

HOW DOES IT WORK?

Well done! You found the message hiding behind the red filter!

When you place the red foil on top of the red scribble, the secret message appears.

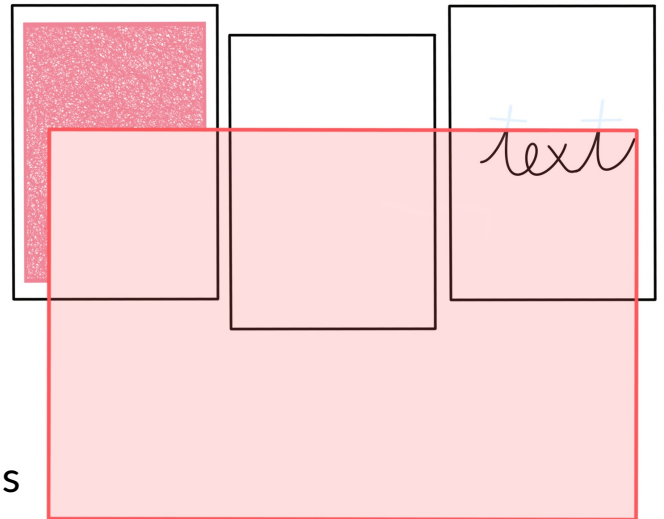
But how does it work?

White light is actually a mixture of all the colors of the rainbow. White paper reflects all of those colors back to your eyes, but a red marker only reflects red light.

When you look through the red foil, it only lets red light pass through.

The white paper looks red through the foil because white contains all colors, including red.

The red scribble also looks red because it reflects red light. Since both the light reflected by paper and the red scribble can pass through the filter, the scribble seems to disappear.



The blue message is different. Blue light cannot pass through the red filter, so the blue ink looks very dark, almost black.

As a result, the hidden message suddenly becomes visible!

HOW DOES IT WORK?

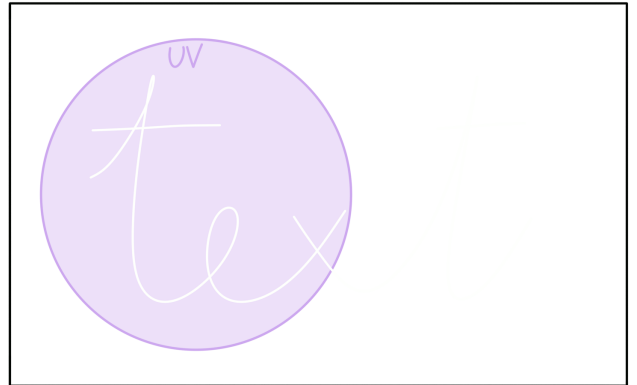
Well done! You managed to solve the reveal the message written with an ink visible only with UV light.

How does it work?

The UV flashlight sends out a special, high-energy light called ultraviolet light, which is completely invisible to human eyes.

The secret ink is made with ingredients that love this invisible light. When you shine the flashlight on the paper, the ink swallows up that high-energy light.

But the ink cannot hold onto all that extra energy for long! It keeps a tiny bit of it, and then shoots the rest of the light back out as less energetic light. Since the energy of this light falls in the range of “visible light”, we can read the message.



Scientists call this trick fluorescence. The ink simply catches invisible light and turns it into visible light!

HOW DOES IT WORK?

Congratulations! You found the message hidden in the puzzle!

To reveal the encrypted message, you need to sort the color in the correct order to form a rainbow.

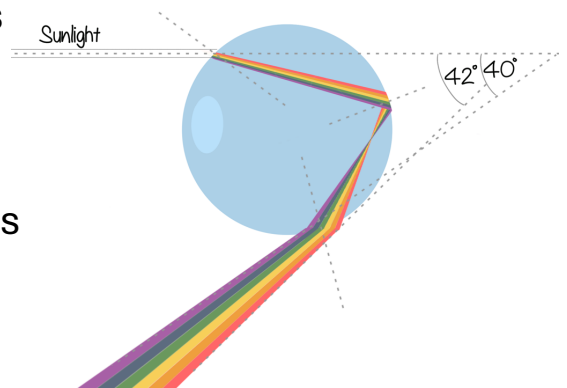
But why are the colors of the rainbow always in the same order and not mixed up?

It has to do with the fact that light travels in waves, and each color has a different wave size, called a wavelength.

Red light travels in long, gentle waves. Blue and violet light travel in much shorter waves. The other colors have wavelengths somewhere in between.

When sunlight enters a raindrop, it slows down and bends. Each color bends by a different amount.

Red light bends the least because it has the longest wavelength. Violet light bends the most because it has the shortest wavelength. The other colors spread out between them.



As the light leaves the raindrop, the colors have been separated and arranged from the least-bent color to the most-bent color: Red, Orange, Yellow, Green, Blue, Indigo, and Violet.

So, the order of our beautiful rainbow depends on the physics of light!