

Listening (Script)

A: Black is black. Or is it? Today I'm talking to Alice Freeman about how to create the colour black. Alice, people say that black is not really a colour, it's the complete absence of colour. Is that right?

B: It's an interesting question. Some artists might disagree with that! They mix all the primary colours and produce black paint which they use in their work. But scientists say that black is not a colour because it is the absence of light, and therefore, as you say, absence of colour.

A: So, if that is true, how can we have different shades of black?

B: Ah - it depends how much light is absorbed by an object. Some things we think are black, only absorb a small percentage of light, while others absorb a higher percentage and therefore look blacker. It's common knowledge that a black hole in space is the deepest black you can find, because it swallows all light. However, scientists have recently managed to create a man-made material that is darker than anything else. It's called Vanta black and it's quite special.

A: Why's that?

B: Well, if you paint something with Vanta black, it looks like there's just a hole, as if you could put your hand straight through it!

A: How on earth is it made?

B: Well, I have great admiration for the inventors. It's quite amazing. You see, it's not really a paint at all - it's a fine material made of tiny carbon tubes - 1,000 million in just one square centimeter! These tubes absorb nearly all the light - well, they absorb 99.9 percent. That's a vast improvement on other blacks. And our eyes tell us that we're looking at a black hole!

A: Wow! So, what's it used for?

B: In the early days, the idea was to use it for space equipment. It's quite complicated to explain, but I can give you a rough idea. In telescopes it helps scientists look further into space because it cuts out any extra light. Also, you can cover satellites with it so that they become invisible. It was also used to cover a pavilion at the Winter Olympics in 2018. They added tiny white lights to look like stars. The effect was amazing - just like the night sky. I think Vantablack has a bright future! It could be used in all sorts of products. The downside is that it takes a long time to produce and is extremely expensive.

A: And what about in art?

B: Yes, interestingly, the developers gave a British sculptor, Anish Kapoor, exclusive rights to use it in painting. As you can imagine it creates quite an effect! But this has caused a bitter row with other artists and there's been a lot of strong criticism about the decision. Another artist even created a new very bright pink colour which he allows every other artist in the world to use except Anish Kapoor!