



Dr. Helen J Williams: Making Maths at Home More Enjoyable

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Trying out maths at home with your children can feel like a challenge for those of us that experienced a less than positive

experience of maths ourselves. Whilst we might relish opportunities to share storybooks with our children, the thought of ‘doing some maths’ is often a little less attractive...

That’s why I wanted to provide you with a few ideas for reconnecting mathematically with both yourself and your youngster, through some simple counting games. Rather than feeling under pressure to ‘teach’ your young child, give these simple mathematical tasks a go, find one you both like, and enjoy it together, maybe even more than once. And don’t forget to get out the LEGO too – very educational and loads of fun to play with together!

Evaluating our own attitudes toward maths

First, let’s have a little background.

- **Make sure the experience is enjoyable for both you and them** – Once an activity stops being enjoyable, it is best to swap to something else. Not everyone will enjoy every idea, and that’s okay.
- **There is no such thing as a ‘maths person’ or a ‘maths brain’**
 - The message we need to give is that every single child has the potential to succeed in maths rather than, “I wasn’t any good at maths, so you don’t need to worry.”
- **Maths does not need to be written down to be ‘real maths’**
 - Maths takes place in our heads, and when we are exploring objects and images and thinking about the relationships between them.
- **Making mistakes and talking about them is an important part of learning maths** – Discussing and learning together

are not 'cheating'.

Learning about numbers

If we think about it, many of the numbers we see around us are not connected with any quantity. For example, a number 68 bus does not mean 68 people are on board, and a shoe size of 10 doesn't mean we have 10 shoes in total.

Here, numbers are working as labels not attached to amount. While these seem obvious to us, it's not always so clear to the little ones. We also need to work on helping them realise that a number is attached to a quantity, such as when they appear on multipacks of crisps, or packs of balloons.



The language of numbers

There is a lot to learn about counting. Firstly we have to learn the words.

Young children learn quickly that number-words (one, two, three...) are a separate set of words than for example colour-words (red, yellow, blue...) or animal-words (cat, dog, bird...). They might answer with a number-word when asked a number-question: “How many banana slices have you now?” “Two!” – even if it might not yet be the correct number!

Most children are quite young when they realise number words are different to words to do with, say, colour. They can give a number-word answer to a number-question we ask.

Although there is pattern to the written numbers, English is not helpful in that the number order we hear is not regular; for example, “eleven” and “twelve” rather than “ten-one” and “ten-two”. We even say some numbers the ‘wrong’ way around, so although we write 15, we read this as “fifteen”. Ah, the tricky teens!

Exploring maths mistakes

We have to be patient whilst all this learning takes place, correcting gently and enjoying the mistakes, which often reveal a young child’s developing understanding. Here are two common ‘mistakes’ you may have heard.

Example 1

Gran: “Let’s count how many of us are sitting at the table today.” She points to each person as she says “1, 2, 3, 4,

5.”

Alysha: “NO! I’m 4, I’m not 3.”

Here Alysha is thinking about her age – a very important number – rather than the amount of people. Gran would be able to point out that she is indeed, “4 years old” but when counting around the table, she is the third person counted (number 3). Maybe she would like to sit where she would be the fourth (number 4)?

Example 2

Sid is counting a pile of pennies:

“1,2,3,4,5,6,7,8,9,10,11,12,13,15,17,18,13,15,17 ...”

Sid knows a lot of number words, and he knows some in the correct order. He also realises there is some repetition when we count. He is on track to using the pattern of our number system to count reliably.

Putting maths into practice at home

The following tasks provide opportunities to learn from our children as well as with them. Below are four playful tasks that you can try at home (or in nursery) to spark mathematical chats and mathematical thinking. The first three tasks help children explore numbers and quantity, and the last task focuses on developing skills of maths language and visualisation.

Task one: How many inside?

What is the rule about counting? We count everything once and we stop when we have done so. The last number we say tells us how many we have (the quantity).

You will need a tin or cup and a collection of small toys, buttons or stones.

Drop 4 stones into the tin one at a time, while the child listens carefully. Ask how many they think are inside the tin? Why do they think that? How sure are they? Tip the tin out and check. This game can be varied by dropping irregularly, or by using quieter objects.

Later when they get good at this, ask “How many is that so far inside?” and then dropping two more on top of the original amount, supporting the child in counting on from a small amount: “Four.... Five, six.” The important idea is to draw their attention to the last number we say telling us how many there are.

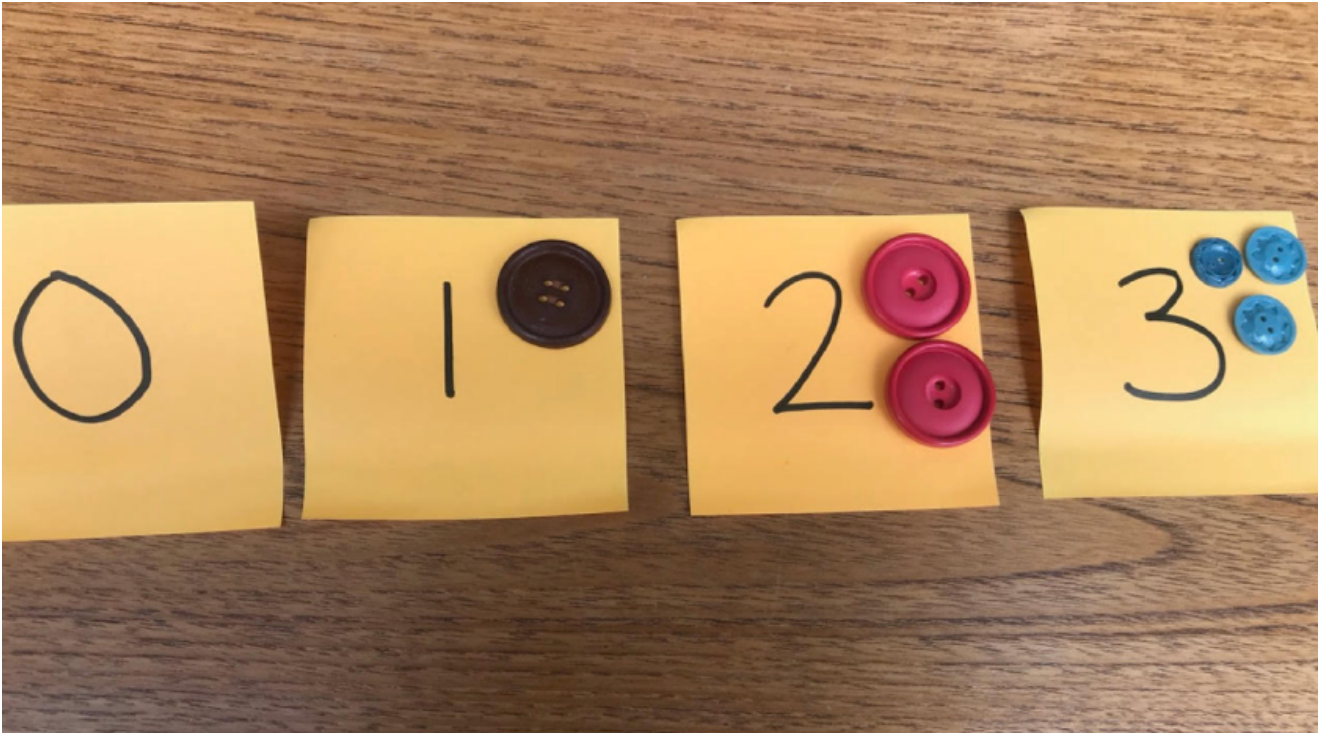
Task two: What’s missing?

You will need 6 pieces of paper and a collection of small bricks, stones, buttons or similar. Clearly write the numbers 0,1,2,3,4,5; one on each piece of card.

Together with your child, organise the 0 – 5 number cards in order from the smallest (0) to the largest (5) number. Take it in turns to hide your eyes whilst the other player turns a card over (or removes a card and closes the gap – harder!). Player one opens their eyes and works out which number is missing.

To extend this, you could shuffle the cards around after removing one or play with numbers 0 to 9. But remember it is best to begin any game at a slightly easier level than you think your child can

manage. It is easy to introduce a challenge with their agreement! You could match an amount of bricks to each number, and play the hiding game by removing one brick – what has changed? How do you know?



Task three: Pairs

You will need 6 identical cups, and a collection of identical counting tokens (you could use coins, beans, LEGO bricks, or whatever else you have handy). This works like the card game ‘Pairs’, where you have to find a matching pair, this time we find a matching amount. Place 1 penny under each of two of the cups, under another two cups place 2 pennies, under another two cups place 3 pennies. Then, mix the cups up.

Take it in turns to turn over two cups. If the amount of pennies underneath is the same, the player keeps the pennies, if not, they replace the cups. You can, of course, extend this to include

matching two groups of 4, when you have enough cups.

Task four: Make it the same

You will need a book to act as a screen between the two of you and two identical sets of bricks or blocks (not too many) and perhaps a toy car and a play person. Share these out between the two of you to make sure you each have the same collection.

One person builds a small scene with their bricks and toys, secretly, behind the screen. When they are ready, they tell the other person how to make one exactly the same as theirs. Only they are allowed to look over the screen to see how the builder is doing (and correct them if necessary). You can only touch your own bricks.

When they think it is the same, remove the screen. Examine what is different – or not. Then swap roles!

These tasks are meant to be playful and to be enjoyed together. When your child asks to repeat one you know you are winning. Aim for that!

Dr Helen J Williams is an independent educational consultant based in Cornwall, who specialises in the learning and teaching of Early Years and KS1 mathematics. She has a special interest in working alongside colleagues developing effective playful curriculum opportunities.



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