Parklands Educate Together

Mathematics in Reception

A guide for parents

Learn Together to Live Together

This guide is designed to inform families of how Maths is taught and how to support at home. It has been created using guides from White Rose Mathematics to support.

This Booklet

The aim of this booklet is to give you, as parents, a better understanding of the key concepts your child will be learning and how they are taught. It provides ideas and resources so you can support your child at home. This booklet is available to download from the curriculum section of our website, with elements hyperlinked so you can easily access the resources.

What is teaching for Mastery?

At Parklands Educate Together we see teaching for mastery in maths as allowing children to gain a deep understanding of maths, allowing them to acquire a secure and long-term understanding of maths that allows them to make continual progress to move onto more complex topics.

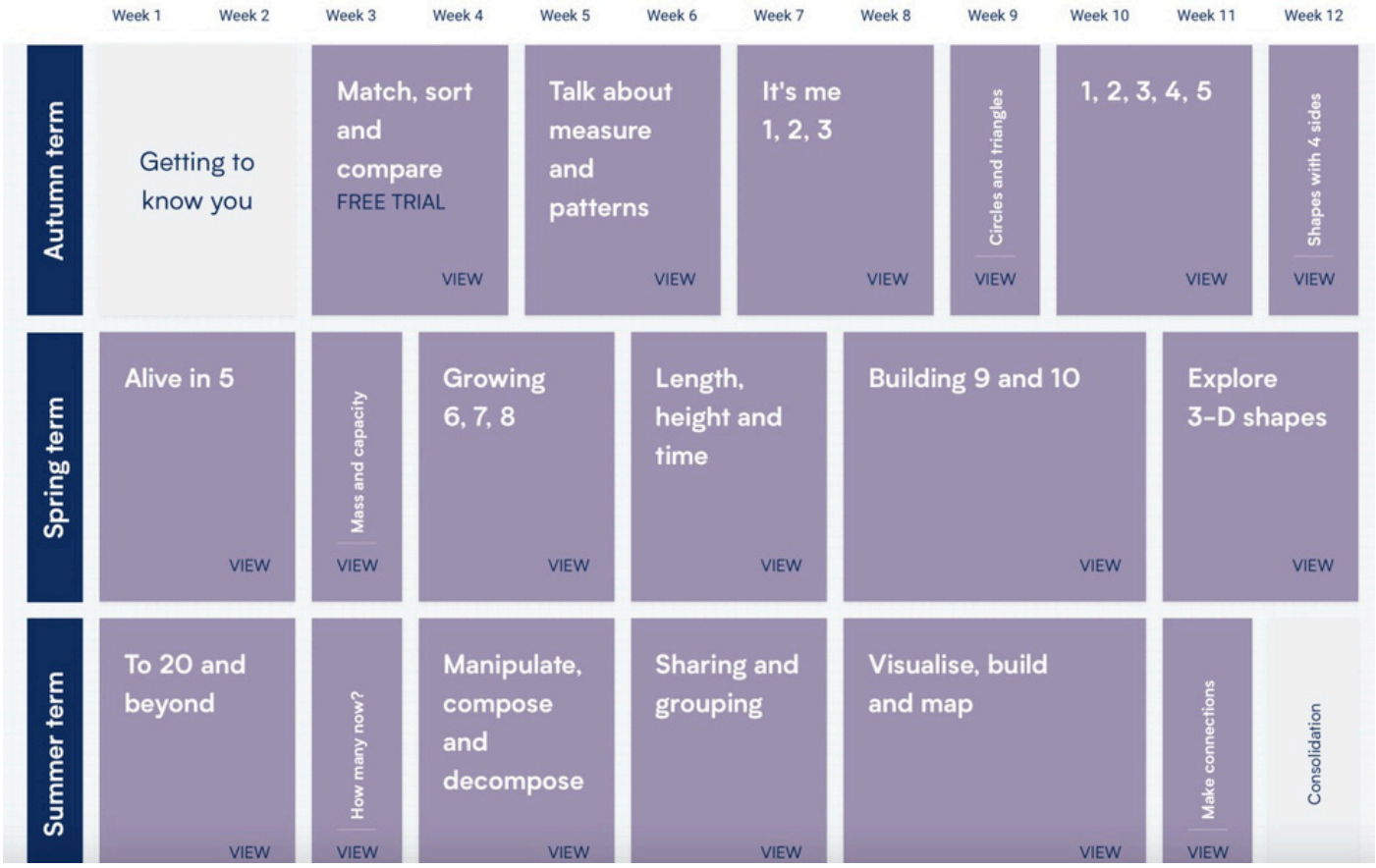
We believe that everyone can do maths and there's no such thing as being a 'good' or 'bad' mathematician. Maths is a subject that everyone can and should be able to perform confidently and competently.

We teach by breaking down maths objectives into the smallest steps, so that every child is secure in every new concept before moving on. We focus upon teaching for fluency, reasoning and problem solving.

What will my child learn in mathematics this year?

At Parklands Educate Together, we use a scheme called White Rose Maths.

Overleaf is an overview of the maths that your child should be learning at any point in the year. Sometimes the class might be a little behind or ahead of the scheme schedule. That's fine; White Rose deliberately build flexibility into their schemes to allow for this. You can check the year group medium term planner on the class page for further information.



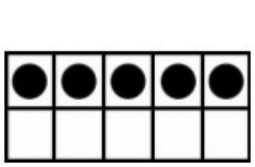
Click the image above to link to the White Rose website. This will give you more information on the small steps that are taught in each of these blocks.

How do we teach for fluency in Reception?
In Reception, we aim to teach so that children have a deep understanding of number.

<u>Representing Numbers</u>

We want to develop children's number sense so that they really understand the number rather than just recognising the numeral. It is good to know that seeing '5' means five, but we want to dig deeper so that children really get to know the 'five-ness' of five.

Children need to understand that numbers can be represented in many ways, not just as a written numeral. We use many different objects and pictures to show that numbers can be represented in lots of ways.






Children sometimes need lots of practise to recognise numbers in different forms. We play matching games and encourage children to recognise and make different amounts in our indoor and outdoor areas.

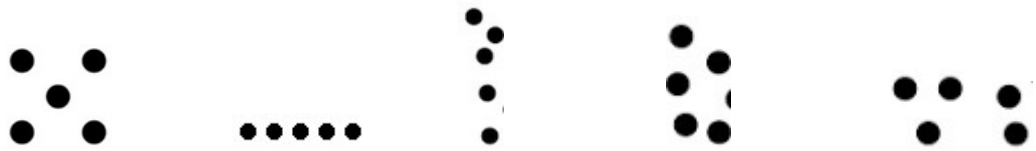
Counting

When counting, children need to understand that

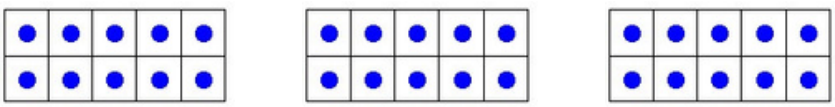
- That we need to say one number for each object counted (touch counting).
- The final number we say is how many altogether. Some children continue to count after they have reached the final object as they don't connect the numbers they are saying to the objects in front of them.
- That we can count objects in any order and the total stays the same.

Recognising amounts

Another skill that is very important is recognising small amounts without the need to count them. Initially this should be by using concrete objects such as those shown on the previous page but as children progress, allowing them to see groups of dots in different arrangements helps them to mentally 'see' how many objects are there without needing to count. This is a very important skill when children begin to add and subtract. Using dice is a good way to practise this skill before moving onto objects in different arrangements.



Understanding that the total stays the same even when the objects move
When children first start to use numbers, they often do not understand that if we move objects into another arrangement the total stays the same. We practise this with many different types of objects but a useful tool is using a tens frame to be able to move counters around.



How do we teach Reasoning in Reception?

Reasoning in maths helps children to be able to explain their thinking, therefore making it easier for them to understand what is happening in the maths they are doing. It helps them to think about how to solve a problem, explain how they solved it and to think about what they could do differently. In Reception, some examples of reasoning are:

- true and false statements e.g. adding one to a number always makes it smaller
- spotting incorrect maths e.g. 1, 2, 3, 4, 6, 5, 7, 8, 9, 10
- explaining how we know something or how we worked it out

How do we teach Problem Solving in Reception?

Problem solving in maths allows children to use their maths skills in lots of contexts and in situations that are new to them. It allows them to seek solutions, spot patterns and think about the best way to do things rather than blindly following maths procedures.

In Reception, problem solving might include:

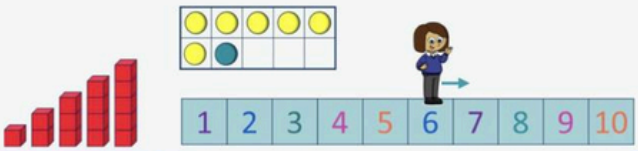
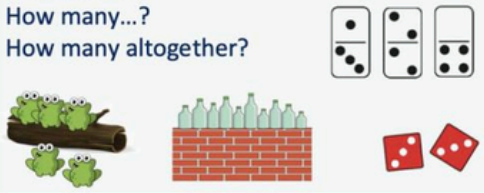
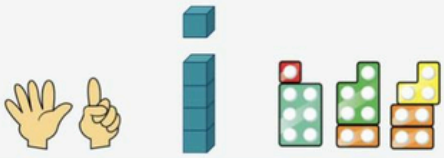
- spotting, following and creating patterns
- estimating amounts of objects
- predicting how many times they can do something in a minute
- sharing objects between different groups – particularly when the amount of groups change and the amount of objects stays the same
- finding different ways to split numbers eg 5 could be 5+0, 4+1, 3+2

Progression of Skills

White Rose is a very carefully planned scheme of work. Over the next few pages, you can see an overview of how key skills are taught.

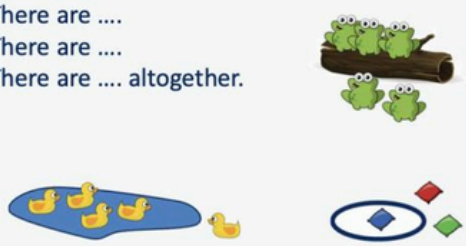
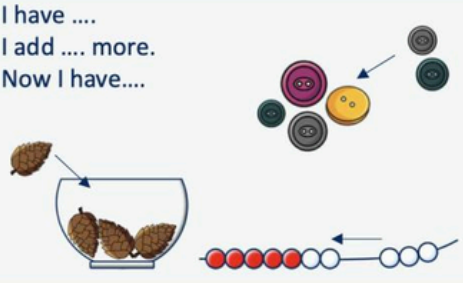
Addition

White Rose MATHS

Reception	• Have a deep understanding of numbers 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 and some number bonds to 10, including double facts.
Progression of skills	**Key representations**
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it? 
1 more Continue to link to stories, songs and rhymes.	1 more than ... is ... 
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many...? How many...? How many altogether? 
	How many ways can you make...? 

Addition

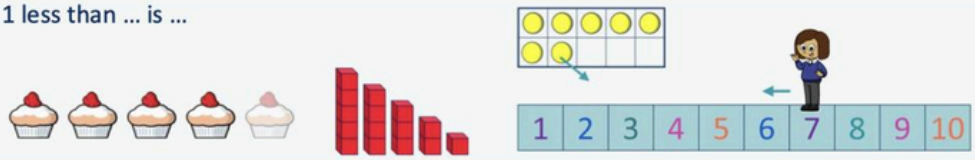
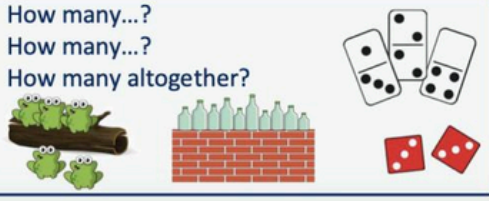
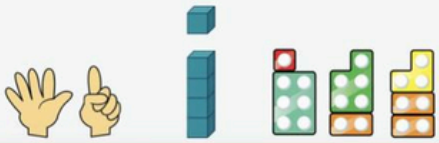
White Rose MATHS

Progression of skills	Key representations	
Combine 2 groups 2 groups are combined to find the total.	There are .... There are .... There are .... altogether. 	.... and .... make .... 
Add more A quantity is increased.	First... Then.... Now.... 	I have .... I add .... more. Now I have.... 

Subtraction

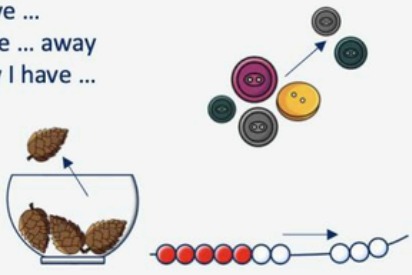
White Rose MATHS

Reception	• 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 (and some subtraction facts) and some number bonds to 10, including double facts.

Progression of skills	Key representations
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it? 
1 less Continue to link to stories, songs and rhymes.	1 less than ... is ... 
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many...? How many...? How many altogether?  How many ways can you make...? 

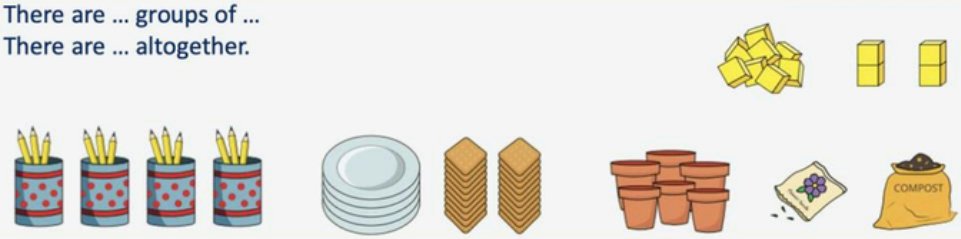
Subtraction

White Rose MATHS

Progression of skills	Key representations	
Partition Using objects, explore different ways to partition a number into 2 or more parts.	There are ... altogether. I can see ... here and ... there. 	... and ... make ... 
Take away A quantity is reduced.	First... Then... Now... 	I have ... I take ... away Now I have ... 

Multiplication

White Rose MATHS

Reception	• 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 and some number bonds to 10, including double facts. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Progression of skills	**Key representations**
Double to 10 Prompt children to notice that double means twice as many and to notice that there are two equal groups.	Double … is … … is double … 
Make equal groups Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are … groups of … There are … altogether. 

Division

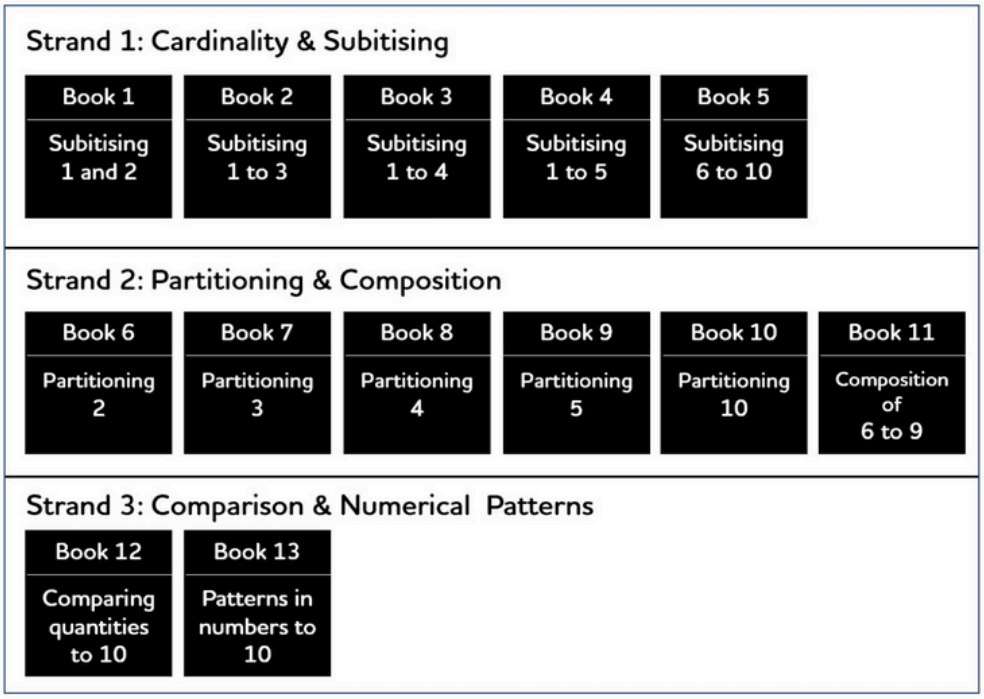
White Rose MATHS

Reception	• 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 and some number bonds to 10, including double facts. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Progression of skills	**Key representations**
Sharing Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).	There are … altogether. They are shared equally between … groups. 
Grouping Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are … groups of … There are … altogether. 

Fluency Friday

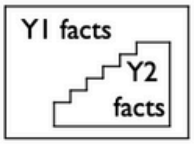
Every Friday across the school, each year group takes part in Fluency Friday wherein children are encouraged to practice the foundational skills that make up mathematic fluency. For Reception, we focus on explicit teaching in whole class settings to enable fluent recall in later year groups. We want all our children to love maths and succeed, whole class practice using a range of exercises and real-world play embeds this deeply and intentionally.

We aim to create a strong bedrock in EYFS. See below how their understanding flows into the further learning in KS1.



EYFS focus

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



Adding 1

Adding 2

Bonds to 10

Adding 0

Doubles

Near doubles

KS1 focus

How to Support your child

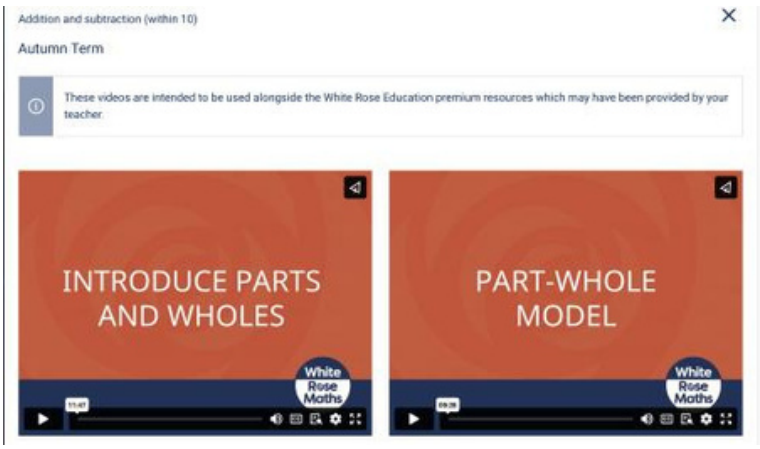
There are a wide range of materials and resources available to support your child with their maths at home.

The medium term planner on the class page will support you with the current focus. Below are some ideas to support, as well as other resources that can be used if your child is finding an aspect of maths tricky. Pictures below are hyperlinked for ease.

You may also find the 'Maths with Michael – Parent Guide' videos and downloadable parent guides on the White Rose website useful. These give a broad overview for parents of place value, subtraction, multiplication, division, fractions and algebra.

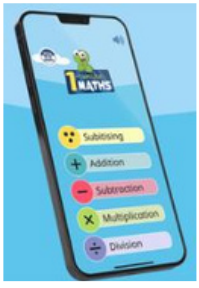
White Rose Home Learning Videos

These are provided for each small step and are 6 – 8 minutes long. These can be useful to reconsolidate learning that your child may find tricky. Clicking on the individual block will then show you the different videos.



White Rose One-MinuteApp

This app is great for short one-minute daily practice on adding, subtraction and subitising skills. It is free to download on iOS, amazon and android devices.



Other ideas

We have listed some concepts that are taught throughout the Reception year, with ideas of activities to support.

Example Statements	Ideas of Activities
Say one more and one less than any given number to 10.	Counting a number of sweets, eating one and saying 1 fewer/1 less. Couting objects – what if I had one mor? Recognising numerals, which number comes before? Which number comes after? -Ordering numerals -Create a number track to 10 – both players start with a counter at 5. Roll a +1, -1 dice or spinner. Who will get to 10 first? Busy Things games: Islands – more or fewer?/Rollercoaster – more or less?/rollercoaster - ordering
I can say my number bonds up to 5. (Pairs of numbers that make 1, 2, 3, 4, 5) I can say my number bonds of 10. (Pairs of numbers that make 10)	Finger buddies – Show a number of fingers, and your partner finds the others that make 5. Use printout of numicon shapes to explore different ways of making numbers Busy Things: Number Jump/ Hungry Chicks/ Rocker Shocker
I can explore the different ways that can make up numbers up to 10.	Adding different types of materials or toys together. Board games: roll two dice and add the total Show different amounts of fingers on hands and add together Busy Things games: Number Jump/ Playground/ Miner Birds/ Hungry Chicks
I know my double facts up to double 5.	Sharing orange segments/sweets out between two or more people.

I can explore how to share quantities of objects to 10 equally.	Can you put the same number of bricks in each tub? I need 5 bricks to build a tower. How many would I need if I built 2 towers? So double 5 is 10. Baking – can your child help you to double the ingredients to make twice as much? Sharing picnic food out. Busy Things: Islands – equal numbers/ Rocker Shocker
I can count objects, actions and sounds	-Playing copy my rhythm games with clapping hands, tapping toes etc. -Counting coins dropped into a tin. Counting cars, sticks, tins of beans, puddles etc. -Board games (counting number of spaces) Busy Things: More or Fewer/ How Many/ Islands – Total Number/ Action Time/ Tree House/ Balloon Tree/ Rollercoaster – ordering/Number Gym
I can subitise up to 5 objects.	Board Games – dots on dice Find the number – flashcards with different representations of 5 (e.g. dice, numicon, objects) Busy Things: Sit Down/ Balloon Tree/Number Jump/ Fun two, three, four
I can compare numbers using the terms 'fewer', 'equal', 'more' when describing amounts of objects. I can compare numbers using the terms 'greater than', 'less than' and 'equal to'	Grab two handfuls of items – and place onto different plates. Can you tell which plate has fewer items, which plate has more? Busy Things: More or Fewer

I can count objects and match to the correct numeral	Pairing activities matching pictures of objects and numerals Flashcards once a day for 30 seconds Spotting numbers on doors/ number plates Busy Things: Islands - How Many/ Islands – Total Number/ Action Time/ Tree House/ Balloon Tree/ Rollercoaster - ordering
I can explore and show even and odd numbers to 10	Pairing socks together – Do they have a pair? If there is one it is odd, if there are two it is even. Draw numicon shapes, which numbers have an extra circle at the top? Can you sort into two groups? Roll a dice and put this number of counters into holes in an ice-cube tray. Does every counter have a pair?

<u>Numberblocks</u>

Numberblocks is a fantastic programme available on BBC iPlayer. Itreally supports children's early knowledge of number.