



Radio Stations : **All Community Radio Stations**
Subject : **Early Childhood Development**
Audience : **Parents, caregivers and educators**
Program Topic : **Maths can be fun**

Guidelines to the presenter

- Presenter – please familiarize yourself with the brief and the use the facts effectively by referring to them from time to time during the show.
- You should be seen as a peer rather than an authority.
- Offer guidance or opinion rather than telling people what to do.
- Encourage people to seek further information
- Always keep the objectives and outcomes in mind and drive these.

Topic:

Maths can be fun!

Objectives:

- To draw the audience attention to the use of maths in everyday life.
- To inform the audience that the development of maths understanding is rooted in the maths language used in the early years.
- To inform them of the different areas and types of maths language.
- To give them ideas of games and activities to make or do with young children that promote maths concepts and understanding but cost little or nothing.
- To enable them to see that maths can be turned into games and become fun.

Introduction

Welcome to <Show name>

Last week we learned how literacy starts before birth and the critically important role parents play in laying a strong language foundation for their little ones to enable them to 'fly' in literacy in the years ahead. One of the other areas of concern for South Africa in education is our very poor rates of numeracy and results in maths in school. Numeracy and maths also start in the early years and the good news is – it's fun!

Join us today as we discuss how to support your child to become a whizz at maths on <Show name>

Questions	Facts/Information
<p>1. <i>Many people claim to have struggled with maths at school; to have hated maths class and to consider themselves poor with numbers. So how do we change their attitudes to their children's maths abilities?</i></p>	<p>Well hopefully, that's one of the things we'll do through this programme! Maths is a very important and very useful part of daily life, and once parents realise this and how they can make it fun for their little ones, it should change their approach to maths.</p>
<p>2. <i>Tell us more about how we use maths in our daily lives?</i></p>	<p>If you just stop and think for a moment, you'll realise that we use maths in hundreds of different ways every day: the alarm clock wakes us up and we need to 'read' the time; we shower to save the volume of water we use; we dress in different size clothes that fit our body shape; we pay taxi fare dependent on the length of distance travelled; our cars need a volume of petrol measured in litres to make them go and we pay money per litres; we catch a lift to the first, second or third floor; our days follow a sequence of events in time; during the</p>

<p>3. <i>In your examples I notice that you've used plenty of maths words like estimate, calculate, count, add, sequence etc. So would I be right in my thinking that much of the child's ability to understand maths is built on their understanding of maths language?</i></p> <p>4. <i>So what is some of the language that's critical for a child to build an understanding of maths?</i></p>	<p>day we estimate, we count, we calculate; we subtract to get the right change; we multiply when we need more than 1 of the same thing; we remember the sequence of numbers in our IDs. And we use these maths skills every day without even thinking! So who says we're bad at maths?</p> <p>Well spotted! You are so right! Maths is a language and if children have plenty of opportunity to use and understand this language, as well as opportunities to explore and experiment with concrete (or physical) and practical examples of number and maths, they will go to school with the building blocks in place to understand more complex maths processes taught in school. If they don't have this language and basic concepts in place, they may well find maths challenging and difficult. The good news is – it's easy for parents to lay a strong maths foundation and once again, it can be done through those 3 simple little actions: LOVE, PLAY TALK!</p> <p>As we've heard earlier, we use maths all day every day, often without even being conscious of it. Once we become conscious, we can draw our little one's attention to number and maths processes as we go about our daily lives. With regard to number, parents are often very proud when their children can count in correct sequence from 1 to 10 or 20. While the child's</p>
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ability to remember a correct sequence is important, it doesn't mean that they have a strong concrete or physical sense of what numbers mean. For this, it is more important that they have plenty of opportunity to physically count our real objects like potatoes, stones, shells, buttons or other objects. They need to have a very firm grasp of what a group of 1 or 2 or 3 or 4 or 5 etc mean; that whether you have 3 potatoes, 3 people, 3 cars, 3 stones – they are still a group of 3. Once they have this firm concrete sense of number, they can start manipulating those numbers in other ways that will eventually become calculations like addition, subtraction, multiplication and division. They will learn that when you have a group of 3 toy cars and you give one to your friend (subtraction) you are left with 2; that if there are 4 biscuits, there are enough for me to have 2 and my friend Jabulani to have 2 (division); that if I'm counting out enough potatoes for supper for everyone to have one and Gogo is joining us for supper, I must add an extra potato (addition). The more opportunities you can give your little one to count out and play with numbers the better. And then of course there are all the number songs and rhymes in every language: '1,2,3,4,5, once I caught a fish alive'; 5 little monkeys jumping on the bed; 1 fell off and bumped his head; 4 little monkeys ' 10 green bottles hanging on the wall – one fell off & then there were 9 green

5. *And apart from number, what other maths language is important?*

bottles’ I’m sure you can think of many from your own childhood!

Maths language covers a wide range of early concepts and understanding that need to be in place for children to move on to more complex maths understanding later on. Babies are aware of shape as their ability to see and recognise the arrangement of shapes that make up a human face develops. They begin to observe irregular and then the regular geometric shapes that make up our world – circles, squares, triangles, rectangles, stars and other shapes. The knowledge of shape, size, space, position, direction and movement will eventually become geometry in school! Parents can draw children’s attention to these shapes in the environment, help them to identify and name shapes, match them and eventually draw them. Posting toys that require the child to put the correct shape through the correct shape hole are useful in this regard. You can also make a game by cutting out shapes from the cardboard of an old cereal box, and then drawing around those shapes on another piece of cardboard. Your child can then match the shapes by putting the correct shape on top of its silhouette. Or make bigger shapes & get your child to hop on the circle; jump on the square etc.

Words of size and quantity are also important – getting a physical sense of big, bigger, biggest; small, smaller, smallest and being able to

sequence objects according to size can become a great game. Tops and lids of all shapes and sizes make wonderful toys for maths games. They can be sorted and grouped for colour, size, shape; they can be sequenced from smallest to biggest or the other way around; they can be counted out; used for addition and subtraction – ‘What happens if we take 2 away – how many do we have left?’ ‘What happens if we add the red and blue lids together? How many do we have now?’ ‘Which has more – the red pile or the green pile?’ ‘And which colour has the least?’ Smarties also make a wonderful way of having fun with colour and number – and your child has the fun of eating them too! Use your imagination and have fun together!

6. *Now you’ve awakened my imagination and I’m beginning to think of other maths language! What about measurement, volume, position in space and patterns?*

Ha! Now you are thinking! And you’re beginning to see the amazing ways maths is in our daily lives. Yes. Of course – measurement is an important part of maths language. Technically this is finding the length, height and weight of an object using units like centimetres and metres, grams and kilograms. Young children love to have a height chart to keep track of how much they’re growing. And a 4 or 5 year old can begin to understand a graph of their increasing weight as they grow up. Get them to sequence different pieces of string/wool/paper according to how long they are. Volume is also part of maths language and what better way to learn about volume than in playing with water or in

the sandpit or even in the garden with soil or mud. Sand and water play help children understand the capacity of objects – which cup holds more or less water or sand; to understand words like heavy, light, half empty or half full, nearly full, overflowing. They love to pour from one container into another as they explore what happens. That's why bath time is also play and learning about science time! Just make sure there is always an adult supervising. Babies and toddlers can drown very quickly in very little water!

And words for position in space are also very important. Games of hide and seek are wonderful ways of exploring words for position in space – words like under, on top of, next to, behind, in front, on the right, on the left, inside, outside and I'm sure you can think of others. Children need to have a good grasp of the meaning of these words as they will play an important part in learning to read, write and do maths later on. It is also important that they learn to recognise and then make patterns. Patterns are a sequence that repeats itself in a logical way – so for example a pattern of colour lids – red, blue, green; red, blue, green. You can get your little one to continue the pattern or copy the pattern underneath and eventually to make up their own patterns. They will love to make pattern necklaces for Mum and this can be done by threading popcorn or macaroni coloured with food colouring, or cutting and

<p>7. <i>What about a concept of time? Does that form part of maths understanding?</i></p>	<p>colouring pieces of polystyrene trays & threading them by tying a piece of wool onto a used match.</p> <p>Yes it does. As our little ones grow and develop we can help them gain a sense of time. The routine of our daily lives helps them have a sense of the sequence of events – supper, bath, story, bed. It is easy to make time sequence puzzles to help little ones understand what happens first, next, last etc. Once again, cereal or beer boxes provide a wonderful and free source of cardboard. Parents can either draw a sequence of events, or find and cut out pictures & paste them on little squares of cardboard that can be sequenced. There are many topics you can use: the sequence of getting dressed; the day’s routine; plant growth from a seed to a tree; the seasons; going on a journey from home to the shops. Use your imagination! Making up and illustrating stories also helps children get a sense of sequence of events. As children get a little older, they begin to have a sense of days of the week – which days I go to pre-school and which days I stay at home. There are many rhymes and songs that teach children the sequence of days of the week and months of the year.</p>
<p>8. <i>You’ve already given us lots of ideas of what parents can do to introduce maths through play. What else can</i></p>	<p>Once parents start to get the idea of maths in their world, they will find an endless supply of ideas to make maths games out of their daily</p>

<p><i>parents do to make maths fun for their little ones?</i></p>	<p>routines. Often it's as simple as getting your little ones to help with daily chores like setting the table and sorting the washing. Most young children love to help and to feel useful doing 'grown up' things. Being patient and encouraging them to help builds their self-esteem and self-confidence and a feeling of being a valued member of the family. So there are many benefits! In helping lay the table, your little one has to work out how many family members there are and put out one of each item for each family member. This is called making 1 to 1 correspondence and is a foundational maths skill. In sorting the washing, he will have to group and put together all 'like' items – e.g. all the shirts, all the shorts, all the undies. And you could get her to match the pairs of socks; estimate which pile has the most/least items and on and on! Use your maths imagination!</p>
<p>9. <i>And what about maths games to play? Don't these cost money?</i></p>	<p>We've already discussed lots of ideas for games that can be made for free by using waste materials around us like tops and lids; cardboard boxes; polystyrene trays; glue made from flour and water; smarties; popcorn; laying the table; sorting the washing; water and sand play and on and on. These cost little or no money. For your 3 to 5 years and older children, it is worth investing in one or two dice. They cost very little and open up a whole lot more games. You can throw the dice and count out</p>

<p>10. <i>If families are going to play card games, children would need to be able to recognise the written symbols for numbers. When should parents introduce these written number symbols?</i></p>	<p>the same number of tops/lids; shells; stones; leaves. You can make some simple card games like snakes and ladders where children throw the dice and move their lid along a path by counting the blocks that match the throw of the dice. Children are not only learning maths skills, they are learning social skills of taking turns; following the rules of the game; learning to win and lose. For older children, two dice enable them to play games of addition, subtraction, multiplication and division. Something else that's worth investing in is a pack of ordinary playing cards. These cost between R12 and R25 and are available in most plastics stores, supermarkets and general stores. There are masses of different games one can play with cards from simple matching, sorting according to suit; sequencing; taking out a few pairs and playing memory games; collecting families. Card games are a wonderful way of spending quality time together and having fun as a family. Games can be adapted to cater for all ages of family members.</p> <p>Children need to have a very good concrete or physical sense of numbers before they can understand the written symbols of numbers. This will come as they grow and develop and start to become aware of the use of symbols in letters, words and numbers. You can draw their attention to number symbols around you – on money, on their clothes, the street numbers of</p>
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	houses, on adverts, but let your child lead you as and when they show interest and curiosity.

Conclusion

Thanks you so much to all the people who phoned in with ideas for games and activities that promote maths understanding that they used to play as children, or now play with their own children. It helps so much for us to share ideas and experiences. Once again we have emphasized the importance of language, in this case maths language, in the development of our children. Language is brain food and as parents, we need to feed our young children’s brains a rich diet of language to provide a strong foundation for their future learning and development. And you’ll be laying the foundation for a positive attitude to maths and your child’s belief that he CAN DO IT! LOVE, PLAY, TALK also helps us build strong relationships and strong families. Go play! Have fun and join us again next week as we look at the building blocks of science and technology in the early years.

Thank you for joining us today on <Show name>

Learning outcomes

After listening to this show the audience should:

- Be aware of the use of maths in everyday life.
- Understand that the development of maths understanding is rooted in the maths language used in the early years.
- Know the different areas and types of maths language.
- Have ideas of games and activities to make or do with young children that promote maths concepts and understanding but that cost little or nothing.
- See how maths can be turned into games and become fun.