Guidance
Schemes of learning
Nursery

White Rose MATHS

The **White Rose Maths** schemes of learning

Nursery guidance

The Nursery maths scheme of learning covers the DfE statutory framework of the EYFS and the Educational Programme for mathematics. It will support you to deliver a curriculum that embeds early mathematical skills, thinking and talk.

Our scheme supports the ethos of EYFS, ensuring a hands-on, practical approach to learning, whilst at the same time enabling practitioners to create a mathematically-rich curriculum. Additionally, the Nursery maths scheme revisits key mathematical concepts and develops them throughout the year.

The scheme has been divided into 24 blocks and provides a variety of opportunities to develop the understanding of number, shape, measure, and spatial thinking. These blocks are not divided into terms as they can be started at any time of the year. However, we would recommend following the progression in sequence.

Teaching and learning

Our Nursery maths scheme supports you in teaching key aspects of the EYFS maths curriculum. The scheme supports the teaching of early maths skills through both adult-led and continuous provision activities. The focus is on introducing the foundations of mathematics through key practical experiences. The scheme builds on early mathematical concepts slowly and develops these throughout the year, so children gain a deep understanding.

The counting principles are threaded throughout the scheme. It is important that practitioners are familiar with and can support children in gaining an understanding of the counting principles.

1. The one-to-one principle.
2. The stable-order principle.
3. The cardinal principle.
4. The abstraction principle.
5. The order-irrelevance principle.

These principles are covered in more detail on the following pages.

Nursery – Notes and Guidance

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.)

1 The one-to-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-to-one correspondence.

1 2 3

Nursery – Notes and Guidance

The Counting Principles

2 The stable-order principle.

Children understand that, 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-to-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.

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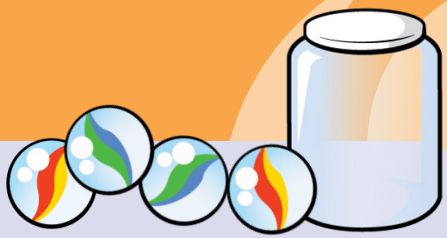
Nursery – Notes and Guidance



The Counting Principles

4 The abstraction principle.

This involves children understanding that anything can be counted, including things that cannot be touched, such as 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 in which 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.

Yearly overview

Overview with suggested weekly timings. Block titles are clear and show the progression through comparison, shape, space and measure, pattern, counting and subitising.

Yearly overview

The yearly overview provides an at-a-glance progression of the mathematical areas and concepts throughout the nursery scheme. The 24 blocks can be accessed at any stage of children starting nursery. Timings are flexible to allow you to start the progression where developmentally appropriate as well as with children starting nursery in different intakes through the year or longer.

Comparison 1	Shape, space and measure 1	Pattern 1	Counting 1	Counting 2	Subitising 1
More than, fewer than, same	Explore and build with shapes and objects	Explore repeats	Hear and say number names	Begin to order number names	I see 1, 2, 3
Pattern 2	Shape, space and measure 2	Subitising 2	Counting 3	Shape, space and measure 3	Pattern 3
Join in with repeats	Explore position and space	Show me 1, 2, 3	Move and label 1, 2, 3	Explore position and routes	Explore patterns
Counting 4	Shape, space and measure 4	Subitising 3	Comparison 2	Pattern 4	Shape, space and measure 5
Take and give 1, 2, 3	Match, talk, push and pull	Talk about dots	Compare and sort collections	Lead on own repeats	Start to puzzle
Pattern 5	Subitising 4	Counting 5	Pattern 6	Counting 6	Comparison 3
Making patterns together	Make games and actions	Show me 5	My own pattern	Stop at 1, 2, 3, 4, 5	Match, sort, compare

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Activities and symbols

An activity introduced by reading a fiction or non-fiction book.

An activity which includes a rhyme or musical instrument.

An activity that could be completed outside.

Teacher guidance

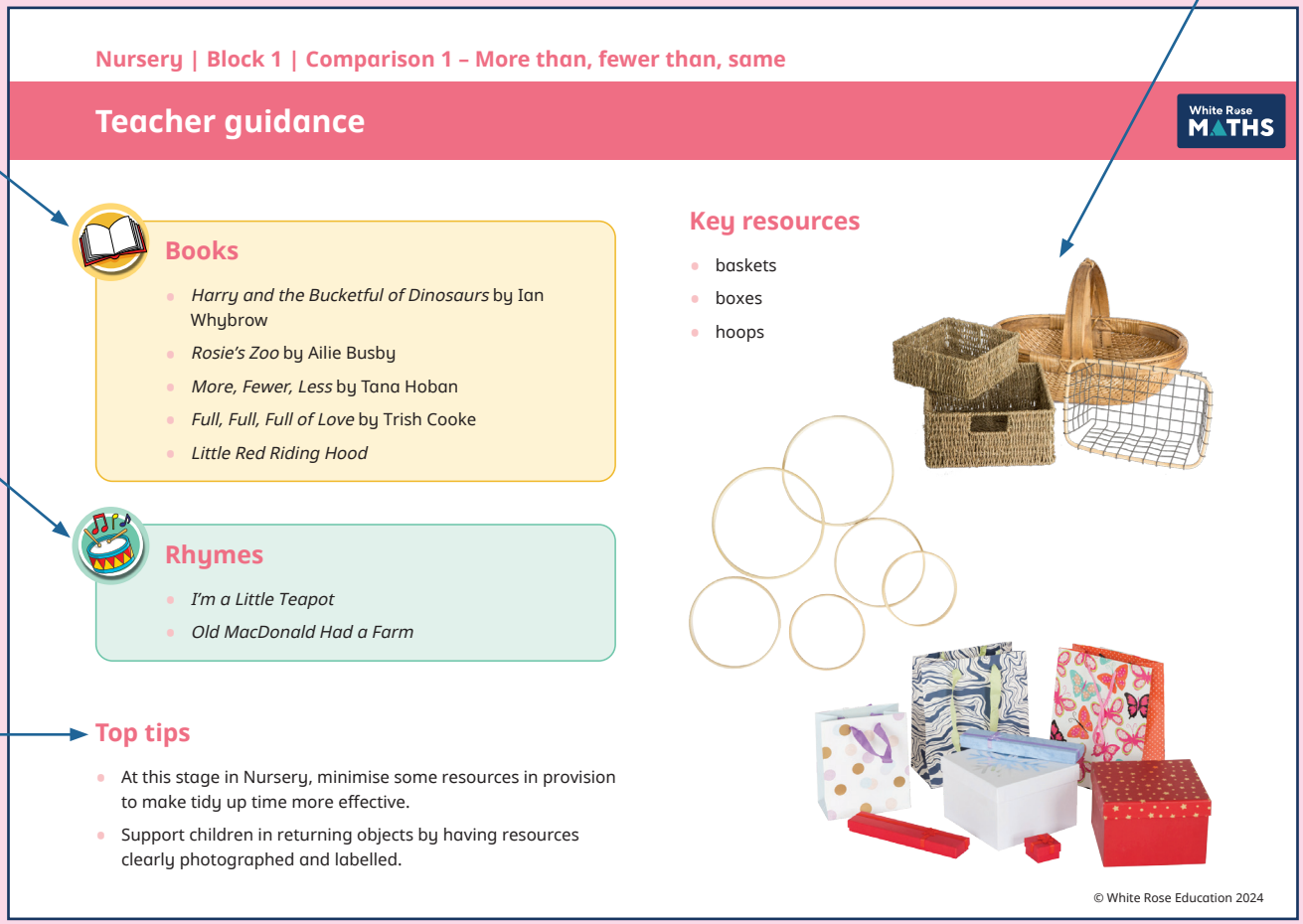
Teacher guidance pages are provided at the start of each block of learning.

Suggested resources that will support children's learning throughout the block, although other resources can be used.

A suggested list of books that can be used to support and spark learning within the block.

A suggested list of rhymes that can be used to introduce or engage children in the learning within the block.

Useful ideas to consider when teaching this block to give a practical helping hand.



Nursery | Block 1 | Comparison 1 – More than, fewer than, same

Teacher guidance

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Books

- *Harry and the Bucketful of Dinosaurs* by Ian Whybrow
- *Rosie's Zoo* by Ailie Busby
- *More, Fewer, Less* by Tana Hoban
- *Full, Full, Full of Love* by Trish Cooke
- *Little Red Riding Hood*

Rhymes

- *I'm a Little Teapot*
- *Old MacDonald Had a Farm*

Top tips

- At this stage in Nursery, minimise some resources in provision to make tidy up time more effective.
- Support children in returning objects by having resources clearly photographed and labelled.

Key resources

- baskets
- boxes
- hoops

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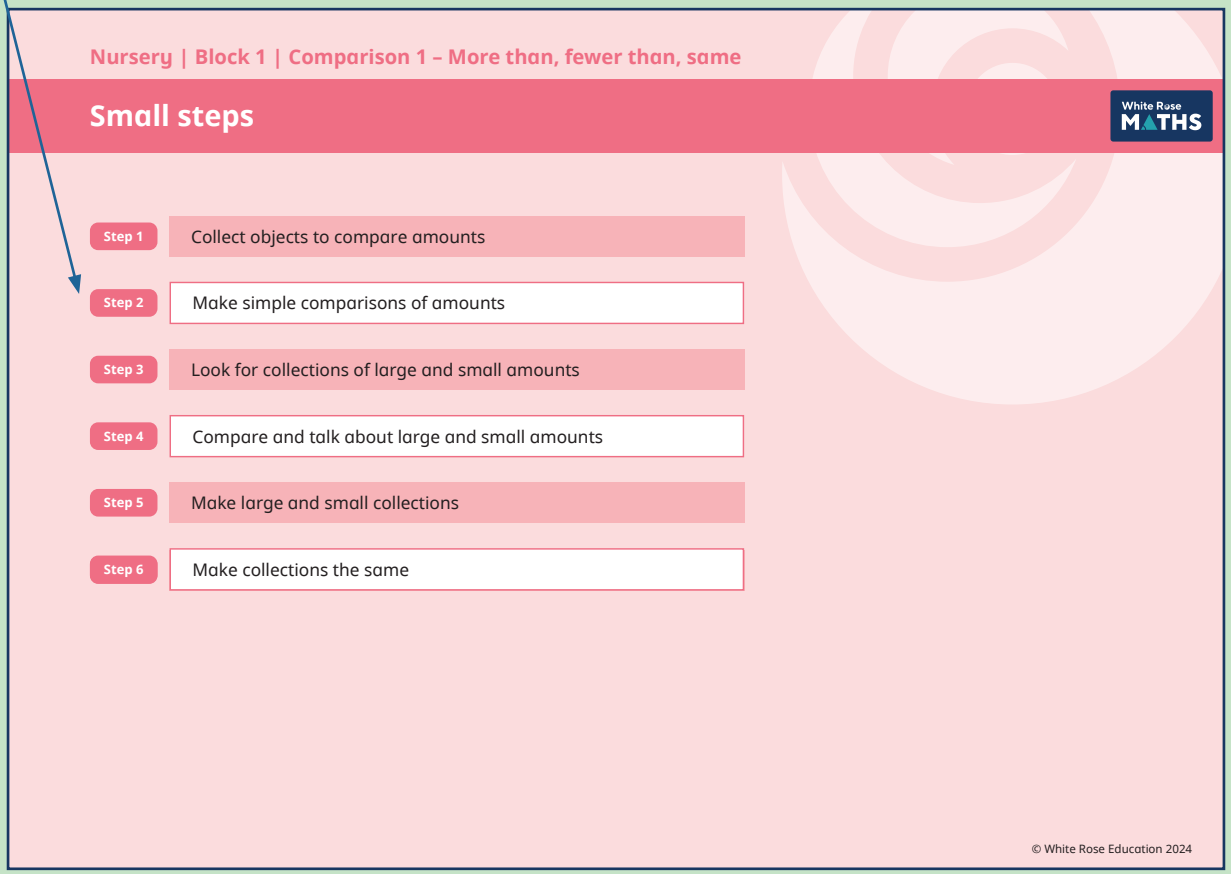
Small steps

Each block has six sequenced small steps. The step titles clearly explain what the teaching focus is.



Notes and guidance

An overview of the content that outlines the key learning that will be introduced in this block, key vocabulary to introduce, relevant subject knowledge and advice on progression.

Nursery | Block 1 | Comparison 1 – More than, fewer than, same

More than, fewer than, same

Notes and guidance

In this block the foundations of comparison are explored. Children need to be given many opportunities to make collections so they can see and feel different amounts of objects. They may do this naturally from their own schemas such as transporting and enclosing. However, some children may not have been given this opportunity.

Give children plenty of opportunities to make different sizes of collections using a range of different or the same objects. Model that we can make collections using any objects, including making collections of children when getting into key worker groups.

When beginning to make comparisons, ensure that there is a large difference between two amounts. At this stage, children will only perceptually compare the collections, rather than counting the objects. Introduce that collections can also be the same. Support children to develop a sense of what looks the same rather than an exact comparison.

Key questions

- What have you collected?
- Which has more?
- Which has fewer?
- Which is the largest collection?
- Which is the smallest collection?
- What has changed?
- Do they look the same?

Sentence stems

- I made a collection of ____.
- There are a lot of ____.
- There are only a few ____.
- They look the same because...

Links to the curriculum

Development Matters – 3 and 4-year-olds – Compare quantities using language: 'more than', 'fewer than'.

Birth to 5 Matters

- Range 3 – Responds to words like *lots* or *more*
- Range 4 – Beginning to compare and recognise changes in numbers of things, using words like *more, lots* or *'same'*

Key questions that can be used to develop children's mathematical talk and reasoning skills.

This section provides suggested sentence stems that can be introduced to support children's mathematical talk and use of mathematical vocabulary.

This section indicates the statement(s) from *Development Matters* and *Birth to 5 Matters* that are covered in this block.

Adult-led activities

The adult-led learning section provides suggested activities that can be used when teaching each small step. The first four small steps are covered on this page. These activities could be delivered to the whole class or in small groups.

Nursery | Block 1 | Comparison 1 – More than, fewer than, same

Adult-led activities

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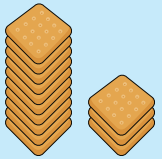
Step 1

In this small step, children will **collect objects to compare amounts**. Begin with an empty box or basket and ask, "What could I put in my ...?" Model making a collection of teddies. Talk about the objects as you put them into the box.

Then, make another collection of different objects. Explain to children that it is still your collection, but now it's a collection of different things.

Step 2

In this small step, children will **make simple comparisons of amounts**. Model having a large collection of a snack, such as crackers. As a group, eat some of the crackers. Show children that there are fewer crackers now.



Also model increasing the amount in a collection. Make another collection of different objects, such as cars in a car park, but start with only a small amount. Then show more cars arriving so there are lots.

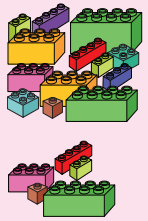
Step 3

In this small step, children will **look for collections of large and small amounts**. Explore different areas of provision and encourage children to notice what different collections they can see.

Draw children's attention to where there are obvious large and small collections. Encourage them to point out where else they can see a large collection or a small collection.

Step 4

In this small step, children will **compare and talk about large and small amounts**. Make a large collection of toys and a small collection of toys next to it on the carpet. Support children to discuss that there are a lot of toys in one pile and only a few in the other pile.



Move some toys from the large collection to the small so that this pile now has more. Ask children, "What has happened? Which collection has more?"

Adult-led activities and continuous provision

This section continues to provide suggested activities that can be used when teaching each small step. The final two small steps are covered on this page.

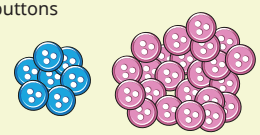
This section provides suggested ways that continuous provision could be used or enhanced to consolidate children's learning from the block.

Nursery | Block 1 | Comparison 1 – More than, fewer than, same

Adult-led activities

Step 5

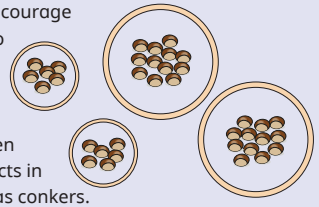
In this small step, children will **make large and small collections**. Hide a selection of buttons of two colours. Ensure that there are more than double the number of one colour than the other. Encourage children to hunt for the buttons and then bring them back to make two piles, for example, one large pile of pink buttons and one small pile of blue buttons.



Encourage children to compare the two piles. Which collection has more buttons? Which has fewer?

Step 6

In this small step, children will **make collections the same**. Support children to make collections that look as if they contain roughly the same amount. This should not be done through counting but general size estimation. Encourage children to use two hoops to make two collections that are the same. Ensure that children use the same objects in both hoops, such as conkers.



Continuous provision

Enact stories in provision that discuss making collections. For example, after reading the book *Harry and the Bucketful of Dinosaurs* by Ian Whybrow, children could fill their own buckets with dinosaurs. Or after reading *Little Red Riding Hood* they could pack picnic baskets for Grandma.

Provide children with a range of empty containers such as baskets, handbags and fancy boxes. Prompt them to talk about whether they have made a large or small collection. Encourage children to compare their collections. Do they look the same?

Support children to talk about their collections to get to know their interests and fascinations.