



Maths at Barnsbury Primary School and Nursery  
Early Years Foundation Stage

# Aims of the session:

- To outline the maths curriculum and end of year expectations
- To share some of the activities in a typical lesson
- To share our ethos toward the teaching of maths (CPA approach, Numicon , WhiteRose)
- To provide suggestions as to how you can support your child at home (including Growth Mindset)



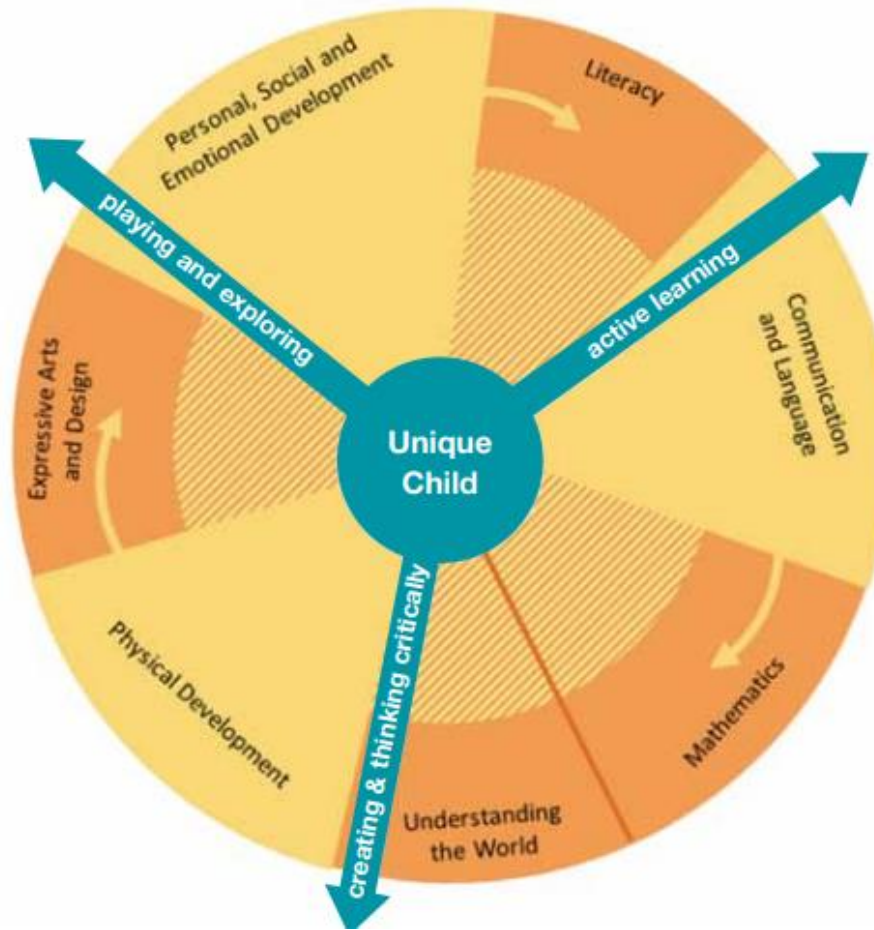
# Development Matters EYFS Framework:

The Unique Child reaches out to relate to people and things through the **Characteristics of Effective Learning**, which move through all areas of learning.

- playing and exploring
- active learning
- creating and thinking critically

Children develop in the context of relationships and the environment around them.

This is unique to each family, and reflects individual communities and cultures.



**Prime** areas are fundamental, work together, and move through to support development in all other areas.

- Personal, Social and Emotional Development
- Communication and Language
- Physical Development

**Specific** areas include essential skills and knowledge for children to participate successfully in society.

- Literacy
- Mathematics
- Understanding the World
- Expressive Arts and Design



# Development Matters EYFS Framework:

Characteristics of Effective Learning
<p><b>Playing and exploring – engagement</b></p> <p>Finding out and exploring Playing with what they know Being willing to 'have a go'</p>
<p><b>Active learning – motivation</b></p> <p>Being involved and concentrating Keeping trying Enjoying achieving what they set out to do</p>
<p><b>Creating and thinking critically – thinking</b></p> <p>Having their own ideas Making links Choosing ways to do things</p>

The characteristics of effective learning will be present throughout all areas covered in the framework including maths. Meaning that learners will form an understanding of maths through both formal teaching and their own **exploratory play and ideas**.

The two maths areas covered in the EYFS are:

- **'numbers'**
- **'shape, space & measure'**.



# End of year expectations:

The end of year expectations or 'Early Learning Goal' suggest a target for learners to achieve by the end of the first school year.

## Number:

### **Early Learning Goal**

**Children count reliably with numbers from one 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 two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.**

## Shape, Space and Measure:

### **Early Learning Goal**

**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.**



# How is maths taught at Barnsbury?:

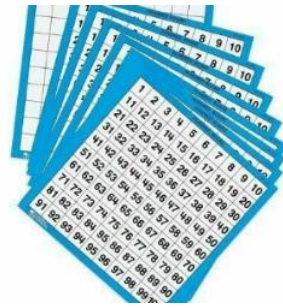
At Barnsbury we aim to provide children with mathematical **experiences** which stimulate the children's enthusiasm and develop their fluency, ability to reason mathematically and their ability to solve problems.

- New concept introduced through current theme e.g '3 Billy Goats'
- Practical exploration through a **concrete, pictorial, abstract** approach.
- Time for children to develop their **fluency** and **verbal reasoning skills**.
- Spotting the maths around us and applying new concepts to everyday life.
- Exploration and discovery through child lead experiences. **Indoors and outdoors**, 'hands on'.



# A typical lesson: Learning practically inside (concrete)

The **'doing'** stage. Brings concepts to life by allowing children to experience and handle physical objects.



100 square



Child lead discovery



Multi-link cubes



Number lines



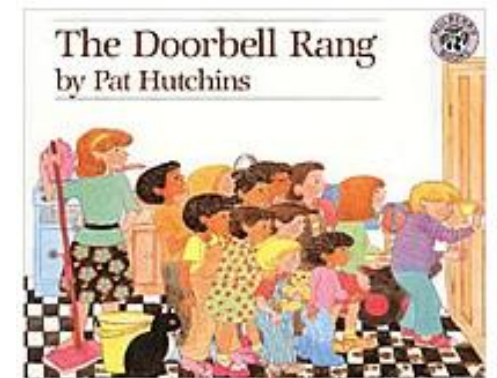
Counters, including buttons, beads and natural objects.



Playdoh



Numicon



Stories and songs



# A typical lesson: Learning practically outside (concrete)

The '**doing**' stage. Brings concepts to life by allowing children to experience and handle physical objects.

- Mud kitchen
- Sandpit
- Tough tray's
- Building and construction
- Role play (shops, money)
- Junk modelling
- Natural materials

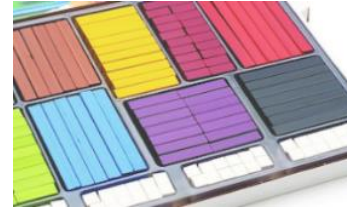




# A typical lesson: Learning practically at school with Numicon

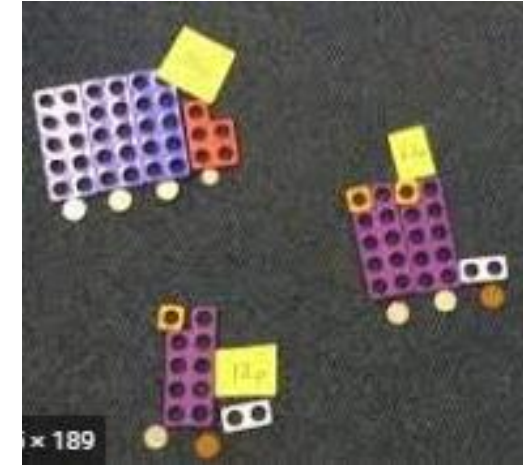
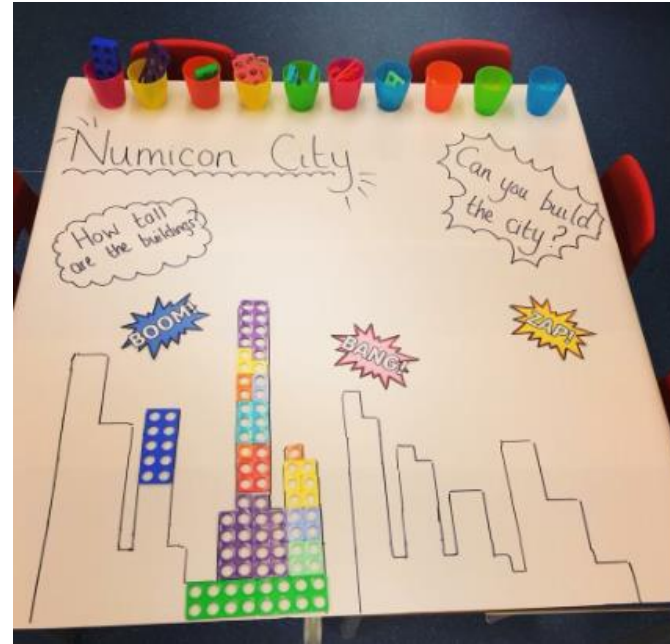
As a Numicon advocate school learners from Nursery to Year 6 use the teaching resource **Numicon**. The Numicon approach is multi-sensory, using apparatus and focusing on Action, Imagery and Conversation.

Numicon is an approach to teaching maths that **helps your child to see connections** between numbers. The program of activities helps students to **understand number relationships, spot patterns and make generalisations**. When Numicon patterns are arranged in order, pupils begin to notice important connections between numbers, for instance that each number is one more than the last and one fewer than the next, odd and even numbers and place value.



# A typical lesson: Learning practically at school with Numicon

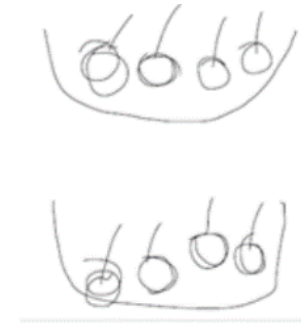
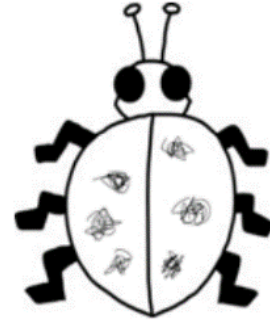
Numicon illustrates number bonds, addition and subtraction, place value, doubling and halving, estimation, division and multiplication. The Numicon Shapes and rods help teachers and students to communicate their ideas. **Students are encouraged to work together on activities which emphasise applying understanding to solve problems.**



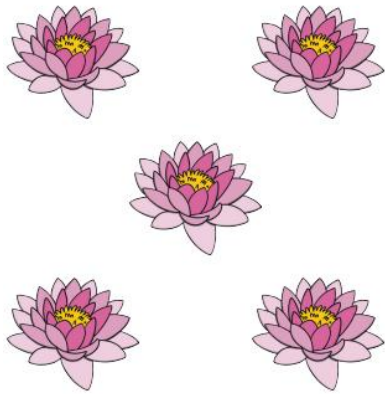
In the EYFS Numicon resources feature in many areas of the classroom. Used in water and sand play and for creating pictures or representations

# A typical lesson: Learning practically at school (pictorial)

The 'seeing' stage. Visual **representations** of concrete objects are used to model problems. Children make a mental connection between the physical object they just handled and the abstract pictures.



Pictures



Number lines

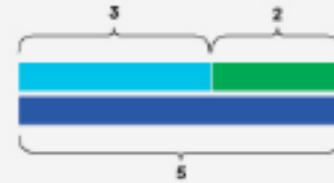
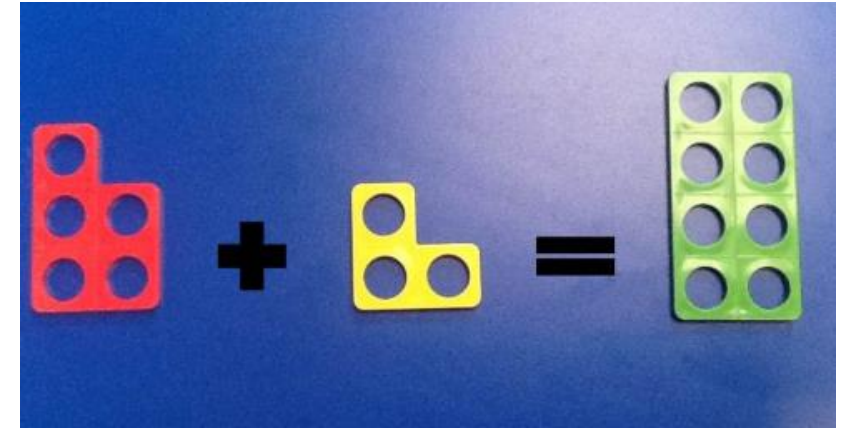


Drawing pictures, footballs, cupcakes etc.



# A typical lesson: Learning practically at school (abstract)

The 'symbolic' stage. Introducing abstract concepts for example, **mathematical symbols**. Using only numbers, notation, and mathematical symbols (for example, +, -, =) to indicate addition and subtraction.



$$3 + 2 = 5$$

Concrete

Pictorial

Abstract

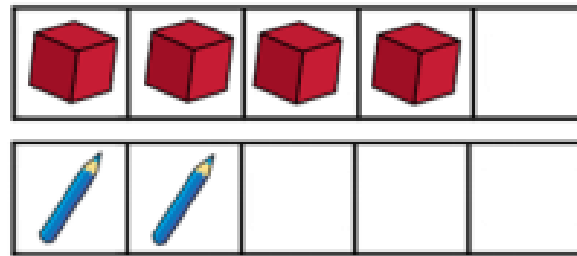
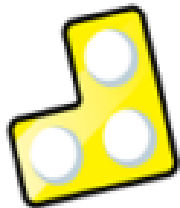


# A typical lesson: Learning practically at school: Varied Fluency & Verbal Reasoning

**Varied Fluency-** Opportunities for practice help them reach an effortless stage of fluency where they can **apply** their knowledge to solve unfamiliar problems. Learners choose efficient strategies, recall facts and double check their answers. They understand that there are many ways to solve a problem.



Ask the children, can you show me two? Can you show me one more than two? Can you show me one more than four? Make a number, can your partner make one more?



# A typical lesson: Learning practically at school: Varied Fluency & Verbal Reasoning

**Verbal reasoning-** Opportunities for solving mathematical problems. Finding the solution, **justifying** their answer and giving proof.

## Sharing at the Teddy Bears' Picnic

The teddy bears are having a picnic. Can you help them share their food so they have the **same** amount each?



## Key questions

What do we need to do first?  
What do I do next/after that/then?  
How many minutes did you take?  
Who was the fastest? Did they take more minutes or less minutes than you?  
How many goals did you score?  
How could you score more goals this time?

## Key questions

How many objects can you feel in the bag?  
How many pebbles did I put in?  
If I add one more how many will there be?  
If I take one out how many will there be?  
How many are in the bag/bucket now?  
How do you know? How can we check?



# White Rose Maths:

EVERYONE CAN DO MATHS:

EVERYONE CAN!

The **White Rose** curriculum is a cumulative curriculum so that once a topic is covered it is met many times again in other contexts.

Together, we're building a whole new culture of deep understanding, **confidence** and **competence** in maths – a culture that produces strong, secure learning and real progress.

We're shaping assured, happy and resilient mathematicians who relish the challenge of maths. They become **independent, reflective thinkers**, whose skills not only liberate them in maths but also support them **across the curriculum**.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Place Value - Numbers to 5 Addition and Subtraction - Sorting Place Value - Comparing groups Addition and Subtraction - Change within 5 Measurement - Time											
Spring	Addition and Subtraction - Numbers to 5 Place Value - Numbers to 10 Addition and Subtraction - Addition to 10 Geometry - Shape and space											
Summer	Geometry - Exploring patterns Addition and Subtraction - Count on and back Place Value - Numbers to 20 Multiplication and Division - Numerical patterns Measurement - Measure											

# White Rose Maths:

'All children can be successful with mathematics, provided that they have opportunities to **explore mathematical ideas in ways that make personal sense to them and opportunities to develop mathematical concepts and understanding.** Children need to know that practitioners are interested in their thinking, respect their ideas, are sensitive to their feelings and value their contributions.'

DCSF (2008)

## Five



### Home Corner

Provide children with party hats, plates, cups etc. to set the home corner ready for a birthday party.

How many guests can come to the party? What number shall we put on the banner?



### Writing Area

Provide children with card to make birthday cards for the birthday party. Can they copy the numeral 5 on to the front of the card? What else could we draw to show 5?

### Enhancements to areas of learning

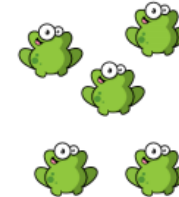
### Outdoor

Provide children with a tray that has a range of natural items in - leaves, conkers etc. Set out buckets that have the numbers 1 - 5 on the front. Can we put the right number of items in each bucket? Can we take a bucket and go and find up to 5 items?



### Water

Act out the different songs we have been singing this week. Provide children with 5 ducks or 5 frogs. Can the children sing the song and act out the movements to count backwards from 5?



In the EYFS maths features in every area of the classroom, indoors and outdoors, from painting to construction.



# Growth mind-set and parental support:

Our children are active participants in their own learning. They are taught to develop skills of self-evaluation and understand the importance of taking responsibility for their own learning and for their actions.

At Barnsbury we: **Believe • Persevere • Succeed**

**Fixed mind-** Believing that intelligence cannot be changed in any meaningful way. People are naturally intelligent, it is fixed.

**VS**

**Growth mind-** Believing that intelligence can be developed over time. Through effort and determination, intelligence can grow.



# Promoting a growth mind set at school and home:

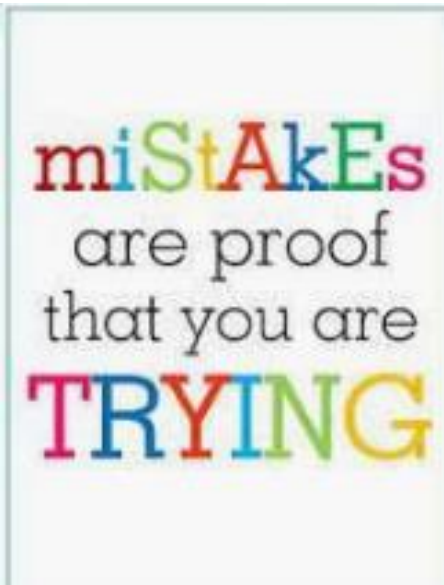
## ‘But I am hopeless at maths’:

-If children hear ‘I can’t do maths’ from parents, family or friends they begin to believe it isn’t important. Don't tell them you are/were hopeless at maths. You were probably not hopeless, and even if you were, that implies to your child, **“I was hopeless at maths, and I'm a successful adult, therefore maths is not important”**

-Children who succeed at maths are usually the ones who **enjoy** it most, so remember – maths is fun, everyone! even if that’s not the way you remember it from your own childhood. We all know how easily children pick up on the things we say, so it’s **vital that you don’t pass on your dislike or fear of maths** by saying things like ‘I was never any good at maths’ or ‘I hated maths at school’ etc...-bbc

## Growth mind set in 1, 2, 3...

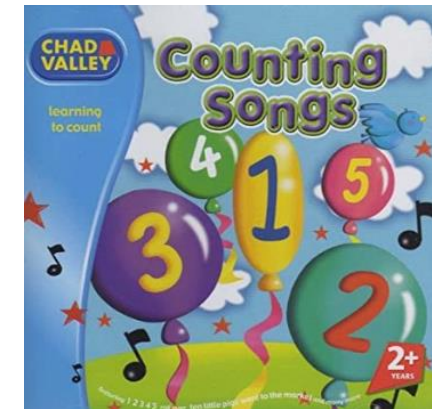
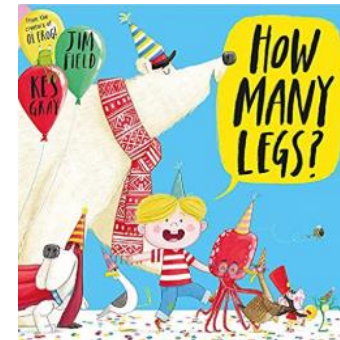
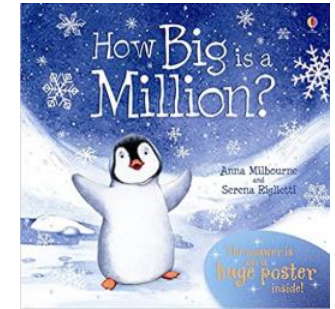
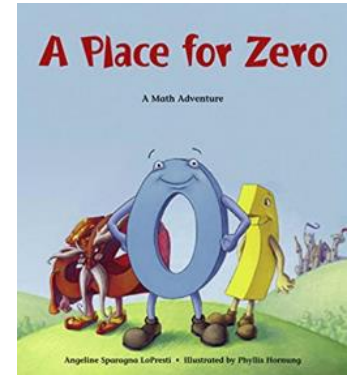
1. View challenge positively
2. The power of yet ‘I can’t do ... YET!’
3. Mistakes are okay, in fact we value them! We can promote them as opportunities for growth, in class we might say ‘good mistake’.



# How can I support my child at home?:

## Maths is all around:

- Cooking/ baking- weighing, measuring, problem solving, double, half
- The food shop- counting, money
- The school run- numbers in the world around us, numbers for a purpose on buses and road signs etc.
- Important dates- months, days of the week, 'sleeps until...'
- Songs- nursery rhymes for counting.
- Time in nature- counting objects at the beach or in the woods.



# How can I support my child at home?:

## Websites for information:

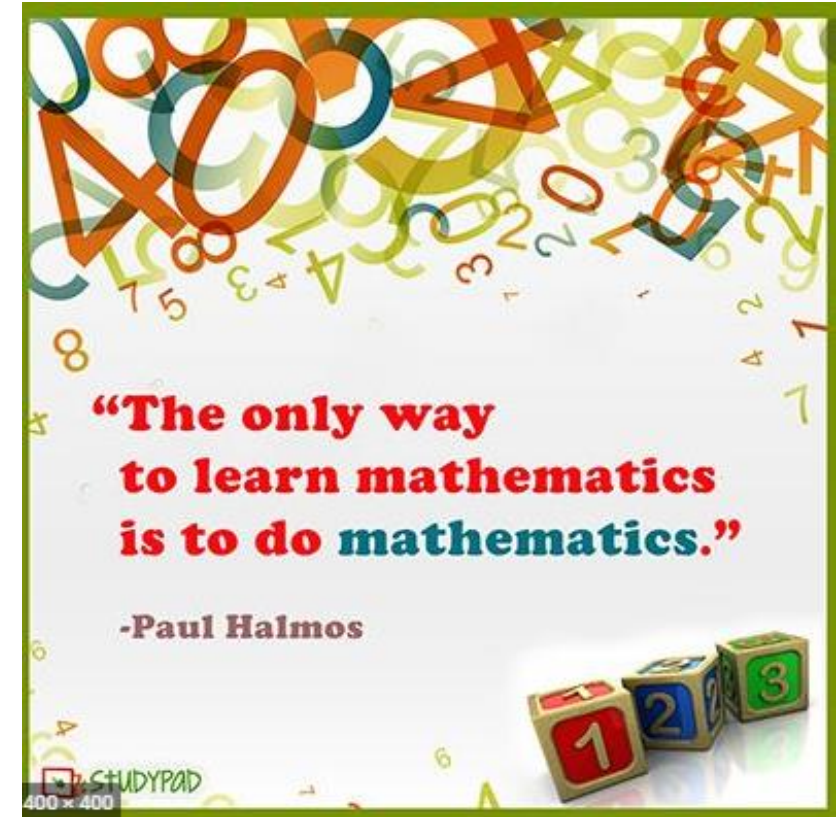
<https://home.oxfordowl.co.uk/maths/>

<https://home.oxfordowl.co.uk/maths/numicon-guide-for-parents/>

<https://www.bbc.co.uk/cbeebies/grownups/help-your-child-with-maths>

<https://www.pacey.org.uk/news-and-views/pacey-blog/2017/november-2017/maths-it%E2%80%99s-an-attitude/>

<https://www.pacey.org.uk/news-and-views/pacey-blog/2015/march-2015/play-by-numbers/>



# How can I support my child at home?:

**Online games and educational television:**

<https://www.topmarks.co.uk/maths-games/5-7-years/counting>

<https://www.bbc.co.uk/cbeebies/shows/numberblocks>

<https://www.bbc.co.uk/cbeebies/topics/numeracy>

<https://www.bbc.co.uk/cbeebies/watch/numtums-numtum1>

<https://www.youtube.com/user/SuperSimpleSongs/videos>

<https://www.youtube.com/watch?v=1NXZnhLCzJo>

®  
**Without mathematics,  
there's nothing you can do.  
Everything around you  
is mathematics.  
Everything around you  
is numbers.**

-Shakuntala Devi



# How can I support my child at home?:

## Games, toys and resources:

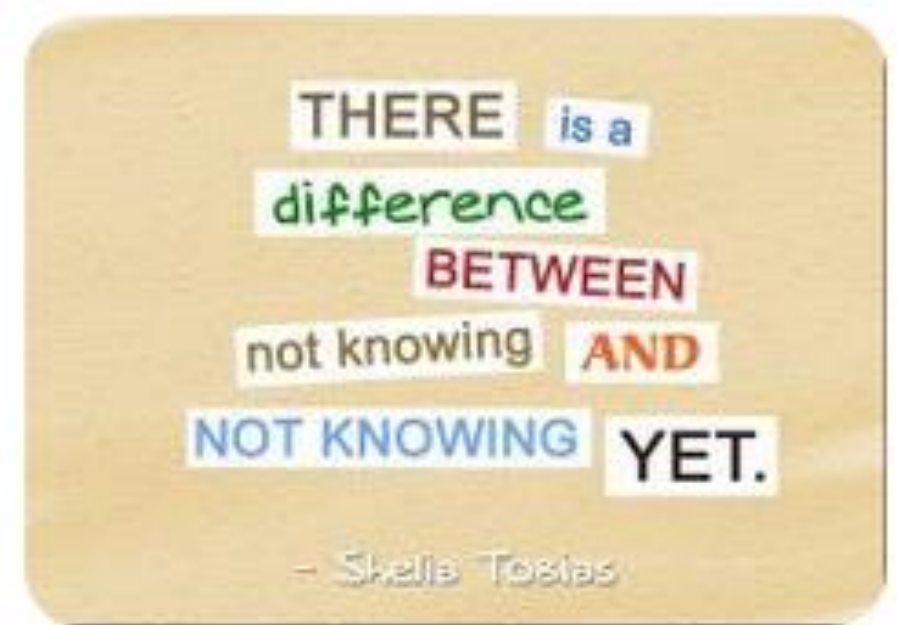
**Numicon shapes 1-10:** [https://www.amazon.co.uk/Numicon-Bag-Shapes-1-10/dp/0198487312/ref=sr\\_1\\_2?dchild=1&keywords=numicon&qid=1592909454&sr=8-2](https://www.amazon.co.uk/Numicon-Bag-Shapes-1-10/dp/0198487312/ref=sr_1_2?dchild=1&keywords=numicon&qid=1592909454&sr=8-2)

**Orchard farm maths games:** [https://www.amazon.co.uk/Orchard-Toys-Catch-Count-Game/dp/B00JPERI16/ref=sr\\_1\\_11?dchild=1&keywords=orchard+farm+maths&qid=1592909555&sr=8-11](https://www.amazon.co.uk/Orchard-Toys-Catch-Count-Game/dp/B00JPERI16/ref=sr_1_11?dchild=1&keywords=orchard+farm+maths&qid=1592909555&sr=8-11)

**Board games with dice:** [https://www.amazon.co.uk/Ravensburger-Gruffalo-Deep-Dark-Wood/dp/B00HFJNHCM/ref=sr\\_1\\_10?dchild=1&keywords=board+game+dice&qid=1592909625&sr=8-10](https://www.amazon.co.uk/Ravensburger-Gruffalo-Deep-Dark-Wood/dp/B00HFJNHCM/ref=sr_1_10?dchild=1&keywords=board+game+dice&qid=1592909625&sr=8-10)

**Number flash cards:** [https://www.amazon.co.uk/Numbers-Flashcards-Collins-Learning-Preschool/dp/0008201064/ref=sr\\_1\\_3?dchild=1&keywords=number+flashcards&qid=1592909781&sr=8-3](https://www.amazon.co.uk/Numbers-Flashcards-Collins-Learning-Preschool/dp/0008201064/ref=sr_1_3?dchild=1&keywords=number+flashcards&qid=1592909781&sr=8-3)

**Printables:** <https://www.twinkl.co.uk/resources/parents/free-resources-parents/maths-free-resources-parents>



Your child is at the very beginning of their maths journey. While developing their understanding at this stage can be extremely valuable, try to make sure their learning does not become a chore, for you or for them.

It doesn't take a great deal of imagination or enthusiasm to turn any part of this early learning into a brief, playful experience. You will also likely find that a 'little-and-often' approach will pay off, and as your child's confidence as a mathematician grows, the more that they will want to engage with maths.

Third Space Learning



Your child's class teacher is there to support you, please ask if you have any further questions.

