

## Simon Singh, Fermat's Last Theorem and Andrew Wiles

How do you handle the last lesson of term? Sometimes as students sense the impending holidays, any attempt to teach right to the final moment are doomed. My way out is to show everyone Simon Singh's famous documentary on Andrew Wiles' solution of Fermat's Last Theorem. Now available in full on Youtube, this 50 minutes represents (in my humble opinion) the best mathematics ever filmed. I must have watched this thirty times now – as a devout believer learns their sacred text by heart, so I can remember every word and every camera angle, and the programme still reduces me to tears every time. In fact, the video opens with Andrew (it feels wrong to call him 'Wiles' here) on the edge of tears himself ('Bless!', said Craig), as he tries to convey how special it was to discover the final moment of his proof. My students may have cried about maths themselves, but never for positive reasons, and to meet this rather awkward man who'd been so moved by his love of mathematics was startling for them.

'Is this going to be funny?' Mark asks me. Two minutes in, and we get a full view of Andrew's desk, which is literally a foot deep in papers, journals, doodling and doubtless the odd biscuit. 'I thought you said this wasn't going to be funny,' Mark says (the desire to offer a commentary on any piece of TV or video is irresistible for any class).

'So here was this problem that I, a ten-year-old, could understand', says Andrew ('a bright ten-year-old', sniffed Darren). We learn how Andrew decided to work alone on this problem for seven years, night and day, without telling any colleague what he was doing. 'Don't mathematicians share their stuff?' asks Kay in some annoyance, and it seems that some

of the other mathematics professors at Princeton, a truly stellar list of names, agree with her.

‘I told my wife that I was working on Fermat...’ ‘So he’s married! No! Really?’

The programme reaches its climax as Andrew explains his final step. ‘Do you understand this stuff, Jonny?’ asks Tom innocently, and I shift a little uneasily in my seat. ‘Oh yes, no problem, Tom.’

Then the story takes a twist – there’s a mistake in Andrew’s proof. Now here’s something that all my young learners can appreciate – you hand in your work, and someone marks it, and you’ve got something wrong. Now Andrew’s mistake is one that maybe only three people in the world could have spotted – but it’s a mistake, none the less. So the programme has a second climax, as Andrew, after intense pain, resolves his error.

‘I’ve had the rare privilege,’ Andrew says, ‘Of being able to pursue my childhood dream in my adult life.’ I look around my class as they troop out, and hope some of them will fulfil their own childhood dreams. ‘What were my dreams at your age?’ I whisper to myself...

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