



**YOU CAN** by jok church

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With **beakman & jax**

Send your question to: Beakman or Jax,  
 P.O. Box 30177, Kansas City, MO 64112

Dear Jax,

Why is the sky blue?

Jon Edwards  
 Kingston,  
 Washington

Dear Jon,  
 That's one of those in-your-face type questions – something that *You Can* see every day without thinking about it much.

When we do stop to think a moment, we remember that the sky is really all different colors. It just depends on the time of day.

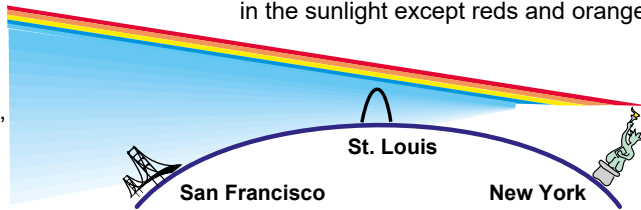
*You Can* make a blue sky on a kitchen table. *You Can* also make a sunset, when the sky is red or orange.



### SUNLIGHT is ALL colors

If you are a regular reader of *You Can*, you know that what looks like white light is really all colors mixed together. When the sun is straight up, the air scatters some of the blue light. That is what we see – scattered blue light, and it makes the sky look blue.

Afternoon in San Francisco is sunset in New York, where the light has to travel through more air to get to the ground. That much air scatters out all the colors in the sunlight except reds and oranges.



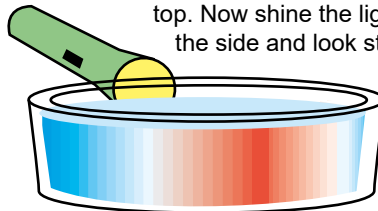
### experiment #1

#### Tabletop Sunset

**WHAT YOU NEED:** Water - milk - flashlight - wide, clear glass bowl - complete darkness

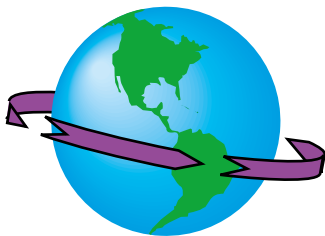
*(The bowl may be a bit hard to find. Sometimes people put flowers in a wide, clear bowl. Or try a punch bowl. Either will do.)*

**WHAT TO DO:** Wait until it's *dark*. Fill the bowl with water and 10 to 15 drops of milk. Shine your flashlight down from the top. Now shine the light from the side and look straight at it



from the other side of the bowl.

**WHAT IS GOING ON:** You just made a model of the sky. Light from above turned the water light blue. From the side, the water was red and orange. The milk acted like the air and scattered the blue light.

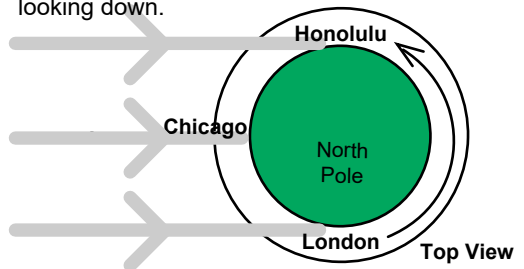


Side View

It's sunrise in Hawaii, noon in Chicago and sunset in England. Sunlight has to go through more air in the morning and evening. The sky is blue in Chicago. But it's also red or orange in Hawaii and England.

### Not just blue

Look at the picture of the Earth. The arrows show how it spins. The top view shows how it would look from way above the North Pole looking down.



P.S. from Beakman: Even though the sky looks blue most of the time, clean, dry air is colorless. Smog is sometimes called photo-chemical pollution.

