

## Thomas and the Journey of Color

By Rodrigo Sierra



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There was once a boy named Thomas who, like every Monday, had gone to school. That day had been very special because early in the morning, he had seen a great sunrise that illuminated everything, making the colors appear clearer and brighter. The science teacher had given him a research assignment to learn about colors.



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That day, on his way home, it was raining very hard, and he saw how the sky filled with shades of gray and how a rainbow could be seen in the distance. Once at home, Thomas sat in front of his computer, and before starting to search for his assignment on the internet, he closed his eyes and said firmly, "Where can I find everything related to colors to do my homework?"



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At that moment, he opened his eyes, and a being named Pixel spoke to him through the screen, although he could not see him. Pixel asked, "Do you really want to learn about colors?" Thomas answered, "Yes, I do," and Pixel told him to close his eyes to take a journey through the world of color. When Thomas opened his eyes, he was inside the screen.



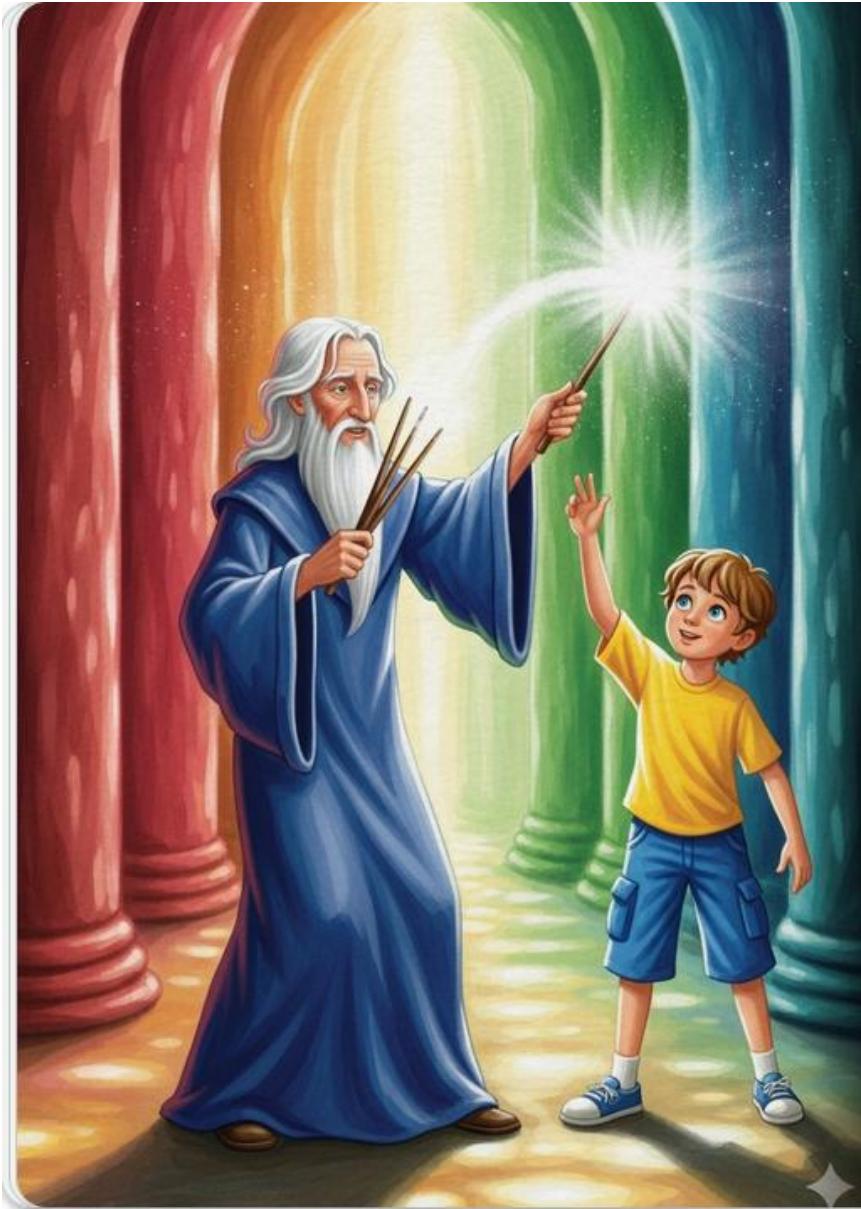
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There, he could see Pixel as a small square that was part of the large screen of his computer, and Pixel explained how he changed color every time someone used the computer and how he adapted to the digital image that appeared, using color. Pixel also introduced him to many of his friends and explained how millions of pixels like him form the images that he saw on his screen and how each one of them could temporarily use a different color depending on the image displayed.



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Thomas, excited, told Pixel that he wanted to learn more about colors, so Pixel said he could speak with his friend, Chroma, the Color Wizard, who lived in the RGB kingdom. After a few minutes, Thomas was ready to travel through a bright portal and visit the kingdom where these colors were created. When Thomas opened his eyes after seeing the bright portal, he found himself with Chroma, the Color Wizard, who indeed had three wands, one red, one green, and one blue.



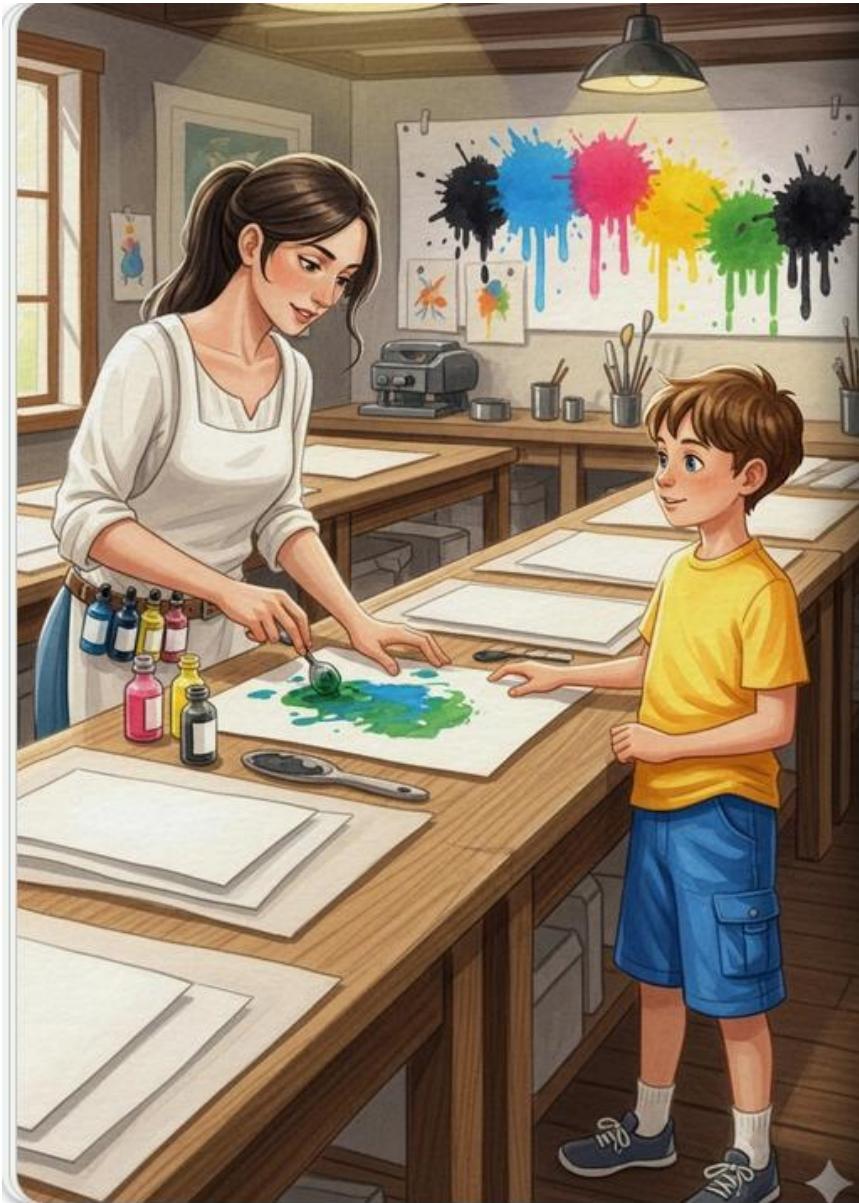
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The wizard greeted him happily and explained that in that kingdom, all colors were created using magic wands and mixing their light rays. He also gave a demonstration so that Thomas could see what happened when he mixed the three colors simultaneously, generating a white color. This left Thomas surprised, and he shouted, "It's like magic!" The wizard explained how the computer screen combined thousands of red, green, and blue lights to display any color he could imagine. Thomas once again wanted to continue learning about colors, and he told the wizard, who said he would speak with his friend, Cerulea, the Painter of the CMYK world.



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Thomas opened his eyes and found himself in the Kingdom of Ink, a place full of different types of paper. There was Cerulea, the Painter of the CMYK world, who welcomed him joyfully and explained that she worked with inks of the colors Cyan, Magenta, Yellow, and Black. Thomas observed how she carried bottles of those colors to her waist. Thomas asked how these inks worked, and she answered, “When I mix the four colors, we absorb light instead of creating it, so the result will be black.”



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The painter demonstrated, as an example, how mixing cyan and yellow produced green. Thomas said, "Now I understand why printed colors don't look the same as on the screen."

"Exactly, the screen uses RGB light, but the paper uses CMYK ink," replied the painter. Once again, Thomas wanted to continue learning about colors, so the painter told him that he would speak with her friend, Iris, the artist of the HSV world.



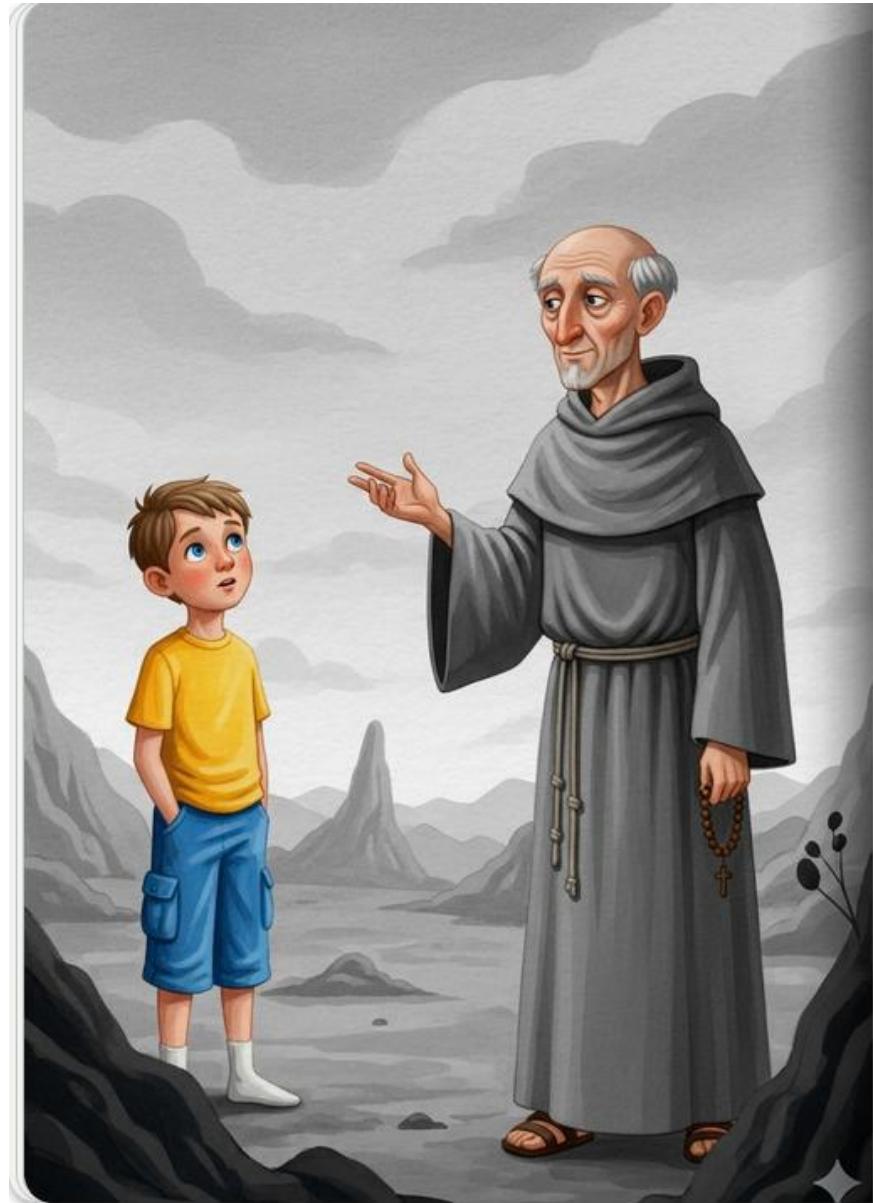
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When Thomas opened his eyes, he was already in the Kingdom of the Rainbow, where Iris, the artist of the HSV world, was waiting for him. She explained that in that world, colors were described as perceived and explained that Hue was the color tone, Saturation was how intense or dull the color was, and Value was how light or dark it was.



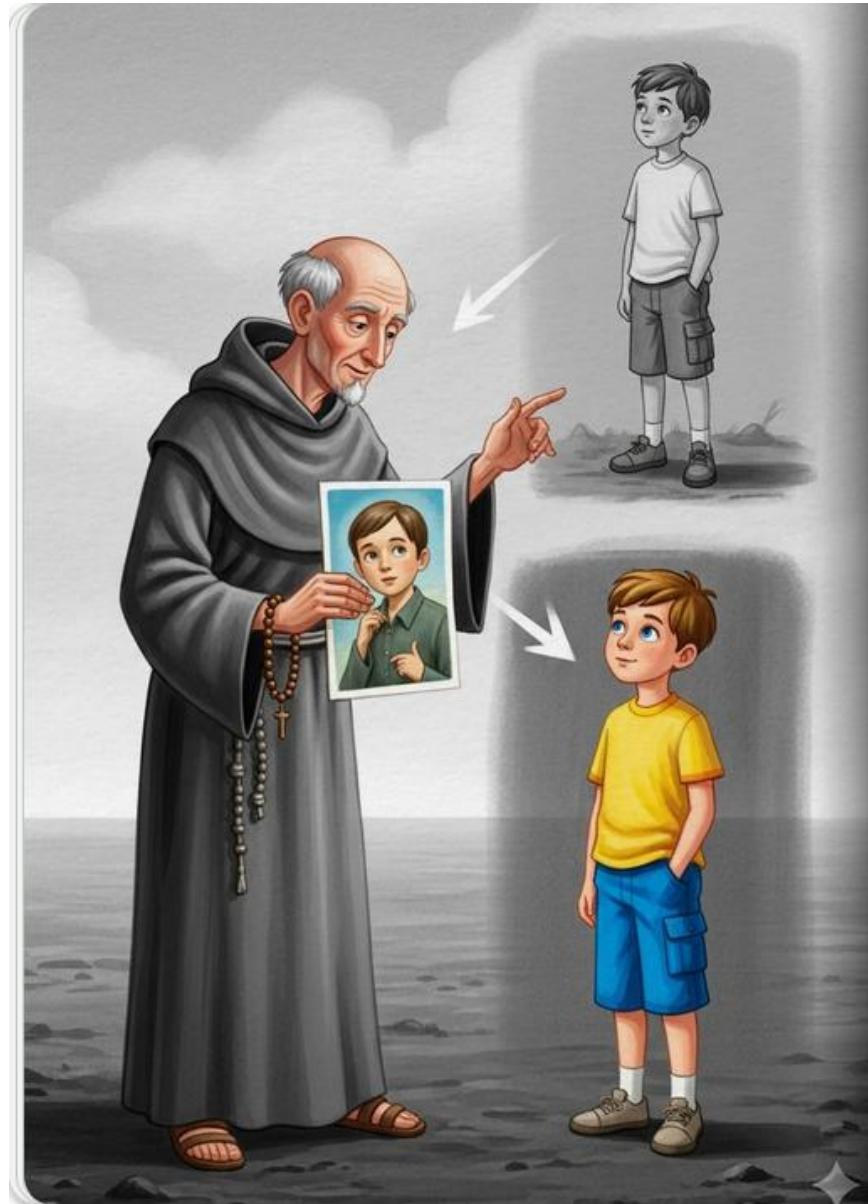
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The artist demonstrated by painting a circle that changed its hue, saturation, and brightness. At that moment, seeing this, Thomas remembered that this was very similar to when he applied filters to his photos. To give him an analogy, the artist said, “The editing programs you use in your world are based on this model because it is easier to understand.” Thomas wanted to continue learning, so Iris, the artist of the HSV world, proposed that he talk to Luma, the Gray Monk.



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Thomas opened his eyes and was in a black and white world, where Luma, a Gray Monk, greeted him. The monk explained that in that world, there was no color, and the only things he would find were shades of gray, which hid great importance. Thomas asked why, and the monk replied, "Because when processing images, sometimes we need to work only with light and shadow." "Can you explain better?" asked Thomas.



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"Of course," said the Gray Monk. "When you work with images in gray tones, it helps us detect edges, shapes, and contrasts." "I'll show you with an example: I take this color image, apply my secret formula, and now you can see how its main forms are highlighted." Thomas, surprised, said, "Even without color, I can understand this image." The monk replied, "The great secret of grays is that they preserve the essence of light." Thomas thanked him and was sent back to his room.



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Thomas opened his eyes and was in front of his computer screen. Suddenly, he smiled, gave thanks for the experience that he had just lived, and had the certainty of what he had learned about pixels and colors.



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He understood that each world had its own reality and that things are not always as we see them, but their interpretation varies depending on the perspective from which we observe them. THE END

[Start over](#)

## Realm of Pixels and Color Models

**Challenge 2:** Develop a short story or comic strip featuring a character who travels through the world of pixels and color models, encountering and learning from each element.

This exercise was interesting because I organized my ideas about the topic and then began to develop the tale, including pixels, RGB, CMY, HSV, grays, and how these concepts are connected to the real world. This connection exists because, from the beginning, Thomas saw clearer and brighter colors, and during the day, these were changed with the rain. Through the story, we can see the relationship between pixels and RGB explained in class, which was seen in the lab. Additionally, the monk explained to Thomas the application of the secret formula, as represented in the lab images, to highlight edges and identify lines within them.

Through the story, Thomas develops conversations with the guide in every world that allow relate the foundation of these topics with stuff such as the screen in the case of pixel and its change of color to adapt the image to any color. The painter explained how colors appear differently when printed in CMYK ink compared to those seen on a screen. Also, how the model HSV is used in image editing programs, or how, without any color, we can understand the images through the edges, detecting shapes and contrast. As we mentioned in the laboratory, these basic ways to work with colors resemble the basic operations that artificial intelligence performs to create new images and apply styles.

Additionally, this exercise allows me to learn more about Gemini and its gem storybook, enabling me to develop and edit my tale. This is another example of how artificial intelligence can assist people in their work by using this technology.