The Park Federation

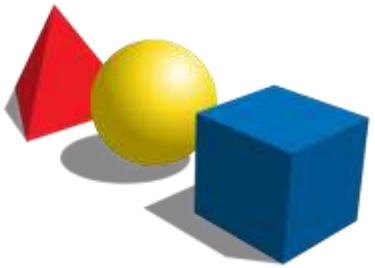
Mathematics in Reception

Maths in Reception

- There are 2 areas of maths covered in the Early Years Foundation Stage curriculum:

- Numbers

- Shape, space and measure



Early Learning Goals

- For both aspects of maths learning, there are steps along the way that children will largely follow, not necessarily in order.
- These will build up experiences and learning in order for children to achieve the Early Learning Goals.
- There are many simple activities that you can do with your child at home to reinforce and extend the learning that takes place at school.

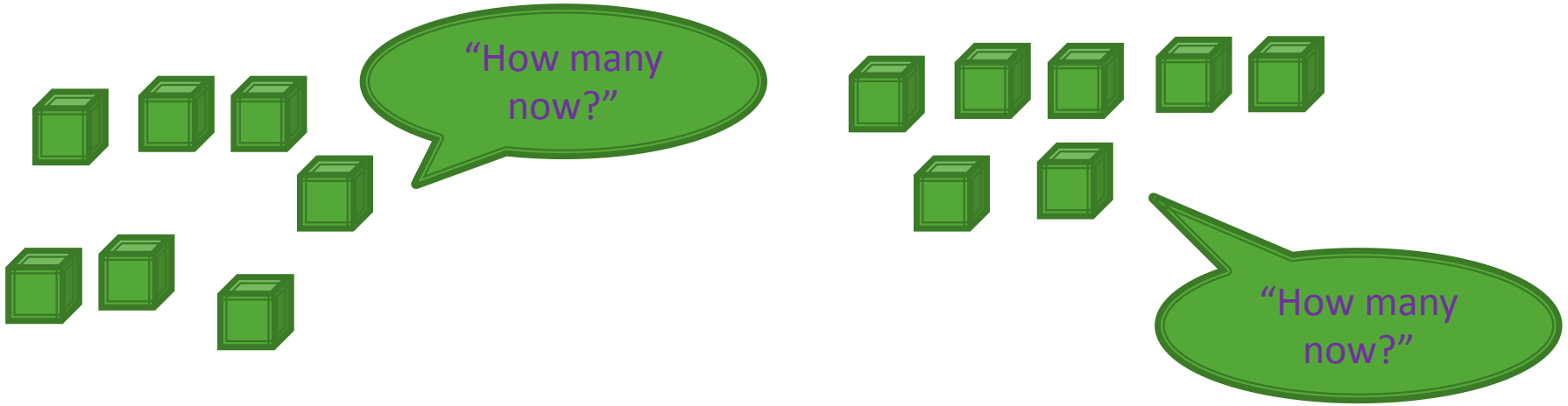
Steps on the way

Not necessarily all of these or in this order.

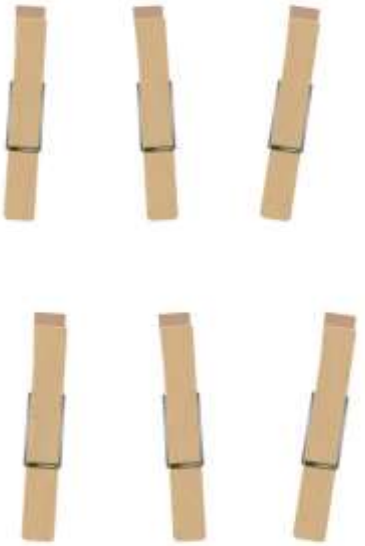
- Recognises some numerals of personal significance *eg own age, house number*
- Recognises numerals 1 to 5
- Counts up to three or four objects by saying one number name for each item
- Counts actions or objects which cannot be moved *eg jumps, claps, cars parked along the road*

What else could your child count going to or from school?

- Counts objects to 10, and beginning to count beyond 10 *When counting objects it's really important that your child recognises that once they know the number in the set, that number stays the same even if the objects are moved around.*



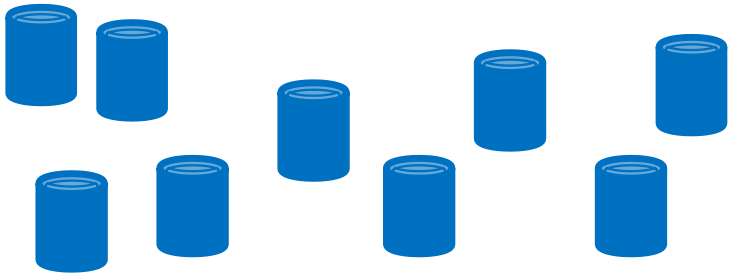
- Counts out up to six objects from a larger group *eg you ask your child to get 6 pegs from the bag*



- Selects the correct numeral to represent 1 to 5, then 1 to 10 objects

1 2 7 4 10 9 8 5 6 3

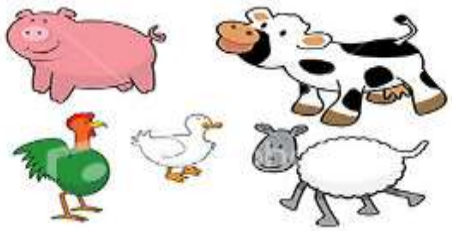
- Counts an irregular arrangement of up to ten objects
- Estimates how many objects they can see and checks by counting them



•Uses the language of ‘more’ and ‘fewer’ to compare two sets of objects

What other sets of objects do you have at home?

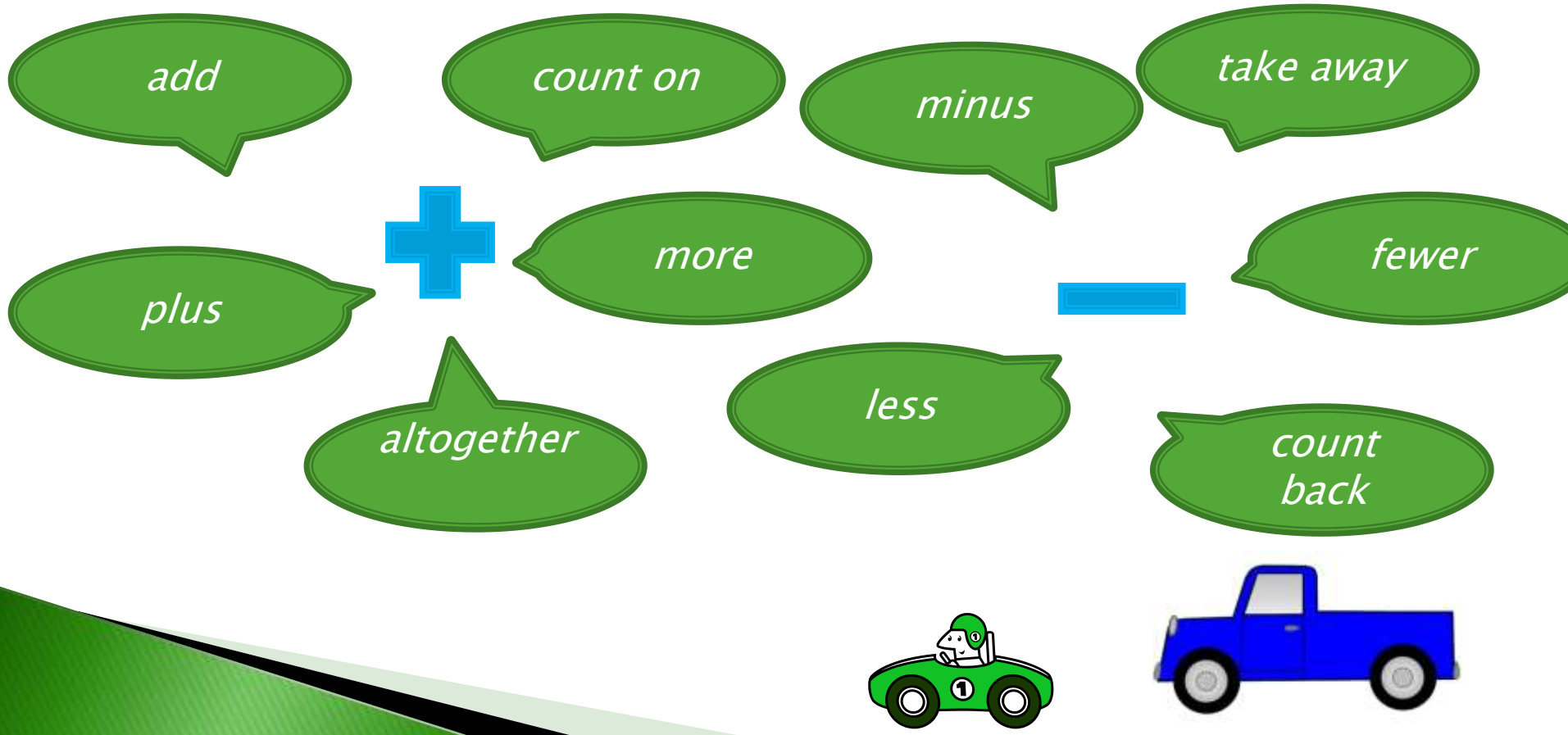
- Finds the total number of items in two groups by counting all of them



•Says the number that is one more than a given number *Your child needs to be secure about the order of numbers before trying to find one more or one less*

•Finds one more or one less from a group of up to five objects, then ten objects

- In practical activities and discussion, begins to use the vocabulary involved in addition and subtraction – *words such as,,,,,,,,,*



- Records, using marks that they can interpret and explain *This could be pictures or symbols drawn in groups; some children will begin to be able to use +, – and = signs*
- Begins to identify own mathematical problems based on own interests and fascinations *eg are there more cars or more lorries to play with? Are there enough cars for me and my 3 friends to have 2 each?*

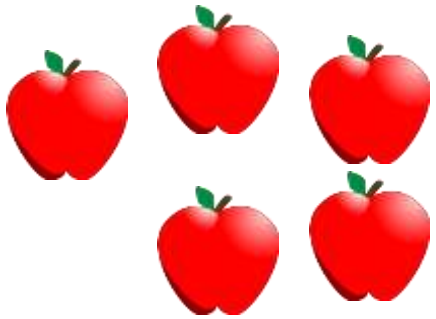
Early Learning Goal: Numbers

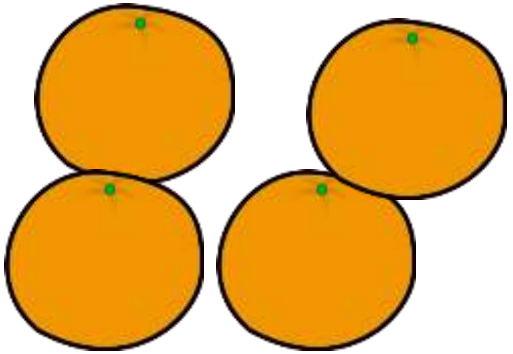
Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number.

They need to count from any given number, forwards and backwards, recognise when numbers are missing or out of order, and match numbers to sets of objects.

Early Learning Goal: Numbers

Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. *Children need to be able to count a set of objects, know that there are eg 5, and count on from that number to find the total of 2 sets.*





So they need to count 5 apples, put 5 in their heads, then count on from 5 to find there are 9 pieces of fruit altogether.

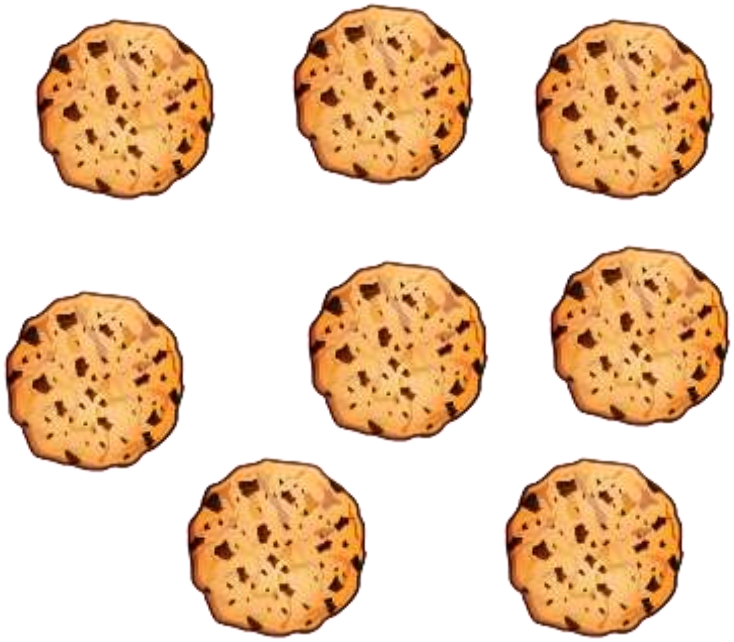
Using Numicon to aid mathematics

- Ask children to select two numbers and then count on.
- Use the numicon tiles to compare numbers.
- Number bonds to ten are easy to teach with numicon.

To subtract, from a group of objects, children need to understand that they don't need two groups of objects, Instead they need to move the number of objects they are taking away from the rest of the group.

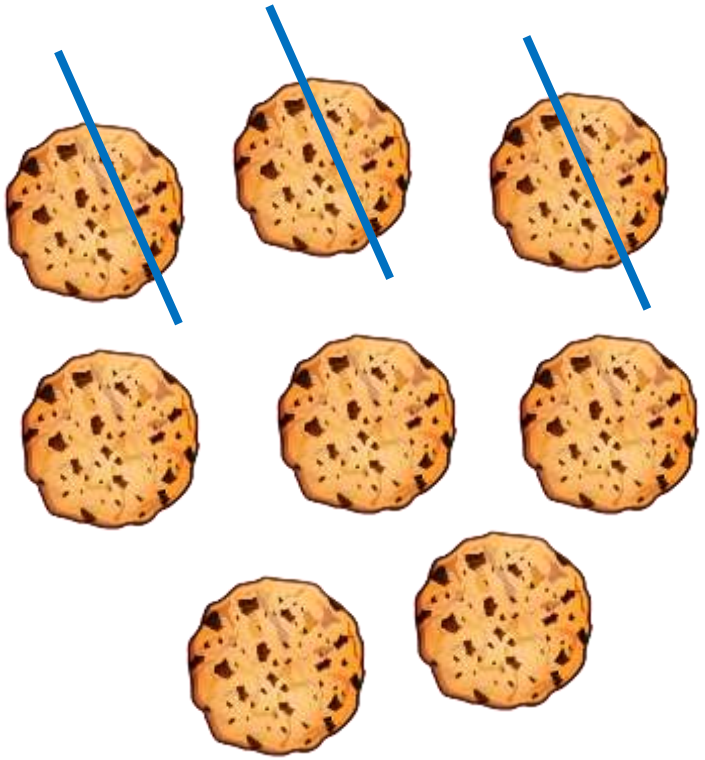
Or they could cross out pictures, or use their fingers to count back. They need to understand that the number they end on when counting back is the answer.

8 biscuits on a plate. Jack, Abu and Anita each eat a biscuit. How many biscuits are left?



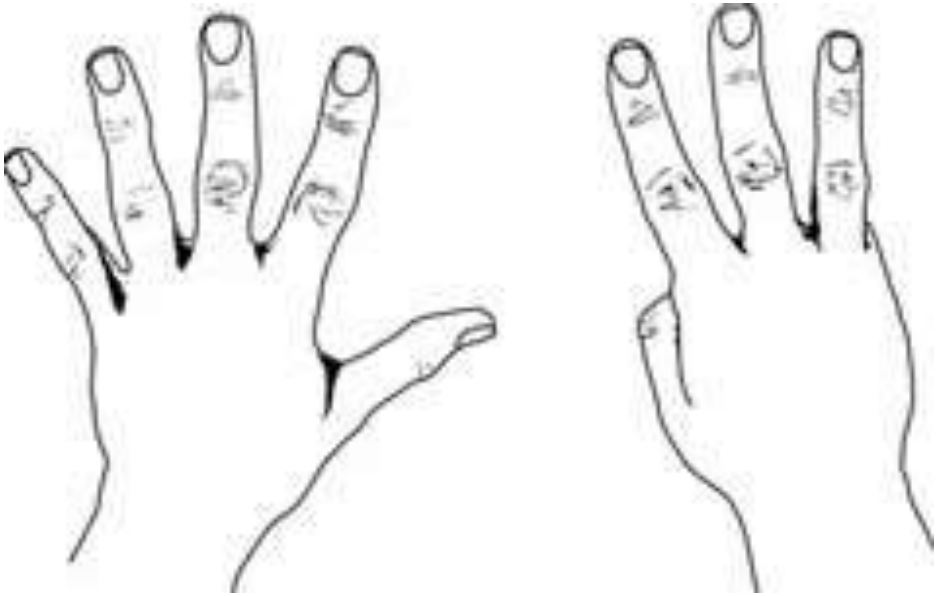
Move 1 biscuit for each child.
Count the biscuits that are left.

8 biscuits on a plate. Jack, Abu and Anita each eat a biscuit. How many biscuits are left?



Cross out 1 biscuit for each child.
Count the biscuits that are left.

Put 8 (biscuits) on your fingers.



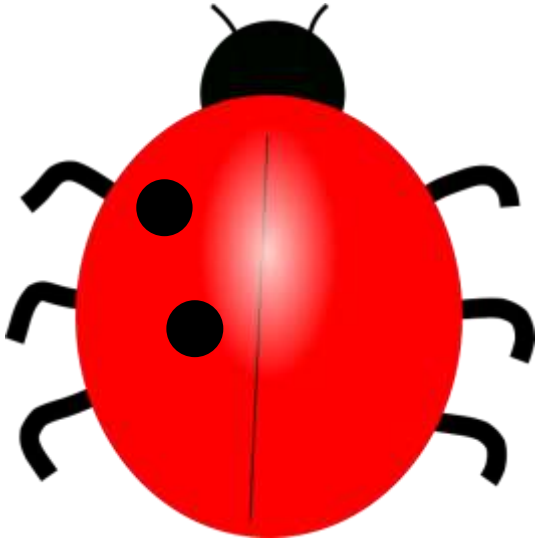
Now put down 3 fingers (one each for Jack, Abu and Anita).

How many fingers are still up?

Make sure your child knows that they have 5 fingers on each hand, and if all the fingers on 1 hand are up, then they don't need to count them – there will be 5!

Early Learning Goal: Numbers

They solve problems, including doubling, halving and sharing.



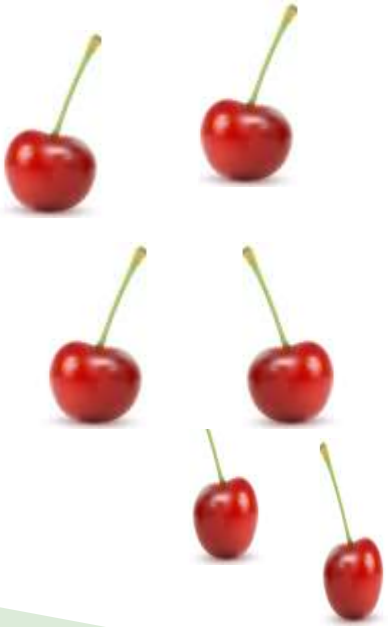
Double the spots on the ladybird?

How many spots now?

Early Learning Goal: Numbers

They solve problems, including doubling, halving and sharing.

Ella and Ben want to share the cherries. They need half each. How many cherries will they each have?



What if Kenan wanted some too?

Number Activities to do together

- **Counting rhymes and songs**

- **The Box Challenge**

Give your child a small box. How many objects can they put inside it? Ask your child to fill up the box with objects and then count them. Challenge them to get more objects in the box – will the objects need to be bigger or smaller? Who in the family can get the most objects in the box?

- **Magnetic numbers** Magnetic numbers are available in toy shops. Keep a set on your fridge and ask your child to find a given number, put the numbers in order, forwards, backwards, etc.

- **Count objects or movements in the street when walking to and from school.** eg How many trees on the way home? How many red cars? How many steps from the end of Dukes Avenue to the school gate?

Number Activities to do together

•Make a book about numbers or 1 number.

Eg My book about 7

You could put in:

*Names of children who are 7
*A birthday cake with 7 candles
*Numbers with 7 in them eg 17
*Ways of making 7 eg 5 + 2, 10 – 3
*Groups of 7 objects – stars, cars, bananas
*A clock showing 7 o'clock
* photos showing 7 in different places

Number Activities to do together

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Make a set of number cards 0 to 20.
Make a set of cards with dots to match the numbers.
Try to put the dots in arrays so they are easy to count.

Start by matching numbers with dots. Then use the pack of numbers and the pack of dots and play snap with them. Or put all the cards face down on a table and take it in turns to try to find matching pairs. You could start with numbers 1-5 and matching dots, and then build up.

Dominoes are good for matching numbers, finding doubles and of course playing games involving turn-taking.

Number Activities to do together

- **Ordering cards** Ask your child to find number cards 1 to 10, and put them in order.
Ask your child to close his/her eyes and you take away a card. Which one is missing? Repeat – build up to taking away 2 or 3 cards. Over time move on to cards up to 20.

- **Naughty number line.** Peg the cards up on a 'washing line'. Have some of the cards in the wrong order. Can your child sort them out so the order is correct?

- **Games – eg Snakes and Ladders.** A simple version is in your pack. You will need counters and a die or a spinner.
Any game that involves recognising numbers, counting on or counting back will help support your child.

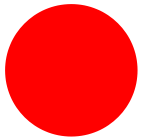
Number Activities to do together

- **Shopping – both real life and role play.**
- Can your child find a given number of objects in the supermarket, eg a bunch of 5 bananas?
- Can he/she put 7 satsumas in a bag?
- Are there enough cake bars in the box for everyone in the family to have one?
- Price some objects at home eg an apple is 5p, a carrot is 3p, and let your child have your loose change to try to 'buy' the objects.
- Can they count out 3p?
- Can they make 3p with a 2p coin and a 1p coin? etc.

Early Learning Goal: shape, space and measures

- Children use everyday language to talk about size, weight, capacity, position, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Steps on the way



- Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes and mathematical terms to describe shapes.

2D: triangle, square, rectangle, circle, pentagon, hexagon

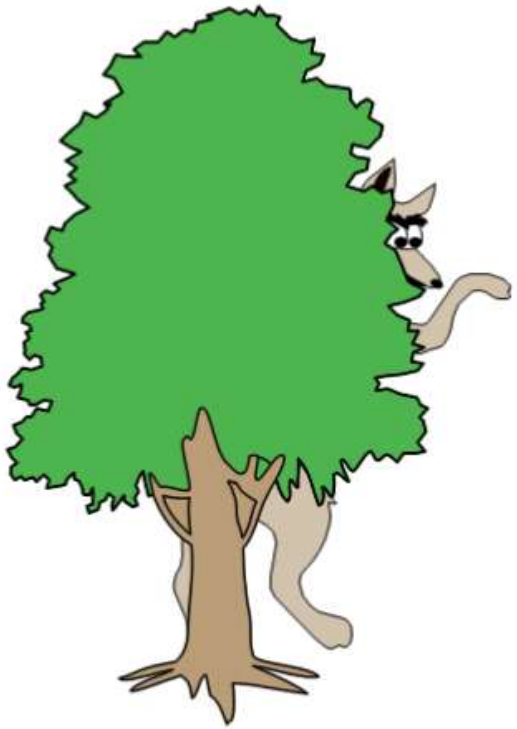
3D:cube, cuboid, sphere, cylinder, cone, pyramid

- Selects a particular named shape – *from a group of shapes, eg where is the square? Can you show me a cube?*

- Can describe their relative position such as '**behind**' or '**next to**' *Also 'under', 'above', 'left', 'right', 'on', 'off' , 'in front of' Playing 'hide and seek' is good for this eg 'I was under the table', 'I was in front of the bush'*

"Where is the wolf?"

"The wolf is behind the tree."



You could 'make a mistake' eg 'the wolf is in front of the tree' and encourage your child to correct you.

- Orders 2 or 3 items by length or height ’

What vocabulary should your child be using linked to length and height?

‘long’, ‘longer’, ‘longest’, ‘short’, ‘shorter’, ‘shortest’, ‘tall’ ,‘taller’, ‘tallest’

Encourage your child to use this vocabulary in sentences about what he/she has ordered or seen.
What could be said about these two animals?

“The giraffe is taller than the lion.” Or “The lion is shorter than the giraffe.”

- Orders 2 items by weight or capacity

What vocabulary should your child be using for weight and capacity?

'heavy', 'light', 'heavier', 'lighter', 'full', 'empty'

Give your child opportunities to pick up different items and decide which is heavier/lighter. Bathtime is a good time to play with water and containers, and practise comparing capacities.

- Uses familiar objects and common shapes to create and recreate patterns and build models *shape patterns, patterns with toy cars, eg*

What other items around the house could children use to make patterns or models?

- Beginning to use everyday language related to money.

What words are important for children to know and use?

pound pence penny more less cost
coin note change enough not enough

coin values – 1p 2p 5p 10p 20p 50p £1 £2

note values – £5 £10 £20

What activities could your child do with money?

- Identify each coin in your purse *eg* 5p, 2p Is it silver, bronze, gold? Is it round or does it have lots of sides?
- Count the coins – how many 1ps? How many 10ps? Can you add two coins together?
- At the shops, let your child select the correct coin to pay for an item
- Allow your child to pay for an item at *eg* the newsagent and receive the change.
- In the supermarket, can your child find an item that costs *eg* 50p?
- Role play shopkeeper and customer at home.

- Uses everyday language related to time – *today, tomorrow, yesterday, hour, day, minute, morning, afternoon, evening, night*
- Orders and sequences familiar events
- *Eg a school day, going swimming*
- Measures short periods of time in simple ways *eg how many jumps can you do in 1 minute? Use a sand timer to measure 1 minute etc*

Early Learning Goal: shape, space and measures

- Children use everyday language to talk about size, weight, capacity, position, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Shape, space and measure activities to do together

- Ask silly questions eg show a tiny box and ask if there is a bicycle in it

- **Be a robot**: ask your child to give you instructions to get to somewhere. Let s/he have a turn at being the robot for you to instruct.

- Look for shapes around you:

3D shapes such as cans, bricks, balls, pillar box, ice cream cones

2D shapes such as windows, doors, computer screens etc

- Make a book: about shape, or time, or measure. This could be shapes found in the environment; long and short things, things longer than ..., patterns, comparing heavier and lighter

- Make a house or vehicle If you have a large cardboard box from a new item, make a house or vehicle together. Shapes can be drawn/painted/stuck on for windows, doors, wings, headlights etc.

- Cooking Making food together is brilliant for many aspects of maths. Weighing out ingredients – heavier/lighter, counting spoonfuls, reading scales on jugs and weighing scales. Counting out the correct number of cake cases, setting the timer on the oven, sharing out pizzas – the list is endless!