MATHEMATICS WORKSHOP

Monday 20th November 2023

WAIS
Where All Individuals Shine
WILLIAM AUSTIN INFANT SCHOOL

WELCOME

Thank you for coming and we hope you found it interesting watching your child in part of the maths sessions.
This mornings session will go over:

- Our Maths sessions in class
- Numbers
- Objectives for Year R
- Key Vocabulary
- Maths Mastery
- Useful websites

MATHS SESSIONS IN YEAR R

- Maths is taught throughout the week with four main carpet sessions.
- It is then supplemented with two Mastering Number Sessions each week.
- Child initiated activities are planned in every day linked to what has been covered during the main carpet sessions.
- An adult led activity also takes place once a week linked to the weeks learning objective.

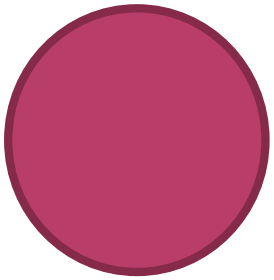
NUMBERS - WHAT DOES THIS INCLUDE?

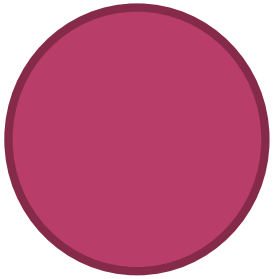
- Counting reliably – actions, sounds, irregular arrangements of objects
- Number recognition and ordering
- Cardinal Numbers
- Comparing Numbers
- **Subitise**

SUBITISE

This is recognising an amount without needing to count. It is important that children are able to use their knowledge and understanding of how numbers are made up and spotting patterns.

SUBITISE





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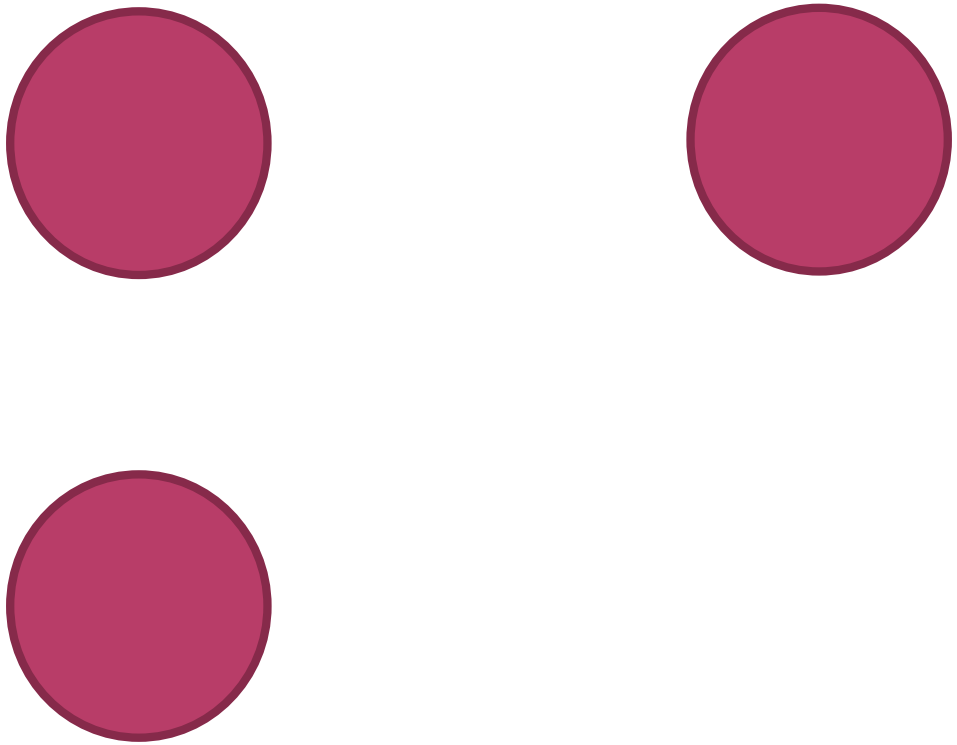

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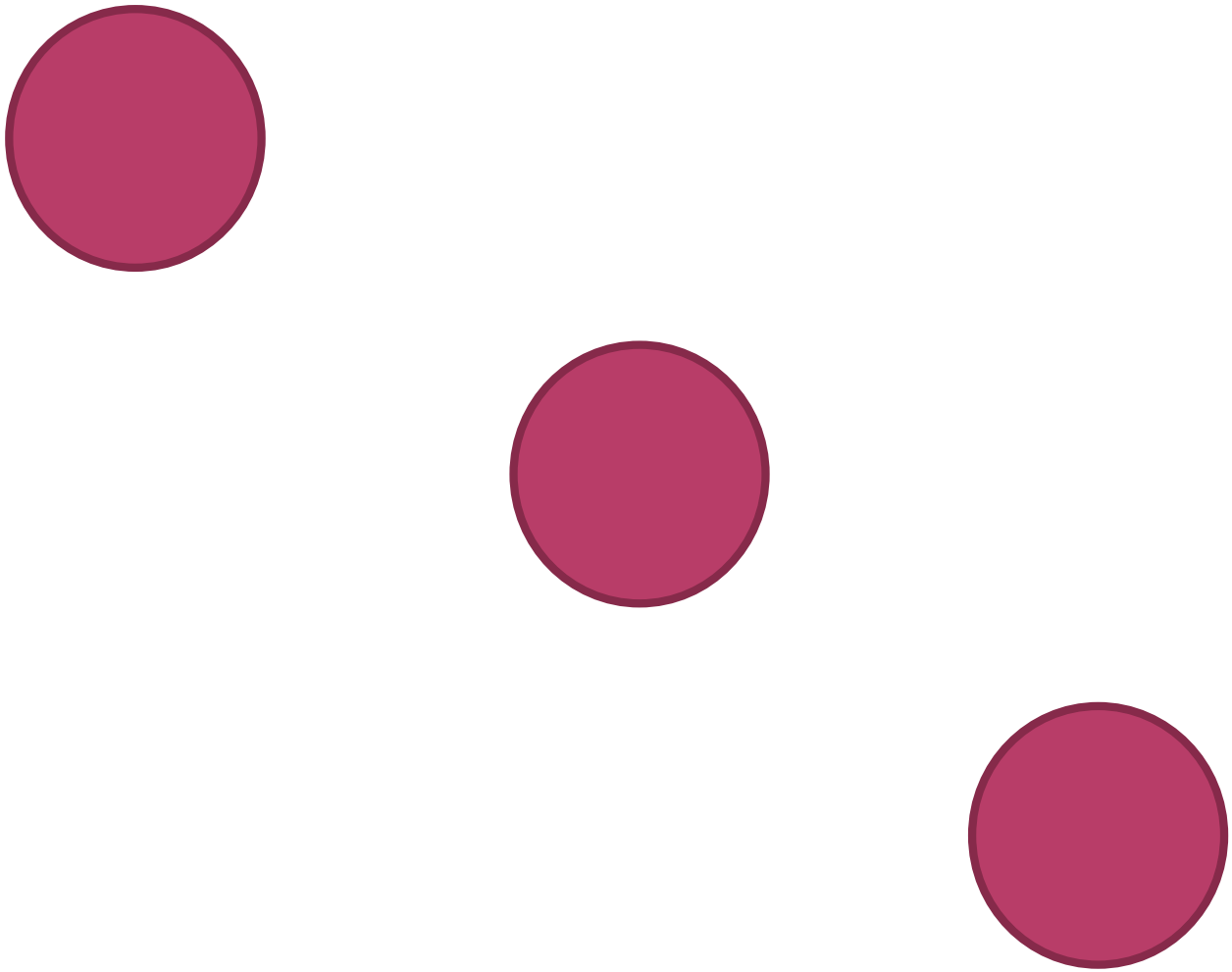

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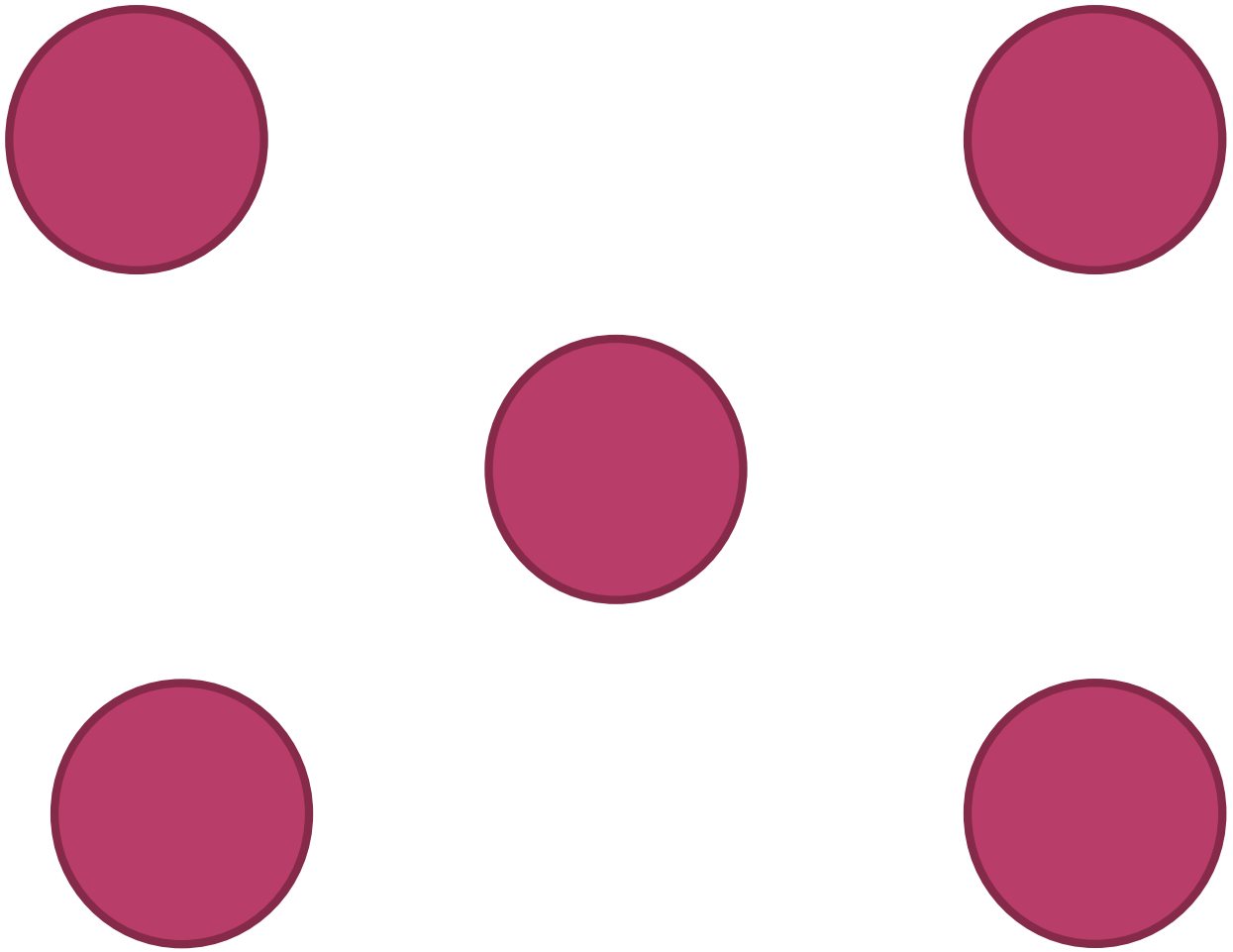

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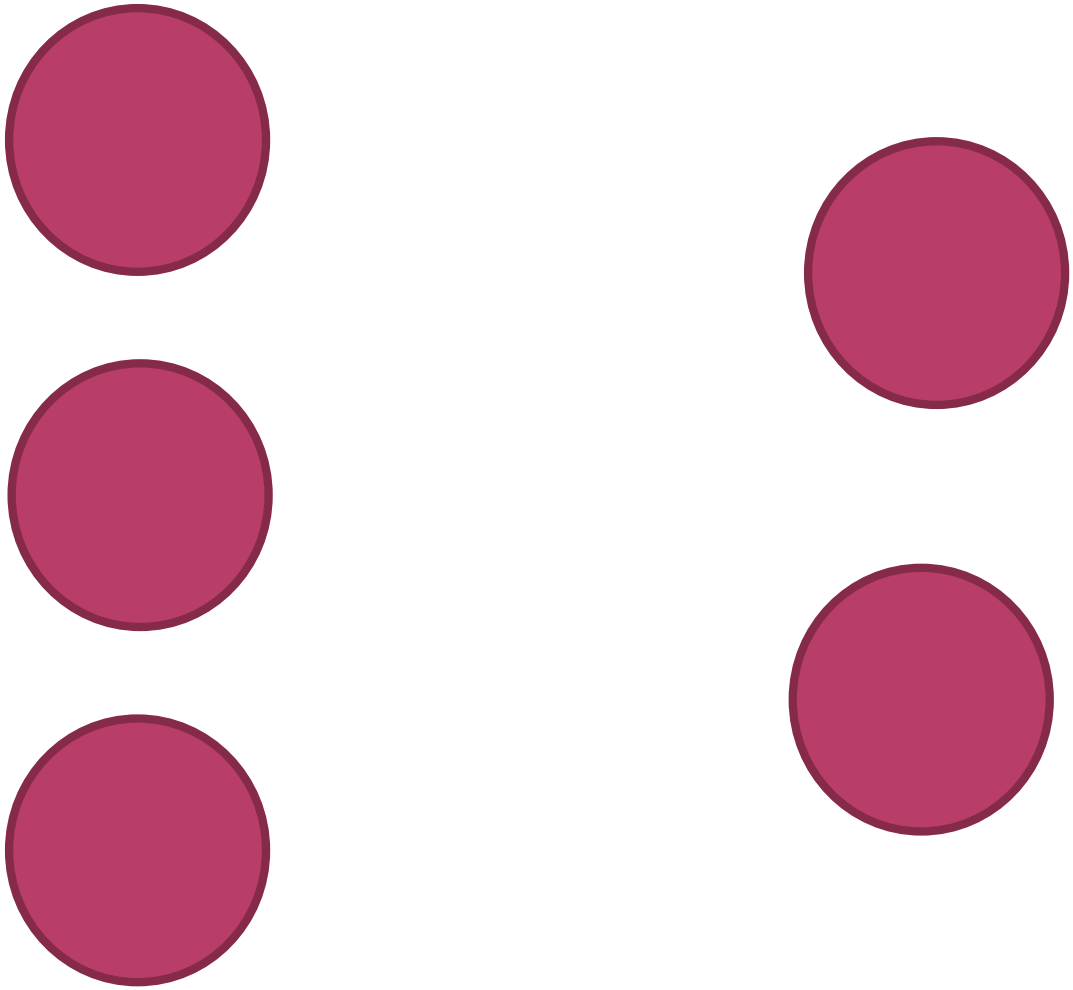


NUMBERS - WHAT DOES THIS INCLUDE?

- One more, one less (fewer)
- Composition of number
- Add and subtract + - =
- Number Bonds
- Odd and Even numbers
- Solving problems involving doubling, sharing and halving
- Recording – number formation

NUMBER RECOGNITION

Recognising numbers is a really important skill that children need to be able to do to ensure they can progress in Maths. They need to know numbers for lots of reasons.

Ways to help at home

- Look for numbers in the environment – door numbers, in books, on car number plates, on billboards, adverts on the TV. Encourage them to tell you what number they have seen.
- Put numbers around the house and go on a hunt to find them.
- Play games to support number recognition- bingo, lotto, snakes and ladders.
- Write numbers on a piece of paper and ask them to point to a given number.

NUMBER RHYMES, SONGS, STORIES

Reciting numbers in order:

- Five Currant Buns
- Count as you go up the stairs when going to bed
- 1,2,3,4,5, Once I caught a fish alive
- Five Little Monkeys
- The Very Hungry Caterpillar

COUNTING RELIABLY

When counting with your child ensure they say one number for one object. At school we encourage your child to move the object once they have counted it or if it can't be moved to cross it off when they have counted it.

Ways to help at home

- **Encourage your child to estimate** how many there are and check by **counting**
- Baking – counting buttons, cups of milk, spoons of sugar
- Count out a given number of toys for their teddy or sibling.
- Count out cups/plates/cutlery for members of the family

REMEMBER TO REMIND YOUR CHILD

The number of objects remains the same however they are arranged as long as no objects have been taken away or added.

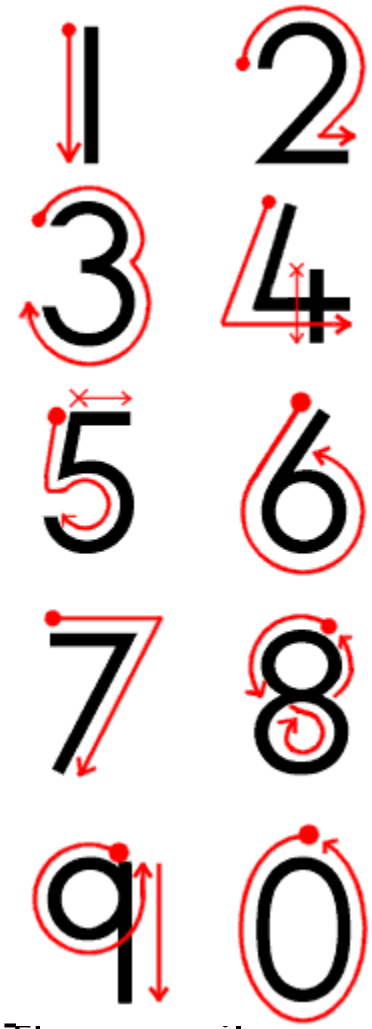
SOLVING PROBLEMS

Children will be encouraged to solve simple problems using their mathematical knowledge they already know.

Ways to help at home

- Laying the table – one to one correspondence
- How many are there?
- Touch each object as you count
- Count – How many lamp posts are there on the way to school? How many items in a shopping basket or carrots on a plate?
- Washing – matching socks and counting in 2s

WRITING NUMERALS



Look for numbers around your house and the local environment:

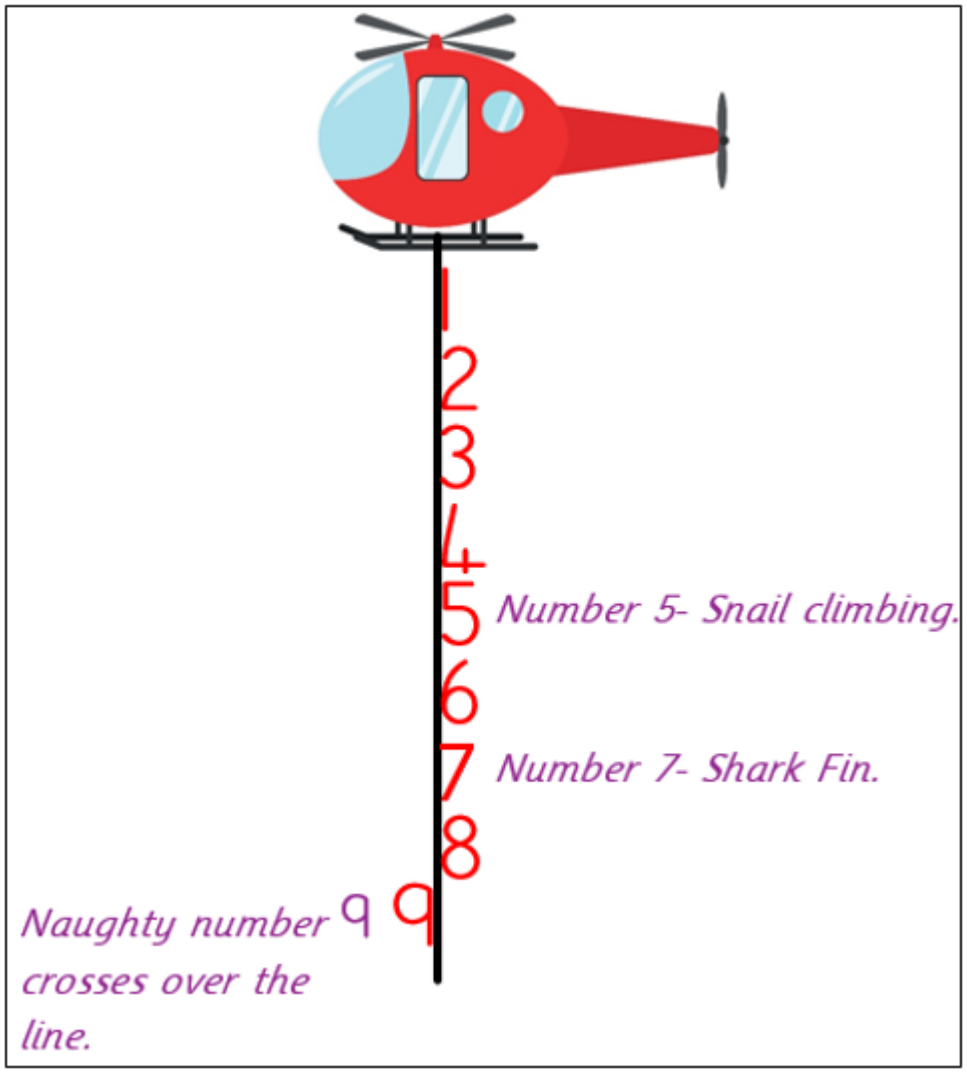
- Clock faces
- Door numbers
- Microwave display
- Car number plates

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.

NUMBER FORMATION

Number Formation Helicopter.



PLAYING GAMES

Make Maths fun by playing games. This will help with their counting skills, application of number, number recognition.

- Snakes and ladders or other simple dice games.
- Adding numbers on two dice.
- Bingo
- Hopscotch
- Lego
- Making odd and even paper chains.

EARLY LEARNING GOAL

The age related expectation by the end of the reception year is:

Number:

- 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.

EARLY LEARNING GOAL

Numerical Patterns:

• 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.

KEY VOCABULARY

- Zero
- Number
- One, two, three…. to twenty and beyond.
- Eleven
- Twelve
- Teen numbers - thirteen, fourteen…
- How many?
- None
- One more
- One less
- Compare
- More, Larger, Bigger, Greater
- Fewer, fewest, smaller, smallest, least
- First, second, third.
- Count
- Count on
- Count back
- More
- Less
- Odd
- Even
- Pattern
- Pair
- Subitise
- Ones
- Tens
- Digit
- Place
- Order
- Add
- Addition
- Plus
- Subtract
- Subtraction
- Take away
- Number line
- Single digit
- Answer
- Doubling
- Halving
- Sharing
- Check

KEY VOCABULARY

- Reasoning and Problem Solving:

- Listen
- Join in
- Think
- Imagine
- Start from
- Start with
- Point to
- Put
- Place
- Change
- Carry on
- What comes next?

- Find
- Choose
- Collect
- Make
- Build
- Tell me
- Explain
- Show me
- Count
- Solve
- Work out
- Check

WHAT ELSE IS COVERED?

- Size
- Weight
- Capacity
- Position
- Distance
- Time
- Patterns
- Shape

SIZE, WEIGHT AND CAPACITY

We encourage children to use specific words to describe and compare different measures. Please reinforce this language at home when talking about height, weight, length 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**

POSITION, DISTANCE, TIME

We encourage children to talk about distance and time in their play and also teach them specific words linked to the topics. E.g. far, near, morning, afternoon, evening. We also teach children to understand and use positional language.

Ways to help at home

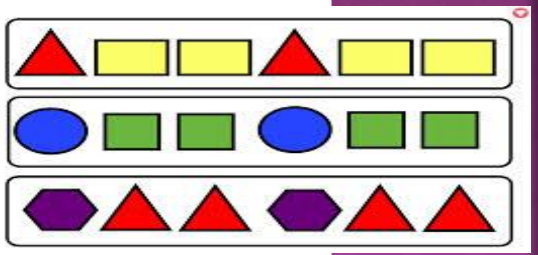
- **Distance** – how many steps from the gate to the front door? Is the shops near or far away?
- **Time** – measuring **short periods** of time and **sequencing** events. E.g. **morning, afternoon, evening, days of the week**. Discuss what they do at different times of the day or on certain days of the week.
- Position – **behind, in front, next to, in, on, beside, under, between, above**.
  Play positional games – Where's the teddy/toy? Hide a toy, child to explain where it is using positional language. Ask your child to put something away using positional language.

PATTERNS

We teach the children to make and recognise repeating patterns using 2 and 3 colours or shapes.

Ways to help at home

- Recognise patterns at home and in the environment around them.
- Describe patterns at home and in the environment around them.
- Create patterns with different toys. E.g colour cars, colour pencils.



SHAPES

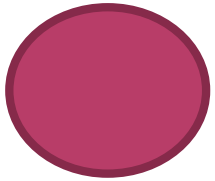
Shapes we teach in school:

- **2D shapes – circle, triangle, square, rectangle**
- Words used to describe **2D shapes – sides, corners/vertices.**
- **3D shapes – cube, cuboid, cylinder, cone, sphere**
- Words used to describe 3D shapes – **edges, faces, vertices and vertex.**

<u>Ways to help at home</u>

- Make pictures with 2d shapes
- Building models with 3d shapes
- Go on hunts at home and in the local environment looking for shapes

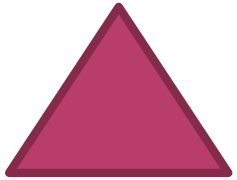
2D SHAPES



Circle- 1 **curved** side, 0 **corners**

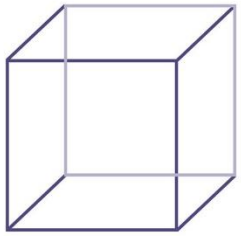
Square- 4 **straight sides** (all the same length) 4 **corners**

Rectangle- 4 **straight sides** (2 long, 2 short), 4 **corners**

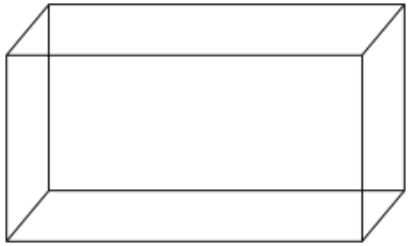


Triangle- 3 **straight sides**, 3 **corners**

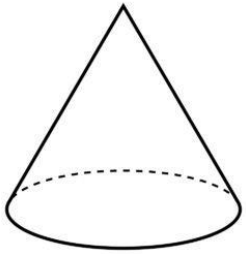
3D SHAPES



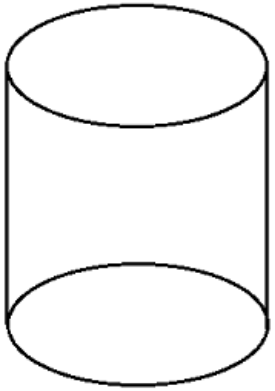
Cube- 6 **faces**, 12 **edges**, 8 **vertices**



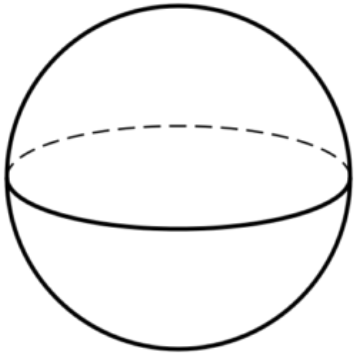
Cuboid- 6 **faces**, 12 **edges**, 8 **vertices**



Cone- 1 **curved face** and 1 **flat face**, 1 **curved edge** and 1 **vertex.**



Cylinder- 3 **faces**- 1 **curved** and 2 flat, 2 **curved edges**.

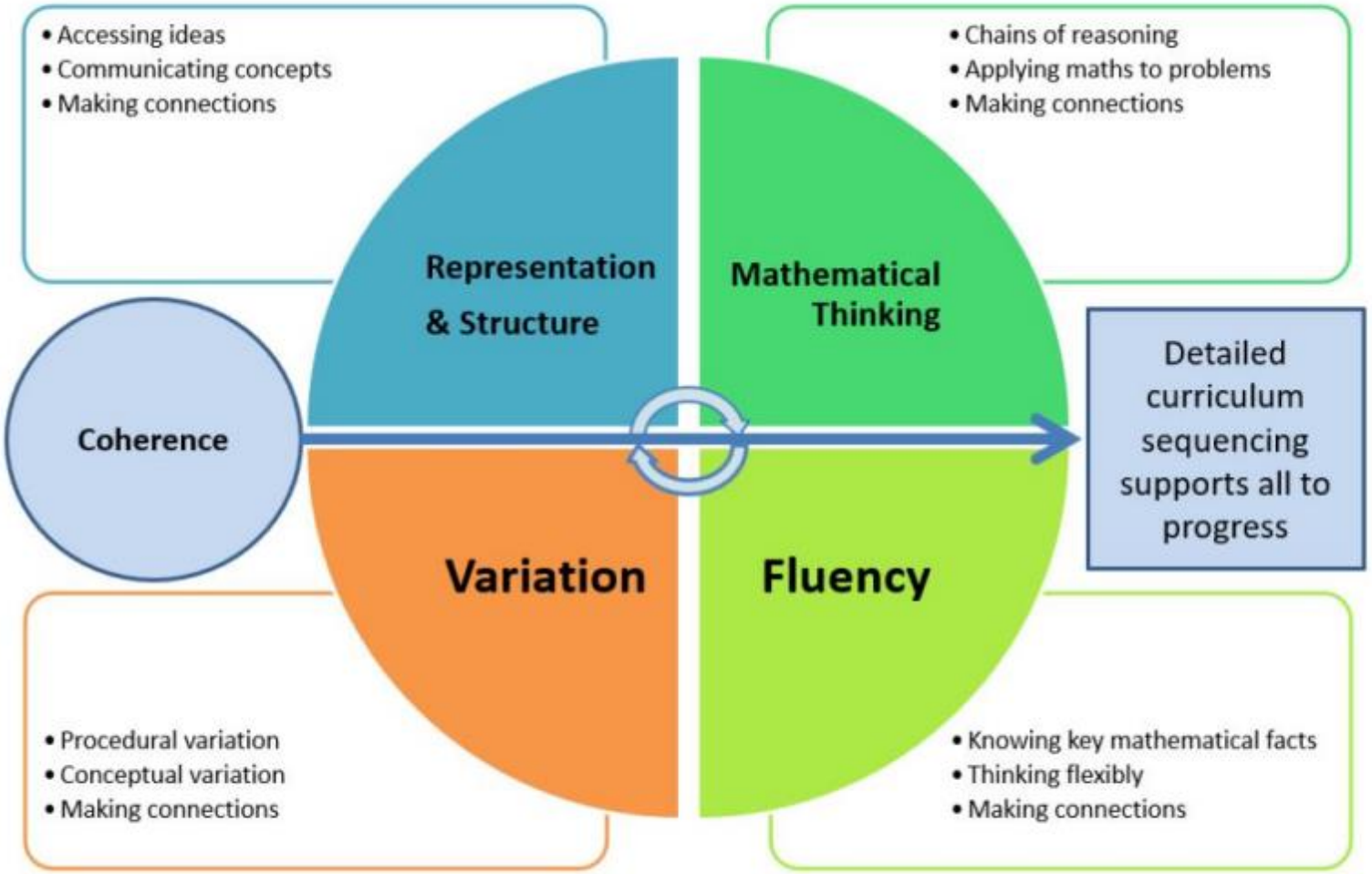


Sphere- 1 **curved face**, 0 **edges**

MASTERY

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Teaching for Mastery



Five Big Ideas of Teaching for Mastery, updated November 2022

WHAT DOES MASTERY MEAN?

- ***Mastering Maths*** means pupils acquire a ***deep, long-term, secure*** and ***adaptable understanding*** of the subject.

- '***Teaching for Mastery***' can be described as the range of elements of classroom practice and school organisation that combine to give pupils the best chances of mastering mathematics.

- ***Achieving 'Mastery'*** is where children have a secure understanding of the Maths that is being taught to them, enabling them to move onto more advanced material where they can apply their skills and understanding in a range of contexts.

- For ***EYFS*** there is a key focus on securing **Number knowledge** and the knowledge of numbers to 10. This supports them in recognising patterns and supports them to count beyond 20.

MASTERY AT WILLIAM AUSTIN INFANTS

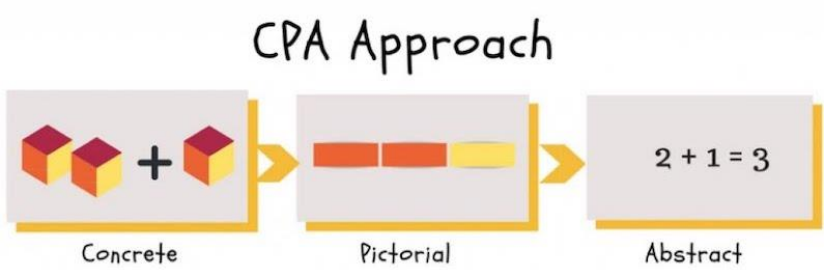
- At William Austin Infants School we have adopted ***White Rose Maths*** as a scheme of choice for our Maths teaching and learning. This is also supplemented with other resources such as The ***NCETM*** when and where needed to further support our children.

- This style develops children's **fluency** before moving onto **reasoning** and **problem solving**.

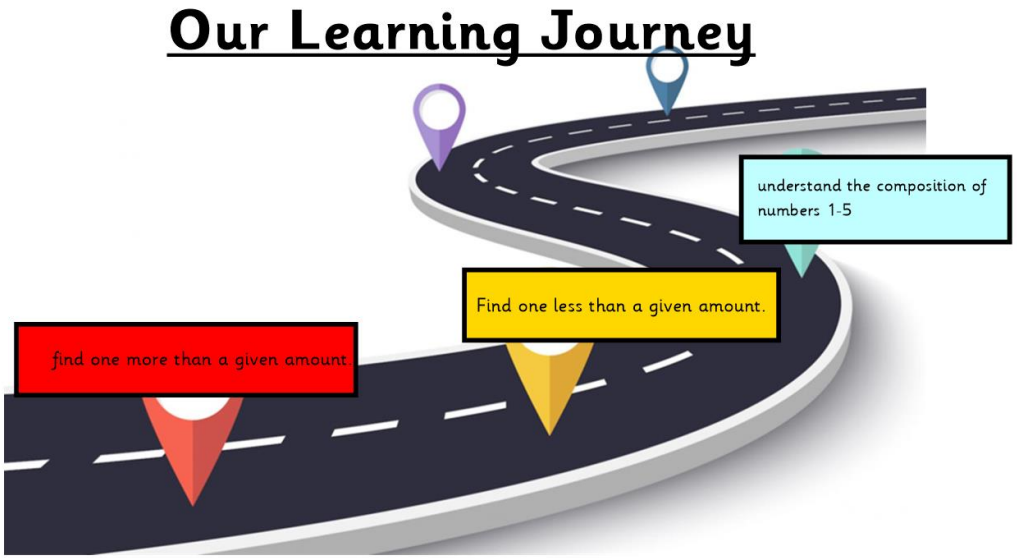
- The Mastery approach recognises that by ***nurturing positive attitudes*** and ***building confidence*** in mathematics, **ALL** children can ***achieve***.

- Therefore the *majority* of children are taught together as a whole class and the focus is on ***depth*** - not acceleration - so that ***all*** children have a chance to embed and deepen their understanding and learning.

- We follow the ***CPA approach*** in our teaching and learning. This stands for ***Concrete-Pictorial-Abstract***.



- **Key learning points** are identified during planning and a clear journey through the maths developed. These concepts are built in small, logical steps and are explored through clear mathematical structures and representations.

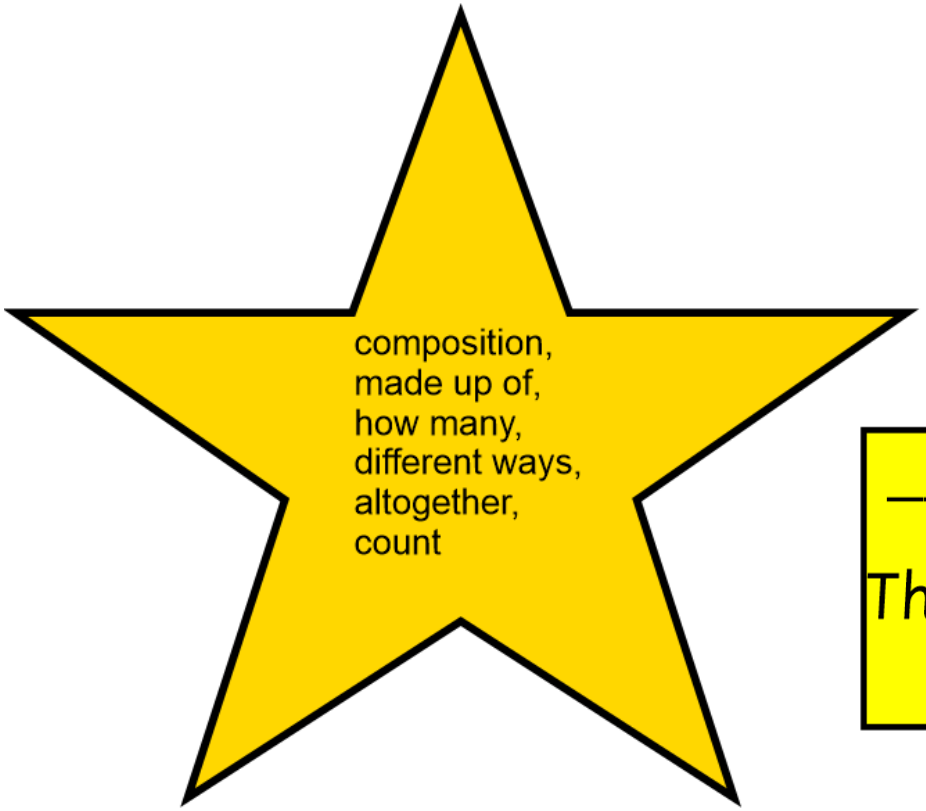


Reception | Autumn term | Block 5 – 1, 2, 3, 4, 5

Small steps

Step 1	Find 4 and 5
Step 2	Subitise 4 and 5
Step 3	Represent 4 and 5
Step 4	1 more
Step 5	1 less
Step 6	Composition of 4 and 5
Step 7	Composition of 1–5

- **Questions-** will probe pupil understanding throughout and responses are expected in full sentences, using precise mathematical vocabulary.



___ is a part and ___ is a part.

The whole is ___.

MASTERING NUMBER

- This project aims to secure firm foundations in the development of ***good number sense*** for **all** children from Reception through to Year 1 and Year 2.

- The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

- **Automaticity** with facts is important because it frees the mind to think about concepts.

- Mastering Number Parent Sessions- January 2024.

USEFUL WEBSITES/APPS

- https://whiteroseeducation.com/resources/maths/
- https://mathsbot.com/
- https://whiteroseeducation.com/1-minute-maths
- https://www.topmarks.co.uk/Search.aspx?Subject=16&AgeGroup=1
- https://nrich.maths.org/early-years
- https://www.bbc.co.uk/bitesize/subjects
- https://www.bbc.co.uk/iplayer/episodes/b08bzfnh/numberblocks
- https://classroom.thenational.academy/subjects-by-key-stage/early-years-foundation-stage/subjects/maths
- http://www.ictgames.com/resources.html
- http://www.familylearning.org.uk/online_math_games.html
- http://www.crickweb.co.uk/Early-Years.html
- http://www.cowlyowl.com/apps/little-digits