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*1089 and All That*

Why are so many people scared stiff of mathematics? All too often, the real truth is that they have never been allowed anywhere near it, and one of my ambitions is to bring some of the ideas and pleasures of real mathematics to a wide public. One way of doing this, I believe, is to emphasize the element of surprise in mathematics. In the lecture I will start with a simple number trick that always leads to the answer 1089, and will go on to discuss many other surprises in mathematics and its applications, including elementary geometry, chaotic pendulums, and electric guitar dynamics. I will even examine whether mathematics can explain the Indian Rope Trick, which is perhaps the most famous illusion in the whole history of magic. Most importantly of all, however, I will suggest ways in which anyone can appreciate that mathematics has a certain magic of its own.