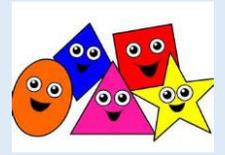




# Mathematics



I never understood maths when I was at school.



I'm no good at maths !

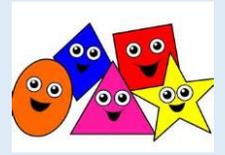
Maths is hard!

Maths is like a foreign language to me.

Maths should be **fun!**



# Maths in the Early Years



More than just learning numbers and shapes

Maths is all around us and part of every day life:

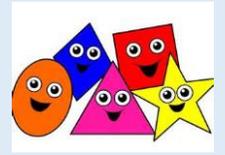
- Counting apples into a bag in the supermarket – how many more are needed, are there too many?
- Working out how many toys will fit in the box
- Sharing out segments of an orange
- Weighing ingredients to make a cake
- Pairing up socks which are the same size
- Counting goals in a game of football – who is winning? How many more goals have they scored?
- Going on a journey – over the bridge, through the tunnel, behind the station ....



Maths should be fun!



# Maths in Foundation Stage



## Using practical situations and routines to develop mathematical understanding

- Register
- Number of children allowed to work in each area
- Entry 'tickets' to different areas
- Talking through the days timetable
- Lining up
- Snack – counting fruit
- Tidying up – sorting into things with similar characteristics



## Number activities in continuous provision – using practical resources, learning through play

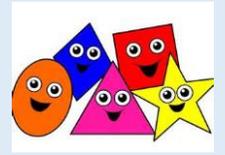
- Making different sized models, whose is taller? How many wheels? How many wheels on each side, how many altogether?
- Playing skittles – how many are knocked over? How many are left?
- Playing turn taking games – who has more cards? How many more?
- Role play – matching cups and saucers – are there enough for everyone, do we need any more?
- Making patterns in small world, painting, peg boards, numicon ...



Maths should be fun!



# Maths in Foundation Stage



## Direct Teaching

### F1

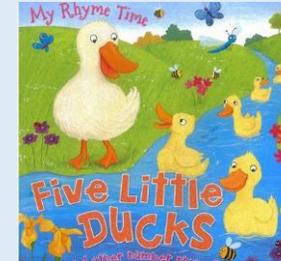
Group sessions focusing on number & Shape Space and Measure

- Often through stories and rhymes
- Using real objects, puppets etc
- Very practical and multisensory

### F2

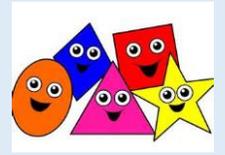
- Whole class teaching
- Numberblocks on CBeebies
- Small groups
- Active participation & multisensory
- Recording in Maths Journals

- Maths should be fun!



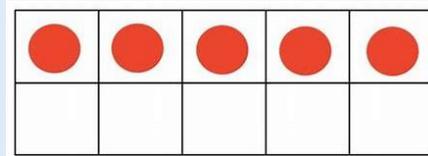
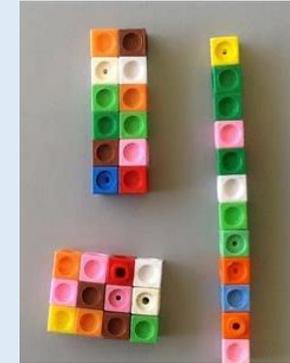


# Maths in Foundation Stage



Seeing numbers visually in different patterns and forms

- Numicon & multilink
- Tens frames
- Subitising [..\..\Subitising to 5 on 10 frame.pptx](#)



Maths should be fun!





# Maths in Foundation Stage

Subitising activity

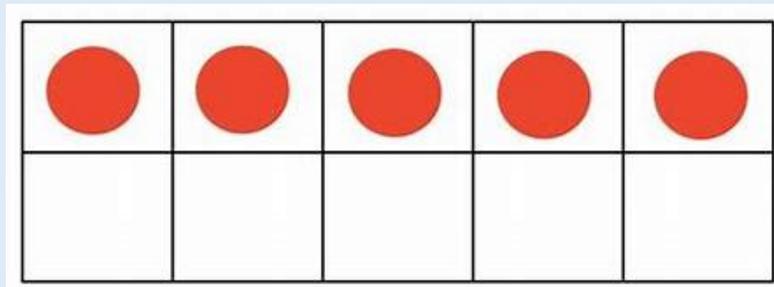
<https://www.youtube.com/watch?v=wRR9LK3zfho>

How many of the numbers can you subitise?

Which were easier or harder?

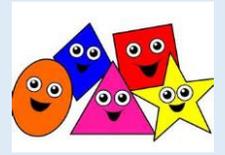
Why do you think that was?

What strategies were you using to subitise?





# Maths in Foundation Stage



## Reasoning & Questioning

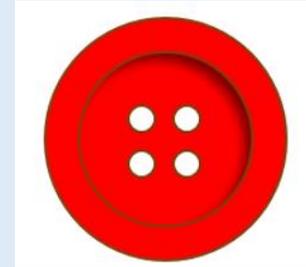
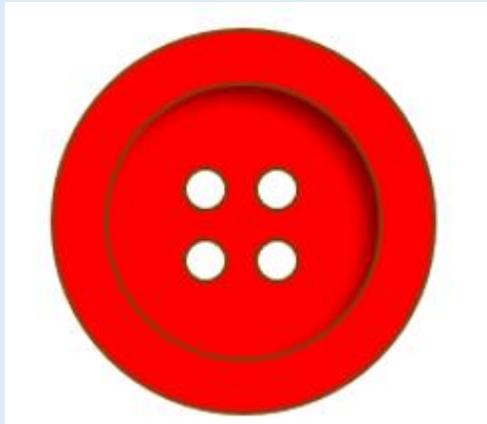
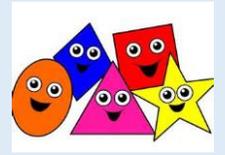
- Asking children to explain what they have done –
  - How do you know?
  - Can you prove it?
  - Can you describe ....?
  
- Open questioning – extends learning and enables children to demonstrate their understanding and identify misconceptions
  - I wonder why.....? I think .....Is that true?
  - What do you notice?
  - What will happen if ...?
  - How can we find out?
  - What is the same / different?
  - Can you find a way to ....?
  - Can you find a different way to .....?
  - How many ways can you ....?



Maths should be fun!



# Maths in Foundation Stage



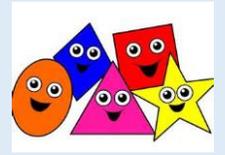
Which button is the odd one out?

Why?

Maths should be fun!



# Maths in Foundation Stage



## Mathematical vocabulary

Number names

Ordinal numbers - first, second...

More, less, fewer

Add, sum, total, altogether

Take away, subtract, leaves

Double, half

2D and 3D Shape names

Sides, corners, straight, curved

Faces, vertices, flat

Long, short, wide, narrow, heavy, light, tall, short

Longer, longest .....

Days of the week, today, tomorrow, yesterday

Before, after, next



# Foundation Stage Curriculum

The EYFS framework is changing in September 2021.

Guidance for the new framework is contained in the recently published Birth to 5 Matters document. This replaces the Development Matters guidance document which has been in place since 2012

In relation to mathematics the document states:

“Effective early mathematics experiences involve seeking patterns, creating and solving mathematical problems and engaging with stories, songs, games, practical activities and imaginative play. Plenty of time is required for children to revisit, develop and make sense for themselves. This is supported by sensitive interactions with adults who observe, listen to and value children’s mathematical ideas and build upon children’s interests, including those developed with their families. It is crucial to maintain children’s enthusiasm so they develop positive self-esteem as learners of mathematics and feel confident to express their ideas.”

# Foundation Stage Curriculum

2012 Framework	2021 Framework
Mathematics is divided into 2 sections: Number and Shape Space & Measure	Mathematics is divided into 2 sections: Number and Numerical Patterns
Development Matters document is organised into ages and stages of development	Birth to 5 Matters document is organised into 6 ranges of development and these have then been linked to typical age spans



## 2012 Framework

### Early Learning Goals:

#### Numbers:

- Children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number
- Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer
- They solve problems, including doubling, halving and sharing

#### Shape, space and measures:

- Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems
- They recognise, create and describe patterns
- They explore characteristics of everyday objects and shapes and use mathematical language to describe them

## 2021 Framework

### Early Learning Goals

#### Number

Children at the expected level of development will:

- 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

Children at the expected level of development will:

- 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.

# Key Early Learning Goal Changes

- Greater emphasis on children developing a 'deep understanding' of number to 10
- Expectation of children being able to subitise and know number bonds up to 5 (including subtraction facts) and know some number bonds and double facts to 10
- No specific mention of shape, space and measure within the ELG but is contained in the Birth to 5 Matters document
- New expectation of being able to count beyond 20 and recognising the pattern of the counting system
- Greater detail on comparing quantities up to 10 - Exploring and representing patterns within numbers up to 10, including odds and evens, double facts and how quantities can be shared equally (

# What does this mean for my child?

- The new curriculum links more closely to the Year 1 curriculum making the transition from EYFS to KS1 smoother.
- Although the new guidance and Early Learning Goals are not statutory until September 2021, many of the main changes have already been incorporated into our EYFS teaching & learning over the last few years.

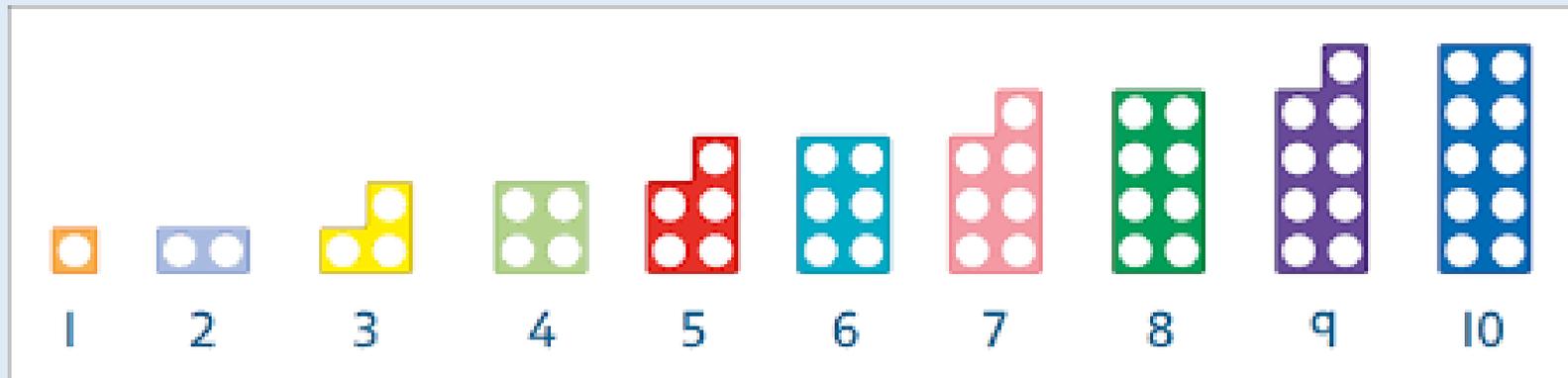
Children are already being encouraged to subitise and to problem solve, explain their reasoning and explore patterns. This means that children moving from F1 to F2 should be well prepared for these changes.



# Current Curriculum



# Number





## Between 30 & 50 months old



I can use some number names and words like “more than” and “fewer than”, when I am playing.

I can recite numbers in order from 1 to 10

I know that numbers tell me how many things there are altogether, like 8 biscuits on a plate.



I use my fingers, pictures or marks to show you how many things there are.

Sometimes I can match a numeral to the right number of things, like “3” to three balls.

I know when there are the same number of things, like 2 cakes, one for you and one for me.

I show I am interested in playing with numbers when I share things out in different ways, like putting my 10 farm animals in 2 fields and then in 3 fields and I am beginning to know there are still 10 animals.

I talk about the numbers I see when we are outdoors.



I am interested in making marks and calling them numbers.



I know that I can count claps and jumps as well as things like apples and buses and dinosaurs.



# Between 40 & 60+ months old



I can recognise the numbers 1 to 5.

I can touch one thing and say the number name at the same time to help me count up to 3 or 4 things.

I can count the number of things on a page in a book or on a birthday card.

I can match the right number to a group of things from 1 to 5 to begin with, and then from 1 to 10.

I can guess how many things I can see in a bucket and then count them to see how close my guess was.

I can tell you which basket or bucket has got “more” or “fewer” things in.



I can put two baskets of things together and tell you how many things I have altogether.

I can tell you what “one more” is when you say a number.

I can tell you what “one more” or “one less” is when you give me a group of up to 5 things, then up to 10 things.

I can use words like “more”, “add”, “less” and “take away”

I can use marks and pictures to show you my counting.



I can use counting to help me solve problems that are important to me, like splitting my sandwich in half to share with my friend.





# Early Learning Goal

End of Foundation 2



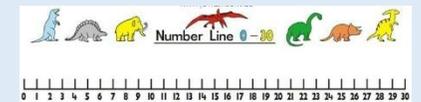
I can use numbers from 1 to 20 in the right order when I am counting things or singing rhymes.

16	18	10
12	14	13
11	17	15

I can tell you what “one more” or “one less” is when you say a number up to 20.

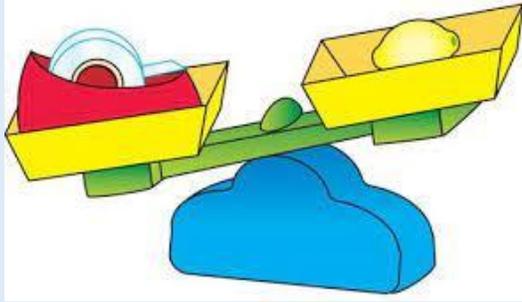
I can add groups of 2 things together and tell you how many I have got altogether and take things away from a group to tell you how many things I have got left.

I can count on or back to find the answer to addition and subtraction calculations.



I can solve problems that are important to me like sharing snacks between me and my friends so that we all have the same number of pieces of fruit.

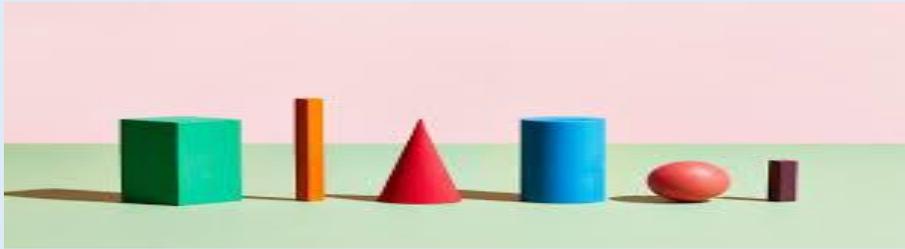


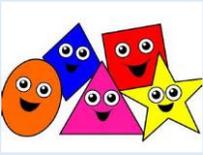


# Current Curriculum



# Shape Space & Measure





## Between 30 & 50 months old



I like lining up shapes and fitting shapes and different things into boxes.



I see shapes when we are outdoors, like square windows and triangle and circle shapes in road signs.



I can use words like “under”, and “next to” to describe where things are.

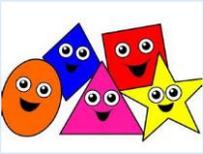


I choose to play with different sorts of building sets and talk about what I am making.

When I am doing puzzles, I look at the missing shapes to see what could fit.



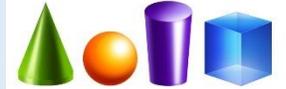
I am beginning to use words like “round” and “straight” when I talk about the shapes I see.



## Between 40 & 60+ months old



I am beginning to use shape names like “circle”, “square”, “cube” and “cylinder”.



When I am playing on an obstacle course I can use words like “under”, “behind”, “on” or “in” to tell you where I am.

I can tell you which thing is “heavy” and which thing is “light” when you give me 2 things.



I can tell you which thing is “full” and which thing is “empty” when I am filling and emptying bottles.



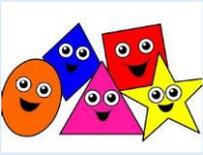
I can use things to make patterns, like buttons and bricks.

I am beginning to use words like “money”, “pound” and “pence” when playing “shop”.



I know the order I put my clothes on.

I can tell you what is happening tomorrow or what happened yesterday. I can tell you what day today is.



# Early Learning Goal

End of Foundation 2



I can use words like “big”, “small”, “heavy”, “light”, “in”, “under”, “pound”, “pence”, “morning” and “night” when I am playing.

I can use everyday language to talk about size, weight, capacity, position, distance, time and money when I am comparing objects and solving problems.

I can make patterns and tell you about them.

I can use mathematical language to describe shapes



# Supporting Maths at Home

- Home Learning Maths Pick & Mix Grids – You can find these on the West Kirby Primary Website / Home Learning / Foundation
- Numbots activities– Your child should have a password for this site in their Learning Journal. Contact a member of staff if you don't have this.
- Use everyday routines and activities to practise maths such as:
  - counting and adding when shopping
  - laying the table for dinner – counting & matching crockery & cutlery
  - counting and comparing steps when on a walk or collecting natural objects to create patterns
  - looking for numbers in the environment – which is the higher / lower number?
  - using the family calendar to look at larger numbers and countdown to events
  - tidying toys – how many will fit in the box? What if you put bigger/smaller toys in? Which is the best box to fit the toys into?
  - sorting toys – how many in each group? Which group has more / fewer? Why have you put those toys together?
  - playing football– how many goals can you score? Did you score more or fewer than the other player? How many more /fewer? What will the score be if you get another goal?
  - playing skittles – great for addition & subtraction
  - playing hopscotch, dominoes, dice or board games such as snakes and ladders – good for recognition of numbers and counting 1 move for each square
  - Singing number rhymes and reading number stories
  - Baking



# Any Questions?

