

Level 1 Mathematics - They Repeat: A Mathematics Lesson on Patterns

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Mathematics in my prep classroom is often quite neglected; I don't feel there is enough time for it and I don't feel I teach it well. I tend to 'tell' the children the answers, rather than letting them find solutions. I often felt that in prep the children really needed to be taught the content so they could further explore it in later years. Boy has my thinking changed!

Attending a PEEL Primary Meeting one Wednesday night during Term 2 made me realise I was not doing Maths very well in my classroom. When asked to bring a Maths activity to share, I had nothing that was any good from this year to share, and only a handful of ideas from last year, when I again had prep. What a worry. What had I been doing? I had been doing everything I said I *didn't* do; teacher oriented tasks, tasks that didn't incorporate the children's prior knowledge, worksheets (aahh!) and little to no problem solving. Looking back on last year, it was my first year of teaching, and it seems I had been so obsessed with getting the children to read and write that Maths had taken somewhat of a backseat. I had also put a lot of focus on play in the classroom. The prioritising of curriculum areas brings up a whole other issue, which I won't delve into right now! The children in my class still learnt Maths last year, but it was boring, definitely not quality learning.

Now in my second year of teaching and my second year with prep children, I was continuing to do 'boring' maths lessons. The following week after the PEEL meeting, 'Patterns' was going to be the maths focus for the week. Originally I was going to show the children what a pattern was, and then have them make patterns using a range of materials found around the classroom (counters, beads, lids, bread tags, unifix and so on). Now I had another idea – it wasn't anything radical, but much more focussed on the children – use a question to guide the lesson.

On Monday I asked the children, "What is a pattern?" I said no more. The children were then divided into groups of three, and were asked to discuss their ideas about patterns and to play around with the materials to try to make some patterns using the materials as mentioned above. I had previously tested the children's mathematics knowledge at the beginning of the year, and almost all the children could continue a pattern. But could they *make* a pattern? I thought this would be a relatively simple task.

All of the groups began making what they called 'patterns.' Some worked more on their own, some worked together. They were all talking about something to do with the task. I heard one child explain patterns to her group; "It's like black, white, black, white" and so that group made black and white patterns with peg boards and pegs. They then made orange, pink, orange, pink. One of the groups was making what they called a pattern; it looked like a mosaic type thing, made of bread tags. Other groups were lining items up in rows, not patterns.

The children explored for around 15 minutes. I then stopped them, but told them not to pack up their materials. As a class we then moved around the room, looking at each group's patterns. We sat around the patterns, or stood, depending on how much room we had. We looked at the 'patterns' and discussed whether we thought they were in fact patterns or not. Some children were on the right track with their comments, such as "it goes yellow, green, yellow, blue, red – it's not a pattern", but they were having trouble articulating why it wasn't actually a pattern. It's important to note here that as we 'examined' each group's efforts, the children were praised and encouraged for what they had done, and for how they had worked in their group. In doing this, the classroom did feel safe, and the children didn't feel like they had done something wrong.

When we got to the third group's patterns, one of the children was commenting about one of the patterns, which actually was a pattern, and I asked, "So why is it a pattern?" Then came the unplanned, unprompted response,

"It repeats!"

It certainly does! And I asked him to 'repeat' what he said.

"It repeats, it just repeats."

From then on as we examined the patterns we were checking whether they were repeating. Other children were now using this language.

There you have it. This is what I was originally going to teach the children at the beginning of the topic. I was going to say "patterns repeat." What I wanted to teach was achieved in this lesson without me having to do that. The learning for the children in this case was much more powerful, and as a class they solved the problem, and could now make patterns and explain what was or was not a pattern.