MATHEMATICS WORKSHOP

Wednesday 22nd November 2023

Mrs Brown

WELCOME

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

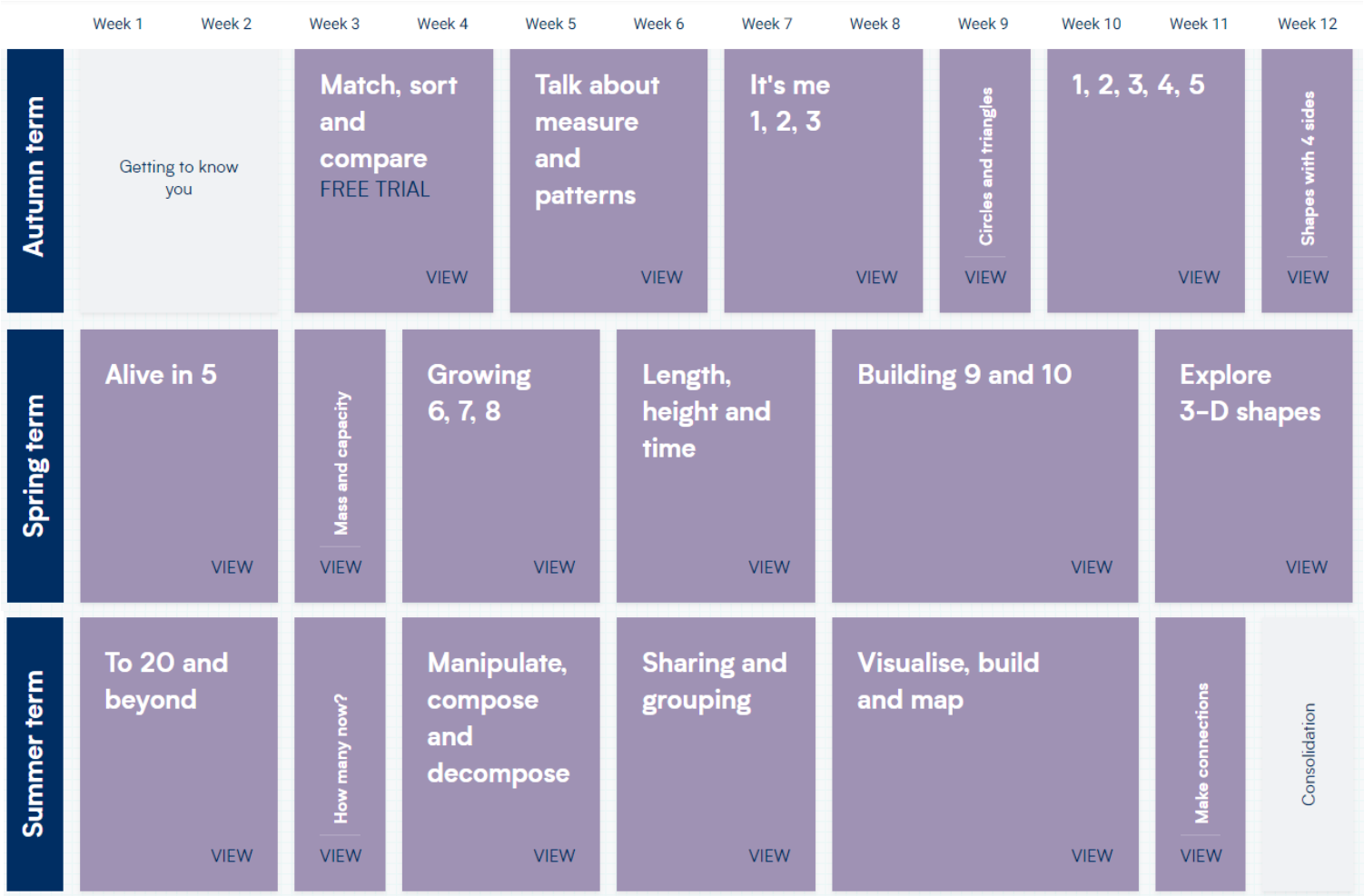
WELCOME

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

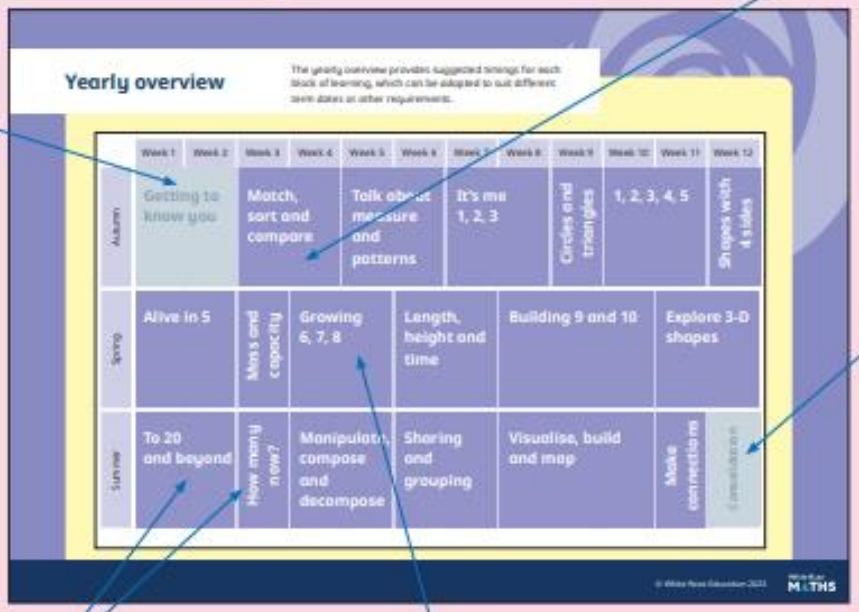

Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Autumn term
Getting to know you
Match, sort and compare FREE TRIAL
VIEW
Talk about measure and patterns
VIEW
It's me 1, 2, 3
VIEW
Circles and triangles
VIEW
1, 2, 3, 4, 5
VIEW
Shapes with 4 sides
VIEW
Spring term
Alive in 5
VIEW
Mass and capacity
VIEW
Growing 6, 7, 8
VIEW
Length, height and time
VIEW
Building 9 and 10
VIEW
Explore 3-D shapes
VIEW
Summer term
To 20 and beyond
VIEW
How many now?
VIEW
Manipulate, compose and decompose
VIEW
Sharing and grouping
VIEW
Visualise, build and map
VIEW
Make connections
VIEW
Consolidation

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.



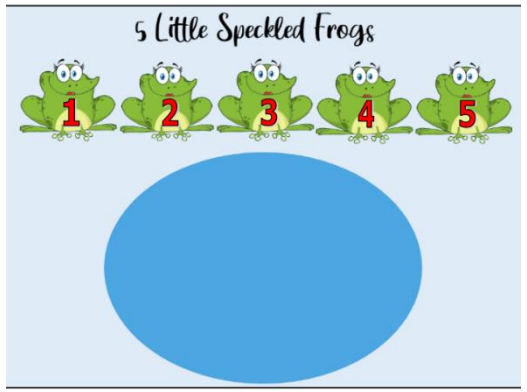
Consolidation weeks allow for a degree of flexibility in the suggested block lengths or to consolidate learning based on the needs of your children.

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

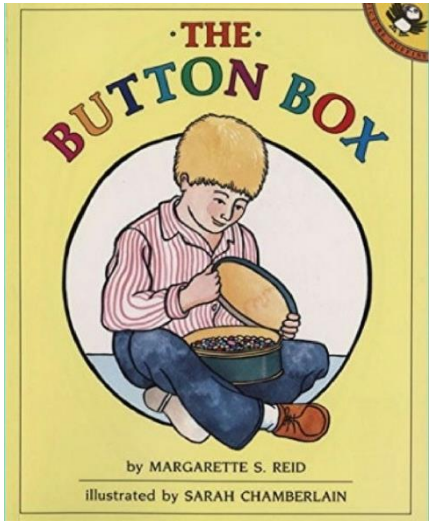
Subitising is taught both perceptually and conceptually through the blocks. Concepts such as doubling and 1 more / 1 less is focused on in the progression of the numbers.

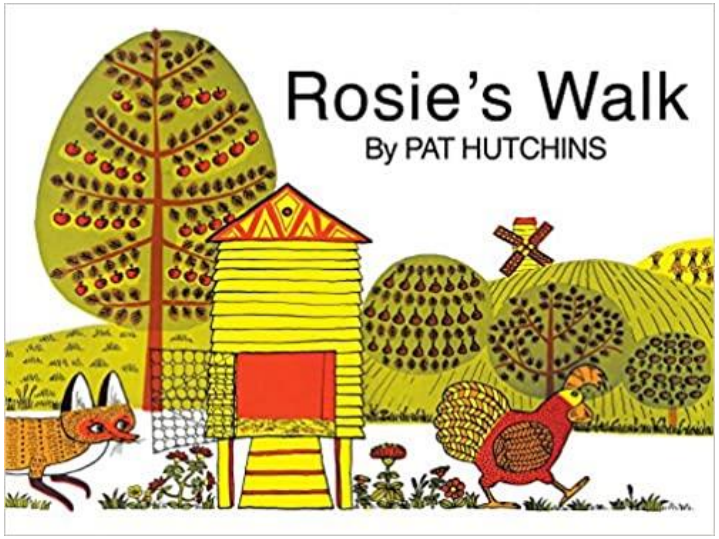
NUMBER RHYMES

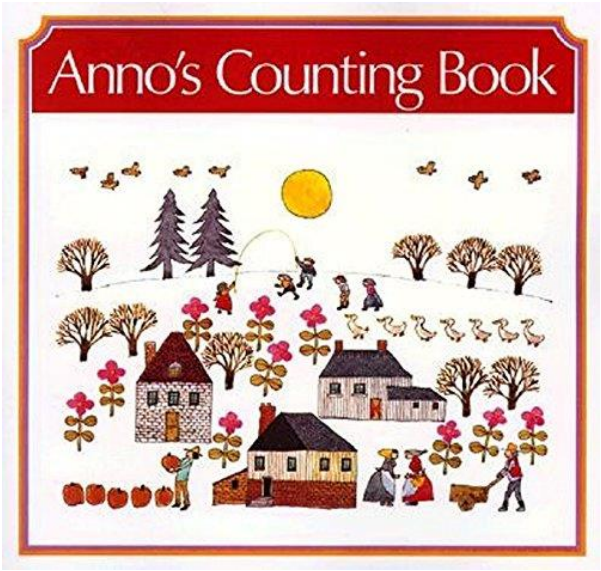
- This Old Man
- 1,2,3,4,5, Once I Caught a Fish Alive
- There Were Ten in the Bed
- Five Little Ducks
- Five Little Speckled Frogs
- One Potato, Two Potato
- One Elephant Went Out to Play

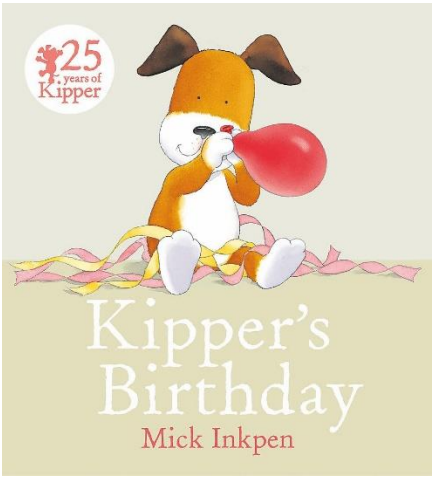


STORIES


THE
BUTTON BOX
by MARGARETTE S. REID
illustrated by SARAH CHAMBERLAIN


Rosie's Walk
By PAT HUTCHINS


Anno's Counting Book


25 years of Kipper
Kipper's Birthday
Mick Inkpen

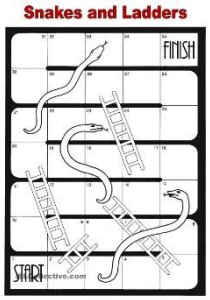
NUMBERBLOCKS

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.**

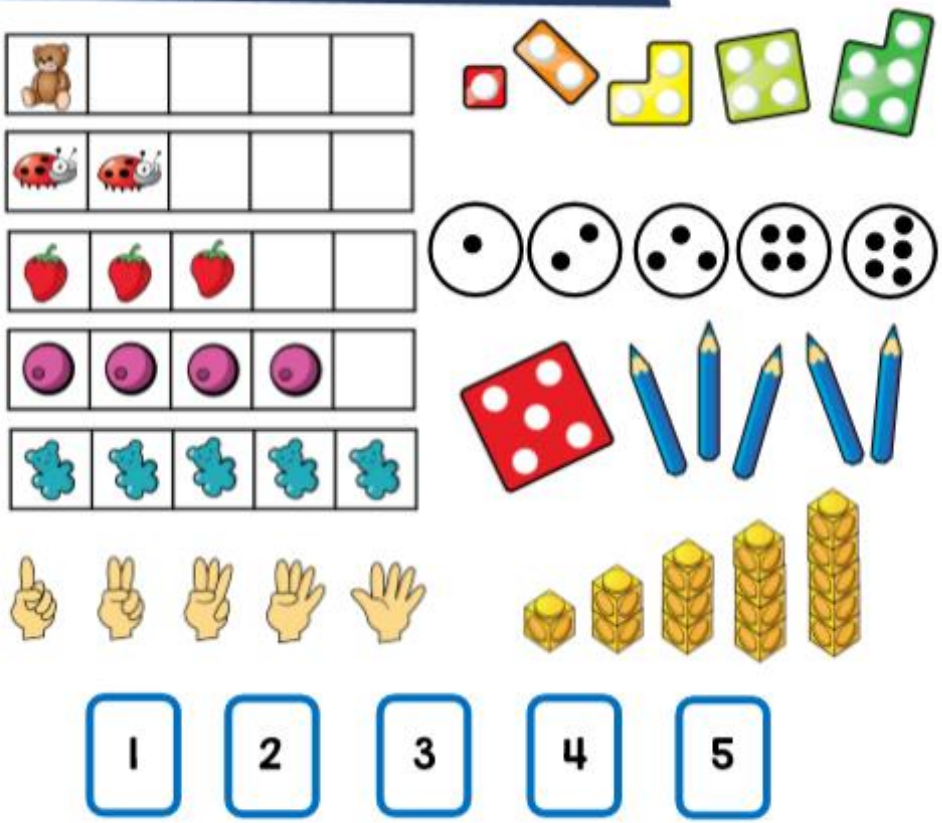


COUNTING

Reception – Notes and guidance

White Rose Maths

Key Representations



Notes and guidance

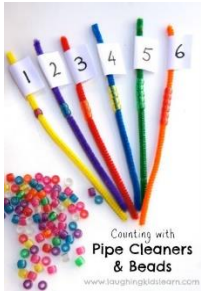
When teaching counting, consider the counting principles at all times.
At this early stage, ensure that children are counting real-life objects. They could start by subitising and counting objects that are identical before moving on to subitising and counting objects that have slight differences such 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.

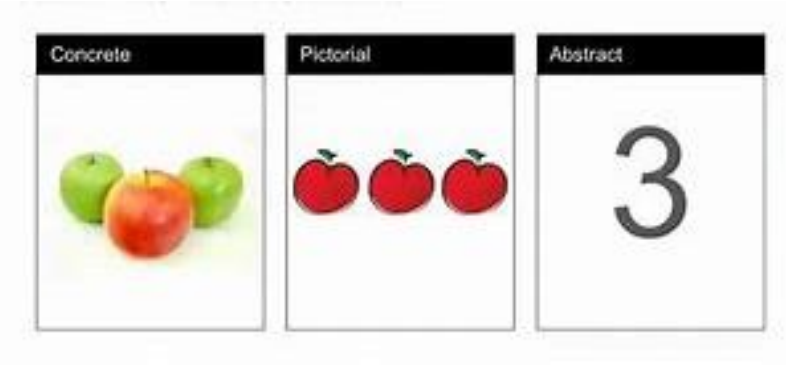
COUNTING PRINCIPLES

- **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.



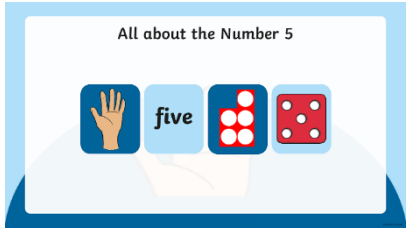
CONCRETE PICTORIAL ABSTRACT

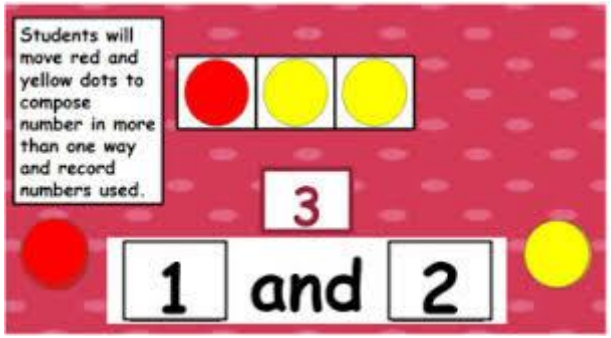
- Concrete – a ‘hands on approach’ using real objects such as apples, bears, dinosaurs, counters, discs, cubes etc.
- Pictorial – relating practical experiences to representations.
- Abstract – the symbolic stage - representing problems using mathematical notation.

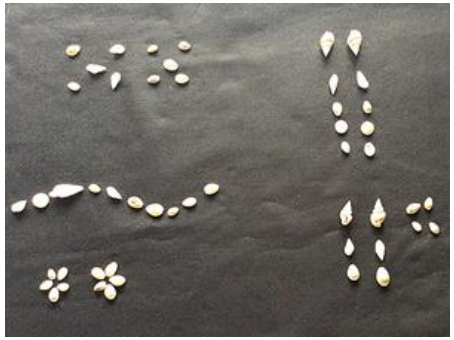


COMPOSITION OF NUMBERS TO 10

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

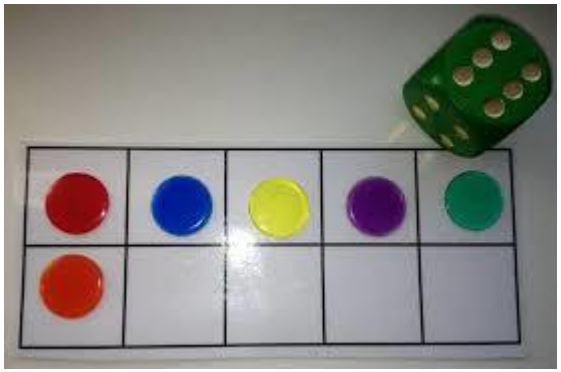


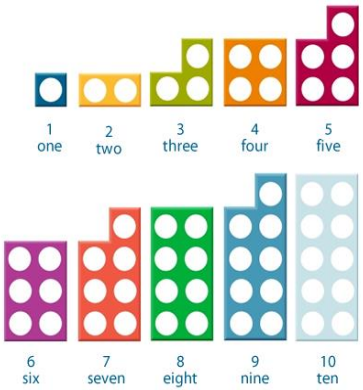


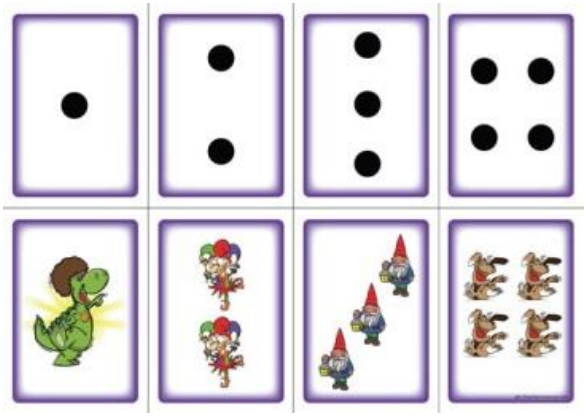


SUBITISE

- 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.

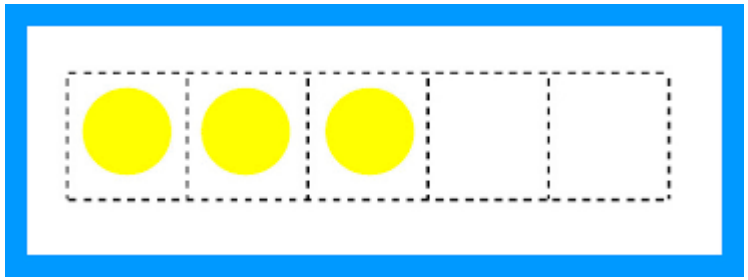






AUTOMATIC RECALL OF NUMBER BONDS FOR NUMBERS 0-5 AND SOME TO 10

- 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?”



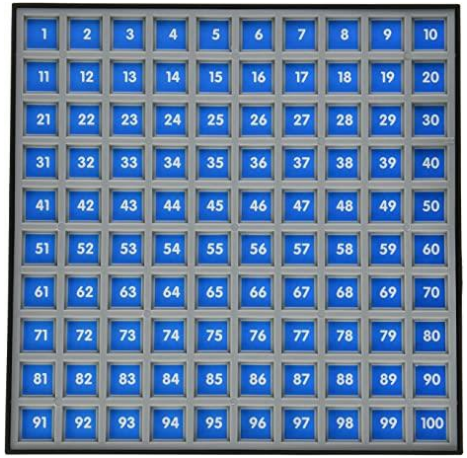
NUMERICAL PATTERNS EARLY LEARNING GOAL

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.**

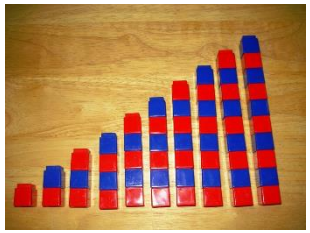
COUNT BEYOND TWENTY

- Count verbally beyond 20.
- Say ‘teen’ rather than ‘ty’ for ‘teen numbers’ (13 to 19).
- Number tracks, calendars, hundred squares help children to become familiar with two-digit numbers and spot patterns within them.



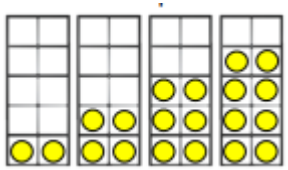
COMPARE NUMBERS
ONE MORE THAN/ONE LESS THAN

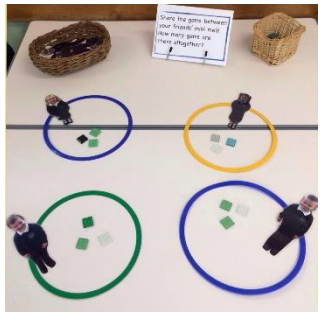
- Compare collections of objects. Include groups where the number of items is the same.
- Use vocabulary: ‘more than’, ‘fewer’, ‘the same as’, ‘equal to’.
- Make predictions about what the outcome will be if one is added, or if one is taken away.
- ‘Staircase’ patterns show that the next counting number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



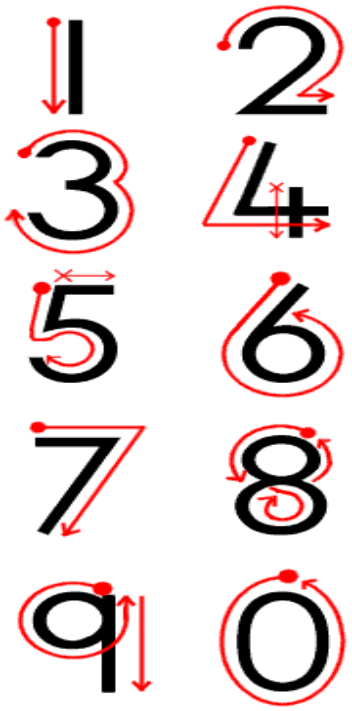
EXPLORE AND REPRESENT PATTERNS WITHIN NUMBERS UP TO 10

- 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.





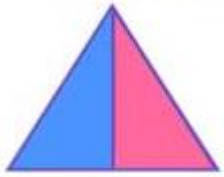
NUMERALS - THE WRITTEN SYMBOL FOR A NUMBER



- Clock face
- Door numbers
- Microwave display
- Car number plates
- Phone
- Forming numerals
- All numbers are written from the top. 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.

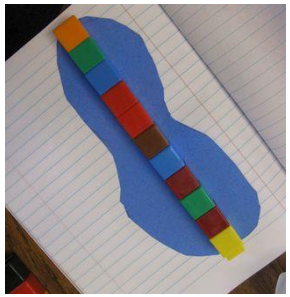
SPATIAL REASONING SKILLS
SHAPE AND SPACE

- 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.



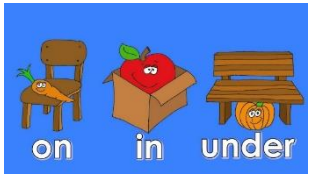
SPATIAL REASONING SKILLS COMPARE LENGTH, WEIGHT AND CAPACITY

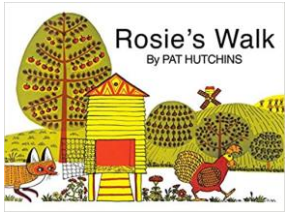
- Height – tall, short, taller than, shorter than, tallest, shortest
- Length – long, short, longer than, shorter than, longest, shortest
- Ordering by size
- Weight – heavier than, lighter than, heaviest, lightest
- Capacity – holds more than, holds less than, full, empty, half full, nearly empty



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.



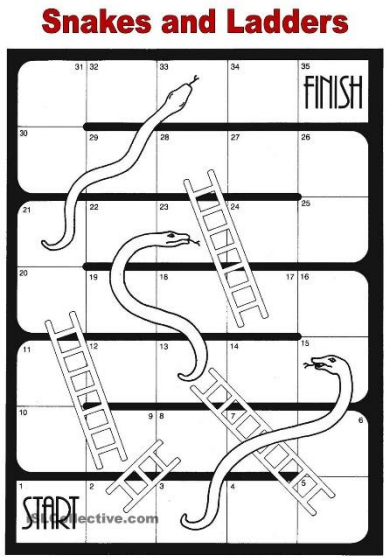


HOW TO HELP AT HOME

- Counting the number of steps up the stairs to bed.
- Counting the number of grapes in their snack pot.
- Using the language of capacity at bath time – filling and emptying containers.
- Baking – weighing ingredients, measuring liquids, counting chocolate buttons.
- Singing number songs.

PLAYING GAMES

- Snakes and ladders or other simple dice games
- Adding numbers on two dice
- Bingo
- Hopscotch
- Skittles



HOW TO HELP AT HOME

- Talk to your child about their learning on Tapestry.
- Look out for door numbers on a walk.
- Be a number detective in the supermarket looking for numbers.
- Talk about daily routines, the days of the week and events that happen on each day.
- Help your children learn their birthday month and date.

SOLVING PROBLEMS

- How many will there be if I add 4?
- How many will there be if I take 2 away?
- How many will we have each if we share these sweets?
- How do you know?
- Washing. How many socks are there? How many pairs of socks are there? Count the pairs of socks in 2s.
- How many knives and forks do we need to set the table?

USEFUL WEBSITES/APPS

- 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