

## Dress drama: Blue and black or white and gold? What's the science?

What color is the dress? A Tumblr user uploaded a picture of a dress, saying that they were having an argument about what colour it is. Is it white and gold or blue and black? [Buzzfeed republished it](#) and it [broke even their records for traffic](#).

In fact [the dress is blue and black](#).

So why does the picture appears white and gold to some people, and blue and black to others? Here's the science behind it.

The reason you see a piece of white paper as white regardless of whether you're outside (under the blue sky) or inside (under red-tinted candle light) is because you shift the colour of the paper in your mind back to white – you white balance it. Or in technical terms, you “discount” for the “colour of the illuminant”.

So now to that dress. We are correcting for an imagined light source, but there are two features of this picture that make it very difficult to interpret, which means people are likely to see it differently.

[The original image is in the middle. At left, white-balanced as if the dress is white-gold. At right, white-balanced as if the dress is blue-black.](#)

Firstly, the dress is actually a complicated mixture. If you find the RGB values of the gold/black, they come out as a “yellowish/gold/brown” says [Bart Anderson](#) from the University of Sydney. Meanwhile, the “white/blue” is a mixture too.

The second feature that makes it ambiguous is that there are not many cues in the picture to tell you how to interpret the colour of the light source. Without cues telling you how to correct for the light source, people can be left fumbling and possibly just randomly fall into one category. And once you see it that way, it's hard to change.

**Read full, original story:** [What colour is the dress? Here's why we disagree](#)