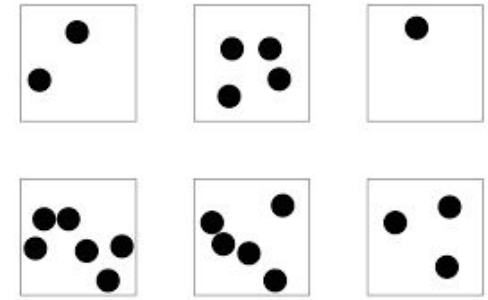


# Maths Parent Workshop



Aims of this session:

- Principles of counting; What they are and the importance of mastering these skills
- Number composition (focussing subitising) :  
What it is, How we can develop this skill at school and home

# The principles of counting



We can often want to rush towards symbols in mathematics and counting is no different.

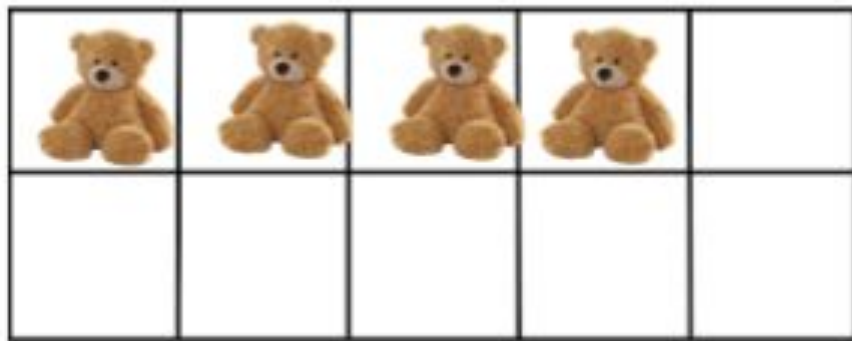
Help children develop a firm grasp of counting before we formally introduce the symbols of number.

## 5 counting principles

### 1. One-to-One Correspondence Principle

Understanding that each object being counted must be given one count and only one count.

It is useful in the early stages for children to actually tag or to move each item as it is counted.




## 5 counting principles

### 2. Stable Order Principle

Understanding that the counting sequence stays consistent. It is always 1, 2, 3, 4, 5, 6, 7, etc., not 1, 2, 4, 5, 8.

Can your child spot your mistake?



Nursery rhymes, practise counting a variety of different things in different ways.

# 5 counting principles



## 3. Cardinality Principle

Understanding that the last count of a group of objects represents how many are in the group.

Keep modelling: There are 1,2,3 marbles in the jar.  
There are 3 marbles.

# 5 counting principles

## 4. Abstraction Principle

Understanding that it doesn't matter what you count, how we count stays the same.

For example, any set of objects can be counted as a set, regardless of whether they are the same colour, shape, size, etc.

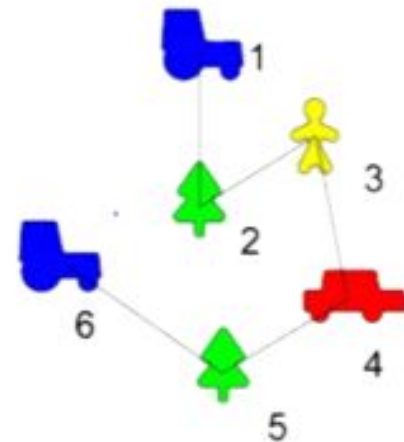
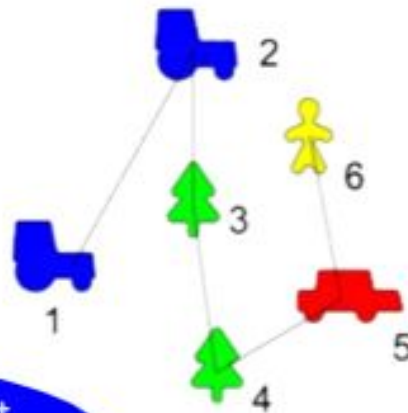
This can also include non-physical things such as sounds, imaginary objects, etc



# 5 counting principles

5. **Order Irrelevance:** Knowledge that the order that items are counted in is irrelevant as long as every object in the set is given one count and only one count.

(left-to-right,  
right-to-left, in a  
random fashion)



Re-count real objects that  
can be touched starting from  
different position.

# Principles of counting

**One-to-One Correspondence:** Understanding that each object receives one count and one only one count

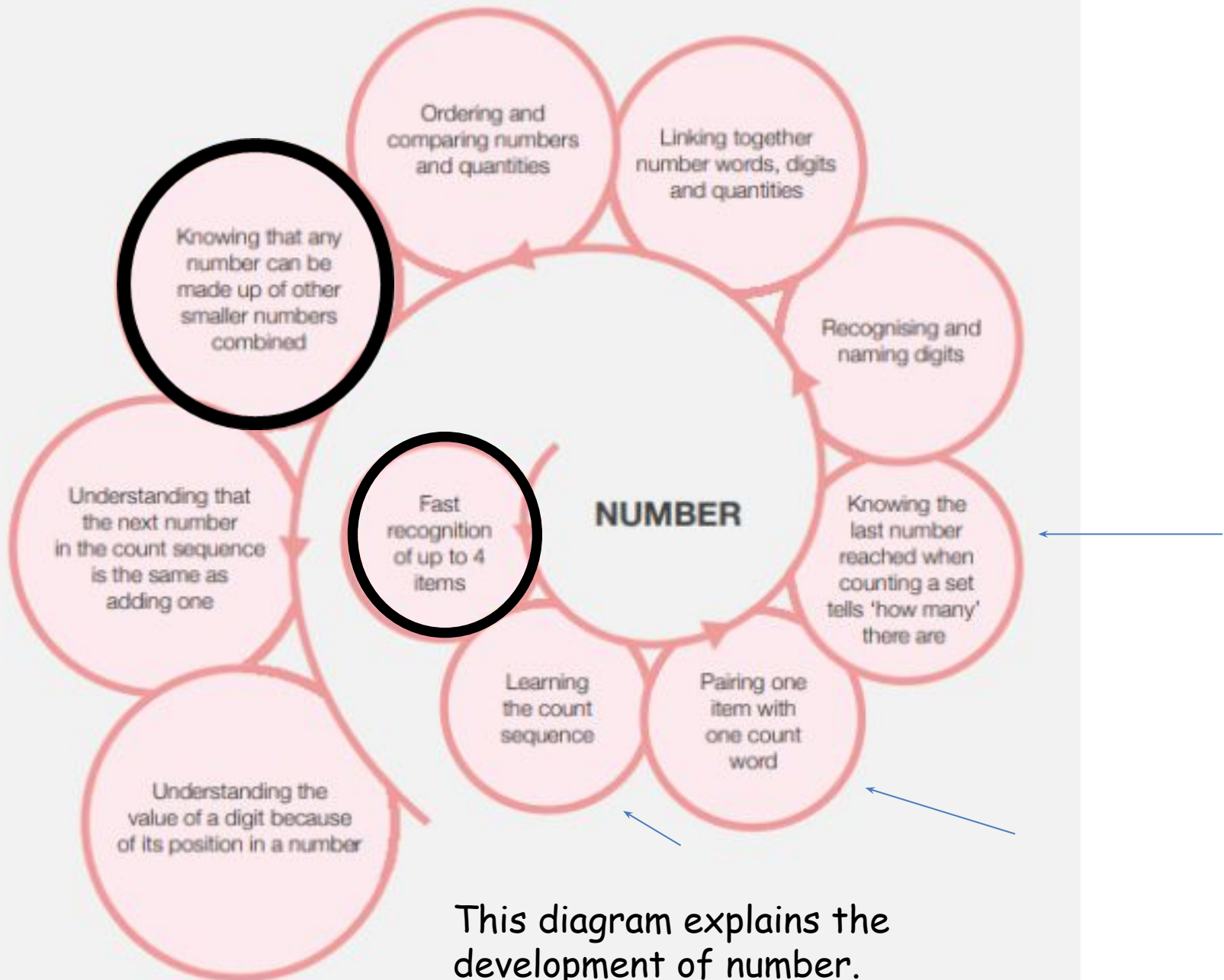
**Stable Order:** Understanding the verbal sequence of counting; being able to say the number names in sequential order

**Cardinality:** Understanding that the last number spoken in a counting sequence names the quantity for that set

**Abstraction:** Understanding that it doesn't not matter what you count, how we count stays the same. For example, any set of objects, regardless of the same colour, shape, size, etc. This can also include non-physical things such as sounds.

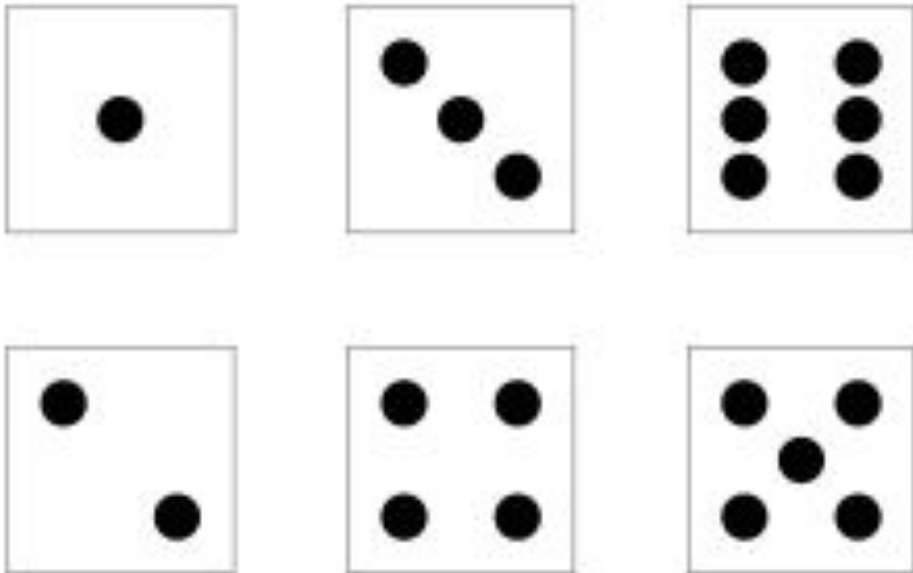
**Order Irrelevance:** Knowledge that the order that items are counted in is irrelevant—left-to-right, right-to-left, in a random fashion





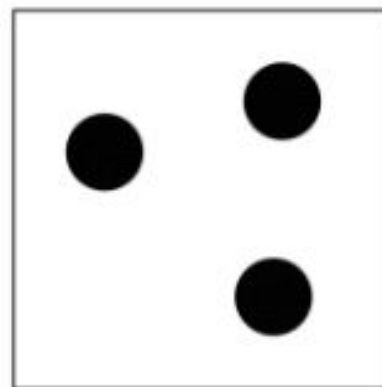
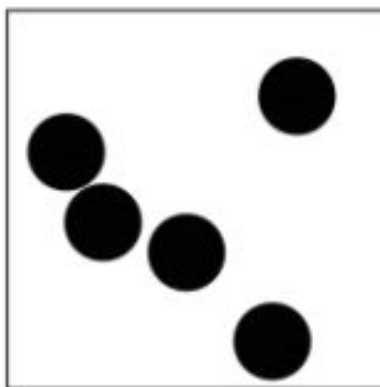
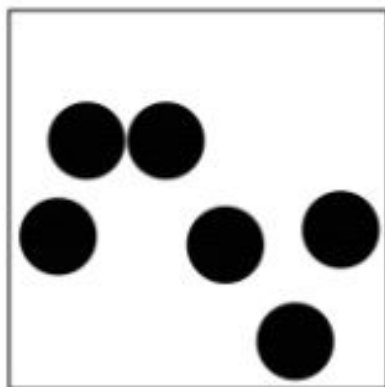
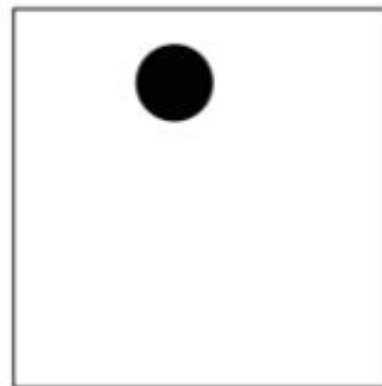
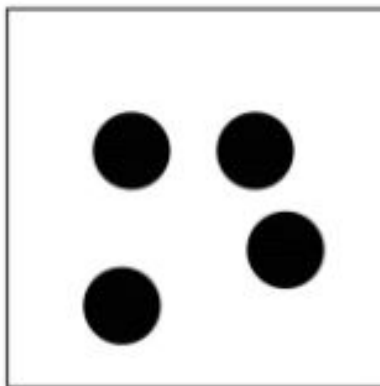
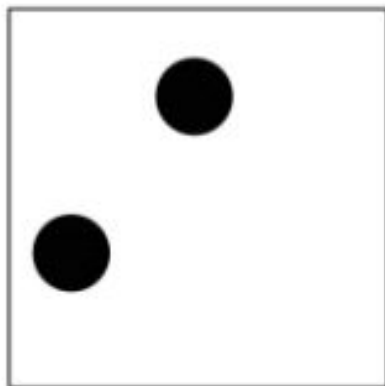
# Subitising

- It is the ability to quickly recognise how many objects are in a group without actually counting
- Reinforces principles of counting and beyond.

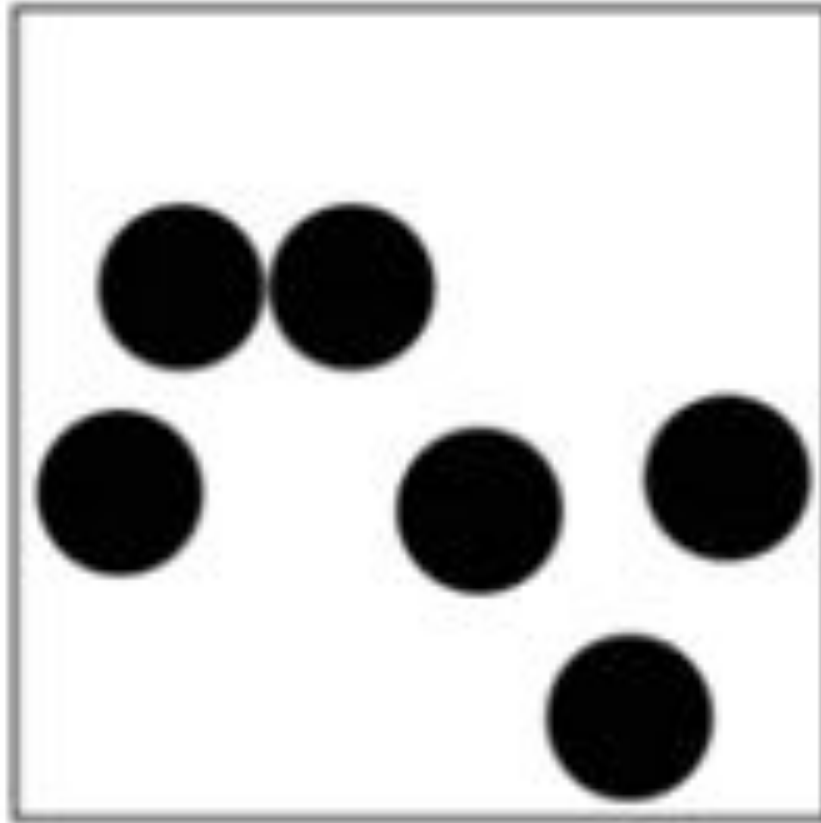


What numbers  
are  
represented  
here?

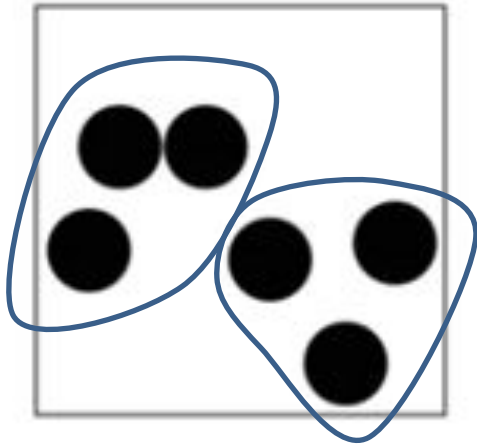
What numbers are represented here?



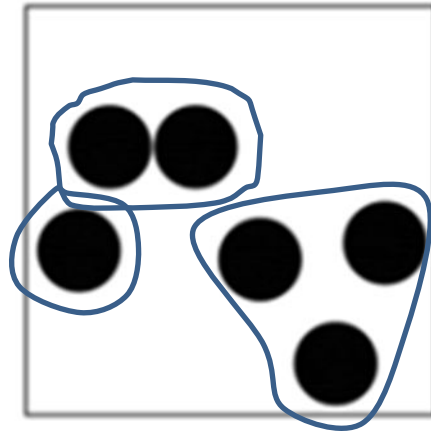
# How did you see the number?



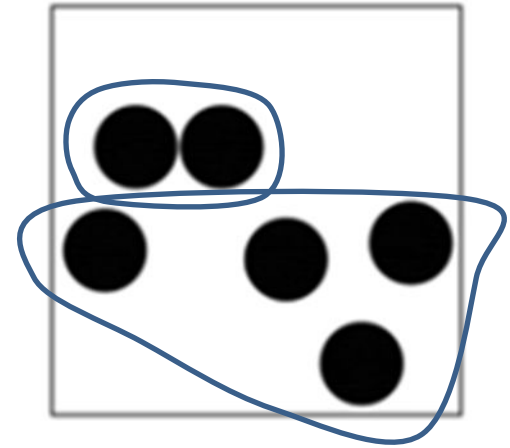
What numbers can you see hidden?



**3 and 3**



**2 and 1  
and 3**



**2 and 4**

There are more ways to recognise 6. By asking the children to investigate images and talk about what they can see helps children develop their understanding of different numbers.

I know 1 and 3  
makes 4.

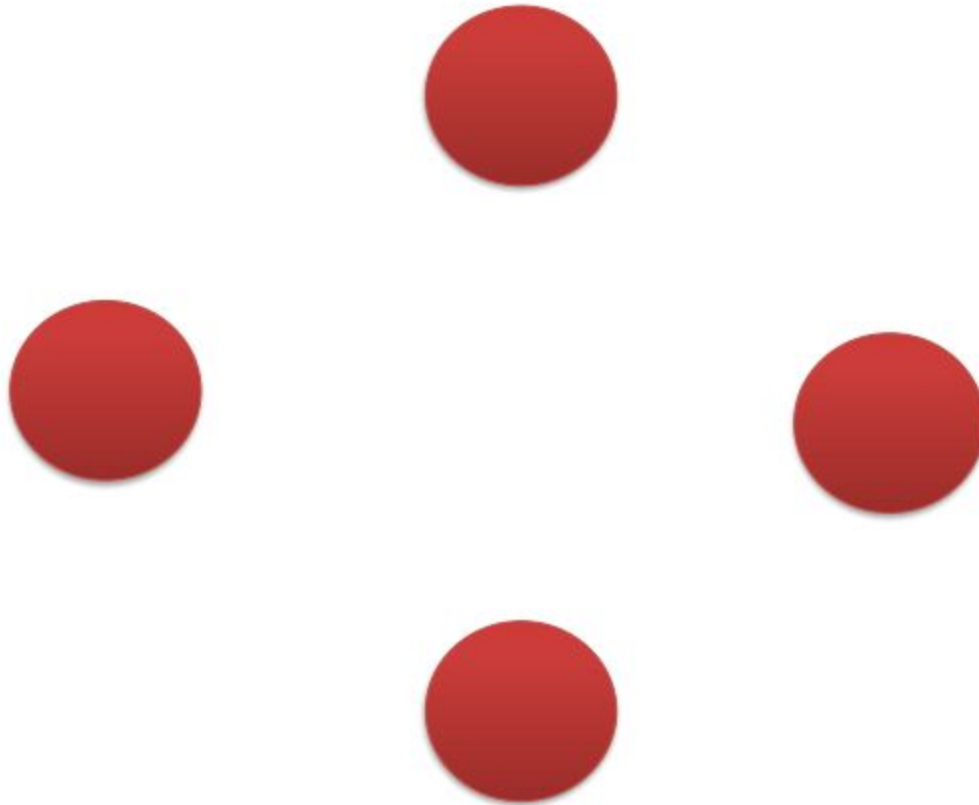
2 more than 4 is 6



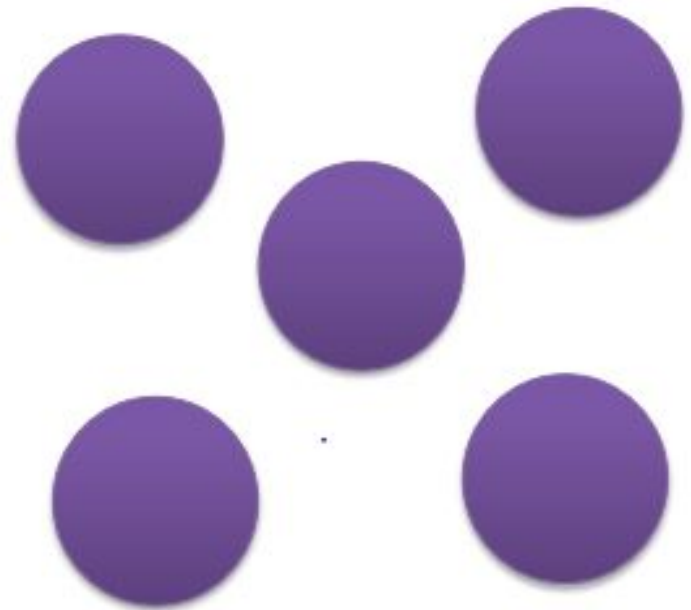
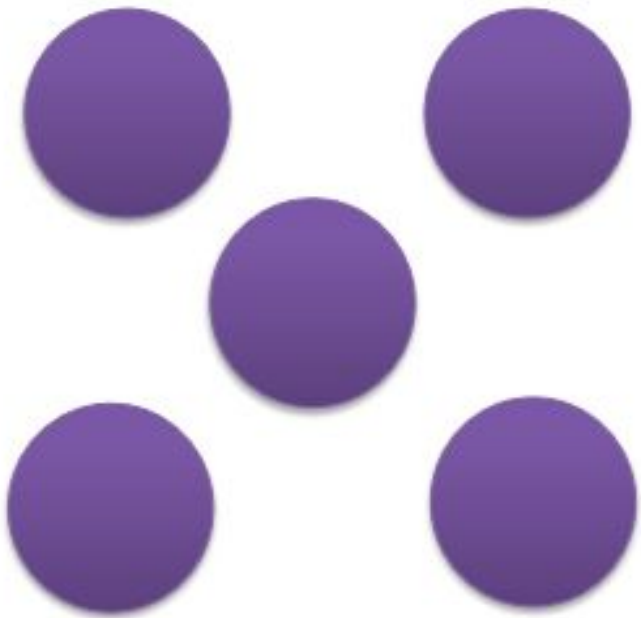
What  
numbers can  
you see  
hidden?



What numbers can you see hidden?

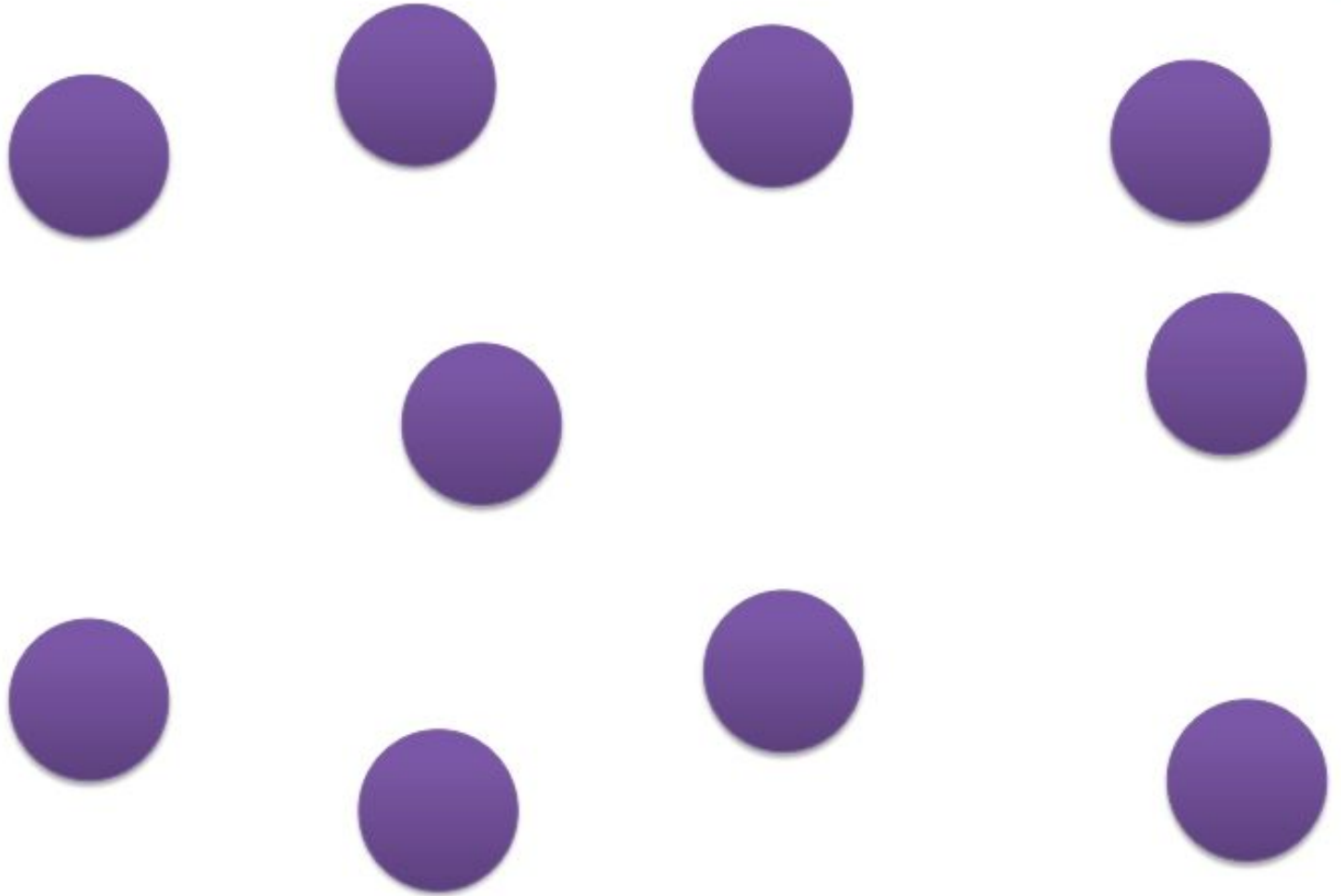


What numbers can you see hidden?



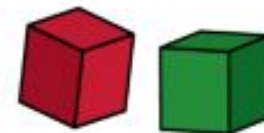
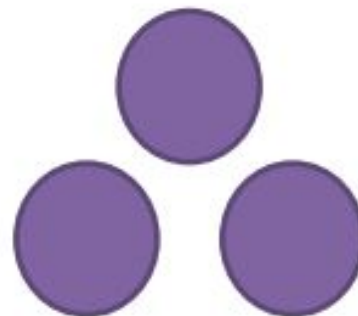


What numbers can you see hidden?

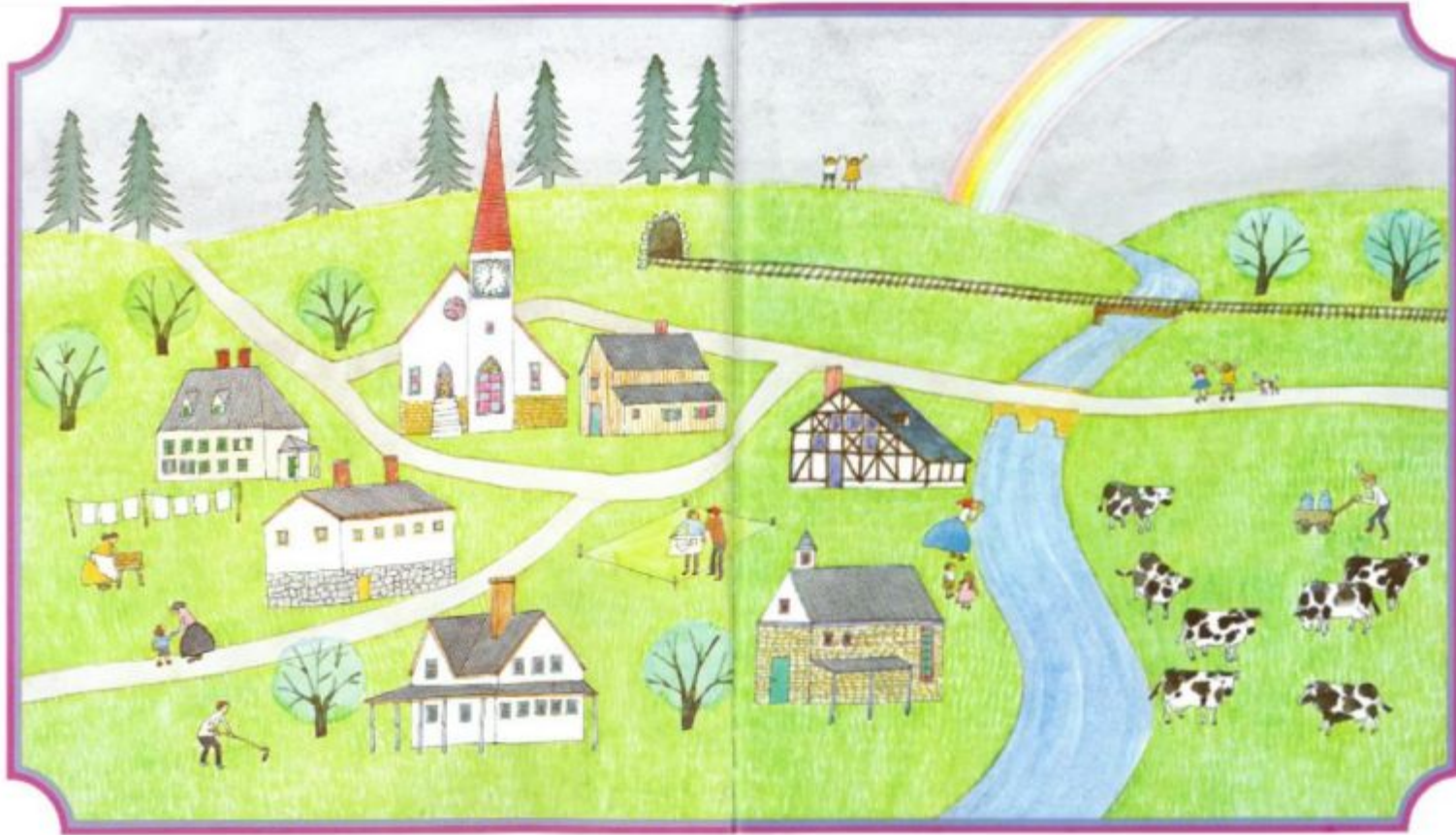


Also developing positional language: next to, underneath, above, at the side.

# Not just dots



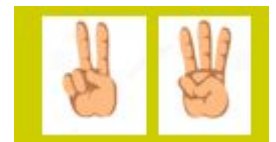
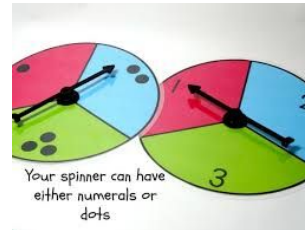
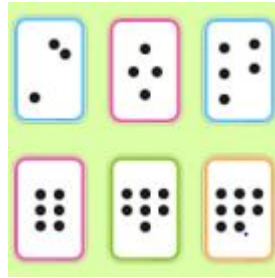
# Subitising in the environment



How many times can you see 7 objects?

# Subitising in class/at home

- Number pairs
- Quick flashcards
- Bingo
- Number treasure hunt
- Find a number the same as mine, more than mine, less than mine.
- Play your cards right!
- Dice games/spinner games
- Track games
- Domino games
- Fingers: Bunny ears / Grow, show and throw
- Resources eg egg boxes, muffin trays and candle holders

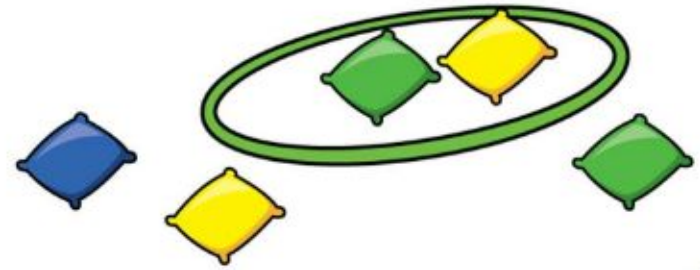
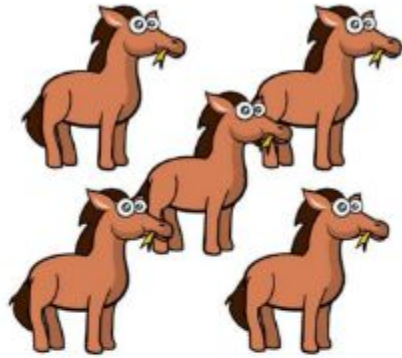


# Subitising helps children to understand the composition of number

Numbers are composed of smaller numbers

- Numbers can be made of 2 parts
- Numbers can be made of more than 2 parts
- Numbers can be made of equal parts
- Numbers can be made of unequal parts

Children will also explore the composition of different numbers through play.



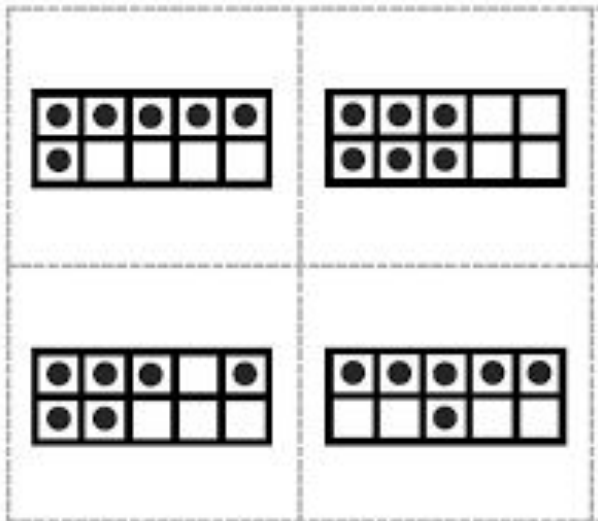


# Resources

6 is 5 and 1

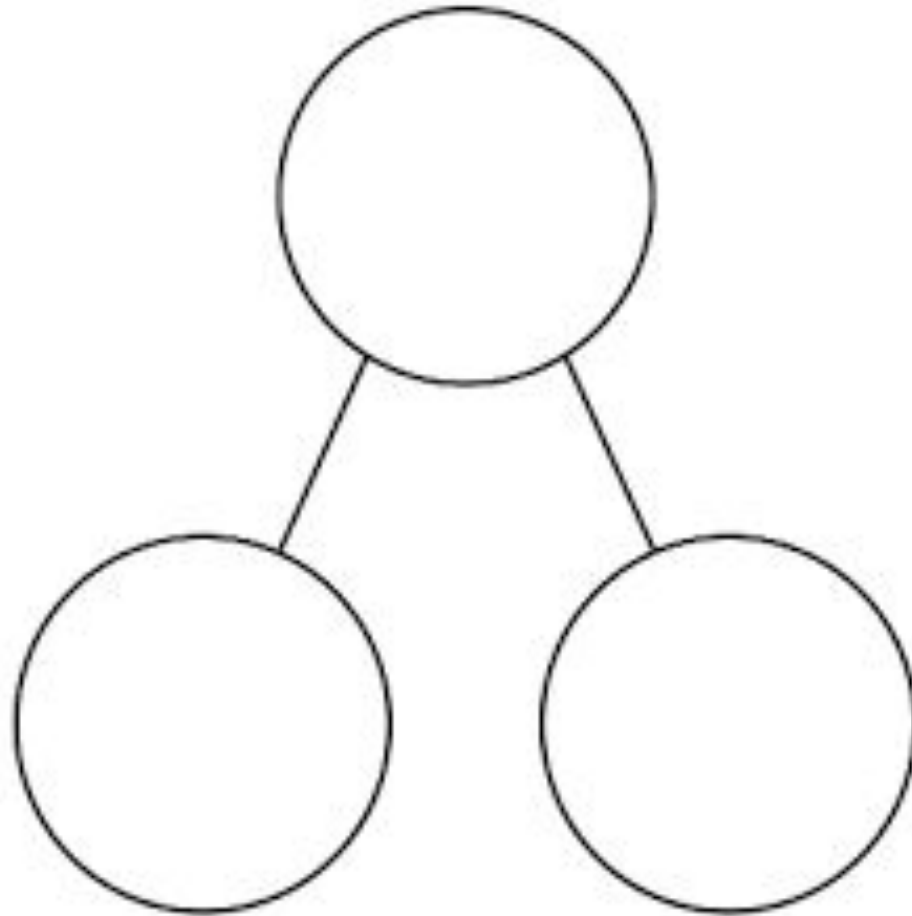


What can you build with 5 cubes?

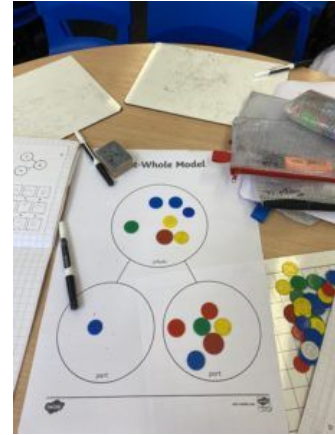
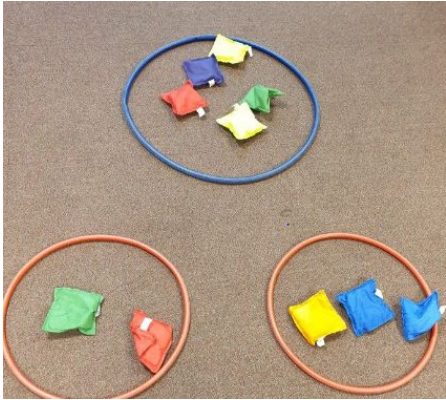
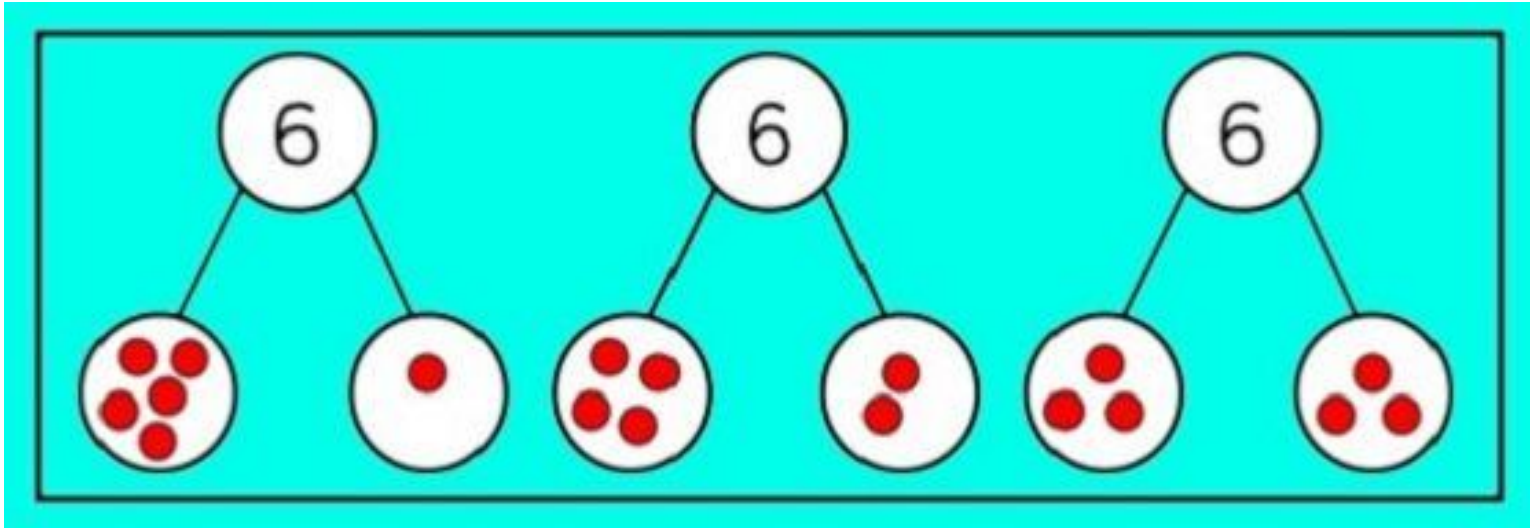


Tens frames - How can you place 6 counters onto the tens frame? What hidden numbers can you see?

# Part Whole Model







# A skill for the future...

$$5 + 6 = 5 + 5 + 1 = 11$$

$$40 + 30 = 3 \text{ tens} + 4 \text{ tens} = 7 \text{ tens} = 70$$

$$3 + 3 = 6. \text{ Half of } 6 \text{ is } 3$$

$$8 \div 2 = 4 \quad 8 \text{ sweets divided into groups of } 2 \text{ is } 4$$

$$4 \times 3 = (3+3) + (3+3) = 12$$



<https://www.bbc.co.uk/iplayer/episode/b08dr1l3/numberblocks-series-1-the-whole-of-me>

# Number Blocks

- Composition of numbers 1 to 5
- introduction to 'part-part-whole'  
Structure
- partitioning a whole number into parts
- Uses correct language and 'stem sentences' that children can use to explain their thinking.
- conservation of number

(name given to understanding that the number of objects in a set does not change if they are moved around)

The whole is 5. 2 is a part and 3 is a part.

