

The reason the sky is blue is tied to something called **scattering**, which is a process that affects how we see colors from the sunlight. Let's break it down step by step:

1. **Sunlight is made of many colors:** When we look at sunlight, it looks white to us. But, sunlight is actually a mix of many colors. You can see these colors when light passes through a prism or when there's a rainbow in the sky. The colors range from red to violet.
2. **Light travels through Earth's atmosphere:** The atmosphere is the layer of gases surrounding our planet. When sunlight enters this atmosphere, it encounters tiny molecules of air and particles.
3. **Scattering effect:** Different colors of light travel in waves, and the blue light waves are shorter than the red light waves. When sunlight hits these air molecules, the shorter blue waves scatter in all directions more than the other colors. This scattering is why we see blue everywhere in the sky during the day.
4. **Seeing the blue sky:** Because blue light is scattered in various directions, when you look up, a lot of that blue light gets to your eyes, making the sky appear blue.
5. **What happens during sunrise and sunset:** During sunrise and sunset, the sunlight has to travel through more of the atmosphere, which means that more of the blue and green light gets scattered out of our line of sight. That's why we see more reds and oranges at those times!

So, in short, the sky is blue because of how sunlight interacts with the tiny particles in the atmosphere and how the different colors of light travel!