

Notes and Guidance

Reception

The White Rose Maths schemes of learning

Reception guidance

The schemes cover the DfE statutory framework for the EYFS and Educational Programme for Mathematics and will support you to deliver a curriculum that embeds mathematical thinking and talk.

Our schemes support the ethos of the EYFS whilst at the same time enabling teachers to create a mathematically rich curriculum. Additionally, they allow for key mathematical concepts to be revisited and developed throughout the year.

The guidance has been divided into 18 blocks and provides a variety of opportunities to develop the understanding of number, shape, measure and spatial thinking.

Reception | Autumn term | Block 1 – Match, sort and compare | Step 4

Sort objects to a type

Notes and guidance

In this small step, children build on their knowledge of identifying sets of different objects from the previous step. Children are introduced to the term 'sorting' and learn that collections of objects can be sorted based on attributes such as colour, size or shape.

Sorting enables children to consider what is the same about all the objects and what is different. At first, children may focus on one attribute only and explore that thoroughly before moving on to other attributes.

By asking open-ended questions, children can be supported to explain how they have sorted the objects. Introduce this by sorting by just one attribute or type, for example, by sorting buttons into green and not green. It is important to introduce children to other types of sorting, such as shape and size, so that they do not think that colour is the only way to sort.

Key questions

- How can you sort the objects?
- How do you know they are the same/different?
- How could you sort the objects a different way?

Possible sentence stems

- I have sorted the objects by _____
- These are _____
- These are not _____
- These objects are _____

Adult-led learning

Read a book, such as *The Button Box* by Margarette S. Reid, where objects are sorted in different ways. Have a range of different buttons for children to explore and sort into sets. For example, sort by size, colour or texture.

Mess up some resources in a continuous provision area. For example, muddle up the farm animals with the wild animals. Ask children to help sort the different objects and put them back into the correct box or place on the shelf.

Have a collection of loose parts. Encourage children to sort the items into different groups depending on their type. Start by sorting using one type to create two sets, for example, leaves and not leaves. Prompt children to think of another way that they could sort the objects.

Provide resources that children can sort into more than two sets in many possible ways. Buttons, shells, pebbles, or autumnal loose parts provide many sorting opportunities. Encourage children to consider a range of different attributes and sort independently.

Teaching and learning

Our reception schemes support you in teaching the key aspects of the EYFS curriculum. The scheme supports specific teaching through small steps with adult-led activities and continuous provision. The focus is on building up the numbers slowly, so children gain a deep understanding of them and how they are composed. However, this does not mean children should not be counting and discussing larger numbers in routines such as lining up. It is also important that teachers are aware of, and children are supported 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.

Reception – 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



4



5



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.



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 progress through number and spatial reasoning.

Early blocks focus on use of provision to support key early maths and routines.

The first 2 weeks are for you to get to know children, develop routines and give you the flexibility to complete baseline assessments.

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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	Getting to know you		Match, sort and compare		Talk about measure and patterns		It's me 1, 2, 3		Circles and triangles	1, 2, 3, 4, 5		Shapes with 4 sides
Spring	Alive in 5		Mass and capacity	Growing 6, 7, 8		Length, height and time		Building 9 and 10		Explore 3-D shapes		
Summer	To 20 and beyond		How many now?	Manipulate, compose and decompose		Sharing and grouping		Visualise, build and map		Make connections	Consolidation	

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Consolidation weeks allow for a degree of flexibility in the suggested block lengths or to consolidate learning based on the needs of your children.

Content is consolidated so all concepts are explicitly taught before assessment for ELG.

Subitising is taught both perceptually and conceptually through the blocks. Concepts such as doubling and 1 more / 1 less is focused on in the progression of the numbers.

Small step breakdown

Each block has sequenced small steps.

Step titles are in the same sequence to help embed learning.

Reception | Autumn term | Block 3 – It's me 1, 2, 3

Small steps

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Step 1	Find 1, 2 and 3
Step 2	Subitise 1, 2 and 3
Step 3	Represent 1, 2 and 3
Step 4	1 more
Step 5	1 less
Step 6	Composition of 1, 2 and 3

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Step titles clearly explain what the teaching focus is.

Activities and symbols

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



Show children the illustrations from pages 1, 2 and 3 of the story *Anno's Counting Book* by Mitsumasa Anno. Encourage them to look at the pictures and identify where they can see the different representations of 1, 2 and 3. Where do they see each representation? How do they see it?

A suggested daily routine to be supported by a teacher.



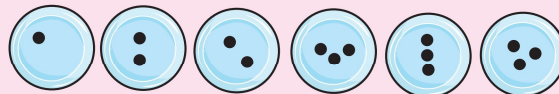
Daily routine

- When lining up in the day, ask children to join the line depending on different attributes, for example, line up if you have a sister.

An activity that has accompanying teaching slides to support adult-led learning as part of a premium subscription.



Prepare a set of dot plates or number cards which have 1, 2 or 3 dots in different arrangements.



Hold up the dot plates and ask the children how many dots.

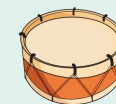
Can children show the correct number of fingers?

Ask children if they can match the numerals 1, 2 and 3 to the dot plates.

An activity which includes a rhyme or musical instrument.



Have a pile of beanbags.
Beat a drum either 1, 2 or 3 times.



Children listen carefully and count out 1, 2 or 3 beanbags from a larger group to match the number of beats.

An outside activity or one that uses resources from nature.



Go outside and model how to make simple large-scale patterns, such as stick, leaf, stick, leaf, stick, leaf.



Support children to copy the patterns and see if they can continue them. Encourage children to use loose parts to make simple patterns for a partner to copy and continue.

A digging deeper activity to deepen children's understanding is provided for each small step.



Wrap up a range of boxes, each with a different mass.

Ensure that some of the small boxes are heavy and some of the large boxes are light.

Pick up a box and ask children to predict if it will be heavy or light.

Ask them to test their predictions using a balance scale.

Are all small boxes light?



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.

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

Reception | Autumn term | Block 3 – It's me 1, 2, 3

Teacher guidance

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Key books

- *Anno's Counting Book* by Mitsumasa Anno
- *How to Count to One* by Caspar Salmon
- *Goldilocks and the Three Bears*
- *The Gingerbread Man*
- *A Squash and a Squeeze* by Julia Donaldson
- *The Three Billy Goats Gruff*

Key resources



Top tips

- Having a set of teacher resources available for children in provision will encourage them to independently demonstrate their learning.
- A great alternative to double-sided counters are dried butterbeans. Spray these on one side or decorate as minibeasts for activities in checkpoint 1
- Blank paper plates could be left out for children to design their own dot plates.
- If you do not have a 1-3 dice, you can use a standard 1-6 dice and cover the numbers 4, 5 and 6

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Small step guidance

An overview of the content that provides key vocabulary to introduce, relevant subject knowledge and advice on progression.

Reception | Autumn term | Block 3 – It's me 1, 2, 3 | Step 2

Subitise 1, 2 and 3

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In this small step, children perceptually subitise. This form of subitising refers to instantly recognising the number of objects or items in a group without needing to count them.

Encourage children to subitise groups of 1, 2 and 3 items. This will allow them to develop an understanding of what each number looks like, and what it is made up of. Use images and stories that include groups of 1, 2 and 3 characters or objects to point out and encourage children to subitise. Dice and spinners with dots are useful in helping support children to develop their subitising skills. It is important that they see the dots or other objects in different arrangements so that they don't think a number representation such as 3 always appears in the same way.



Rhymes

- *When I Was One, I Banged My Thumb*



Books

- *How to Count to One* by Casper Salmon

Key questions

- How many can you see?
How do you know?
- How many are there in each group?
- What can you show me?
- What can you see?

Possible sentence stems

- There are ____ dots altogether.
- There is 1 ____.
- There are 2/3 ____.
- I can see ____ without counting.
- I can subitise ____.

Links to the curriculum

- *Development Matters* – Reception – Subitise
- *Birth to 5 Matters* – Range 5 – Subitises one, two and three objects (without counting)

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

Key sentence stems to further support children's mathematical talk and the use of mathematical vocabulary.

Indicate the statement(s) from Development Matters and Birth to 5 Matters that are covered in the small step.

Adult-led learning

The adult-led learning section provides suggested activities that can be used when teaching this small step. These activities could be delivered to the whole class or in small groups.

Reception | Autumn term | Block 3 – It's me 1, 2, 3 | Step 2

Subitise 1, 2 and 3

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Adult-led learning



Prepare a set of dot plates or number cards which have 1, 2 or 3 dots in different arrangements.



Hold up the dot plates and ask the children how many dots.

Can children show the correct number of fingers?

Ask children if they can match the numerals 1, 2 and 3 to the dot plates.



Share stories such as *How to Count to One* by Casper Salmon.

Encourage them to subitise and notice where they see 1, 2 and 3

Where can they see 1, 2 and 3 groups of objects or characters from the story?

Can they show you 1, 2 and 3?

Play a simple track game with small world creatures or characters.

Children take it in turns to roll a 1-3 dice, or a spinner, and subitise the number of dots.



They move the creature or character the corresponding number of jumps.

Who will be the first to reach the finish?



Represent 1, 2 and 3 using small objects.

Cover each amount with a bowl or cup.



Quickly reveal one group of objects and ask children how many there are.

Swap the positions around.

When you stop, can they point to the bowl with 3?

Lift the bowl and see if the children can instantly say whether they are correct.

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Continuous provision

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

Reception | Autumn term | Block 3 – It's me 1, 2, 3

Continuous provision

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Support children to make their own representation cards.

Provide them with a piece of paper and allow them to paint, draw or use collage materials to represent the numbers 1, 2 and 3

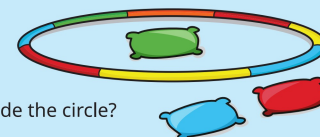


Children can create their own dots, dice patterns, or create a picture of something that interests them.

These can then be used to play games such as 'Snap'.

Place a hoop on the ground.

Ask the children to collect 3 beanbags and to take turns to throw them into a circle.



How many land inside the circle?

How many land outside?

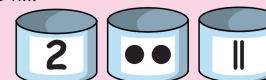
Provide an easel or clipboard so that they can record their own scores.

Make dough. Use a recipe that involves measuring using 1, 2 or 3 cups.

Ask children to measure out the ingredients and count the cups.

2 cups of plain flour
1 cup of salt
2 cups of water
2 tablespoons of oil
1 teaspoon of cream of tartar
3 drops of food colouring

Provide a collection of various loose parts or natural objects and some small pots labelled 1, 2 and 3 for children to fill.



Include some unlabelled pots and encourage children to make their own labels to show how many they put inside.

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End of block checkpoint

This section provides suggested activities that can be used to assess children's learning from the block.

Each block has three end of block checkpoints where adults can observe children demonstrating the knowledge they have gained. These are designed to be fun games or activities to support play-based practical learning.

The end of block assessments from each block can be printed out and joined together on display to show the children's learning journey.

Reception | Autumn term | Block 3 – It's me 1, 2, 3

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End of block checkpoint

Checkpoint 1

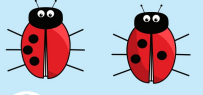
Set up a tuff tray with an assortment of wood, autumn leaves and seeds.

Hide several ladybirds with 1, 2 or 3 spots.

How many spots does the ladybird have?

Do all the ladybirds with 3 spots look the same?

Can you find a ladybird with 1 less or 1 more spot than mine?



Checkpoint 2

Play 'Bunny Ears'.

Using 2 hands to be the ears, how many ways can you show 1, 2 and 3?

Can you see what number I have made?

Can you make ears the same as mine?

Can you make the same number in a different way?



Checkpoint 3

Set up a small world bridge and 2 fields.

Each player builds a 1, 2 and 3 tower to represent the 3 goats.

Roll a 1–3 dice and move the corresponding tower over the bridge.

The winner is the first player to move all 3 'goats' over the bridge.

Encourage the children to notice how many goats are on each side of the bridge as they play.



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Reception | Autumn term | Block 1 – Match, sort and compare

End of block checkpoint

Checkpoint 1

The box that the buttons are stored in has been dropped. There are buttons everywhere. Ask children to sort the buttons and put them back in the box in sets.



Observe children as they sort the buttons.

Can they explain how they have sorted them?

Can they find another way to sort them?

Checkpoint 2

When playing alongside children in the small world area, can children make collections and say why they belong to a set?

For example, "This set are all cows" or "This set are all horses".

Can children say which set has more?



Checkpoint 3

The daily routine of tidy-up time is a great opportunity to observe children and notice who can match and sort effectively.

Are children able to use the pictures and shadowing on the storage units to ensure that the resources are put back in the correct area of the classroom, shelf or box?



Reception | Autumn term | Block 2 – Talk about measure and pattern

End of block checkpoint

Checkpoint 1

Children use simple language of comparison such as 'size', 'mass' and 'capacity' when playing. Observe children as they play in continuous provision. The dough, water and construction areas provide a great opportunity to support this.

Do they use the language appropriately?



Checkpoint 2

Set up a repeating AB pattern that has three units of repeat.



Provide extra resources for children to choose from that are both in the pattern and not.

Ask children to complete the pattern.

Are they able to copy and complete the simple pattern?

Checkpoint 3

Provide children with objects and loose parts to make simple patterns.

Ask children to use the resources independently to make an AB pattern.

Children may need to be given just two different types of objects, for example, blue and red cubes.



Reception | Autumn term | Block 3 – It's me 1, 2, 3

End of block checkpoint

Checkpoint 1

Set up a tuff tray with an assortment of wood, autumn leaves and seeds.

Hide several ladybirds with 1, 2 or 3 spots.

How many spots does the ladybird have?

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