School



# Your turn! What can you see?

How do you know you have 4?





# Your turn!

# What can you see?



# **Five and Ten Frames**

In reception, children secure their understanding of number and begin the link with calculation that will later be followed on in year 1 using resources such as a 5 frame and later a 10 frame.



How many dots? How many spaces? How many more dots to make 5?

## Which ten frame shows 7? How do you know?



# **Conservation of Number**

In reception, the children develop an understanding that the number of objects in a set does not change if they are moved around.



Lindow

Community

Primary School

Put some gel/ slime in a sealable food bag with some coins, counters, buttons etc. Use a marker pen to draw a wall down the middle.

How many counters are in the bag? How many different ways can you show the number 7? E.g. 3 and 4



There are ten pegs on the hanger. How many on this side? How many on the other side? Move some pegs over? How about now? Are there still 10 altogether?

his

# Your turn! Using 6 coloured bears can you show me arrangements to show 6.















# Partitioning Numbers into two groups



Bracelets - move the beads on your bracelet to show the number 4 in different ways

Smarties etc on your baking. Each biscuit has 4 smarties but how can you show that differently on each one?









![](_page_17_Picture_8.jpeg)

Picnic time with the teddies. There are 4 cakes. You can have 1 and I have 3 or you can have 2 and I can have 2 etc.

![](_page_17_Picture_10.jpeg)

![](_page_17_Picture_11.jpeg)

![](_page_17_Picture_12.jpeg)

CBeebies Series 3: Fruit Salad Find out how to split numbers into smaller numbers

![](_page_17_Picture_14.jpeg)

## Part Part Whole model

![](_page_17_Picture_16.jpeg)

![](_page_18_Picture_0.jpeg)

# Using your part whole sheet show me how you can partition 8.

# Discuss

# Partitioning Numbers into more than two groups

Towards the end of reception, the children take their understanding of number even further by exploring how the numbers within 10 can be split into more than 2 groups.

![](_page_19_Picture_2.jpeg)

## Lindow Community Primary School

![](_page_19_Picture_4.jpeg)

## Numberblocks Episodes on BBC iPlayer

The earlier episodes of Numberblocks have some great visual animations that support the children's early understanding of number.

> Free advice, guidance and workbooks for children for all year groups: https://whiterosemaths.com/parentresources#download

![](_page_20_Picture_3.jpeg)

chools & teachers V Parents & pupils V About us

# **Enjoy maths** together all year round

Here's another great way for your primary-aged child to enjoy maths at home. Our FREE workbooks for Years 1 - 6 give children and parents an extra tool for enjoying maths together.

DOWNLOAD NOW

![](_page_20_Picture_10.jpeg)

![](_page_20_Picture_11.jpeg)

# Lindow

Community Primary School

![](_page_20_Picture_15.jpeg)

![](_page_20_Picture_16.jpeg)

![](_page_20_Picture_17.jpeg)

### Reception children are encouraged to learn through play and practical activities. They work with the

numbers up to 10 to ensure they know the numbers well and use them in their play.

We encourage children to use a number track to help them count. Have them available at home if possible.

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

Suggested activities to do at home with your child.

Lindow Community Primary School

- Encourage the children to count as regularly as possible e.g. whilst climbing the stairs, count toys. Ensure your children line to up the objects and point to each object whilst counting. Eggs boxes are also useful to help children count the objects. Put one object in each section and point as you count.
- Count objects that can not be touched e.g. dropping coins into a tub, clapping hands, jumping.
- Roll a dice. Encourage your child to collect that amount of objects. Roll again. Can they see which group has more?
- Play number games e.g. Bunny Ears. Show me 6 fingers. Can you show me another way?
- Hide a number of small objects under a pot. Can the children count how many are under the pot? Hide the same objects under another container. Can they say how many there are without counting again? Add an object, how many now? Take an object away, how many now?
- Encourage the children to create and spot patterns. Can they make a fruit skewer using a pattern?
- We would recommend watching Numberblocks on BBC. Discuss the numbers and concepts in the story during/after the programme, see if you can use the ideas in your child's play.

My Amazing Maths

### © First4Maths 2021

![](_page_21_Picture_14.jpeg)

![](_page_21_Picture_15.jpeg)

![](_page_21_Picture_16.jpeg)

![](_page_21_Picture_18.jpeg)

# addited

![](_page_22_Picture_1.jpeg)

National Curriculum Objectives: Addition objectives from Addition and Subtraction Strand	Key Skills/ other linked NC Objectives (Place Value)	Key Vocabulary
<ul> <li>Read. Write and interpret mathematical symbols involving addition (+) and equals (=) signs.</li> <li>Represent and use number bonds within 20.</li> <li>Add one-digit and two-digit numbers to 20, including 0.</li> <li>Solve one step problems that involve addition, using concrete objects and pictorial representations and missing number problems.</li> </ul>	<ul> <li>Count forwards to and across 100, beginning with 0 or 1, or from any given number.</li> <li>Count, read and write numbers to 100 in numerals.</li> <li>Given a number, identify one more.</li> <li>Identify and represent numbers using objects and pictorial representations including the number line.</li> <li>Read and write numbers from 1-20 in numerals and words.</li> </ul>	Addition, add, altogether, put together, sum, and, plus, total Equals, equal to, makes more than, less than, fewer, most, least

![](_page_22_Picture_3.jpeg)

# Year 1

Firstly, the children become secure with their understanding of the numbers to 10. We introduce the children to a concept of subitising.

What is subitising?

Subitising is when you are able to look at a group of objects and realise how many there are without counting. This only works with small groups of numbers, as we can only subitise up to 5 things.

The children have access to a wide range of counting equipment, everyday objects, number tracks and number lines, and be shown numbers in different contexts.

They should explore number and the different ways the numbers can be partitioned (representing and using number bonds within 20).

![](_page_23_Picture_5.jpeg)

![](_page_23_Picture_6.jpeg)

![](_page_23_Picture_7.jpeg)

![](_page_23_Picture_8.jpeg)

![](_page_23_Picture_9.jpeg)

We need so many eggs to cook with. I've got 4, how many do you need to get? Let's share out the toys. We've got ten and I've got 4, how many have you got?

![](_page_23_Picture_11.jpeg)

Then we link the children's exploration of number and subitising with written calculations: Read and write the addition (+) and equals (=) signs within number sentences. Specific learning takes place in year 1, through exploration of number, around the equals sign, ensuring children understand it's role within a number sentence and that it does not always just indicate where the answer goes.

![](_page_24_Picture_1.jpeg)

![](_page_24_Picture_2.jpeg)

Primary School

Can you add the amounts of apples and carrots we've bought today? How many altogether?

![](_page_24_Picture_6.jpeg)

![](_page_24_Picture_7.jpeg)

## Interpret addition number sentences and solve missing box problems, using concrete objects and number line addition to solve them: 8 + 3 = = 15 + 4and 14 = 9.

![](_page_25_Picture_1.jpeg)

![](_page_25_Picture_2.jpeg)

When solving mathematical calculations independently, it's really important to use missing numbers and fact families to identify part, part, whole.

Eg. 4, 5 and 9

4+5=95+4=9 9=4+5 9=5+4

![](_page_25_Picture_6.jpeg)

![](_page_25_Picture_7.jpeg)

![](_page_25_Picture_8.jpeg)

## Interpret addition number sentences and solve missing box problems, using concrete objects and number line addition to solve them: 8 + 3 = = 15 + 4 and 14 = 9.

![](_page_26_Figure_1.jpeg)

![](_page_26_Picture_2.jpeg)

![](_page_26_Picture_3.jpeg)

![](_page_26_Figure_4.jpeg)

This starts of with using the concrete resources like a coat hanger with pegs to visually show if you know one fact, what other facts can you see..

e.g. 2 pegs on this side, 3 pegs on this side makes 5 altogether. Now if I flip the hanger over, you can see 3 on this side now and 2 over there but it still makes 5. If I hide one group. I know there is 5 altogether so 5 - 2 means there are 3 hidden and if I hide the other side I have 5-3 means there are 2 hiding.

![](_page_26_Figure_7.jpeg)

![](_page_26_Figure_8.jpeg)

![](_page_26_Figure_9.jpeg)

## Interpret addition number sentences and solve missing box problems, using concrete objects and number line addition to solve them: 8 + 3 = = 15 + 4and 14 = 9. Finding a Missing Number

? + 3 = 5 3 + ? = 5 5

![](_page_27_Picture_2.jpeg)

![](_page_27_Picture_3.jpeg)

![](_page_27_Figure_4.jpeg)

![](_page_27_Figure_5.jpeg)

Then it builds on to using that same skill and the childrens firm foundations of the models and images that they have been using to help them find missing numbers. If I have 3, how many are needed to make 5?

![](_page_27_Figure_7.jpeg)

![](_page_27_Figure_8.jpeg)

## Mental Methods

In Year 1, the children will be taught to use the following mental strategies, and to use jottings to support their methods:

- Counting on in ones
- Re-ordering the numbers when adding e.g. put the larger number first
- Counting on and back in ones, twos and tens
- Looking for pairs of numbers that equal 10
- Partitioning small numbers to bridge tens e.g. 8+3 = 8+2+1
- Partitioning using known facts e.g. double and adjust 5+6 = 5+5+1
- Adding 9 to a number by adding 10 and then subtracting 1

![](_page_28_Picture_10.jpeg)

Asking children to count out pasta for tea Let's count out all of the toys we've been playing with. Can you count back down until there are zero toys out of the box? Count together when pairing socks from the washing. Can you count in 2s?

• Recalling number bonds to 10 and 20 in several different forms (e.g. 9+7 = 16, 16-7=9 and 7=16-9)

Written Methods: Building on the prior learning, and exploration of number outlined above, children should:

Step 1- Use numbered number lines to add, by counting on in ones. Children should be encouraged to start with the larger number.

![](_page_29_Picture_2.jpeg)

Step 2- Once confident using a number line for addition, children should be taught to use their understanding of partitioning numbers and number bonds to bridge tens.

![](_page_29_Picture_4.jpeg)

![](_page_29_Picture_5.jpeg)

![](_page_29_Picture_6.jpeg)

![](_page_29_Picture_7.jpeg)

Community Primary School

![](_page_29_Figure_9.jpeg)

![](_page_30_Picture_0.jpeg)

National Curriculum Objectives: Subtract objectives from Addition and Subtracti Strand

- Read. Write and interpret . mathematical symbols involving subtraction (-) and equals (=) signs.
- Represent and use related subtract facts within 20.
- Subtract one-digit and two-digit numbers to within 20, including 0
- Solve one step problems that involve subtraction, using concrete objects and pictorial representations and missing number problems.

![](_page_30_Picture_6.jpeg)

# SUBTRACTION

# Year 1

tion on	Key Skills/ other linked NC Objectives (Place Value)	Key Vocabulary
tion	<ul> <li>Count backwards from and across 100, beginning from any given number.</li> <li>Count, read and write</li> </ul>	Subtraction, subtract, take away, minus
	<ul> <li>numbers to 100 in numerals.</li> <li>Given a number, identify one</li> </ul>	Halve, half, Difference, dictorce
ve s	<ul> <li>Identify and represent numbers using objects and</li> </ul>	between
	<ul> <li>pictorial representations including the number line.</li> <li>Read and write numbers from 1-20 in numerals and words.</li> </ul>	Less, least, few, fewest

tracks and number lines, and be shown numbers in different contexts. Consolidate their understanding of subtraction practically, showing subtraction on bead strings, using cubes etc.

They should then use practical resources alongside pictures to make the link between concrete and pictorial representations

![](_page_31_Picture_2.jpeg)

![](_page_31_Picture_3.jpeg)

![](_page_31_Picture_4.jpeg)

Primary School

Use pegs on coat hangers, number lines, count numbers out and about (eg. Bus numbers, aisles in the super market, counting out amounts of fruit and veg that you're buying)

- The children begin by having access to a wide range of counting equipment, everyday objects, number

![](_page_31_Picture_9.jpeg)

Read and write the subtraction (-) and equals (=) signs within number sentences. Specific learning should continue, through exploration of number and use of practical resources, around the equals sign, ensuring children understand it's role within a number sentence and that it does not always just indicate where the answer goes.

Interpret addition number sentences and solve missing box problems, using concrete objects and number line subtraction to solve them: 8 - 3 = .0 and 9 = 14 - .0

![](_page_32_Picture_2.jpeg)

Using magnetic numbers, can you add two numbers together? Use toys/pegs on a coat hanger to support practical additions and subtractions. Model how you could start with the answer and then have the = sign before showing which two amounts are added together to make the total. Using kitchen scales or the seesaw at the park, show that the answer and the two parts of the answer could be on either side.

![](_page_32_Figure_5.jpeg)

In year 1, the children will also be introduced to finding the difference. This will be introduced practically, using the language 'find the distance between' and 'How many more?'

![](_page_33_Figure_1.jpeg)

![](_page_33_Picture_2.jpeg)

Using dulpo, lego or similar building blocks, count how many more you'd need to make a tower that is a certain height tall. Count how many more or less your child has than you. Line up the blocks and count how many more your child would need to make both towers the same height.

![](_page_33_Picture_5.jpeg)

![](_page_33_Picture_6.jpeg)

## **Mental Methods**

support their methods:

• Count back in ones

Lindow

Community

Primary School

- Find one less than a number
- Find 10 less than a multiple of 10
- Take away a small number by counting back
- Find a small difference by counting on (using equipment such as building blocks, pegs on a coat hanger, how many more toys would you need to have as many as...)
- Begin to bridge through 10 when subtracting a one-digit number Start to recall subtraction facts up to and within 10 and 20 and understand subtracting 0.

## The children should be taught to use the following mental strategies, and to use jottings to

Lindow Community Primary School children should

### Step 1-

Use numbered number lines to subtract, by counting back in ones, marking the jumps on a number line or number track

## Step 2-

Once confident using a number line for subtraction, children should be taught to use their understanding of partitioning numbers and number bonds to bridge tens.

Written Methods: Building on the prior learning, and exploration of number outlined above,

![](_page_35_Figure_7.jpeg)

![](_page_35_Picture_8.jpeg)

![](_page_35_Figure_9.jpeg)

![](_page_35_Figure_10.jpeg)

![](_page_36_Figure_0.jpeg)

### Year 1 Practising Number and Calculation Skills at Home - Building Fluency -Summer Term Count forwards and backwards from = Count in 1s Now find another way and another and another Count in 10s Spring Term Count in 1s Count in 10s Write in words. is 1 less than 1 less than (Number range up to 50) is 1 more tha 1 more than

Write down 3 numbers in between

Circle the number of cubes needed

and 25

Show 📈 using coins

5

Show 2 efficient jumps you could make to add 9 to

= 20

Number range

up to 20 except 14)

+

![](_page_36_Figure_5.jpeg)