

NASA's Solar Eclipse Safety Tips

Source: <https://eclipse2017.nasa.gov/safety>



Aug. 21 marks the first day for most DPS schools – it also happens to be the day of the solar eclipse! This is an exciting and educational opportunity for students to get outside and learn, kicking the new school year off to a sunny start.

Looking directly at the sun is unsafe except during the brief total phase of a solar eclipse, known as totality, when the moon entirely blocks the sun's bright face. This occurs only within the narrow path of totality as illustrated on the map above. The only safe way to look directly at the uneclipsed or partially-eclipsed sun is through special-purpose solar filters, such as "eclipse glasses" or hand-held solar viewers. Homemade filters or ordinary sunglasses, even very dark ones, are not safe for looking at the sun because they still transmit *thousands* of times too much sunlight.

The eclipse will start locally at about 10:23 a.m. and end around 1:14 p.m., with the maximum phase occurring at 11:47 a.m.. Denver is not in the path of totality and will experience a 92% partial solar eclipse, so it is especially important to follow the safety tips below:

- **Always supervise children using solar filters.**
- Always inspect your solar filter before use; if scratched or damaged, discard it. Read and follow any instructions printed on or packaged with the filter.
- Stand still and cover your eyes with your eclipse glasses or solar viewer before looking up at the bright sun. After looking at the sun, turn away and remove your filter — do not remove it while looking at the sun.
- Do not look at the uneclipsed or partially eclipsed sun through an unfiltered camera, telescope, binoculars, or other optical device.
- Similarly, do not look at the sun through a camera, a telescope, binoculars, or any other optical device while using your eclipse glasses or hand-held solar viewer — the concentrated solar rays will damage the filter and enter your eye(s), causing serious injury.
- If you are within the path of totality, remove your solar filter only when the moon completely covers the sun's bright face and it suddenly gets quite dark. Experience totality, then, as soon as the bright sun begins to reappear, replace your solar viewer to look at the remaining partial phases.
- *Outside* the path of totality, you must *always* use a safe solar filter to view the sun directly.

An alternative method for safe viewing of the partially eclipsed sun is pinhole projection onto the ground. For example, cross the outstretched, slightly open fingers of one hand over the outstretched, slightly open fingers of the other, creating a waffle pattern. With your back to the sun, look at your hands' shadow on the ground. The little spaces between your fingers will project a grid of small shadows on the ground, showing the sun as a crescent during the partial phases of the eclipse. Or just look at the shadow of a leafy tree during the partial eclipse; you'll see the ground dappled with crescent Suns projected by the tiny spaces between the leaves.

A solar eclipse is one of nature's greatest spectacles. By following these simple rules, you can safely enjoy the view and be rewarded with memories to last a lifetime.

For more information on the solar eclipse, check out these fun and educational YouTube videos with your student.

- Why solar eclipses are awesome - <https://youtu.be/sIUMcCH0pug>
- Why you shouldn't look directly at the sun - <https://youtu.be/SzCKPbg5QRg>
- SciShow kids explain the solar eclipse of 2015 - <https://www.youtube.com/watch?v=l7H083VuxQw>
- Why is a total solar eclipse such a big deal? - <https://youtu.be/oNH3akWXaV8>