mystery science

Grades K-5
Mini-Lesson: “How dangerous is it to look at the Sun?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! I'm putting on sunscreen because I'm going outside to plan where I'm going to watch the solar eclipse, and I don't want to get sunburned while I'm out there.

Someone named Thomas has a question for us about the Sun. Let's give him a call now.

> **[Video Call]**
> - Hi, Doug!
> - Hi, Thomas!
> - I was wondering, isn't it really dangerous to look at the Sun? How come we can wear eclipse glasses and how do they work?
> - That's a great question.

It is really dangerous to look at the Sun. Think about that for a second. If you've ever gotten this—a sunburn—then you know there's something powerful about the Sun's light. It's strong enough to burn your skin if you don't use sunscreen. The Sun gives off an incredibly strong amount of light. It has *a lot* of energy. If it can burn your skin, imagine what the Sun's light can do to your eyes if you stare at it.

In fact, the back of your eye, the part that receives light, is really sensitive. If you look at the Sun, it can hurt the sensitive part of your eye, and so, damage your eyesight. Sometimes that

damage can even be permanent—something that lasts forever. So you don't ever want to stare at the Sun. This is why you hear people saying if you're going to watch the eclipse directly, you need special eclipse glasses.

So why do these solar eclipse glasses make it somehow safe to look at the Sun? Well, before I say anything more, see if you can figure this out for yourself. Check out the view of the Sun through solar eclipse glasses.

You ready? Whoa!

So, given what you see here, what do you think? Does this give you any ideas? Why do you think these special eclipse glasses make it safe to look at the Sun?

VIDEO 2

How do these eclipse glasses make it safe to look at the Sun?

Well, on any normal, bright, sunny day, the Sun is so bright it makes you squint. It hurts your eyes to look at it. But notice how through the eclipse glasses, the Sun looks so dim. It's just this faint, orange-yellow ball.

If you've ever put on a pair of ordinary sunglasses, you know they make everything look a little darker, but not dark enough for looking at the Sun. That wouldn't be safe.

Eclipse glasses are kind of like sunglasses, but they're not ordinary sunglasses. They're made of a special material that blocks most of the light that comes through them—99% of the light

never gets to your eyes if you wear the eclipse glasses. They only let through less than 1% of the Sun's light.

Eclipse glasses are so dark, they make the Sun look dim. In fact, you want to be careful not to walk around with eclipse glasses on—you might bump into things or trip. You can't see anything other than the Sun itself.

So in summary, if you look at the Sun, it can hurt the sensitive part of your eye, and so, damage your eyesight. So you don’t ever want to stare at the Sun. If you’re going to watch the eclipse directly, you need special eclipse glasses. They only let through less than 1% of the Sun’s light.

Well, that's all for this week's question. Thanks, Thomas, for asking it!