

Which is the odd one out? Why?

6

12

15

18

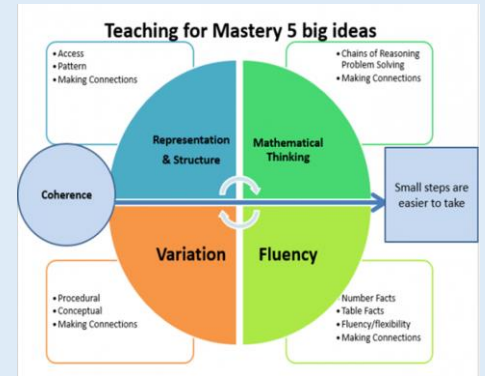
Teaching for Mastery in Maths and Building Conceptual Understanding through EYFS and KS1

Wednesday 20th November 2019



Teaching for Mastery

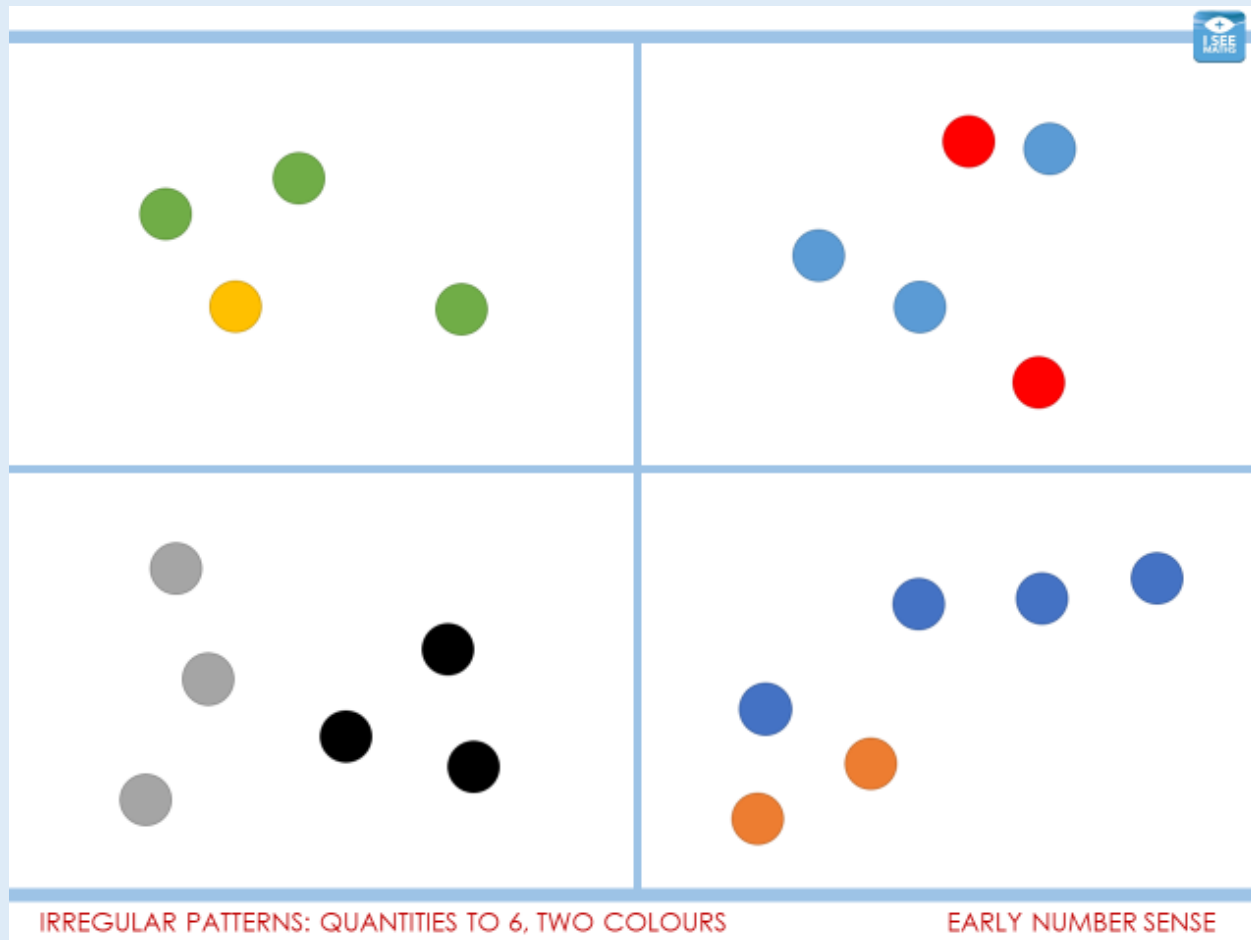
- All can succeed
- Whole class is taught together
- Individual learning needs addressed through scaffolding, skilful questioning and rapid intervention
- High quality feedback and addressing of misconceptions through marking and teacher interaction
- Mathematical processes are emphasised and broken down to build conceptual understanding in small steps to lead to most efficient methods
- Precise mathematical language
- Deep and sustainable learning
- Lots of time spent on key concepts
- Lots of practise inside and outside of the daily maths lesson to develop fluency and consolidate their learning



Key skill: subitising is the foundation of strong number sense.

How many dots can you 'see'?

The ability to think about numbers as compositions of other numbers was described by Resnick (1983) as 'probably the major conceptual achievement of the early school years'.



Number Sense

- **Counting** – knowing the number names in order forwards and backwards, understanding how to count objects, events or actions in ones, and also in twos, fives and tens and so on
- **Comparing** – having a feel for the relative sizes of numbers, putting numbers in order, estimating
- **Composition** – understanding how each number can be made up in different ways by addition, subtraction, multiplication and division; knowing how our number system uses groups of hundreds, tens and ones

Key counting principles:

- **One-to-one correspondence** – when children touch or point to each object individually as they count and match a number to each object that is being counted
- **The need for stable order** – children will gradually find out that numbers need to be said in the same order
- **Abstraction** – children may begin by counting objects like cars ‘in the here and now’, in front of them, but they will also realise that many things can be counted, such as claps or jumps
- **Order irrelevance** – when counting a group of objects in a random layout, it doesn’t matter where you start; whether you start at the top, bottom, middle or edges, the result is the same as long as each item is counted once
- **Cardinality** – understanding that the last number counted indicates how many things are in the set

As an example...

Order these numbers:

二	八	九	万	十
四	六	三	七	一

Can you order the numbers now?

二



八



九



万



十



四



六



三



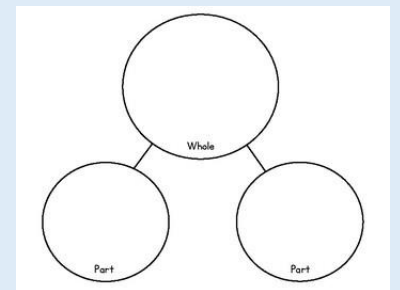
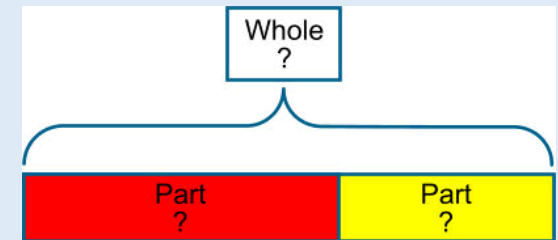
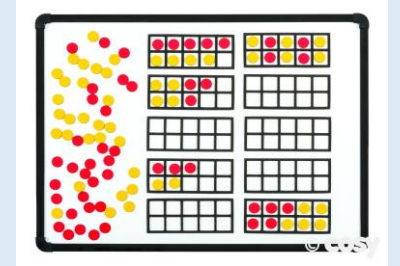
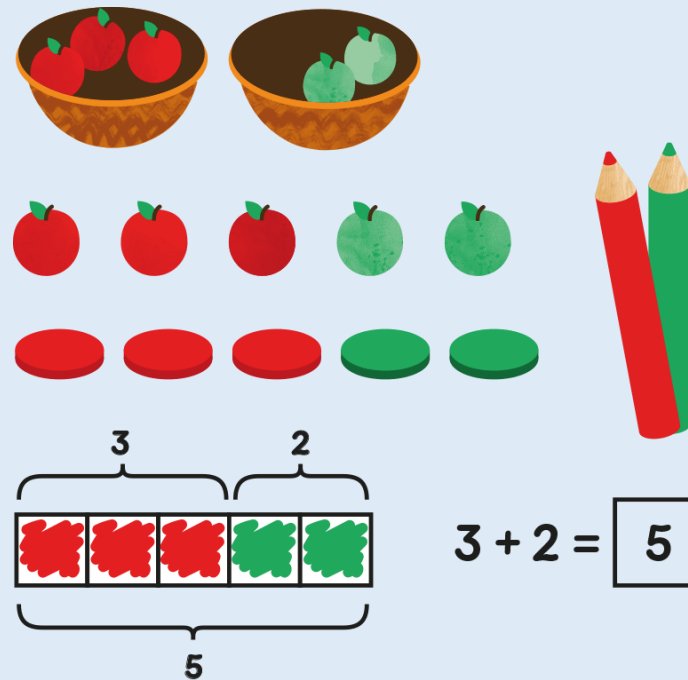
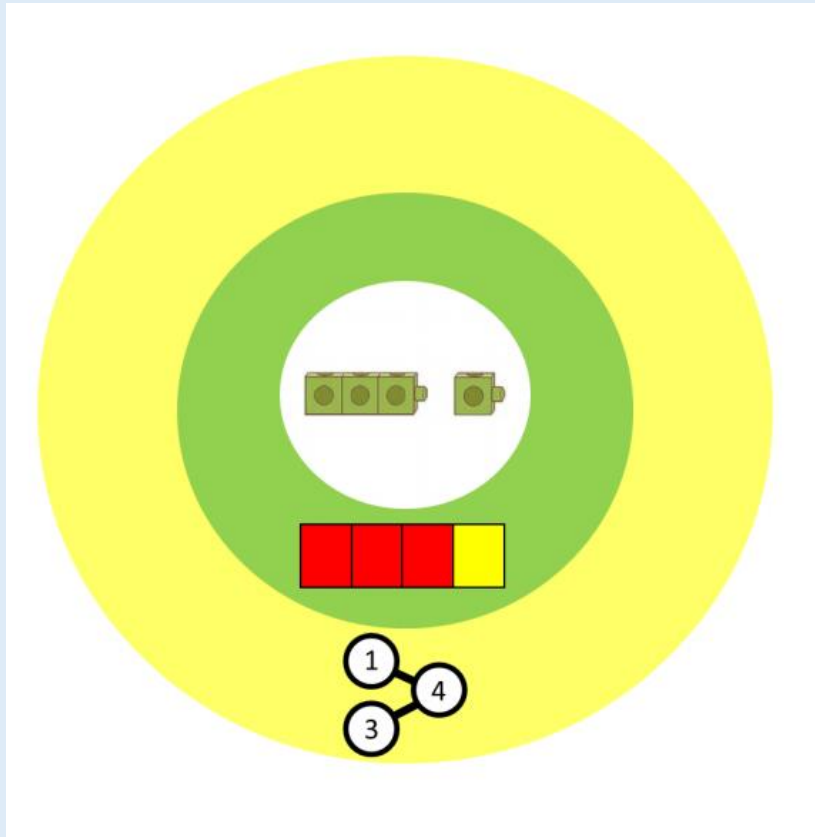
七



一



Concrete – Pictorial - Abstract



- Children are taught fluency in number which is applied in reasoning and problem solving contexts which are accessible to all. Teachers scaffold learning so that children are supported to master new concepts, recall prior learning and deepen their knowledge through carefully planned, challenging tasks.
- Precise mathematical language and specific vocabulary is modelled and encouraged in children when talking with their peers, giving explanations and recording their ideas.

Games to play at home...

https://dreme.stanford.edu/sites/g/files/sbiybj9961/f/dreme_family_card_game_booklet_oct2019.pdf



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