

Why is the sky blue?

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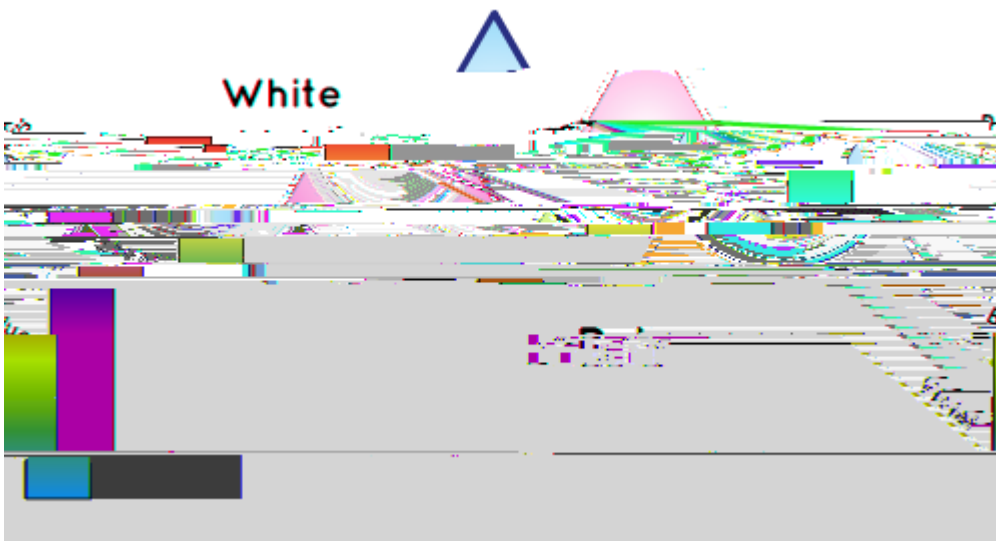
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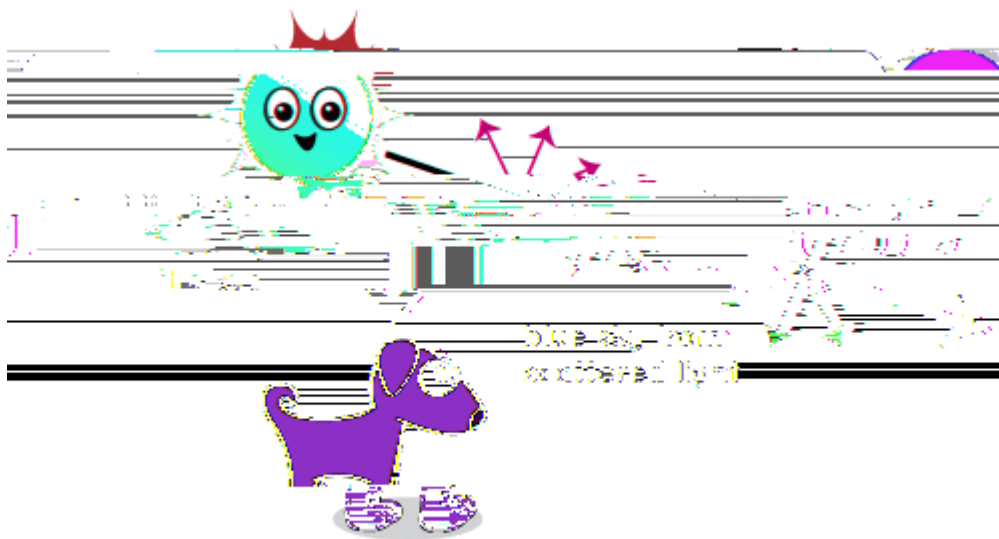


TOP: PEXELS. All others courtesy of NASA.

It's easy to see that the sky is blue. But why is it blue and not yellow, green or red?

A lot of smart people have asked this question, and it took them a long time to find an answer.

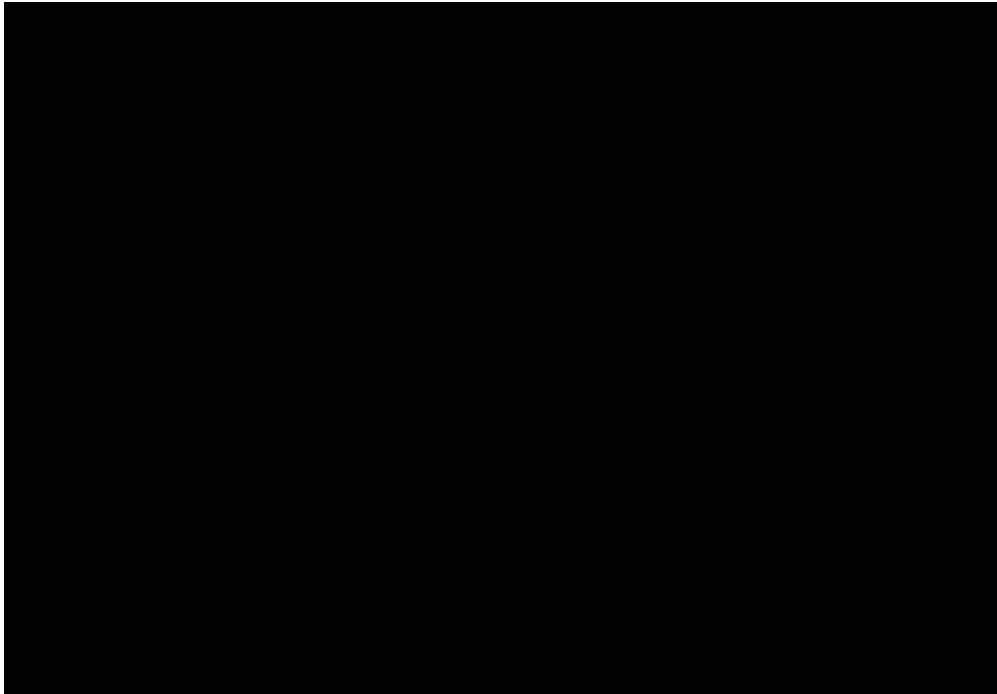




Sunlight reaches Earth's atmosphere and is scattered in all directions by all the gases in the air. The gases are made up of tiny particles called molecules. They scatter the blue light in all directions. Blue is scattered more than other colors because it travels as shorter, smaller waves. This is why the sky appears blue most of the time.

More White, Less Blue Near The Horizon

Closer to the horizon, the sky fades to a lighter blue or white. The sunlight low in the sky has passed through even more air than the sunlight overhead. Passing through more air means more blue light is scattered. By the time the light reaches the horizon, the air molecules have scattered the blue light many times in many directions.



The surface of Earth also reflects and scatters the light. All this scattering mixes the colors together again so that there is more white and less blue.

What Makes A Red Sunset?

As the sun gets lower in the sky, its light passes through more of the atmosphere. Even more of the blue light is scattered. This allows the reds and yellows to pass straight through to people's eyes.

Sometimes the whole western sky seems to glow. The sky appears red because of larger particles of dust, pollution and water vapor in the atmosphere. These particles reflect and scatter more of the reds and yellows.



Quiz

- 1 Based on information in the section "What Makes A Red Sunset?," which statement is TRUE?
 - (A) People can see more red and yellow light at sunset when there is very little pollution in the sky.
 - (B) The whole western sky glows at sunset, because the white light shines more brightly.
 - (C) As the sun gets lower in the sky, the sun starts sending out more red and yellow light.
 - (D) People can see more red and yellow light at sunset, because a lot of the blue light is scattered.

- 2 Which sentence from the article BEST explains how the color of the sky is affected by the way light moves?
 - (A) The light that people see with their eyes is just one tiny bit of all the kinds of light energy in the universe.
 - (B) Like energy passing through the ocean, light energy travels in waves, too.
 - (C) Blue is scattered more than other colors because it travels as shorter, smaller waves.
 - (D) Closer to the horizon, the sky fades to a lighter blue or white.

- 3 Which selection from the article is BEST illustrated by the graphic "Visible Light"?
 - (A) These forms of invisible light include infrared light, radio waves and X-rays.
 - (B) Some light travels in short, choppy waves. Other light travels in long, lazy waves.
 - (C) All light travels in a straight line unless something gets in the way.
 - (D) The surface of Earth also reflects and scatters the light. All this scattering mixes the colors together again so that there is more white and less blue.

- 4 Use the top graphic and information from the article to select the TRUE statement.
 - (A) The sky is blue because the other colors are invisible.
 - (B) Sunlight contains the colors of the rainbow.
 - (C) A prism helps people see infrared light waves.
 - (D) White light always travels in a straight line.