



At West Butterwick CE Primary School, the aims of mathematics are;

- To promote confidence and competence with numbers and the number system.
- To promote enjoyment and enthusiasm for learning through practical and creative activities, exploration and discussion.
- To develop the ability to solve problems through decision-making and reasoning, both verbally and written, in a range of contexts.
- To develop a practical understanding of the ways in which mathematical information is gathered and presented.
- To understand that some facts need to be learnt by heart.
- To explore features of shape and space, and develop measuring skills in a range of contexts.
- To understand the importance of mathematics in everyday life.

We use the White Rose Maths Scheme across the school to enable us to achieve our aims. Within the Reception year, the children spend a great amount of time truly understanding numbers and being able to manipulate them. We teach with a mixture of whole group inputs, adult led activities and child initiated activities both indoors and outdoors. These activities include exploring numbers, shapes, space and measures through counting, drawing, painting, singing rhymes, playing games, problem solving, and creating patterns.

Below is some information that you may find useful.

Guidance for Teachers

Reception

#MathsEveryoneCan

Updated September 2021

White
Rose
Maths

Reception Guidance



Our guidance underpins the Educational Programme for Mathematics (DfE March 2021) and will support you to deliver a curriculum that embeds mathematical thinking and talk.

Our overviews support the ethos of the EYFS whilst at the same time enabling teachers to create a mathematically rich curriculum. Additionally, it allows for key mathematical concepts to be revisited and developed further across the year.

The guidance has been divided into ten phases and provides a variety of opportunities to develop the understanding of number, shape, measure and spatial thinking.

The Counting Principles

Following research from Gelman and Gallistel in 1978, it is vital that teachers understand the five counting principles. (Gelman, R. & Gallistel, C. (1978) *The Child's Understanding of Number*. Cambridge, MA. Harvard University Press.)

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The one-one principle. This involves children assigning one number name to each object that is being counted. Children need to ensure that they count each object only once ensuring they have counted every object.

Children will sometimes count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count saying one number name per object. This will also help to avoid children counting more quickly than they touch the objects which again shows they have not grasped one-one correspondence.



1



2



3



4



5

The Counting Principles



2

The stable-order principle. Children understand when counting, the numbers have to be said in a certain order.

Children need to know all the number names for the amount in the group they are counting. Teachers can therefore encourage children to count aloud to larger numbers without expecting them to count that number of objects immediately.

3

The cardinal principle. Children understand that the number name assigned to the final object in a group is the total number of objects in that group.

In order to grasp this principle, children need to understand the one-one and stable-order principle. From a larger group, children select a given number and count them out. When asked 'how many?', children should be able to recall the final number they said. Children who have not grasped this principle will recount the whole group again.

The Counting Principles



4

The abstraction principle. This involves children understanding that anything can be counted including things that cannot be touched including sounds and movements e.g. jumps.

When starting to count, many children rely on touching the objects in order to count accurately. Teachers can encourage abstraction on a daily basis by counting claps or clicks. They can also count imaginary objects in their head to encourage counting on, this involves the children visualising objects.

5

The order-irrelevance principle. This involves children understanding that the order we count a group of objects is irrelevant. There will still be the same number.

Encourage children to count objects, left to right, right to left, top to bottom and bottom to top. Once children have counted a group, move the objects and ask children how many there are, if they count them all again they have not fully grasped this principle.

Key Language for Teachers



Cardinal - The number that indicates how many there are in a set.

Classification - The identification of an object by specific attributes, such as colour, texture, shape or size.

Conservation (of number) - The recognition that the number stays the same if none have been added or taken away.

Numeral - The written symbol for a number; e.g. 3, 2, 1

Ordinal - A number denoting the position in a sequence e.g. 1st, 2nd, 3rd, etc or page 1, page 2, page 3...

Partition - Separate a set into two or more subsets e.g. Partition a set of socks into plain and patterned.

Subitise - Instantly recognise a small quantity, without having to count how many there are.

Number - Number can be:

- a count of a collection of items e.g. three boxes,
- a measure e.g. of length or weight, or
- a label e.g. the number 17 bus

Quantity - The amount you have of something e.g. a cup of flour, three boxes, half an hour.

Overview



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	Getting to Know You			Just Like Me!			It's Me 1 2 3!			Light and Dark			Consolidation	
Spring	Alive in 5!			Growing 6, 7, 8			Building 9 and 10			Consolidation				
Summer	To 20 and Beyond			First Then Now			Find My Pattern			On The Move				

Autumn



Week 1	Week 2	Week 3		Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<p>Getting to Know You</p> <p>Opportunities for settling in, introducing the areas of provision and getting to know the children.</p> <p>Key times of day, class routines. Exploring the continuous provision inside and out. Where do things belong? Positional language.</p>			Phase	Just Like Me!			It's Me 1 2 3!			Light and Dark		
			Number	Match and Sort Compare Amounts			Representing 1, 2 & 3 Comparing 1, 2 & 3 Composition of 1, 2 & 3			Representing Numbers to 5. One More and Less.		
			Measure, Shape and Spatial Thinking	Compare Size, Mass & Capacity Exploring Pattern			Circles and Triangles Positional Language			Shapes with 4 Sides. Time		

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Phase	Alive in 5!			Growing 6, 7, 8			Building 9 & 10		
Number	Introducing zero Comparing numbers to 5 Composition of 4 & 5			6, 7 & 8 Combining 2 amounts Making pairs			Counting to 9 & 10 Comparing numbers to 10 Bonds to 10		
Measure, Shape and Spatial Thinking	Compare Mass (2) Compare Capacity (2)			Length & Height Time			3d-shapes Patterns		

Summer



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Phase	To 20 and Beyond			First Then Now			Find my Pattern			On the Move		
Number	Building Numbers Beyond 10 Counting Patterns Beyond 10			Adding More Taking Away			Doubling Sharing & Grouping Even & Odd			Deepening Understanding Patterns and Relationships		
Spatial Thinking	Spatial Reasoning (1) Match, Rotate, Manipulate			Spatial Reasoning (2) Compose and Decompose			Spatial Reasoning (3) Visualise and Build			Spatial Reasoning (4) Mapping		