

# STUDENTS SPOT FLAW IN RENOWNED MATHEMATICIAN'S CODE

Well done to the vigilant students who spotted an error in a puzzle set by the renowned mathematician Simon Singh, author of the bestselling *Fermat's Last Theorem*, on his website. Here's the original puzzle

## 1. The Colour Code Challenge

Below you can see the numbers from 1 to 20 represented by coloured circles, but what is the relationship between each number and its colours? If you can work out the relationship, then you will notice that one of the numbers is linked to the wrong colours.



Here's the email we sent to them explaining why we thought it was wrong

*In your colour code challenge, my pupils think 13 and 17 should have new colours (they were both red, so we chose pink and yellow) otherwise 22 and 26 would both be 1/2 orange and 1/2 red. Do you agree or have we missed something? We think every new prime number should have a new colour. The pupils at Castle School, Pembrokeshire would love to know if they've spotted something clever.*

*Thank you (Mrs Cowell - their maths teacher)*

You can see the changes we made here



Here is their response

*Thanks for your email, and that's a very good observation! If we were to continue our pattern on longer than 20, we would indeed need to introduce new colours for every prime number, else we would always have problems when it came to multiplying those numbers by 2. And if we were to go on so long that we came to multiple 11 by 13, we would end up in quite a mess if we hadn't brought in a new colour for each prime!*

*So that's a great observation from your pupils, well done to them!*

*Best,  
Michael and Simon*

Oh and by the way - can you crack the code?

You can find out more about Simon Singh and his website and have a go at their puzzles using the following link <https://parallel.org.uk/> You'll need to ask your teacher for a code to sign up.

## Welcome to the Parallel Maths Project!

Dr Simon Singh, author of the No. 1 bestseller *Fermat's Last Theorem* and *The Simpsons and Their Mathematical Secrets* has created a set of weekly maths challenges – roughly 30 minutes of interesting, fun and challenging material that goes beyond school maths: mystery and history, activities and oddities, puzzles and problems.

- [Sign up](#) and each week you will receive a Parallelogram, a weekly set of maths challenges.
- It's **FREE** to sign up and all the materials we offer are **FREE**.
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