Colours

Your child is learning about the colours red, blue, green and yellow. These colours are introduced to the children using stories, games and poetry. Research has shown that when parents actively engage in their child's education, the child is likely to perform well in school. They are more likely to be happier and have better self-esteem which leads to better progress across all subjects.

Colours at home

Talk to your child about the colours red, blue, green and yellow. Ask him/her to name some things around the house that are red, blue, green or yellow. **Examples**:

Red objects: apples, roses, cars, balloons, tea set, cups, mugs, clothes, hats, scarves, meat, etc. Blue objects: bluebells, butterflies, footballs, cots, clothes, prams, tents, Garda uniform, sky, etc. Green objects: frogs, grass, trees, leaves, hedges, clothes, markers, Irish jerseys/flags, etc. Yellow objects: Wellington boots, bananas, daffodils, sun, sunflowers, cars, buses, balls, coats, butter,

cheese, etc.

Game: I spy...

Take turns with your child playing the game 'I spy' by saying: *I spy with my little eye something with the colour red/blue/green/yellow.*

Game: Find the colour

Scatter a number of red, blue and green items on the kitchen table. Put only one yellow item in the set. Ask your child to pick out the one yellow item. This can be varied by having only one red, green or blue item among the other colours.

Read and discuss

Read the fairytale 'Little Red Riding Hood' and discuss the colours as they crop up in the story.

Sorting by colour

Place a number of coloured objects – red, green, blue and yellow – on the kitchen table. You can use anything that is to hand, e.g. clothes' pegs, buttons, sweets (best to use healthy items), pens, etc. Place four saucers/plates/bowls in another part of the table. Ask your child to put the red items on one plate, the green on a second plate, the blue on the next plate and the yellow on the last plate.

Poetry

Before reading:

- Ask your child to talk about the title of each poem.
- Ask him/her what things, objects or items might be mentioned in each poem.
- Read these four poems to your child over a number of days.

Red

Red is an apple, Red is a rose, Red is the colour of My frozen, icy nose.

Blue

Blue is the ocean, Blue are my eyes, Blue is the sky where The lonely eagle flies.

Green

Green is the grass, Under both my feet, And green is the broccoli My mother makes me eat.

Yellow

Yellow is a lemon, Yellow is a star, Yellow is the sun In the sky so far.

Mary Flynn

- Check to see if any of his/her suggested objects were mentioned in the poem.
- Over time, s/he may memorise one or two of the poems.
- Talk about why the poet's nose might be frozen/ icy. Why might the eagle be lonely? Why should we eat broccoli? (Broccoli has Vitamin C that helps our bodies fight off many diseases.)



Matching

Your child is learning about matching. S/he is learning about matching by carrying out the following activities:

- Matching sets of identical objects, e.g. a cup to a cup.
- Matching sets of related pairs, e.g. a cup to a saucer.
- Matching related objects in one-to-one correspondence.

Your child needs to acquire the mathematical language of matching, so ask him/her the following questions:

- Which two objects are the same?
- How are they different?
- Is the _____ the same colour as the _____?
- How is the button different to the cup?
- Show me a match for the _____
- Why is it a match/not a match for the button?
- Can you show me a match for the ______
- What in the kitchen is a related match for a cup (saucer)?
- Would a glass be a related match for a dog? Why/ Why not?

Activity 1: Find the matches

Place pairs of objects on the kitchen table, e.g. two cups, two saucers, two plates, two forks, two spoons, etc. Hold up one of the objects and ask your child to hand the identical object to you or place the pair together on a section of the table.

Activity 2: Match the fridge magnets

Place a number of pairs of identical/similar fridge magnets on the fridge door. Ask your child to place the identical/similar pairs of objects together.

Activity 3: Match the socks

When the washing is done and the socks are dry, get your child to help you match the socks into identical pairs.

Activity 4: Memory

This game can be played by a number of players. Get a standard pack of playing cards. Place all the cards face down on a table or on the floor. The object of the game is to collect as many matching pairs of cards as possible, e.g. two threes, two kings, two sevens, etc. The person who has most pairs at the end of the game wins.

Activity 5: Snap

This game can be played by four/five people in the home. Divide a pack of playing cards into equal numbers (it doesn't matter if one or two people have an extra card). One person starts the game by placing a card face upwards on the table. The next player places a card on top of the previous one and so on. The game should move quickly and players should not hesitate when placing a card down. The object of the game is to look for consecutive cards that are pairs. The player who sees the pair and who places his/her hand on the pair while shouting out 'snap' wins. The game continues until one player has all the cards.

Activity 6: Musical chairs

Place a number of chairs in the centre of the room. The number of chairs will depend on the number of players; always have one less chair than the number of players. This game is a good way to show that the number of chairs does not correspond to the number of players – there is always one less. Play a piece of music and stop it after 10/20 seconds. Have the children try to sit on a chair. The player who fails to find a chair to sit on when the music stops is out. The game continues until there is only one child sitting on a chair.

Pairs

Ask your child to collect as many objects in the home that come in pairs, e.g. shoes, socks, etc.

One-to-one correspondence

Place five cups in a row on the table. Place five saucers in a row underneath. Ask your child: *Is there a cup for every saucer*? Take away one cup. Ask: *Is there a cup for every saucer*? This is pre-subtraction work. Your child does not need to know how to subtract yet, but you can still ask questions, such as: *Which set has more: the cups or the saucers?; Which set has least/fewest items?; How many fewer cups are there than saucers?; How many more saucers are there than cups*? This activity can also be done using other objects, such as conkers, cubes, books, socks, shoes, etc.



Sorting

Your child is learning about sorting objects into sets. S/he is learning this by carrying out a range of sorting activities.

Your child needs to acquire the mathematical language of sorting, so make sure to use the following instruction: *Sort these clothes into sets of socks, shirts, underwear*. This introduces the word 'set'. The set in question here is the set of clothes. We then sort the set of clothes into subsets of socks, shirts, underwear, etc.

Activity 1: Sort the objects

Place a range of buttons, clothes' pegs, paper clips, spoons or any other objects that you have to hand on the kitchen table. Ask your child to sort the objects into sets. To make the different sets clearer, get the child to place the different objects onto plates or into boxes.

Open-ended questions:

Use open-ended questions, ones that require more than a yes or no answer, to get information from your child, for example:

- Where should I/we put the buttons? Why/Why not?
- Why would we not put the clothes' peg here?
- Are there more/less clothes' pegs than spoons?
- What must we do to have the two sets the same?
- How are the sets of buttons and clothes' pegs similar/ different?

Activity 2: Sort the fridge magnets

As with Activity 1, ask your child to sort a number of fridge magnets into sets, e.g. round magnets in one set, square magnets in another set.

Activity 3: The odd-one-out

Place three spoons and one fork on the table. Ask your child to point or to hand you the odd-one-out. This can be done with other objects, e.g. cubes, toy cars, cups, teddies, etc. To encourage your child's oral language development, get him/her to explain why a particular object does not belong in a set by modelling answers: *I think this does not belong in this set because...*

Activity 4: Sorting objects into two sets

Divide an A4 piece of paper into halves horizontally. Ask your child to sort objects onto the sheet into the following two sets:

- Things you can/can't eat.
- Things that roll/can't roll.
- Things that are red/not red.
- Things that are made of wood/not made of wood.
- Things that are rough/smooth.
- Things that are toys/not toys.

Activity 5: Sorting objects into three sets

Divide an A4 piece of paper into three equal parts. Place three of the same object, e.g. knives, spoons, forks, on the table. Ask your child to sort the knives into one section of the sheet of paper, the spoons into another section and the forks into another. This activity can also be done by asking your child to place the objects onto three plates on the table.

Activity 6: Sorting clothes

When the washing is done and the clothes are dry, ask your child to help you sort the clothes. Have your child sort all the shirts, shorts, vests, socks, etc. into different piles before putting them away. Your child is learning about sorting objects without even knowing it.

Activity 7: Sorting objects into four sets

Divide an A4 piece of paper into four sections by folding horizontally and vertically. Place different objects that you have to hand, e.g. buttons, clothes' pegs, on the table. Place one of each object in one of the sections on the A4 sheet. Now ask your child to place the rest of the objects in the correct sections on the sheet.

Activity 8: Sorting pictures

With your child, use a scissors to cut out pictures of adults and children from newspapers, magazines, pamphlets, etc. This is also a good way to help your child's motor skills. (Ensure that your child is fully observed while using a scissors.) Cut out about seven or eight pictures of people; a mixture of men, women, girls and boys. Place the pictures randomly in a heap on the table. Ask your child to sort the pictures into two separate piles on the table; one pile should have adults only and the other should have children only.



Classifying According to One Attribute

Your child is comparing a range of objects according to one attribute, one at a time. S/he is comparing objects according to size, length, height, weight, width and texture. These comparisons are introduced to the children using stories, games and poetry.

Big/small things at home

Talk to your child about objects in the home that are big/small; bigger/smaller. Ask him/her to name some things around the house or neighbourhood that are big/small, e.g. boxes, cups, mugs, knives, spoons, televisions, windows, chairs, doors, beds, cars, trees, bushes, buses, etc.

Game: I spy...

Take turns with your child playing the game'l spy' by saying: *I spy with my little eye something that is big/small*.

Read and discuss

Read the fairytale 'The Three Little Pigs' and discuss the different sizes, etc. as they crop up.

Long/short things at home

Talk to your child about objects in the home that are long/short; longer/shorter. Ask him/her to name some things around the house or neighbourhood that are long/short, e.g. ties, belts, shirts, trousers, ribbons, skipping ropes, thread, string, rope, nails, ladders (on the ground), straws, roads, paths, etc.

Game: The giant's pencil

Ask your child to show you the size of his/her short pencil; the short pencil is made by the child holding their index fingers about 8–10cm apart. Then ask him/her to show you the size of the giant's long pencil; the long pencil is made by the child stretching their arms as wide as possible.

Tall and short things at home

Talk to your child about objects in the home that are tall/short; taller/shorter. Ask him/her to name some things around the house or neighbourhood that are tall/short, e.g. houses, tower blocks, trees, pencils, bottles, cabinets, etc.

Heavy and light things at home

Talk to your child about objects in the home that are heavy/light; heavier/lighter. Ask him/her to name some things around the house or neighbourhood that are heavy/light, e.g. chairs, tins of beans/peas, pans, pots, different boxes, paperweights, etc. Show him/her that the size of an object does not determine its weight – a big box could be lighter than a paperweight.

Wide and narrow things at home

Talk to your child about objects in the home that are wide/narrow; wider/narrower. Ask him/her to name some things around the house or neighbourhood that are wide/narrow, e.g. schoolbags, rulers, ribbons, books, television screens, lunchboxes, scarves, belts, clocks, birthday cards, windows, doors, gates, etc.

Rough and smooth things at home

Talk to your child about objects in the home that are rough/smooth; rougher/smoother. Ask him/ her to name some things around the house or neighbourhood that are rough/smooth; rougher/ smoother, e.g. nail-file, banana, apple, sandpaper, Brillo pad, scrubbing brush, hedgehog, glass, toast, balloon, etc.

Poetry

Read the poem 'This is Big, Big, Big!' with your child.

This is Big, Big, Big!

This is big, big, big (*hold arms out*). This is small, small, small (*bring arms in*). This is short, short, short (*crouch down*). This is fast, fast, fast (*circle fists quickly*). This is slow, slow, slow (*circle fists slowly*). This is yes, yes, yes (*nod head*). This is no, no, no (*shake head*).

Melissa Depper

- Talk about the title of the poem.
- Talk about the attributes mentioned in the poem that have/have not been done in class (fast, slow).



Counting/Size/Ordinal Number

Your child is counting up to 10 only and comparing a range of objects that are small, medium or large. They also deal with ordinal number. Your child needs to know the language of ordinal number – first, last, next to, in between, in front of, behind, etc.

Counting to 10

Counting from 0–10 is a very important aspect of the Junior Infants programme but it is only a small part. It is vitally important that, as well as being able to count forward from 1, that your child is also able to count backwards from 10. Encourage your child to count forwards and backwards from different starting numbers, e.g. 6, 8, etc.

Give your child some counters, Lego bricks, spoons, buttons, etc. and an A4 sheet of paper. Do an action, e.g. jump up and down, blow on a whistle, bang on a biscuit tin, hop a ball, clap, etc. a number of times up to a total of 10 times. Ask him/her to place the corresponding number of counters on the A4 sheet, e.g. if you clap your hands four times, s/he should place four counters on the A4 sheet.

Place 10 objects, e.g. toy cars, books, cups, etc. in a row on the kitchen table. Ask your child to count them forwards and backwards.

Size – Small, Medium and Large

Game: Sort the objects

Get three objects that are different sizes, e.g. a small car, a medium-sized car and a large car. Talk to your child about the relative sizes of the different objects – one might be large relative to a small one but could be very small relative to the size of a person.

Ask your child to place the objects in a row in order from biggest to smallest and vice versa. Change the order of the objects and ask: *Show me the largest car now*. Some children think that the biggest object always comes first. By moving the objects around and asking open-ended questions (those that require more than a yes/no answer), your child will realise that it doesn't matter in what order the objects appear.

Read and discuss

Read the fairytale 'Goldilocks and The Three Bears' and discuss the sizes of the beds, chairs, plates, etc. that are mentioned throughout the story.

Ordinal Number

Place three toys, e.g. a teddy, rabbit and horse, in a row on the table. Have them all facing the same direction as if heading for the finishing line of a race. Ask questions, such as:

- Which animal is in first place?
- Which animal comes next?
- Which animal is in last place?
- Which animal is in between the horse and the teddy?
- Which animal comes just after the rabbit?

Change the order of the animals and ask:

- Is the teddy in first place now? Why/Why not?
- Is the rabbit in the middle now?

When you are in a queue in a supermarket or at a bus stop, ask your child who s/he thinks is in first place, last place, etc.

Game: Who is first or last?

Have three family members including your child line up. Give each one a Post-it or piece of paper with 'first', 'in the middle/between' or 'last' on it. Ask the participants to stand in the correct order.

Fridge magnets

Get your child to arrange three fridge magnets in order and have him/her explain to you which one is first, next and last.

Visual Arts

Get your child to draw some objects/people/animals in a row and have him/her explain to you which is first, in the middle/next or last.



Numerals 1 and 2

Your child is learning about sets of one and two. Your child needs to know the following language associated with the numerals 1 and 2 – How many?, trace, write the numerals 1/2, colour, count, ring, row, red, green, blue, yellow.

The numeral 1

When teaching the children to write the numeral 1, say: Start at the dot and come straight down. (See Busy at Maths Home/School Links Book, page 10.)

The numeral 2

When teaching the children to write the numeral 2, say: Start at the dot, go around and down. Stop. Then go straight across. (See Busy at Maths Home/School Links Book, page 11.)

Practise writing the numerals 1 and 2

Practise writing the numerals with your child using pencil and paper. You could also put some sand in the lid of a biscuit tin and have your child write the numerals in the sand with his/her finger.

The numerals 1 and 2 around us

Highlight to your child or get him/her to tell you where s/he might see the numerals 1 and 2 around them, e.g. calendar, doors, streets, mobile/landline phones, prices in the supermarket, calculators, lanes in a race, scoreboards, car registration plates, etc.

Making sets of one

Place a number of small objects that are normally around the house on the table, e.g. clothes' pegs, apples, pears, bananas, grapes, spoons, tins of food, toys, etc. Have three plates on the table in a row. Ask your child to put one clothes' peg on the first plate. Now ask him/her to put one apple on the middle plate and one toy on the last plate. You can use as many plates as you like. Explain to your child that each plate has a set of one.

Setting for one

Ask your child to set the table for one person – cup, saucer, plate, knife, fork, etc.

Making sets of one and two

Use plates/saucers or paper plates for this activity. Place a number of small items that are normally around the house on the table – clothes' pegs, apples, pears, bananas, grapes, spoons, tins of food, toys, etc. Have three plates on the table in a row. Ask your child to put two clothes' pegs on the first plate. Now ask him/her to put two apples on the middle plate and two toys on the last plate as done with one.

Setting for two

Ask your child to set the table for two people – two cups, two saucers, two plates, two knives, two forks, etc.

Things that come in pairs

Talk to your child about objects that usually come in pairs/twos – eyes, ears, arms, hands, legs, feet, pairs of trousers (two legs), lungs, kidneys, socks, shoes, skates, twins, etc.

Poetry/Music

Read/sing the first verse of the poem/song 'The Animals Went in Two by Two' with your child.

The Animals Went in Two by Two

The animals went in two by two, Hurrah, hurrah, The animals went in two by two, Hurrah, hurrah, The animals went in two by two, The elephant and the kangaroo, And they all went into the ark, For to get out of the rain.

Ask questions about this verse from the poem/song, such as:

- How many elephants went in?
- How many kangaroos went in?
- Why did the animal go into the ark?
- Do you think the animals were happy?



3-D Shapes

Your child is learning about 3-D shapes (shapes with three dimensions). The shapes will be introduced by means of games and activities. Your child is not expected to know the names of the shapes, cube, cuboid, cylinder or sphere, at this early stage but s/he does need to know some of the mathematical language associated with the 3-D shapes – roll, can't roll, same shape, different shape.

3-D shapes around us

Point out to your child some shapes around the house, or when out shopping, that come in the cube, cuboid, cylinder or sphere shapes. Some of the packets may be for sweets or other unhealthy products, so emphasise the importance of healthy eating to your child.

Examples of objects:

Cube – die/dice, Oxo cube, ice cubes, boxes, etc. A cube has six flat faces of equal size and eight corners.

Cuboid – cereal packets, shoeboxes,



pencil cases, books. A cuboid has six flat faces with the opposite faces of equal size. It has eight corners.

Sphere – footballs, tennis balls, basketballs, marbles, some lights/lamps, Moon/Sun and other planets. A sphere is round in shape. It has only one flat face and no corners.



Cylinder – tin of beans/peas/soup, Pringles/Smarties boxes, packets of mints, fire extinguishers, etc. A cylinder has one round face and two, flat, circular ends.

Game 1: I spy...

Play the game 'I spy...' with your child to find objects in the house that are in the shape of a cube, cuboid, cylinder or sphere. Say: *I spy with my little eye something in the shape of a cereal box* (cuboid).

Game 2: Roll like a sausage

Ask your child to roll like a sausage – s/he needs to know what it means to roll as they are required to recognise shapes that can/can't roll.

Activity 1: Give your child an object that is to hand, e.g. ball, cup, book, tin of beans, scissors, pencil, etc. and ask him/her if it can roll. Ask open-ended questions (questions that require more than a yes/no answer), e.g. Why do you think the scissors won't roll?; Why won't the tin of beans roll while it is standing upright?; How might you make the tin of beans roll?; Will the Smarties tube roll? Explain.

Breaking/making shapes

Give your child a cereal box/shoebox or any other box to hand in the shape of a cube, cuboid or cylinder. Ask him/her to cut carefully along the edges to highlight the different faces on the shapes. This will also help your child's manual dexterity. Show him/her how to use a scissors properly.

Extension work: Help your child to stick the faces of your chosen 3-D shape back together using glue/ paste/Sellotape/Pritt stick, etc.

Sorting shapes

Place a number of 3-D shapes on the table, e.g. die, cereal box, shoebox, tin of peas, beans, etc. Place a cube at one corner of the table, a cuboid in another, a cylinder in another and a sphere shape in the other. These will act as the 'set family home'. Hold up one object, e.g. the shoebox, and ask questions, such as: *Which corner of the table will I put this shape?* Place the shoebox in the corner with the cuboid. Do the same with the other objects on the table. When all the shapes are in their 'family home', you can ask questions, such as: *Which family home has more shapes – the spheres or the cubes?; Which family home has fewer shapes – the cylinders or the cuboids?*



Numeral 3

Your child is learning about sets/groups of three. Your child needs to know the mathematical language associated with the numeral 3 – How many?, trace, write the numeral 3, colour, count, ring, row, red, green, blue, yellow.

Writing the numeral 3

When teaching the children to write the numeral 3, say: Start at the dot. Go around and around again. (See Busy at Maths Home/School Links Book, page 14.)

Practise writing the numeral 3

Practise writing the numeral 3 with your child using pencil and paper. You could also put some sand in the lid of a biscuit tin and have your child write the numeral in the sand with their finger.

The numeral 3 around us

Highlight to your child or get him/her to tell you where s/he might see the numeral 3 around them, e.g. calendar, doors, streets, mobile/landline phones, prices in the supermarket, calculators, lanes in a race, scoreboards, car registration plates, etc.

Making sets of three

Place a number of small objects that are normally around the house on the table, e.g. clothes' pegs, apples, grapes, spoons, tins of food, toys, etc. Have three plates on the table in a row. Ask your child to put three clothes' pegs on the first plate. Now ask him/her to put three apples on the middle plate and three toys on the last plate. Explain to your child that each plate has a set of three objects.

Read and discuss

Read and discuss the following fairytales:

- Goldilocks and the Three Bears
- The Three Billy Goats Gruff

Setting for three

Ask your child to set the table for three people – three cups, three plates, three knives, three forks, etc.

Things that come in threes

Talk to your child about objects that usually come in threes – leaves on a shamrock, wheels on a tricycle, legs on a tripod, etc.

Poetry/Music

Read/sing the second verse of the poem/song 'The Animals Went in Two by Two' with your child.

The Animals Went in Two by Two

The animals went in three by three, Hurrah, hurrah, The animals went in three by three, Hurrah, hurrah, The animals went in three by three, The wasp, the ant and the bumblebee, And they all went into the ark, For to get out of the rain.

Poetry/Music

Read/sing the poem/song 'Three Blind Mice' with your child.

- Three Blind Mice Three blind mice,
- Three blind mice, See how they run, See how they run!

They all ran after the farmer's wife, Who cut off their tails with a carving knife, Did you ever see such a sight in your life, As three blind mice?

Combining objects within three

Place two objects, e.g. apples, on the kitchen table. Add another object and ask: *How many apples had we at first? How many more did we add to the set of two apples? How many apples have we altogether?* This illustrates that 2 and 1 make 3.

Partitioning objects within three

Place three objects on the table and ask: *How many objects are in this set?* Partition (break up) the set by placing a pencil through the set to show 2 and 1 make 3.



2-D Shapes

Your child is learning about 2-D shapes (shapes with only two dimensions – length and width/breadth). The shapes are introduced by means of games and concrete materials. Your child needs to know some of the mathematical language associated with 2-D shapes – names of the four shapes: square, rectangle, triangle and circle.

2-D shapes around us

Point out to your child some objects around the house or in the environment that come in the square, rectangle, triangle and circle shapes. Emphasise that we are only looking for the shape at the front – not the 3-D shape.



Square – Has one flat face with four straight sides of equal length, e.g. sides of boxes, dice, some floor/bathroom tiles, tabletops, some flowerbeds, some picture frames, windowpanes, etc.



Rectangle – Has one flat face with the opposite sides of equal length, e.g. most cereal packets, shoeboxes, pencil cases, books, television/computer screens, window panes, doors/door panels, sheets of paper, picture frames, fridges, freezers, skylights, photographs, chair seats, etc.



Circle – Has one, flat face and one curved side, e.g. clock faces, shapes on buildings, five circles in the Olympic flag, STOP sign, medals, traffic signals, hula hoops, cooker rings, mugs, cups, pots, pans, lollipops, etc.



Triangle – Has one flat face and three straight sides. The sides can be different lengths, e.g. ends of a Toblerone bar, YIELD sign, snooker ball holder, etc.

Breaking/making shapes

Give your child a cereal box/shoebox or any other box to hand in the shape of a cube, cuboid or cylinder as done for 3-D shapes. Ask him/her to cut carefully along the edges to highlight the different faces on the shapes. This will also help your child's manual dexterity. Show him/her how to use a scissors properly.

Extension work: Help your child to stick the faces of your chosen 3-D shape back together using glue/ paste/Sellotape/Pritt stick, etc. Emphasise that 2-D shapes make up each 3-D shape, e.g. two triangles and three rectangles make up the triangular prism (Toblerone bar), etc.

Drawing shapes

Circles

Ask your child to draw circles of different sizes by drawing around the outline of a range of circular objects, e.g. cups, mugs, tins, pots, plates, deodorant bottles, spray cans, etc. Then ask your child to put them in order of size starting with the biggest down to the smallest.

Squares

Ask your child to draw squares of different sizes by drawing around the outline of a range of square objects, e.g. boxes, dice, soft toy dice, etc. Then ask your child to put them in order of size starting with the biggest down to the smallest.

Rectangles

Ask your child to draw rectangles of different sizes by drawing around the outline of a range of rectangular objects, e.g. mobile phones, lunchboxes, butter cartons, pencil cases, playing cards, etc. Then ask your child to put the triangles in order of size starting with the biggest down to the smallest.

Triangles

Ask your child to draw triangles of different sizes by drawing around the outline of a range of triangular objects, e.g. Toblerone bar, cheese triangles, snooker ball rack, etc. Then ask your child to put the triangles in order of size starting with the biggest/smallest.



Numeral 4

Your child is learning about sets/groups of four. Your child needs to know the mathematical language associated with the numeral (number) 4 – How many?, trace, write the numeral 4, colour, count, ring, row, red, green, blue, yellow, etc.

Writing the numeral 4

When teaching the children to write the numeral 4, say: Start at the dot. Go straight down and then go across. Lift. Then put on its nose. (See Busy at Maths Home/School Links Book, page 19.)

Practise writing the numeral 4

Practise writing the numeral 4 with your child using a pencil and paper. You could also put some sand in the lid of a biscuit tin and have your child write the numeral in the sand with his/her finger. You can also have your child revise writing the numerals I, 2 and 3.

The numeral 4 around us

Highlight to your child or get him/her to tell you where s/he sees the numeral 4 around them, e.g. calendar, doors, streets, mobile/landline phones, prices in the supermarket, calculators, lanes in a race, scoreboards, car registration plates, etc.

Making sets of four

Place a number of small objects that are normally around the house on the table, e.g. clothes' pegs, apples, pears, bananas, grapes, spoons, tins of food, toys, etc. Have three plates on the table in a row. Ask your child to put four clothes' pegs on the first plate. Now ask him/her to put four apples on the middle plate and four toys on the last plate. Explain to your child that each plate has a set of four objects.

Setting for four

Ask your child to set the table for four people – four cups, four saucers, four knives, etc.

Things that come in fours

Talk to your child about objects that usually come in fours, e.g. four-leafed clover, wheels on a car, wheels on a quad bike (quad means four in Latin), quads or quadruplets (four babies born to the same mother at the same time), legs on a table/chair, seasons, suits of cards, etc.

Poetry/Music

Read/sing the third verse of the poem/song 'The Animals Went in Two by Two' with your child.

The Animals Went in Two by Two

The animals went in four by four, Hurrah, hurrah, The animals went in four by four, Hurrah, hurrah, The animals went in four by four, The great hippopotamus stuck in the door, And they all went into the ark For to get out of the rain.

Combining objects within four

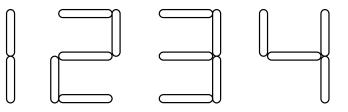
Place three objects on the kitchen table. Add another object and ask: *How many objects had we at first? How many more did we add to the set of three objects? How many objects have we altogether?* Show that 3 and 1 make 4 **or** 3 and 1 is the same as 4.

Partitioning objects within four

Place four objects, e.g. apples, on the table and ask: *How many apples are in this set*? Partition (break up) the set by placing a pencil through the set to show 4 is the same as 2 and 2. Ask your child to use the pencil to make as many partitions of four as s/he can. **Note**: We do not deal with 0 (zero) until later in the year.

Lollipop stick numbers

Help your child make the numeral 4. Give him/her some headless matches/lollipop sticks, etc. and ask him/her to make the numeral 4. When they are proficient at making 4, ask them to revise making the numerals 1, 2 and 3 and to arrange them in the correct order 1–4.





The Passage of Time

Your child is learning about the passage of time. It is introduced by means of games, poems and rhymes – 'Little Bo Peep', 'Little Miss Muffet' and 'Humpty Dumpty'. Your child needs to know the mathematical language associated with the passage of time – What happened/happens first, last, then, next, before/after that, in the middle/middle picture.

Passage of time activities

Activity 1: Give your child a ball that bounces easily but is relatively easy to control. Ask your child to bounce the ball. Give him/her 10 seconds to do it. Say: *I am putting 10 seconds on the clock – go*. See what improvement, if any, occurs after your child has had a few attempts at bouncing the ball.

Variation: Ask your child to skip with a skipping rope. See how many skips s/he can do in 10/20/30 seconds. You set the time, so your child doesn't need to count as s/he skips!

Activity 2: Ask your child to look out the window and observe a cloud passing. Count how long it takes to go out of sight. We don't want the length of time to be very long, so observing the cloud approaching the sun might be more suitable for some children.

Activity 3: Ask your child to look out the window and observe a car passing. Ask him/her to count how long it takes to go out of sight.

Variation: Ask him/her to count how many cars went by in 10/15/20 seconds – you simply set the time/ timer. Your child does not need to count the time.

Activity 4: Light a sparkler/match and ask your child to count how long it takes to burn out.

Activity 5: Ask your child which will take longer: boiling the kettle, boiling potatoes or boiling an egg. Prove or disprove his/her estimate by boiling each of them – not necessarily on the same day, particularly if you are quite busy!

Activity 6: Ask your child to hop on one leg. Count how many times s/he can hop in 10/20/30 seconds.

Rhymes

Read the following rhymes to your child:

1. Little Bo Peep

Little Bo Peep has lost her sheep, And doesn't know where to find them. Leave them alone, And they'll come home, Wagging their tails behind them.

Have your child talk about the rhyme. Ask questions, such as:

- What has Little Bo Peep lost?
- What will the sheep do?
- How do you know that the sheep are happy?
- Do you think Little Bo Peep should search for the sheep? Why/Why not?
- What happened first/next/in the end?

2. Little Miss Muffet

Little Miss Muffet sat on a tuffet Eating her curds and whey; Along came a spider, Who sat down beside her, And frightened Miss Muffet away.

Have your child talk about the rhyme. Ask questions, such as:

- Where did she sit? (a tuffet a pouffe or footstool)
- What was she eating? (curds the thick cheesy part of milk; whey – the watery part of milk which is left after the curd is taken away)
- How would you feel if a spider sat down beside you?
- What happened first/next/in the end?

3. Humpty Dumpty

Humpty Dumpty sat on a wall. Humpty Dumpty had a great fall. All the king's horses and all the king's men Couldn't put Humpty together again.

Have your child talk about the rhyme. Ask questions, such as:

- What happened first/next/in the end?
- How do we know that Humpty Dumpty wasn't made better in the end?
- What did you like/not like about the poem?



Numeral 5

Your child is learning about sets/groups of five. Your child needs to know the mathematical language associated with the numeral (number) 5 – How many?, trace, write the numeral five, colour, count, ring, row, red, green, blue, yellow, and, make, is the same as, etc.

Writing the numeral 5

When teaching the children to write the numeral 5, say: Start at the dot. Go down and around. Then put on its hat. (See Busy at Maths Home/School Links Book, page 24.)

Practise writing the numeral 5

Practise writing the numeral 5 with your child using pencil and paper. You could also put some sand in the lid of a biscuit tin and have your child write the numeral 5 in the sand with his/her finger. You can also revise writing the numerals I, 2, 3 and 4. **Variation**: Use playdough/plasticine to make the numeral/number 5.

Game: What's my number?

Have your child stand with his/her back to you. Trace one of the numerals I, 2, 3, 4 or 5 on his/her back. The object of the game is for your child to guess what the number is. When your child answers correctly, s/he gets the opportunity to trace one of the numerals 1–5 on your back.

The numeral 5 around us

Highlight to your child or get him/her to tell you where s/he might see the numeral 5 around them, e.g. calendar, doors, streets, mobile/landline phones, prices in the supermarket, calculators, lanes in a race, scoreboards, car registration plates, etc.

Making towers or columns of one to five

Give your child some buttons/matchboxes/yoghurt cartons, etc. Ask him/her to arrange them in towers/ columns of one to five. Get him/her to write the numerals 1 to 5 on Post-its or paper and to place the correct numeral under the correct tower/column.

Setting for five

Ask your child to set the table for five people – five cups, five saucers, five plates, etc.

Things that come in fives

Talk to your child about objects that usually come in fives, e.g. fingers per hand, toes per foot, the five senses (sight, hearing, taste, touch and smell), a starfish has five arms, five weekdays, five-a-side football teams, etc.

Poetry/Music

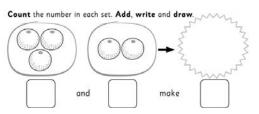
Read/sing the fourth verse of the poem/song 'The Animals Went in Two by Two' with your child.

The Animals Went in Two by Two

The animals went in five by five, Hurrah, hurrah, The animals went in five by five, Hurrah, hurrah, The animals went in five by five, They were so glad to be alive, And they all went into the ark For to get out of the rain.

Combining objects within five

On page 26 of the Home/School Links Book, we ask your child to draw the total in each flash.



In the first question on the page, we don't want your child to think that there are 10 oranges altogether. Consequently, you need to do a number of sums like these, particularly on the kitchen table. Ask your child to physically add the two sets of oranges and move them into a new set (total). With practice, your child will be ready to draw the total in the flash.

Partitioning objects within five

Place five objects on the table and ask: *How many objects in this set?* Partition (break up) the set by placing a pencil through the set to show 2 and 3 make 5. Ask your child to use the pencil to make as many partitions of five as s/he can.

Note: We do not deal with 0 (zero) until later in the year.



Capacity

Your child is learning about capacity (the measure of how much containers can hold). This is done by means of games and activities using concrete materials. When children learn about capacity through hands-on experiences with containers and water, they gradually develop a feeling for how much containers of different shapes and sizes hold. Consequently, the best and most effective way to teach capacity is to allow your child fill and empty a range of containers that are to hand in the home. This can be done while working/cooking in the kitchen or at bath time.

Your child needs to know the mathematical language associated with capacity – How much?, How much more water is needed?, full, empty, holds more, holds less, not as much, nearly as much, nearly full, scoops, container, up to the top/brim, etc.

Which bottle holds more? (similar shapes)

Give your child some clean, empty plastic/glass bottles/containers that are to hand in the house. The bottles should obviously be different sizes but relatively similar in shape. Ask him/her to arrange them in order of which holds most/least. Ask them to tell you why they think the bottles/containers were arranged in that order. Ask open-ended (requiring more than a yes or no answer) questions, e.g. *Why did you put that bottle first? Why do you think it holds more than that bottle? Why do you think that bottle holds less than this one here?*

After the discussion, have your child test whether his/her estimations of the capacity of the different containers was correct by filling each one with water. Measure the amount of water that was in each container using a household measuring jug. If there is no measuring jug to hand, pour the water from the individual bottles/containers into a larger bottle and use a marker to show the amounts that were in each bottle/container.

Which bottle holds more? (different shapes)

Give your child some clean, empty plastic/glass bottles/containers that are to hand in the house. The bottles should have different shapes but be relatively similar in capacity. This is quite an important experiment as many children wrongly think that the shape of the bottle/container determines the actual capacity, e.g. that a tall bottle holds more than a small one. Ask your child to arrange the bottles in order of which holds most/least. Ask them to tell you why they think the bottles/containers were arranged in that order. Ask some open-ended questions as done earlier.

After the discussion, have your child test whether his/her estimations of the capacity of the different containers was correct by filling each one with water. Measure the amount of water that was in each container using a household measuring jug. If there is no measuring jug to hand, pour the water from the individual bottles/containers into a larger bottle and use a marker to show the amounts that were in each bottle/container.

Discuss with your child that a small, wide bottle can often hold more than a tall, narrow one. Discuss how this might be used by advertisers to trick people into thinking that they are getting more in tall, thin bottles than in small, wide bottles – always look to see how much liquid the container actually holds. Talk to your child about this when shopping in the supermarket for any commodity that is sold in a bottle/container.

Which box holds more?

Give your child some clean, empty boxes that are to hand in the house. Ensure that the boxes range in size from quite small to the size of a cereal/shoebox, if possible. This activity can be done using rice, marrowfat peas, marbles, pine cones, shells, etc. to measure the capacity of each box. Use the same methods as done above for measuring containers with water.



Home/School Links Sheet 14

Numeral 0

Your child is learning about the numeral 0 (zero). This is done by means of games and activities using concrete materials. Your child needs to know the mathematical language associated with zero – How many?, nought, nothing, nothing at all.

Learning about 0 (zero)

Zero has not been mentioned up until now because some children have difficulty in grasping the concept of nothing/nothingness. When learning to count, children associate an object with the numeral/ number. When singing about 'Ten Green Bottles', they can physically see and handle the bottles and associate each bottle with its numeral/number. If 0 (zero/nought) is introduced too early, it can confuse some children, as there is no corresponding object for it.

Maria Montessori

The great Italian educationalist Maria Montessori played the 'zero game' with children and asked the parents/guardians of the children to also play it with them. You can play it with your child too. Ask your child to come to you one/two/three times. Most children will find this relatively easy. Now ask your child to come to you zero times. Many children will be puzzled by this as s/he may not have the concept of zero, meaning nothing or no times, simply say: But I asked you to come zero times – it was a little bit of a trick question because zero times means nothing. You have to stay quite still and do nothing. You must not move. You must not come even once. Zero means no times at all. (Adapted from pages 269–270 of Discovery of the Child by Maria Montessori.)

Writing the numeral 0 (zero)

When teaching the children to write the numeral 0, say: Start at the dot. Go around and around and around again. (See Busy at Maths Home/School Links Book, page 29.)

0 (zero) around us

Highlight to your child or get him/her to tell you where s/he sees the numeral 0 around them, e.g. calendar, doors, streets, mobile/landline phones, prices in the supermarket, calculators, lanes in a race, scoreboards, car registration plates, etc.

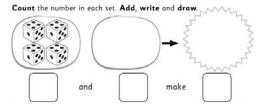
Game: What's my number?

Have your child stand with his/her back to you. Trace any of the numerals 0, I, 2, 3, 4 or 5 on his/her back. The object of the game is for your child to guess what the number is. When your child answers correctly, s/he gets the opportunity to trace one of the numerals 0–5 on your back.

Combining objects within zero

Place four spoons/cups/apples on a plate on the kitchen table. Have one spoon/cup/apple on a separate plate and ask: *How many spoons are on the first plate? How many spoons are on this plate? How many spoons are there altogether?* Show that 4 and 1 make 5 or 4 and 1 is the same as 5. Now have five spoons on one plate and zero spoons on the other. Ask: *How many spoons have we altogether?* Show that 5 and 0 make 5; or 5 and 0 is the same as 5. Be careful that your child doesn't count the actual plate!

On page 31 of the Home/School Links Book, we ask your child to draw the total in each flash.



In the first question on the page, we don't want your child to think that there are eight dice altogether. Consequently, you need to do a number of sums like these, particularly on the kitchen table. Ask your child to physically add the two sets of dice and move them into a new set (total). With practice, your child will be ready to draw the total in the flash.

Partitioning objects within zero

Place five objects on the table and ask: *How many objects are in this set?* Partition (break up) the set by placing a pencil through the set to show 0 and 5 make 5. Ask your child to use the pencil to make as many partitions of five as s/he can, including zero.



Days of the Week

Your child is learning about the days of the week. This is done by means of games, poems, songs and activities using concrete materials. Your child needs to know the mathematical language associated with the days of the week – Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, schoolday, weekday, weekend, comes before/after, between, next to, etc.

In order for your child to be able to make predictions about what might happen on a particular day, s/he must first know the days of the week and the sequence in which they come.

The first day of the week

The categorising of the first day of the week differs from country to country. Some have Sunday as the first day with Saturday as the last day. Other countries have Monday as the first day with Sunday as the last day. In Ireland, we call Monday through to Friday weekdays with Saturday and Sunday classed as the weekend. You don't need to explain this to your child but for the purposes of our activities, we are taking Monday as the first day of the week. This is shown in the words of the two songs that follow.

Activity: Order the days of the week

Write the names of the days of the week on pieces of paper. You may prefer to write the names on Post-it stickers. Place the names of the week randomly on the kitchen table. Now ask your child to place the names in order starting with Monday. Then ask a number of questions but always try to make them fun, such as:

- Can you pass me Monday?
- Which day comes after Wednesday?
- Hand me the day that comes just before Sunday.
- Give me the day that comes between Thursday and Saturday.
- Hand me the last day of the week.
- Show me the days you have to go to school.
- Show me the days when you don't have to go to school.
- Which is your favourite day? Why?

Poetry/Music

Read the titles of both poems/songs before reading/ singing. Ask your child what s/he thinks each poem/ somg is about.

Recite/sing the song 'The Days of the Week' with your child. It can be sung to the tune of 'Twinkle, Twinkle, Little Star'.

The Days of the Week

Monday, Tuesday, Wednesday too, Thursday, Friday, all for you. Saturday, Sunday, that's them all. All those days we will recall. (Sing two or three times.)

Recite/sing the poem/song 'Let's All Sing' with your child. It can be sung to the tune of 'Frère Jacques'.

Let's All Sing

Here we ha-ve The days of the week. Let's all sing, Let's all sing. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Su-n-day. My favourite day!

When you are finished reading, ask him/her if their predictions about the content of the poems/songs were correct. Explain any word that causes difficulty for your child.

Writing the days of the week

Ask your child to write the days of the week into their copy or onto a sheet of paper using only the script from their schoolbook.

The days around us

Ask your child to find the name of any day on objects around the house, e.g. calendars, daily paper, magazines, mobile phones, diary, school homework diary, etc.

Variation: Ask your child if s/he can find the day of his/her birthday on a calendar.



Vertical Addition/Day and Night

Your child is learning about adding items that are shown vertically (straight up) as well as day and night. This is done by means of games, poems, songs and activities using concrete materials. Your child needs to know the mathematical language associated with day and night – bright, light, dark, sunny, sun, moon, stars, breakfast/lunch/dinner/ supper, wash teeth, toothbrush, toothpaste, morning, afternoon, bedtime, asleep, wake up, etc.

Vertical Addition

Up to now, your child is used to adding items horizontally (in a line across). S/he needs to know that items can also be placed vertically and added. Place three buttons/cubes/counters in a vertical line and place another two buttons/cubes/counters to the right of these as on page 108 of the textbook. Ask:

- How many buttons are in the first column/section?
- How many buttons are there in the second column?
- How many buttons are there altogether?

This can be done with a range of items.

Day and Night

Activities during the day

Technically, a day starts just after midnight but for the purpose of this exercise with very young children, we generally classify day as the hours of brightness and night as the hours of darkness.

Talk to your child about the different things s/he or the family does during the day. Get him/her to come up with the activities where possible, e.g. get up, wash, get dressed, brush teeth, get ready for school, go to school, spend time in class, have lunch, go to the yard/playground, get collected from school, do homework, have dinner, listen to a story read by family member, etc.

Signs of day and night

Day: sun, bright sky, clouds, birds chirping, breakfast. **Night**: darkness, moon, stars, bed, sleep, supper.

Poetry/Music

Read the title of each poem/song before reading/ singing. Ask your child what s/he thinks each poem/ song is about.

Recite/sing the song 'The Morning Song' with your child. It can be sung to the tune of 'You Are My Sunshine'.

> The Morning Song In the morning, Only the morning, I wake up happy, The sun is bright. I eat my breakfast And put my clothes on. Then I go to school on a bus. ('On a bus' can be replaced by 'in a car', 'on my bike', 'o-n foot'.)

When you are finished, ask your child if his/her predictions about the content of the song were correct.

Bed's Best

A nest is best for a bird, A hive is best for a bee, Moles and voles are best in holes But bed is best for me.

A cat can nap on a mat, A squirrel can curl up in a tree, Fish have dreams in ponds and streams But bed is best for me.

A sheep can sleep in a field, A cow is best in a shed, But teddy and me, we both agree, We like it best in bed.

Kaye Umansky

Ask your child if his/her predictions about the content of the poem were correct. Explain any word that causes difficulty for your child.

Compare the two poems/songs. How are they similar/different?



Money – 1c, 2c and 5c Coins

Your child is learning about 1c, 2c and 5c coins. This is done by means of games, poems, songs and activities using concrete materials.

Your child needs to know the mathematical language associated with money – How much?, count, what colour is a..., coin, etc.

Note: Exposing your child to real coins is the best way to teach him/her. There is nothing better than hands-on experience.

Game 1: Matching coins

Collect as many 1c, 2c and 5c coins as you can – there are usually lots of them around the house! Place them in a pile in the centre of the table. Give your child three boxes/cups/plastic cups, etc. Using Postit notes, label one box 1c, another box 2c and the last box 5c. Ask your child to sort the coins into the correct boxes.

Game 2: The feely bag

Place some 1c, 2c and 5c coins in a bag. You and your child should not be able to see the coins. Ask him/her to feel about in the bag and pick a coin. S/he must guess what value each coin is before placing it in the correct box as used in Game 1.

Shopping

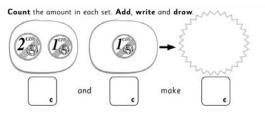
Bring your child shopping with you and talk to him/ her about the prices of different items. Get him/her to point out any price tags with 1c, 2c or 5c on them. If you are paying by cash and receive copper in your change, ask your child to take it from the cashier. S/he can tell you how much s/he received.

Monopoly

If you have the children's version of the board game Monopoly, you can play it with your child.

Combining

On page 39 of the Home/School Links Book, we ask your child to draw the total in each flash.



In the first question on the page, we don't want your child to think that there is 8c altogether. Consequently, you need to do a number of sums like these, particularly on the kitchen table. Ask your child to physically add the two sets of coins and move them into a new set (total). With practice, your child will be ready to draw the total in the flash.

Poetry

Read the poem 'My Coins' with your child.

My Coins

I know a little poem. It isn't very funny. It's about my cent coins And how to count my money.

A cent means there's just one. And two cent means there's two. We know that two means one and one And to have two cent is really fun.

Five cent means five. That means two and two and one. When I have five cent, Off to the shop I run.

Cian Murtagh

Encourage the children to carry out actions along with this poem by holding up the appropriate number of fingers for each coin, when mentioned.

Game 3: Trading up my coins to 5c

This game is played with three or more players. Place coins in the middle of the table – this is the bank. Assign the role of banker to one of the children. The first player throws a die. S/he is given the number of coins that the die shows, e.g. if the die shows a three, the banker gives him/her three 1c coins. Once the first player receives his/her coins, s/he trades them with the banker for coins of a higher denomination, e.g. 2c + 1c. The other players take their turns, throwing the die and trading their coins accordingly. The object of the game is to keep trading the coins until a player has five 5c coins. So on the first player's next turn, if s/he throws a four, for example, s/he will have 2c + 1c + 1c + 1c + 1c + 1c which s/he can exchange for a 5c coin and keep the 2c coin. The game continues until a player has five 5c coins.



Before/After/Between

Your child is learning about numbers that go before, after and between other numbers. This is done by means of games and activities using concrete materials. Your child needs to know the mathematical language associated with before, after and between – What number/numeral?, in between, in the middle, in front of, just after, just before, next to, beside, etc.

This is an extension of work done earlier where your child was ordering three items or racing cars heading for the checkered flag, etc. It was dealt with on Home/School Links Sheet 5. On Sheet 5, we dealt with objects and things your child might do before or after different events. At this stage, your child will be transferring this knowledge to numbers/numerals.

Poetry

Read the following poem to your child:

When I Get Up

First, I get up. Next, I get dressed. Then, I make the breakfast. Last, I get you off to school.

First, I come home from school. Next, I eat my dinner/lunch. Then, I play some games. Last, I go to bed.

Ordering objects

Also revise some activities using objects from around the house – a cup, saucer, sugar bowl, pepper mill and plate, etc. Place them in a row on the table. Have them all facing in the same direction as if heading for the finishing line of a race. Ask the following type of questions:

- Which object is in first place?
- Which object comes next?
- Which object is in last place?
- Which object comes just before/after the cup?
- Which object comes between the cup and the plate?
- Which object comes two places before the plate?

This activity can also be done by having a few family members stand in a line facing the door/wall/ television (as if they're standing in a queue) and asking the questions above.

What I do before, after and between

Talk to your child about things s/he does before/ after/between significant events in his/her day and ask some of these questions:

- What do you do before you get dressed in the morning? (I wake up/jump out of bed, etc.)
- What do you do after you get dressed in the morning? (I walk to the bathroom/wash my teeth/go downstairs/tie my shoelaces, etc.)
- What do you do after you reach school? (I play with my friends/talk to my friends/get into my line/walk slowly into my class/sit in my chair/play with some toys, etc.)
- What do you do in the time between having your dinner and going to bed? (I do my homework/read a book/practise playing the recorder, etc.)

Numbers – Before, after and between

Place numeral cards 0–5 on the table in random order. You can write the numerals on pieces of cardboard/paper/Post-it notes. Ask your child to arrange the numerals in order from 0–5. Now ask him/her some of the following:

- Which numeral/number comes just after 2/3/4, etc.?
- Which numeral comes before 1/2/3, etc.?
- Which numeral comes between 2 and 4?
- Which numeral comes between 1 and 3?
- Which numeral comes two places before 3?
- Which numeral comes three places before 5?
- Which numeral comes two places after 3?
- Which numeral comes three places 0?
- Which numeral comes between 2 and 3?
- Which numeral comes between 3 and 5?
- Which numeral comes between 0 and 2?

Race time

Place four or five interlocking cubes/multi-links/ buttons, etc. on the table. (If you have a teddy, doll, troll, dog or similar animals, it would be better.) Place the objects as if they are taking part in a race, heading towards the winning line, and ask questions, such as:

- Which object is in first place?
- Is the dog last/nearly last?
- Which object do you think will win the race?

