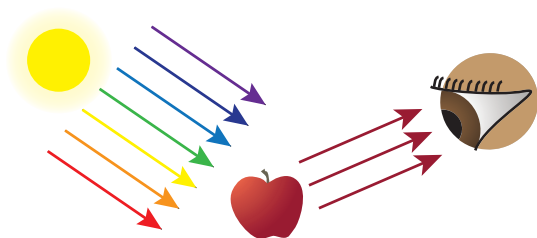


# THE SCIENCE OF VISUAL AIR QUALITY

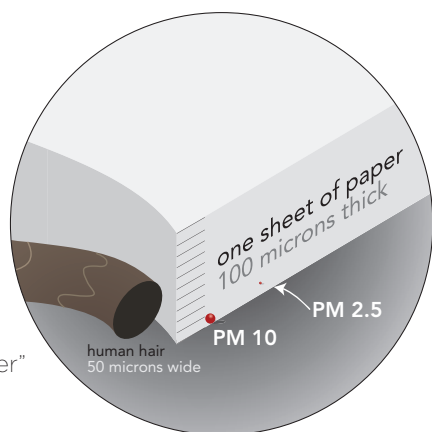


**SEEING THE HAZE** We can see objects because light has been reflected off those objects and into our eyes.

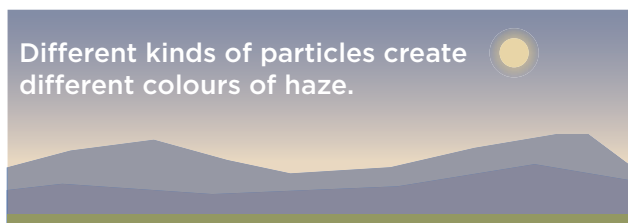
Similarly, we notice haze in the air because tiny particles have either absorbed sunlight or “scattered” it toward our eyes.

The particles are very small.

Scientists often refer to them as “fine particulate matter” or  $PM_{2.5}$

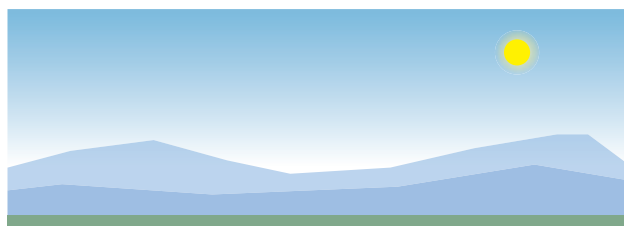


Different kinds of particles create different colours of haze.



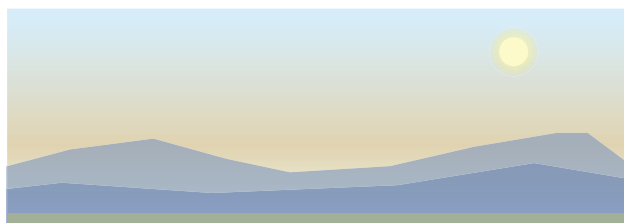
## Haze of a different colour

Particles and gases interact differently with different colours of light. For example, very small particles may scatter only blue light, making the haze appear blue.

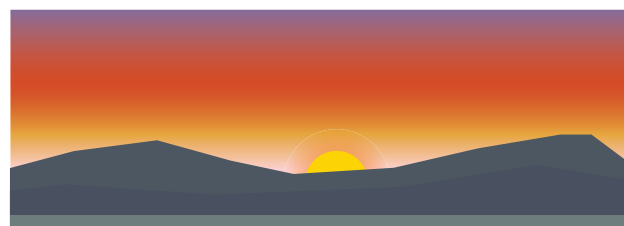


If all colours of the light are scattered equally, haze can appear white or grey.

Some gases absorb light. Nitrogen dioxide, a common air pollutant, absorbs blue light, but allows yellow, red or brown light to reach your eyes. Hence, haze with high levels of nitrogen dioxide will appear yellow or reddish-brown.



On the other hand, sunsets tend to be red or orange during forest fire season because tiny smoke particles scatter blue light away, allowing only orange or red light to reach our eyes.



Particles that contain large amounts of soot or “black carbon” will absorb all colours of light, causing the scene to appear darker.