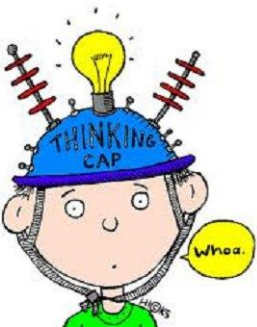


Developing Number Sense and Fluency in KS1

Aims of today:

- To explore the main elements that can help children develop number sense and fluency when calculating in KS1.
- To discuss ways you can support your children at home, including games you can play.

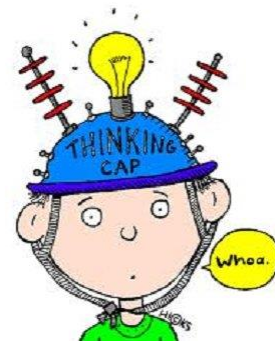




Let's play...



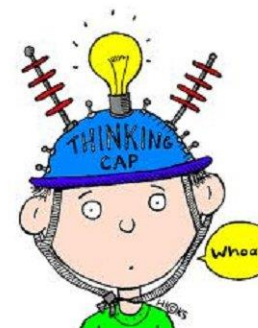
Bunny Ears



Can we predict children's future maths ability?

Research has found 3 key components:

- Having a good sense of the size of numbers (Number Magnitude)
- Being able to subitise
- Being able to invent strategies



Number Magnitude

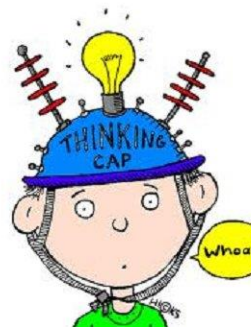
‘Immature number line representation is linked to both lower mathematical performance, but also with hindering learning of new mathematics.’

(Booth & Siegler , 2008)

Which is larger:
3 or 6?

Which is larger:
 $\frac{1}{3}$ or $\frac{1}{6}$?

How close can
you get to 1?



Number Magnitude

It is important to develop linear estimation.



Activities like this help to develop strategies for estimating and children's sense of the relative size of numbers.

It is essential that children explain their reasoning.

Deconstructing and reconstructing

- Explicit teaching strategies

What can't this number be?

What could this number be?

This number could be...because...

This number can't be...because...

What could this number be?

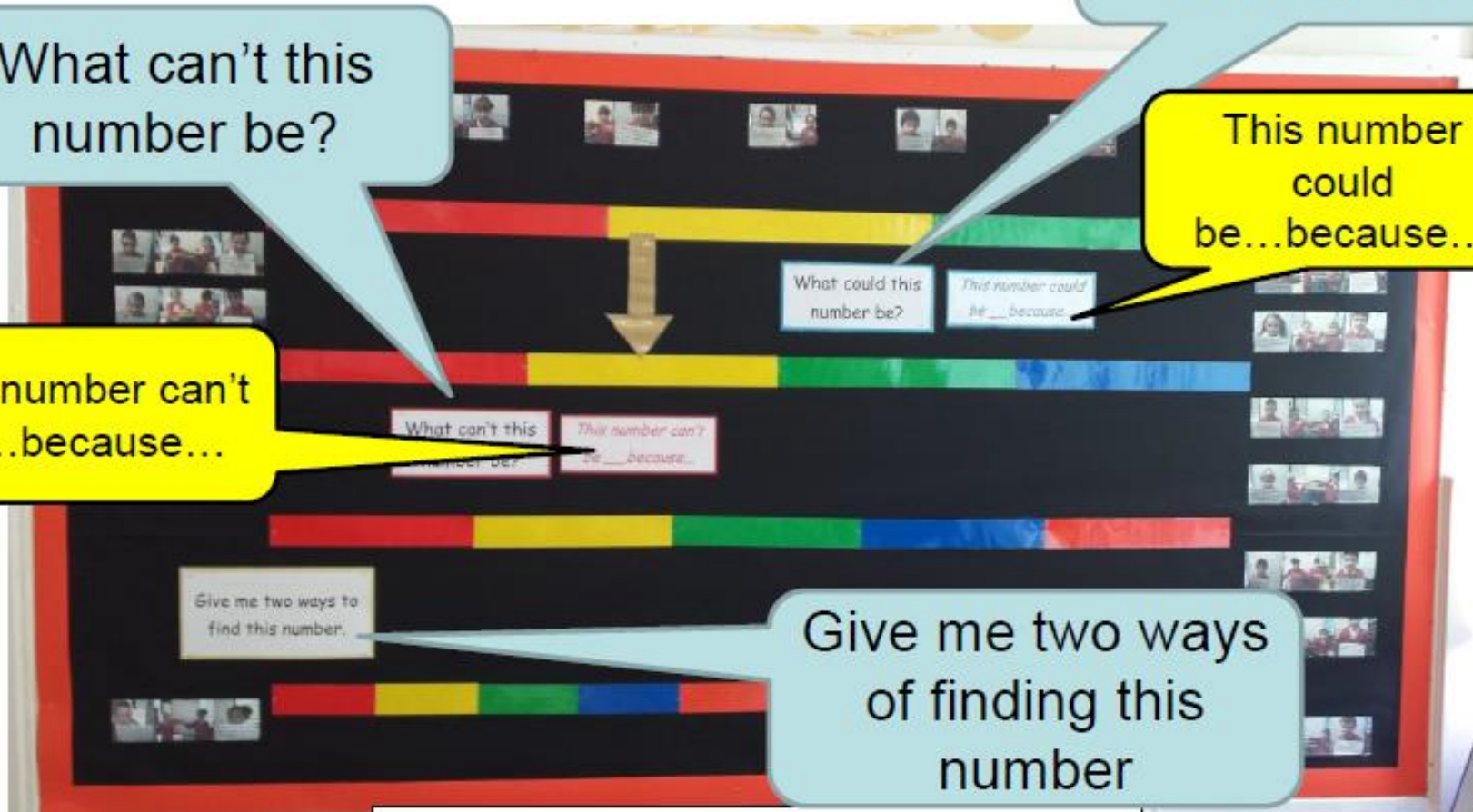
This number could be...because...

What can't this number be?

This number can't be...because...

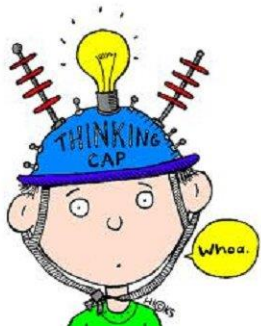
Give me two ways to find this number.

Give me two ways of finding this number

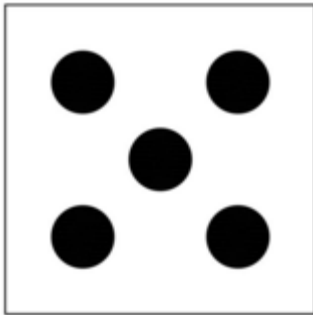


Subitising

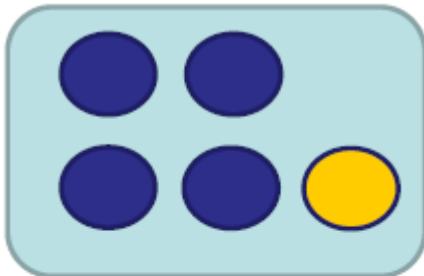
The process of immediately knowing how many objects are in a small group without needing to count them.



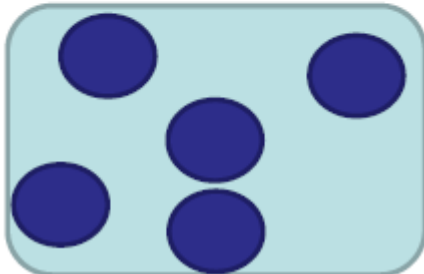
Developing early number sense



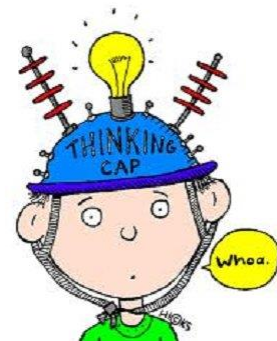
Familiar and structured dot patterns



structured dot patterns



unstructured dot patterns



Perceptual Subitising



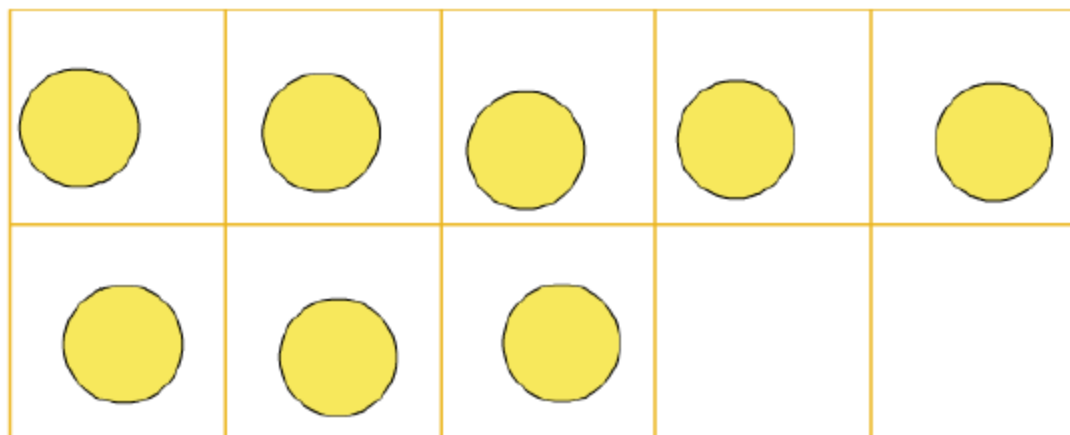
- Being able to 'just see' how many are in a group, without counting

→ Conceptual Subitising

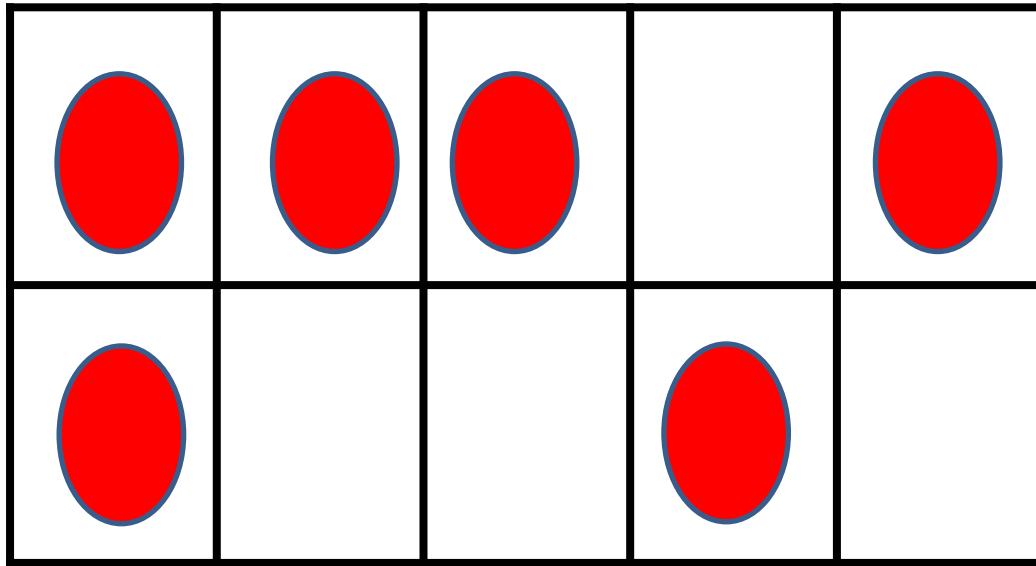
- Being able to see numbers within numbers (eg 6 is made of 4 and 2).
This helps to develop efficient calculating skills.

Partitioning/building numbers

Say what you see...



How many spots?



Number talk

How do you know?

What do you see?

Tens Frame Games

These are great for developing maths skills including:

- Subitising
- Reasoning about numbers
- Comparing
- Composition – knowing number bonds

These can also be played with standard playing cards.

Board games can be great at developing number sense and fluency too.



Let's play...



Spot the Number!

Higher or Lower



Highest Card Wins (or lowest!)

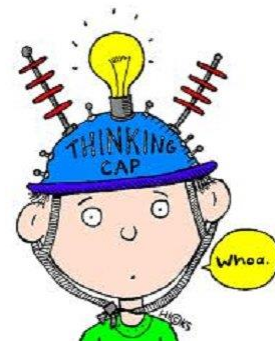


Let's play...



Mind Reading Cards

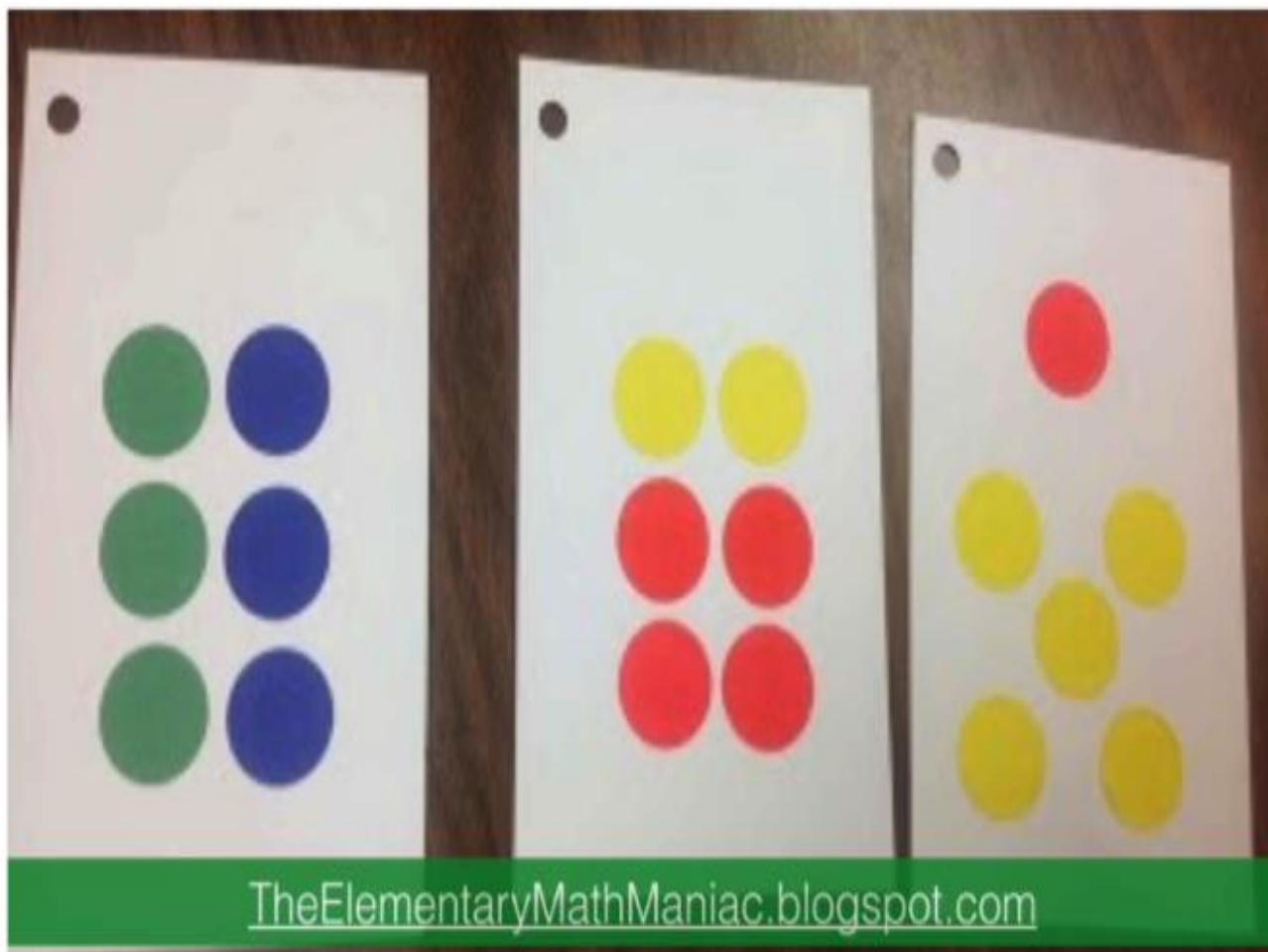
Tens Go Fish



Other ideas for developing
Conceptual subitising → fluency and
number sense

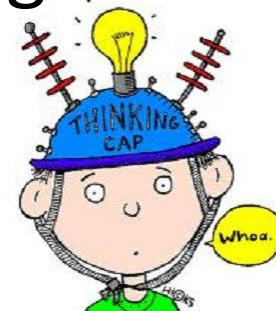


What's the role of colour here?



How can you help at home?

- Involve your child in everyday maths.
- Help to develop your child's sense of number magnitude by talking about the size of numbers. Have a go at estimating.
- Play lots of games, including the ones we've provided and ordinary board games.
- Discuss and celebrate your child's strategies for calculating.



To finish...

‘ PLEASE, PLEASE... NEVER say that you are bad at maths ... not anywhere within a 100-mile radius of any child you ever want to influence.’

Naomi Sani

‘How to do maths so your child can too’

