

Bad Language in the Maths Classroom

Most people who have taught calculus will be familiar with the YouTube video *I Will Derive* (<https://www.youtube.com/watch?v=P9dpTTpjymE>). It's had 2.1 million views over the past 11 years, probably nearly all by maths nerds. Watch it if you haven't done so.

I generally show it to my students, though with the caution that it contains bad language – not bad in the sense of profanities that might offend your grandmother, bad in the sense of misusing the word *derive*.

Most students are quite happy to say that, if we derive x^2 , we get $2x$. But this is wrong. If we differentiate x^2 , we get $2x$. $2x$ is the derived function. We are deriving $2x$, not x^2 . So when we talk about deriving a function, it is actually the derivative we are deriving from the primitive. We derive x^2 by differentiating $\frac{x^3}{3}$.

Why do we use the word wrongly? Maybe because *derive* has 2 syllables and *differentiate* has 5, and some might say 'Never use five syllables to say what you mean when you can say what you don't mean with two'. Most wouldn't subscribe to that view, but many of us still use *derive* when we mean *differentiate*. It's very common in Australia and, as *I Will Derive* is an American video, it seems to be a world-wide thing.

Bucking the trend isn't always a bad thing. If we use the word *differentiate* when we mean *differentiate*, no one is going to get confused. It just takes half a second longer.

Alright, so there's a bee in my bonnet. There's another one crawling up my nose. Here we go.

Let's times 7 by 3. Or maybe we should minus 3 from 7. Or we could even plus 3 and 7 together. Just about every student I've ever come across has said such things. I'm not sure what part of speech *minus* is, but I don't think it's a verb!

Admittedly, *multiply* is two more syllables than *times*, but *subtract* is just as short as *minus* and *add* is just as short as *plus*.

Then there's *gazinta*, as in *4 gazinta 12 3 times*. But maybe that's not quite so bad.

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