

Smoke and Sunsets

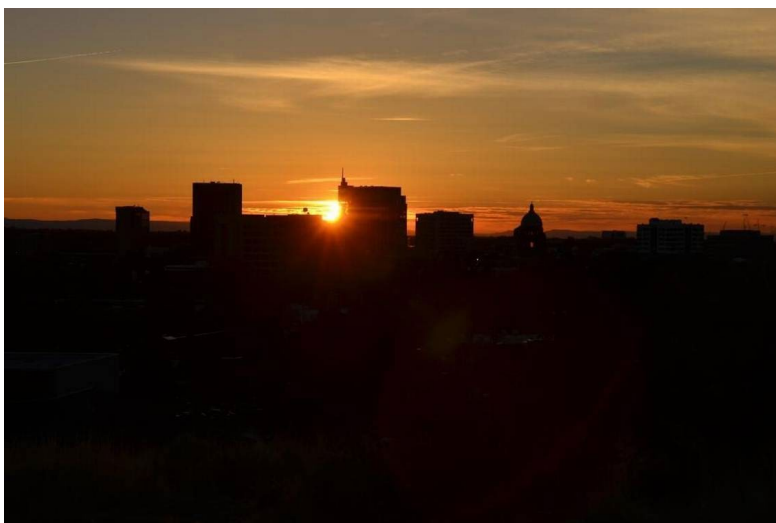


Image by Pete Zimowsky via [The Idaho Statesman](#)

Each summer, wildfire smoke affects our lives, sometimes even prohibiting outdoor activities. While the negative impacts of smoke in the air are numerous, one thing you can always count on is a beautiful sunset. Sometimes the sun even appears orange or red in the middle of the day. This is only one phenomena involving light that students may have observed when there are particulates in the air. How would a student explain this phenomenon? How can different ages engage with this phenomenon? First grade students might make observations about the brightness of the sun on smokey days compared to clear days. Middle school students might create a model explaining how different frequencies of light interact with particles in the air to explain the brilliant colors in a sunset.

Additional Resources:

- Idaho Statesman Article [What is it about smoke that makes a sunset more intense?](#)

Performance Standards:

| 1 st Grade | 4 th Grade | Middle School | High School |
|--|--|--|---|
| 1-PS-1.3. Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light. | 4-PS-2.2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. | MS-PS-4.2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. | HS-PSP-3.1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. |



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