

# *Sherington Primary School*



## *Reception Maths Open Morning*

*Information for Parents and Carers*

Aspire

Believe

Create

Achieve

## Maths Through Play

Play is the natural way in which children learn. It is the process through which children explore, investigate, recreate and come to understand their world. Play is an activity in which everything that a child knows and can do is practised or used to make sense of what is new.

Young children are using maths all the time, through a wide variety of play experiences. Maths is everywhere in the home. With the support of parents, children can grasp many mathematical concepts through their play.

## Around the house

There is maths in all those everyday activities you already do together.

When you're at home, there are plenty of opportunities to play with numbers and develop those everyday maths skills. Always point out that you are doing maths - this helps children understand that maths isn't a scary thing.

## Tips & Ideas

- **Measure ingredients** or set the timer together when you are cooking.
- **Practice counting** up to twenty, and backwards too.
- **Find the same amount of different items** to help your child understand what numbers mean. For example, find 3 spoons, 3 hats, or 3 socks.
- **Talk about** the shape and size of objects, e.g. big car, round ball, rectangular book. Ask questions like 'pass me the biggest box', or 'which is the smallest shoe?'.
- **Play with things** like shells, bottle tops, beads, Lego - and compare them. You can make patterns with them too.

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| <p><b>Patterns and symmetry</b></p> <p>size<br/>bigger, larger, smaller<br/>symmetrical<br/>pattern<br/>repeating pattern<br/>match</p> | <p><b>Position, direction and movement</b></p> <p>Position, direction<br/>over, under, above, below<br/>top, bottom, side<br/>on, in<br/>outside, inside<br/>around, in front, behind<br/>front, back<br/>before, after<br/>beside, next to, opposite<br/>between, middle,<br/>left, right<br/>up, down<br/>forwards, backwards, sideways<br/>across<br/>close, far, near<br/>along<br/>through</p> | <p><b>Exploring patterns, shape and space</b></p> <p>shape, pattern<br/>flat<br/>curved, straight<br/>round<br/>hollow, solid<br/>corner<br/>face, side, edge, end<br/>sort<br/>make, build, draw</p> |
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| <p><b>Mass</b><br/>weigh, weighs, balances<br/>heavy/light, heavier/lighter,<br/>heaviest/lightest<br/>balance, weight, scales</p> <p><b>Capacity</b><br/>full<br/>half full<br/>empty<br/>holds<br/>container</p> | <p><b>Length</b><br/>length, width, height, depth<br/>long, short, tall<br/>high, low<br/>wide, narrow<br/>deep, shallow<br/>thick, thin<br/>longer, shorter, taller, higher...<br/>and so on<br/>longest, shortest, tallest, high-<br/>est... and so on<br/>far, near, close</p> | <p><b>Time</b><br/>time<br/>days of the week: Monday,<br/>Tuesday...<br/>day, week<br/>morning, afternoon, evening,<br/>night<br/>today, yesterday, tomorrow<br/>before, after<br/>next, last<br/>now, soon, early, late<br/>quick, quicker, quickest, quickly<br/>slow, slower, slowest, slowly<br/>old, older, oldest<br/>new, newer, newest<br/>takes longer, takes less time<br/>hour, o'clock<br/>clock, watch, hands</p> |
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- **Put things in order** - of weight, height, size. Ask your child to help you organise things at home.
- **Make patterns** with objects, colouring pencils, paint or play-dough.
- **Build structures** with Duplo, Lego, or cardboard boxes.
- **Solve problems** by working out 'how many altogether' or 'how many more', such as: 'We have 3 red apples and 2 green apples, so how many apples do we have altogether?' or 'We have 6 chocolates/oranges/crisps, if I eat 3, then how many will we have?'

### Maths and money

Money is great opportunity to start do some simple maths with young children - and children love spending money, whether it's real or pretend! Whenever possible, when out shopping, encourage your child to participate in transactions, handling money, counting coins and notes and receiving change. Don't forget to talk to your child about where money comes from.

### Tips & Ideas

- **Play the coin game.** Together, trace around coins and colour in the shapes. Ask your child to match the coin to the image and talk about each one's name.
- **At the shops** - ask them to guess how much a couple of items will cost. Give them small amounts e.g 20p, - what can they buy? Talk about the items you buy - which are more expensive, which are cheaper? Which are heavier, which are lighter?
- **Play shops** - make some pretend money (or use Monopoly money) for your play shop, and use items from all over the house as shop items. By 'buying' things with play money, your child begins to understand that different things need different amounts of money.

## Out and About

You don't have to be inside to be practicing your maths skills! Exploring your local community or playing sports provides loads of opportunities to start thinking about numbers, and gets you fit too!

### Tips & Ideas

- **Go on a shape hunt** - how many circles, squares, rectangles, triangles can your child find? You can look for patterns too.
- **Find 3D shapes too** - cubes, cuboids, spheres, cylinders, cones.
- **Play games that use counting** - Hopscotch, Hide and Seek, What's the Time Mr Wolf, Skipping, Hula Hooping.
- **Get dancing** - create patterns by making up short dances, or rhythms using your body (e.g. clap, clap, stomp, belly slap, and repeat).
- **Play sport!** Sports are the perfect chance to talk about speed, scores, time and angles. Get competitive - how many goals/points can your child score? How many can you score?
- **Look for numerals...** on doors, buses, cars, signs, at home, at the shops... anywhere. Remember to talk about what the numbers mean.
- **Count anything** - how many lampposts are on our street? How many houses have a red door? How many dogs can you count in a day?
- **Talk about time** - for example, how long does it take to walk to the shop, or to school?

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| <p><b>Solving problems</b></p> <p>Reasoning about numbers or shapes<br/>pattern<br/>puzzle<br/>answer<br/>right, wrong<br/>what could we try next?<br/>how did you work it out?<br/>count, sort<br/>group, set<br/>match<br/>same, different<br/>list</p> | <p><b>Problems involving 'real life' or money</b></p> <p>compare<br/>double<br/>half, halve<br/>pair<br/>count out, share out<br/>left, left over<br/>money<br/>coin<br/>penny, pence, pound<br/>price<br/>cost, sell<br/>spend, spent<br/>pay<br/>change<br/>dear, costs more<br/>cheap, costs less, cheaper<br/>costs the same as<br/>how much...? how many...?<br/>total</p> | <p><b>3D shapes</b></p> <p>cube, cuboid<br/>pyramid<br/>sphere, cylinder<br/>cone</p> <p><b>2D shapes</b></p> <p>circle<br/>triangle<br/>square<br/>rectangle<br/>star</p> |
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| <p><b>Counting</b></p> <p>how many...?<br/> count, count (up) to<br/> count on (from, to)<br/> count back (from, to)<br/> more, less,<br/> odd, even<br/> every other<br/> how many times?<br/> guess how many,<br/> about the same as<br/> too many, too few, enough, not<br/> enough</p> | <p><b>Comparing and ordering numbers</b></p> <p>the same number as, as many<br/> as<br/> <i>Of two objects/amounts:</i><br/> greater, more, larger, bigger<br/> less, fewer, smaller<br/> <i>Of three or more objects/amounts:</i><br/> greatest, most, biggest, largest<br/> least, fewest, smallest<br/> one more, ten more<br/> one less, ten less<br/> compare<br/> order<br/> size<br/> first, second, third... tenth<br/> last, last but one<br/> before, after<br/> next<br/> between<br/> above, below</p> | <p><b>Adding and subtracting</b></p> <p>add, more, and<br/> make, total<br/> altogether<br/> double<br/> one more/less, two more/less,<br/> how many more to make...?<br/> how many more is... than...?<br/> take (away), leave<br/> how many are left/left over?<br/> how many have gone?</p> |
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## Games

Games help children develop a good attitude towards maths. Whenever they're playing something that involves maths, tell them it's maths! This helps children realise just how much we use maths every day.

## Tips & Ideas

- **Play with cards** - players take 2 cards and add the numbers - the player with the highest number wins.
- **Play with blocks** - get them to think about size, colour, shape, weight, texture, and create patterns and structures too. Ask them to guess how many blocks they could pile up without them falling down.
- **Play 'I spy'** but with numbers or shapes.
- **Play with containers** - how many socks can you fit in the box? Which container holds the most sand/water/beads etc.
- **Play the Clue Game** - Pick an object and give your child clues to that object by using directional language: up, down, over, under, between, through, beside, behind, in front of, and on top of. To make the game more challenging give two part directions e.g. 'It's on top of the table and to the left of the TV'.
- **Board Games** are great for developing skills. Try games like Connect 4, Jenga, Ludo, Dominoes or Snakes and Ladders.

Websites to support you and your child's learning at home.

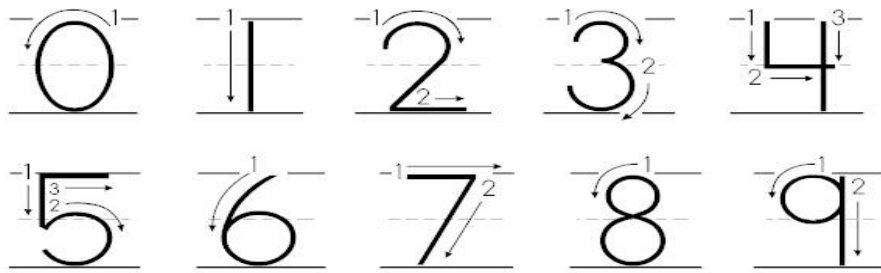
[www.nnparenttoolkit.org.uk](http://www.nnparenttoolkit.org.uk)

[www.bbc.co.uk/cbeebies/grownups](http://www.bbc.co.uk/cbeebies/grownups)

[www.mixinginmath.terc.edu](http://www.mixinginmath.terc.edu)

<https://www.moneyadviceservice.org.uk/en/you-your-kids-and-money>

[http://www.familylearning.org.uk/money\\_games.html](http://www.familylearning.org.uk/money_games.html)



These rhymes are helpful in recalling the steps of number formation

0 Around and round and around we go. When we get home we have a zero.

1 Straight line down and then you're done. That's the way to make a one.

2 Around and back on a railroad track. TWO! TWO! TWO!

3 Around a tree and around a tree, that's the way to make a three.

4 Down and over and down some more, that's the way we make a four.

5 Down and around then a flag on high. That's the way we make a five.

6 Down we go and make a loop. Number six makes a hoop.

7 Across the sky and down from heaven that's the way to make a seven.

8 Make an S and do not wait. When it's joined up you have an eight.

9 Make a loop and a line. That's the way we make a nine.

10 A straight line down, is fun, its one, but with a zero beside it makes ten more fun.

## Concrete, Visual, Abstract

The children follow the "concrete, visual, abstract" route with all new learning, from reception to throughout the school.

It is important children are given the opportunity to handle as many different physical objects before applying this to visual representations. Do not rush children into the abstract (e.g. write the number 3). Allow children to handle 3 objects in various ways before showing a picture of 3 dinosaurs, dots, lines etc. After children are secure in the concrete and abstract, then introduce children to the abstract (writing and recognising the digit 3).

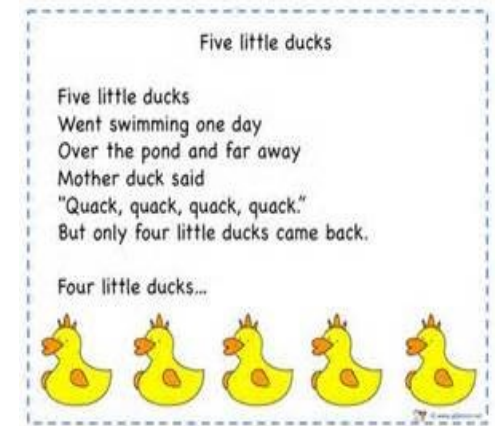
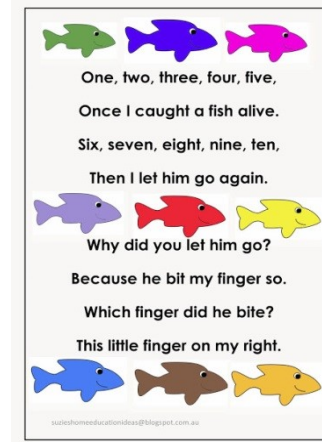
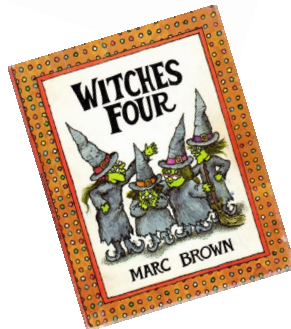
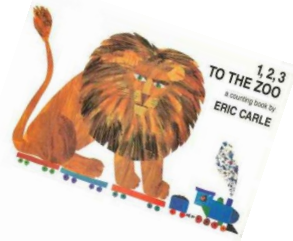
The following resources are useful to help children with their concrete and visual learning:

- o Cards
- o Cubes / counters
- o Magnetic / foam / wooden numbers
- o Dominoes
- o Board games
- o Jigsaws
- o Clock face / digital time
- o Measuring jugs / containers
- o Weighing scales
- o Books
- o Household objects to count and to recognise 2D and 3D shapes



The following stories can be used to teach and reinforce counting skills.

- o Goldilocks and the Three Bears' - T Bradman (Metheun Publishers)
- o 'Ten, Nine, Eight' - Motly Bang (Pic Puffin Publishers)
- o 'One, Two, Three Jump' - Penelope Lively and Jan Ormerod (Puffin Publishers)
- o 'Ten in the Bed' - Penny Dale (Walker Publishers)
- o 'Ten Sleepy Sheep' - Holly Keller (Hippo Publishers)
- o 'Witches Four' - Marc Brown (P Corgi Publishers)
- o 'One Bear All Alone' = C Bucknall (Macmillan Publishers)
- o 'The Bad Babies Counting Book' - Tony Bradman (Beaver Books Publishers)
- o 'Sixes and Sevens' - John Yeoman and Quentin Blake (Pic Mac Publishers)
- o '1, 2, 3 to the Zoo' - Eric Carle (Hamish Hamilton Publishers)
- o 'Kipper's Toy Box' - Mick Inkpen (Hodder and Stoughton Publishers)
- o 'The Squirrel's Store' - Rosemary Revile Irons (Kingscourt Publishers)
- o 'Counting on an Elephant' - Jill MacDon-ald (Pic Puffin Publishers)
- o 'One Duck, Another Duck' -J Amego (Pic Puffin Publishers)

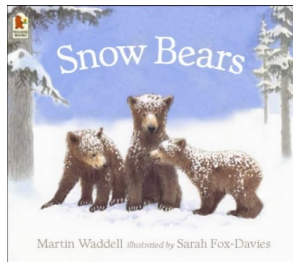


## Number Songs and Rhymes

Nursery rhymes and songs with numbers are a fun way to introduce children to how numbers look and sound.

Counting and number songs provide an ideal way to help your child develop numeracy skills from a young age. Encourage them to perform actions to accompany the songs using their fingers, teddies or even finger puppets. Number songs are easy for children to remember and can be an excellent starting point for counting and mathematical work.

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| <a href="#">Five Currant Buns</a>       | <a href="#">Five Little Speckled Frogs</a>         | <a href="#">Five Little Ducks</a>      |
| <a href="#">Five Dinosaurs</a>          | <a href="#">Five Fat Peas</a>                      | <a href="#">Five Fat Sausages</a>      |
| <a href="#">A Tall Silver Rocket</a>    | <a href="#">Ten Fingers</a>                        | <a href="#">Ten in a Bed</a>           |
| <a href="#">Ten Green Bottles</a>       | <a href="#">Monkeys on the Bed</a>                 | <a href="#">Beach counting</a>         |
| <a href="#">I Can Count</a>             | <a href="#">Three Duck</a>                         | <a href="#">Turtles</a>                |
| <a href="#">Rockets</a>                 | <a href="#">Counting in Two's</a>                  | <a href="#">One Banana, Two banana</a> |
| <a href="#">One, Two Buckle My Shoe</a> | <a href="#">Five Little Men In a Flying Saucer</a> |  |



## Mathematical Story Books

There are many stories which you can share with your child, which focus on key mathematical concepts and vocabulary. There are a wide range of stories which can be used to develop maths skills such as counting, number formation, ordering, addition, subtraction, months of the year, days of the week and telling the time. Children enjoy stories as they provide a fun and relaxed atmosphere for learning to take place. Not only are you developing maths but also a love of stories along with key language patterns and new vocabulary.

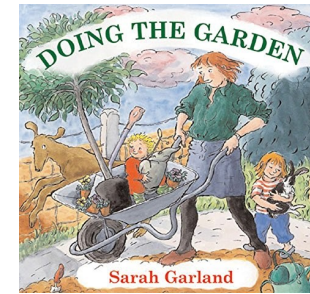
Below are some ideas of how stories can be used to develop your child's maths skills. You might want to focus on one story for a few days and explore the maths in detail or read several stories which focus on one mathematical area such as counting to five.

Peace at Last by Jill Murphy (1992)

This book could be used to explore the concept of time i.e. night and day. Discuss and explain language such as: morning, afternoon, evening, night, midnight, now, soon, early, late, clock etc. You could talk about different ways of telling the time and how you know when it's night or day. Can your child recognise things which are different at night such as lights being on in houses, different animals about, street lamps and car lights being turned on etc.

Four Friends in the Garden by Sue Heap (2005)

This story explores many mathematical concepts and has lovely illustrations. The book could be used to look at capacity through the size of the cups and jug used for the picnic. The language of shape, pattern and time could be explored. In addition counting and number could be discussed through looking at flowers,



butterflies, symmetry and seasons. Discuss and explain the language in the book such as 'more, less, how many...?' pattern, every other, circle, spring, summer, autumn, winter, same, sides'. Take time to talk about the story and let your child raise questions about new concepts or vocabulary.

Snow Bears by Martin Waddell (2003)

This story is ideal to explore the concept of size through the three baby bears (smallest, middle sized and biggest), mother bear and the different sized snowballs. Talk about different sized objects around you and after reading the story ask your child to order three objects from smallest to largest. This could be extended by ordering a larger quantity of objects closer in size.

Doing the Garden by Sarah Garland (1992)

This book would be useful for exploring length, mass and capacity through focusing on different sized plants, trees, pots, seeds, seed trays etc. Having read the story you could do some gardening with your child, and discuss important concepts such as size of plants and how we measure things outdoors.

Popular Stories for Teaching Counting and Numeracy

There are a wide range of stories which develop counting skills. When sharing a story take time to focus on the front cover, illustrations, characters and language used. Read the story slowly focusing on new vocabulary and mathematical language. If the book is focusing on counting, spend time practising the numbers together, and encourage your child to read and recognise the numerals. Give your child the chance to talk about the story and share what they think it may be about, whether or not they liked the book or what their favourite part was.