

## **DID YOU KNOW**

### **THE REASON THE SKY IS BLUE**

Light coming from the sun is white, so it is expected that the sky should be white as well. Something happens to the light from the sun as it passes through the atmosphere.

White light is made up of a combination of different colours, called a spectrum. These colours are red, orange, yellow, green, blue, indigo and violet. These colours can be seen when white light passes through a prism. The pattern that is formed appears in the same order as the colours of a rainbow. The wavelength of the red light is the longest and it has the shortest frequency while the violet light has the shortest wavelength and the highest frequency

Light travels in straight lines so long as nothing disturbs it. As the sunlight moves through the atmosphere, it goes straight until it bumps into dust, water drops and gases in the atmosphere. When it bumps into the larger dust molecules, it gets reflected in all directions and the colour remains white.

The gas molecules are smaller than the wavelength of light. When the light bumps into a gas molecule, some of the light is absorbed and after a while it is re - emitted (radiated) in a different direction. The colour that is radiated is the same colour as the colour that was absorbed.

Different colours are absorbed differently. The colours with the highest frequency or lowest wavelength are absorbed more than the colours with the lower frequencies. That means that blue light will be absorbed better than red light.

### **So why is the sky blue?**

As the sunlight moves through the air, most of the light with the longer wavelengths moves straight through the molecules. Very little red, orange and red is absorbed.

The gas molecules in the atmosphere absorb a lot of the blue light with the short wavelength. The absorbed blue light is then radiated in different directions and scattered across the sky. This scattered blue light then reaches your eyes. Since you see the blue light from everywhere in the sky, it looks blue.