

MATHEMATICS WORKSHOP

Wednesday 23rd November 2022

Mrs Brown

WELCOME

- ◉ Overview of White Rose Maths
- ◉ Rhymes and stories
- ◉ Numberblocks
- ◉ Number
- ◉ Numerical patterns
- ◉ Writing numerals
- ◉ Spatial reasoning skills
- ◉ Useful websites

WELCOME

Mathematics

EYFS Statutory Educational Programme:

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

By providing frequent and varied opportunities to build and apply this understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.



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
Autumn term	Getting to know you (Take this time to play and get to know the children!) Contains overviews and frequently asked questions VIEW			Just like me! Match and sort Compare amounts Compare size, mass & capacity Exploring pattern VIEW			It's me 1, 2, 3! Representing 1, 2 & 3 Comparing 1, 2 & 3 Composition of 1, 2 & 3 Circles and triangles Positional language VIEW			Light & dark Representing numbers to 5 One more or less Shapes with 4 sides Time VIEW		
Spring term	Alive in 5! Introducing zero Comparing numbers to 5 Composition of 4 & 5 Compare mass (2) Compare capacity (2) VIEW			Growing 6, 7, 8 6, 7 & 8 Combining two amounts Making pairs Length & height Time (2) VIEW			Building 9 & 10 Counting to 9 & 10 Comparing numbers to 10 Bonds to 10 3-D shapes Spatial awareness Patterns VIEW			Consolidation		
Summer term	To 20 and beyond Build numbers beyond 10 Count patterns beyond 10 Spatial reasoning 1 Match, rotate, manipulate VIEW			First, then, now Adding more Taking away Spatial reasoning 2 Compose and decompose VIEW			Find my pattern Doubling Sharing & grouping Even & odd Spatial reasoning 3 Visualise and build VIEW			On the move Deepening understanding Patterns & relationships Spatial mapping (4) Mapping VIEW		

AUTUMN TERM

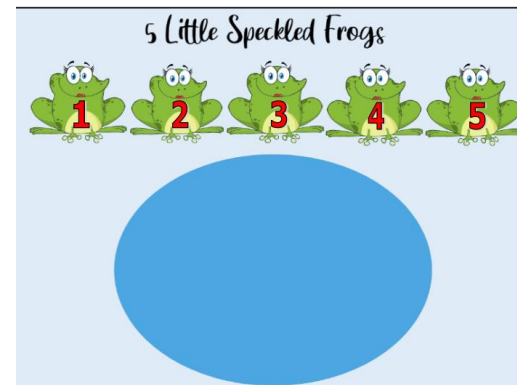
Autumn



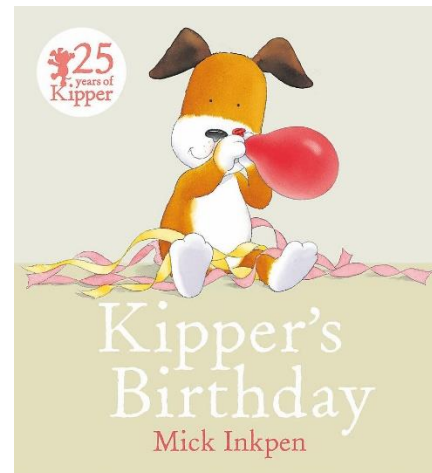
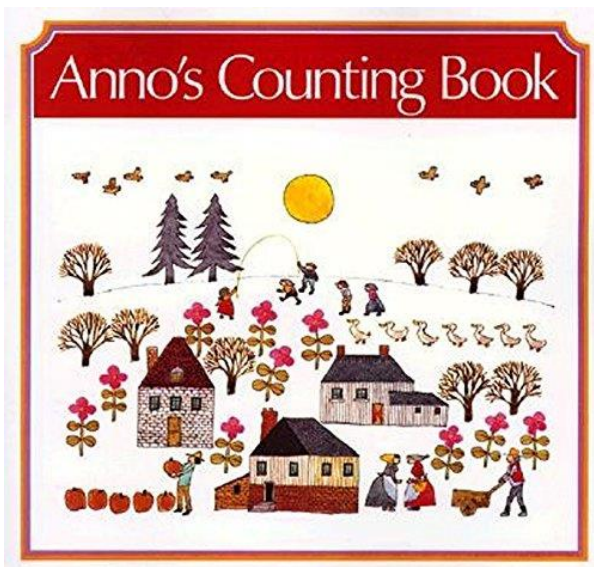
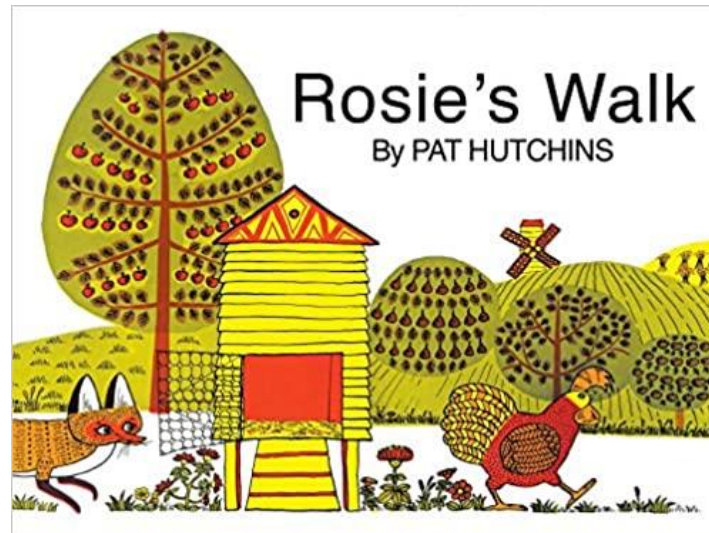
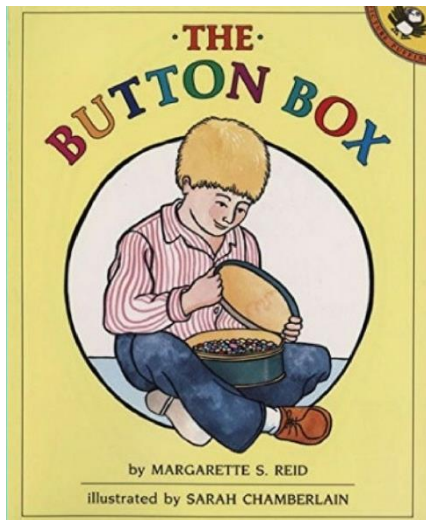
Week 1	Week 2	Week 3		Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Getting to Know You Opportunities for settling in, introducing the areas of provision and getting to know the children. Key times of day, class routines. Exploring the continuous provision inside and out. Where do things belong? Positional language.			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		

NUMBER RHYMES

- ◉ This Old Man
- ◉ 1,2,3,4,5, Once I Caught a Fish Alive
- ◉ There Were Ten in the Bed
- ◉ Five Little Ducks
- ◉ Five Little Speckled Frogs
- ◉ One Potato, Two Potato
- ◉ One Elephant Went Out to Play



STORIES



NUMBERBLOCKS

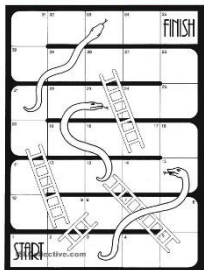


<https://www.bbc.co.uk/cbeebies/shows/numberblocks>

NUMBER EARLY LEARNING GOAL

Children at the expected level of development will:

- **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 (including subtraction facts) and some number bonds to 10, including double facts.**



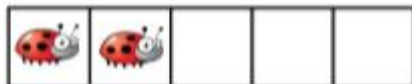
COUNTING



© Mystic Arts, LLC

Reception – Notes and guidance

Key Representations



Notes and guidance

When teaching counting, consider the **counting principles** at all times. At this early stage, ensure that children are counting real-life objects. They could start by subitising and counting objects that are identical before moving on to subitising and counting objects that have slight differences such as size or colour. Make sure that the objects are of the same type e.g. apples, cubes, books.

Encourage children to put objects into a line when counting so they have a clear start and end point.

The five frame can be used to support children to **subitise** and compare numbers within 5

Numerals may be introduced to children but they are not expected to write them at this stage. They could use informal jottings and/or drawing to record their thinking.

COUNTING PRINCIPLES

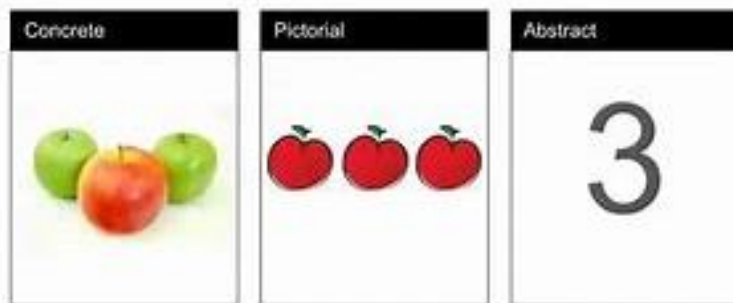


- **The one-one principle** - assigning one number name to each object.
- **The stable order principle** - numbers have to be said in a certain order when counting.
- **The cardinal principle** - the number assigned to the final object is the total number of objects in that group.
- **The abstraction principle** - anything can be counted e.g. jumps, claps, actions, sounds.
- **The order-irrelevance principle** - it does not matter in which order objects are counted, there will still be the same number.



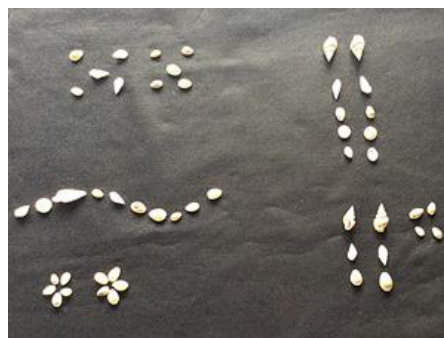
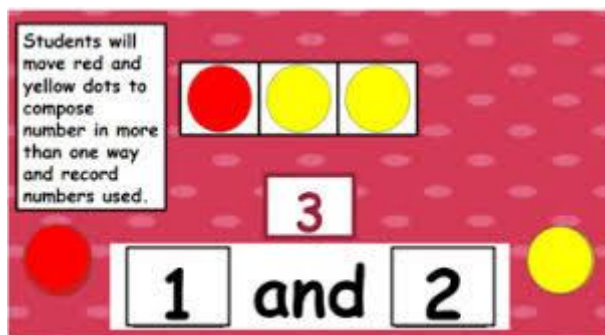
CONCRETE PICTORIAL ABSTRACT

- Concrete - a 'hands on approach' using real objects such as apples, bears, dinosaurs, counters, discs, cubes etc.
- Pictorial - relating practical experiences to representations.
- Abstract - the symbolic stage - representing problems using mathematical notation.



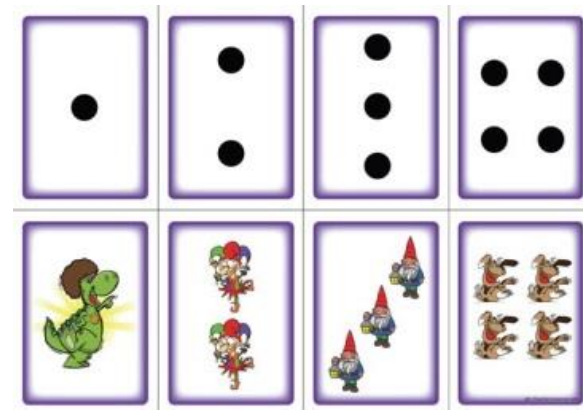
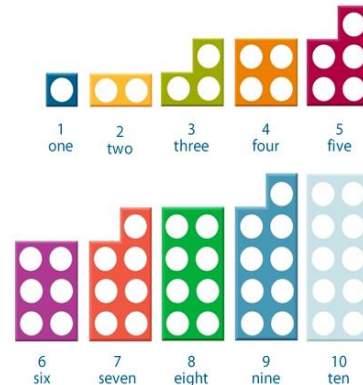
COMPOSITION OF NUMBERS TO 10

- Focus on the composition of 2,3,4 and 5 before moving onto larger numbers.
- How many bean bags go into the hoop and how many don't?
- Visual models of numbers.



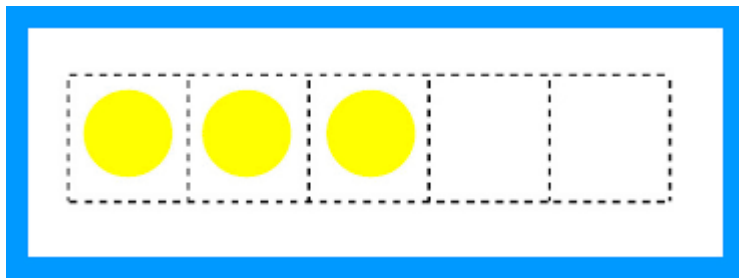
SUBITISE

- The ability to instantaneously recognise a small quantity without having to count how many there are.
- “I don’t think we need to count those. They are in a square shape so there must be 4.”
- Count to check.



AUTOMATIC RECALL OF NUMBER BONDS FOR NUMBERS 0-5 AND SOME TO 10

- ◉ Different ways of making numbers to 5.
- ◉ Hiding games: “Six went in the tent and 3 came out. I wonder how many are still in there?”
- ◉ “There are 5 of us but only 3 clipboards, how many more do we need?”



NUMERICAL PATTERNS

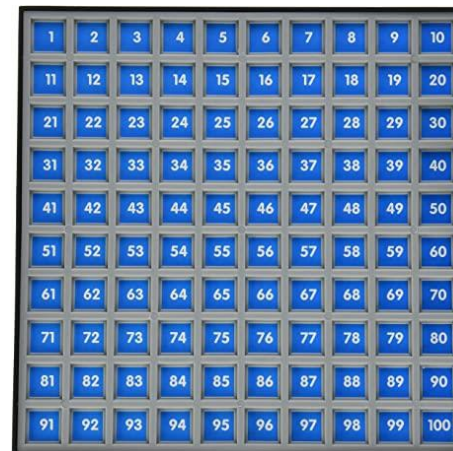
EARLY LEARNING GOAL

Children at the expected level of development will:

- **Verbally count beyond 20, recognising the pattern of the counting system;**
- **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;**
- **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.**

COUNT BEYOND TWENTY

- Count verbally beyond 20.
- Number tracks, calendars, hundred squares help children to become familiar with two-digit numbers and spot patterns within them.



COMPARE NUMBERS

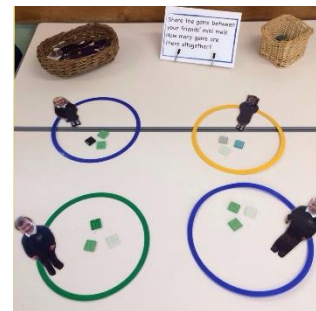
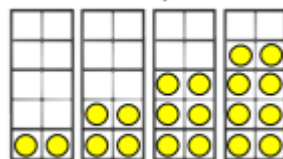
ONE MORE THAN/ONE LESS THAN

- Compare collections of objects. Include groups where the number of items is the same.
- Use vocabulary: 'more than', 'fewer', 'the same as', 'equal to'.
- Make predictions about what the outcome will be if one is added, or if one is taken away.
- 'Staircase' patterns show that the next counting number includes the previous number plus one.



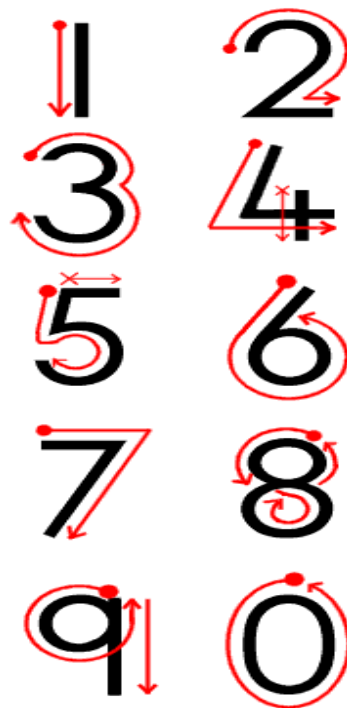
EXPLORE AND REPRESENT PATTERNS WITHIN NUMBERS UP TO 10

- ◉ To understand that some quantities will share equally into 2 groups and some won't.
- ◉ Learning that double means 'twice as many'. Building doubles using real objects and mathematical equipment.
- ◉ Checking that items are shared equally and that everyone has the same. Recognising and making equal groups.



NUMERALS - THE WRITTEN SYMBOL FOR A NUMBER

- ◉ Clock face
- ◉ Door numbers
- ◉ Microwave display
- ◉ Car number plates
- ◉ Phone

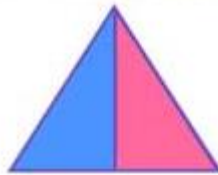


- ◉ Forming numerals
- ◉ Spots indicate the starting position of the pencil. The pencil should remain on the paper, following the arrows. For the numbers four and five, the pencil must be raised before completing the second part of each number. Crosses indicate the second starting positions.

SPATIAL REASONING SKILLS

SHAPE AND SPACE

- Number 4 - introduce shapes with 4 sides.
- Select, rotate and manipulate shapes. Tangrams.
- Compose and decompose shapes. Combine shapes. A shape can have other shapes within it.
- Create models.
- Continue, copy and create repeating patterns. AB, ABB and ABBC. Unit of repeat. Rule.



SPATIAL REASONING SKILLS

COMPARE LENGTH, WEIGHT AND CAPACITY

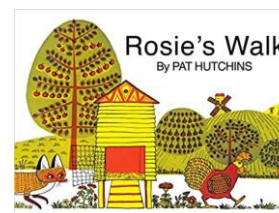
- Height - tall, short, taller than, shorter than, tallest, shortest
- Length - long, short, longer than, shorter than, longest, shortest
- Ordering by size
- Weight - heavier than, lighter than, heaviest, lightest
- Capacity - holds more than, holds less than, full, empty, half full, nearly empty



SPATIAL REASONING SKILLS

POSITION AND TIME

- ◉ Positional language - behind, in front of, next to, beside, in, inside, on, under, in between.
- ◉ Follow and give directions.
- ◉ Recall a sequence of events in everyday life and in stories.
- ◉ Make simple maps of familiar and imaginary environments.
- ◉ Measure time with timers and calendars.



USEFUL WEBSITES/APPS

- ◉ <https://whiterosemaths.com/homelearning?year=early-years>
<http://www.ictgames.com/resources.html>
- ◉ <http://www.topmarks.co.uk/maths-games/5-7-years/counting>
- ◉ <http://www.crickweb.co.uk/Early-Years.html>
- ◉ <https://www.bbc.co.uk/cbeebies/shows/numberblocks>
- ◉ <http://www.cowlyowl.com/apps/little-digits>