

Having fun being wrong

Colin Foster recalls some of the wisdom of Derek Ball in conversations at ATM conferences.

I was very sorry to hear recently that Derek Ball had passed away. I always really looked forward to talking to Derek at ATM conferences and attending his wonderful sessions. Derek was so playful with mathematics, full of fun and an inspirational thinker. One of the things I learned from him was how to have fun by being wrong about mathematical things when talking to children. This is something I can do very well, as I'm very good at being wrong about things! I noticed myself doing this recently, and it reminded me of Derek, who was a master at it.

My daughter had been reading, and said, "I've just finished chapter 12 and there are 23 chapters."

I replied, "Oh, so you're nearly a quarter of the way through!"

I believe this is the kind of thing that Derek would have said. No doubt he'd have had something better than this, but this was my attempt to imitate his style.

A more typical parental response, trying to 'bring maths into the conversation', might have been to ask the child, "So how many chapters do you have left to read?" This doesn't feel fun or even very interesting. It's relevant to the situation, I suppose, but feels like a demand to work something out. It places the adult as the asker and the child as the responder. It's a bit too 'teachery'.

By contrast, a deliberately wrong statement like this is a bit more of a provocation. I suppose it attempts to elevate the discussion, by bringing fractions into the conversation, taking it beyond counting. It offers an example of the kind of correct statement that could be made. But it gives space for the child to get something right and the adult keeps out of the spotlight. The adult is always the fool, who has to be corrected by the child. This feels the right way round.

Her: "A *quarter*? It must be *more* than a quarter!"

Me: "Really?"

We ended up having an interesting discussion about whether 12 out of 23 is a bit less than a half or a bit more than a half, and trying to see this in different ways. The numbers seemed fortuitous, with 23 happening to be 1 less than twice 12. But I nearly always find in situations like this that the numbers that arise turn out to have some helpful, convenient relationship. Mathematics is so full of relationships, perhaps we shouldn't be surprised by this. It's as if, when you're being silly with mathematics, there will always be some interesting relationship that will bubble to the surface. You don't have to force it or try to plan ahead to make it happen – it just emerges.

Children generally enjoy it when adults say ridiculous things. Teachers sometimes tell their students that "It doesn't matter if you get the wrong answer". But I find that children generally *do* care very much about things being right. They won't let it go if you say something absurd. They may roll their eyes at you, but they'll also want to put you right and make sure you appreciate your error.

I find that young children, at least, are always like this. As they get older, they sometimes seem to become more like adults – a bit world-weary. They 'pick their battles' and 'let things go'. "It isn't worth arguing", they might say. They have perhaps become used to being told things that make little sense, and they lose their faith that the world – or mathematics – is supposed to be coherent. Perhaps they are less often treated playfully and expected to 'be the adult'.

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