Wootton Bassett Infants School Maths Presentation For Parents 15/11/23

Teaching for Mastery

MathsHUBS

1. We ALL start the journey TOGETHER

2. Some children will need a little additional support along the way

3. Some children, who feel confident, will be let loose. They'll be able to explore deeper into the woods, before returning to the group to continue on with the journey.

4. Children will not be racing off ahead on a different journey.

5. Children will not be left behind alone and isolated.

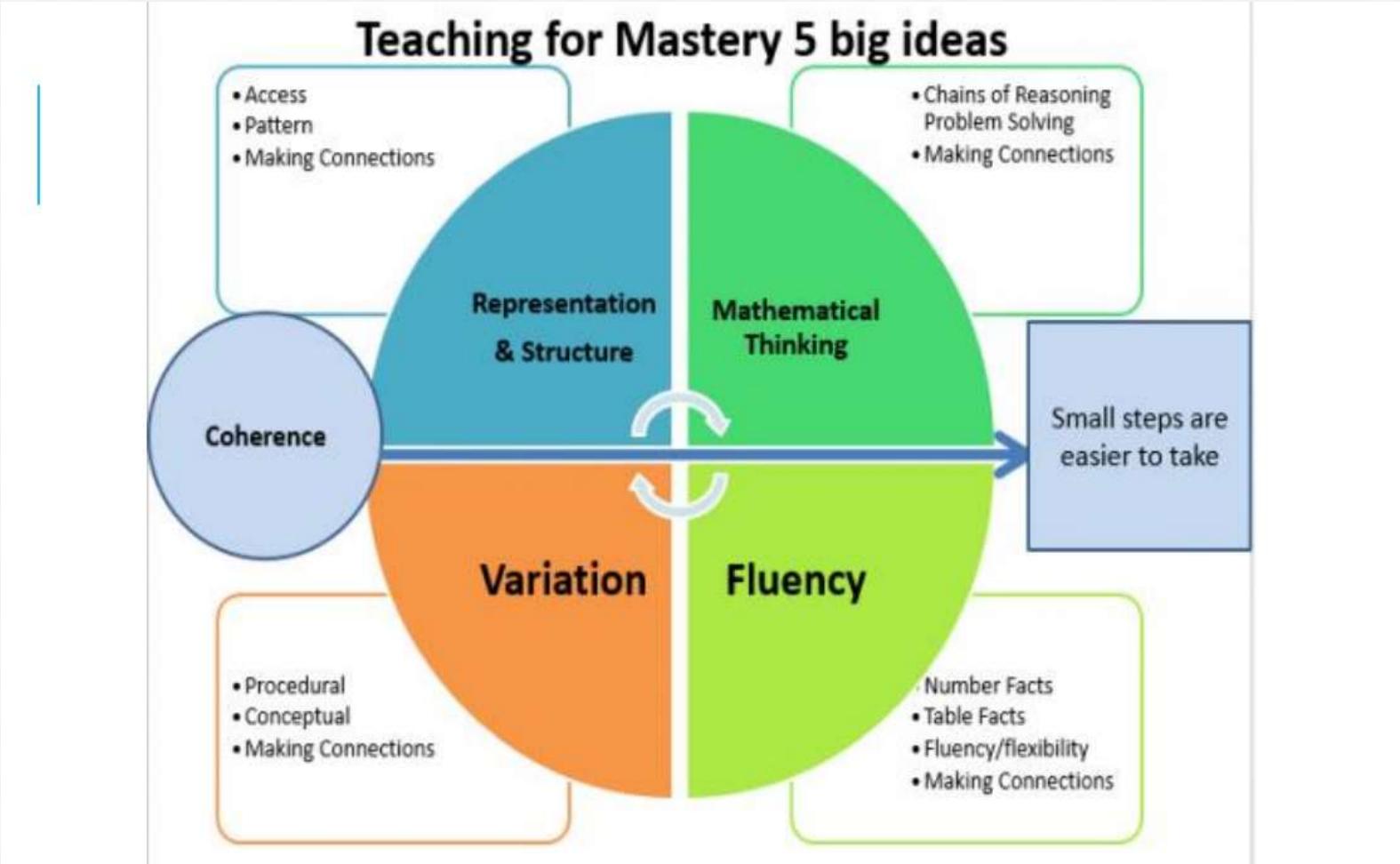
Martin Adsett
Mastery Specialist

We're Going on a Maths Hunt

Aim for Today

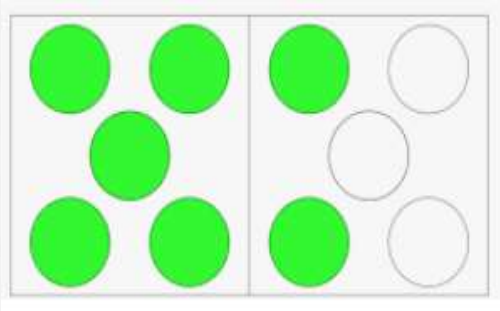
- Inform you of the how we teach maths at RWBI
- Look at calculations
- Ways you can support at home

BACKGROUND OF MATHS MASTERY Pupils in South Asian schools are renowned for their academic prowess. In 2015, Shanghai, Hong Kong, Singapore, Japan and South Korea topped the rankings for English and maths test results, while the UK languished in 23rd place. But now, primary schools in England are adopting their method of teaching maths with the hope of improving pupils' performance.


Teaching for Mastery 5 big ideas
• Access
• Pattern
• Making Connections
• Chains of Reasoning
Problem Solving
• Making Connections
Representation
& Structure
Mathematical
Thinking
Coherence
Small steps are
easier to take
Variation
Fluency
• Procedural
• Conceptual
• Making Connections
• Number Facts
• Table Facts
• Fluency/flexibility
• Making Connections

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. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.



CPA

Children (and adults!) can find maths difficult because it is abstract. The CPA approach builds on children's existing knowledge by introducing abstract concepts in a concrete and tangible way.

It involves moving from concrete materials, to pictorial representations, to abstract symbols and problems (Maths No Problem, 2019).

CPA – CONCRETE STEP

Concrete is the 'doing stage'. During this stage, children use concrete objects to model problems.

Unlike traditional maths teaching methods where teachers demonstrate how to solve a problem, the CPA approach brings concepts to life by allowing children to experience and handle physical (concrete) objects.

With the CPA framework, every abstract concept is first introduced using physical, interactive concrete materials (Maths No Problem, 2019).

For example, if a problem involves adding paintbrushes, children can first handle paintbrushes. From there, they can progress to handling abstract counters or cubes which represent the paintbrushes.

SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

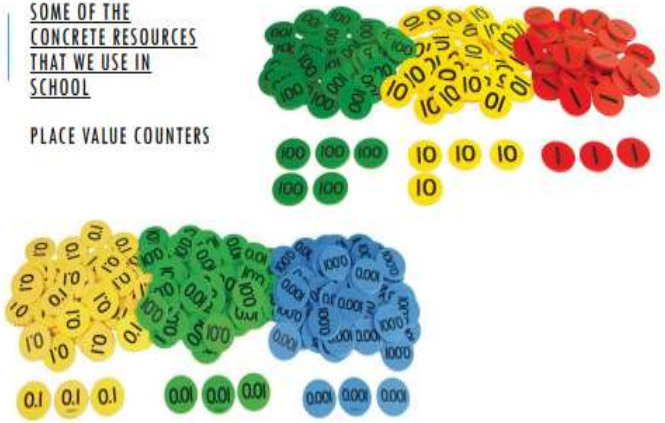
MULTILINK CUBES

SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

NUMICON

SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

PLACE VALUE COUNTERS

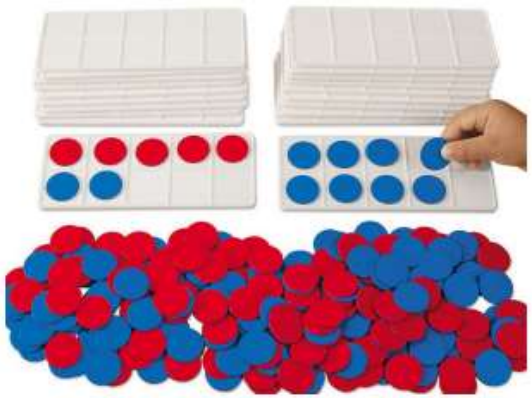


SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

BASE 10 EQUIPMENT

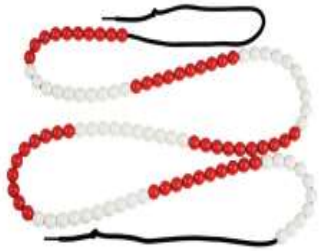
SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

TENS FRAMES AND DOUBLE SIDED COUNTERS



SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL

BEAD STRINGS



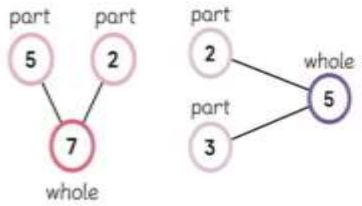
BUT REALLY THERE IS NO END TO THE CONCRETE RESOURCES WE/YOU CAN YOU USE

CPA – PICTORIAL STEP

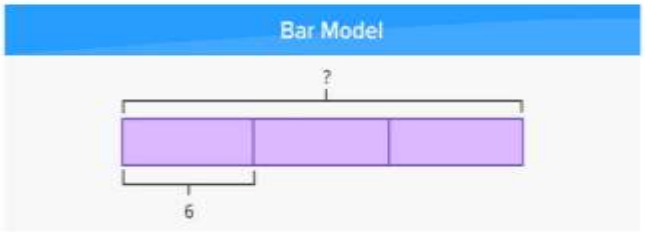
Pictorial is the 'seeing' stage. Here, visual representations of concrete objects are used to model problems. This stage encourages children to make a mental connection between the physical object they just handled and the abstract pictures, diagrams or models that represent the objects from the problem.

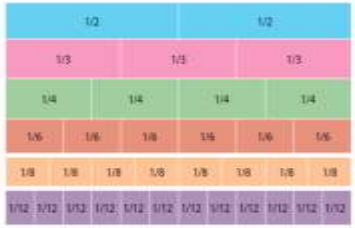
Building or drawing a model makes it easier for children to grasp difficult abstract concepts (e.g. fractions). Simply put, it helps the children visualise abstract problems and makes them more accessible (Maths No Problem, 2019).

EXAMPLES OF MODELS AND DIAGRAMS



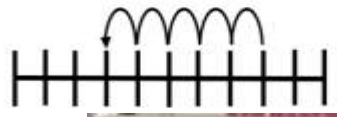
Part-whole model



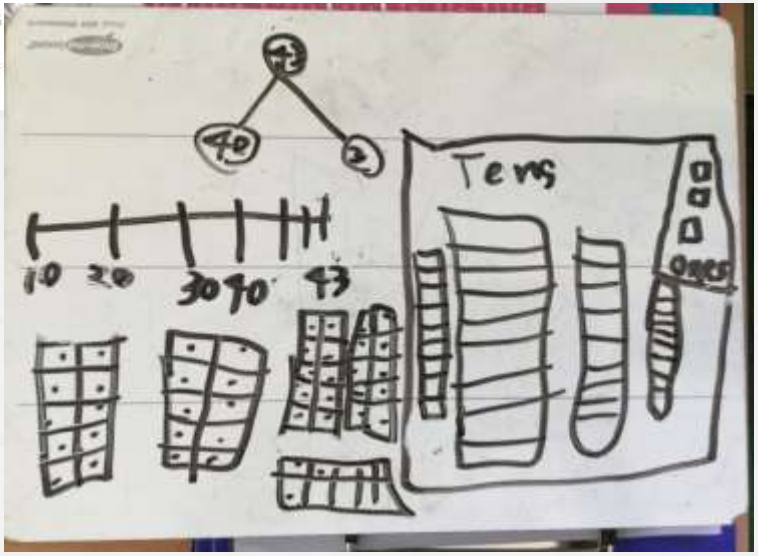


Fraction wall

Question: What is 3 - 5?



Answer =



Showing the number 43

CPA – ABSTRACT STEP

Abstract is the 'symbolic' stage, where children use abstract symbols to model problems. They will not progress to this stage until they have demonstrated that they have a solid understanding of the concrete and pictorial stages of the problem.

The abstract stage involves the teacher introducing abstract concepts (e.g. mathematical symbols). Children are introduced to the concept at a symbolic level, using only numbers, notation, and mathematical symbols
(e.g. +, -, x, /) to indicate addition, subtraction, multiplication or division.

EYFS

Mathematics

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.

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 Stage 1 (Year 1 and Year 2)

Year 1

Counting within 100

Comparing numbers part-part whole

Numbers 0 to 5

Numbers 0 to 10

Equations using =

First, now then stories to support addition and subtraction

Addition and Subtraction facts within 10.

Numbers 0 to 20

Year 2

Numbers 10 to 100

Calculations within 20

Fluently add and subtract within 10

Add and Subtract 2 digit + 1 digit

2 digit – 1 digit

Introduction of multiplication

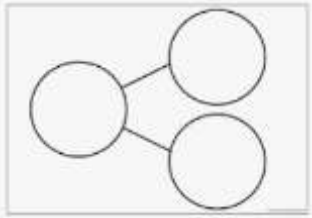
Introduction to division

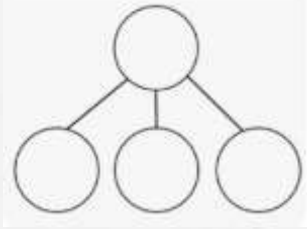
Addition and subtraction 2 digit + 2 digit 2 digit – 2 digit

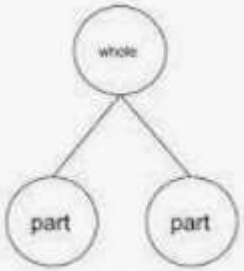
Multiplication and Division doubling and halving

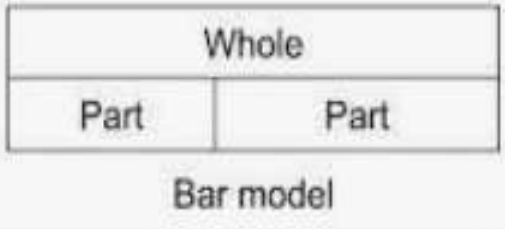
Model on whiteboard a couple of calculations.

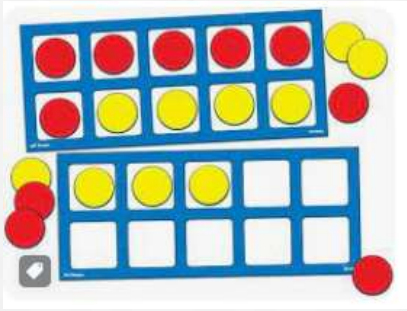
Manipulatives and Structures

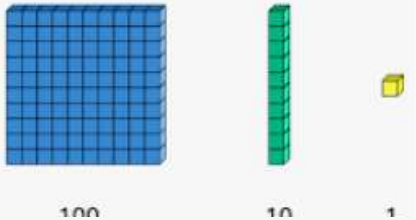


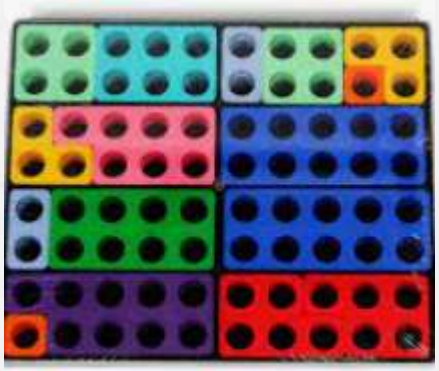












Top tips for parents and families:

Be positive about maths. Don't say things like "I can’t do maths" or "I hated maths at school"; your child might start to think like that themselves.

Point out the maths in everyday life. Include your child in activities involving maths such as using money, cooking and travelling.

Praise your child for effort rather than talent - this shows them that by working hard they can always improve.

Doodle Maths

KIRFs – Key Instant Recall Facts

Teaching for Mastery

MathsHUBS

We're Going on a Maths Hunt

We're Not Scared

National Centre for Excellence in the