GreatHearts®
Irving

Permission Slip

Activity: Total Solar Eclipse Viewing
Date(s) of Activity: April 8, 2024

On Monday, April 8, 2024, the North Texas area will be treated to a total solar eclipse. A total solar eclipse is an exceptionally-rare astronomical event. The last time Dallas-Fort Worth was in the path of a total solar eclipse was 1878, and we will not experience another eclipse like this one for another 300 years, making this a truly once-in-a-lifetime event.

Weather permitting, students who have parent permission to participate will be taken outside to view the eclipse. Looking directly at the sun for any length of time is extremely hazardous and will permanently damage the human eye, so, to make viewing the eclipse safe, we have acquired eclipse glasses for all teachers and students. The glasses are certified by ICS Laboratories under ISO 12312-2:2015(E), the most current safety standard recommended by NASA for safe solar eclipse viewing. If you prefer, you may instead provide your child with eclipse glasses purchased yourself. If so, please clearly label them with your child's name and send them to school prior to the eclipse. Alternatively, you may also make an indirect eclipse-viewing device such as a pinhole camera and have your child bring that to school. Sample instructions for making such a device can be found attached or at jpl.nasa.gov/edu/learn/project/how-to-make-a-pinhole-camera/.

While teachers will do everything in their power to ensure students are using their eclipse-viewing glasses/device safely, we ask that parents also speak to their children about the special importance of obeying teachers' directions immediately during this activity. Students who are unable to participate appropriately will be sent indoors for their own safety. In addition, all students must have this form filled out in its entirety by a parent/legal guardian and return it to the school in order to participate.

Student's Name (printed): _____

- ☐ **DOES** have permission to view the eclipse through school-provided eclipse glasses.
- ☐ **DOES** have permission to view the eclipse through parent-provided eclipse glasses.
- ☐ **DOES** have permission to view the eclipse through a parent-provided indirect viewing device.
- ☐ does **NOT** have permission to view the eclipse and should remain indoors.

I will not hold Great Hearts Irving Lower School liable in case of injury or accident that may occur, nor will I hold them financially responsible for any emergency medical care and/or transportation that may be necessary due to said injury or accident.

Parent/Legal Guardian's Name (printed): _____

Signature: _____ **Date:** _____

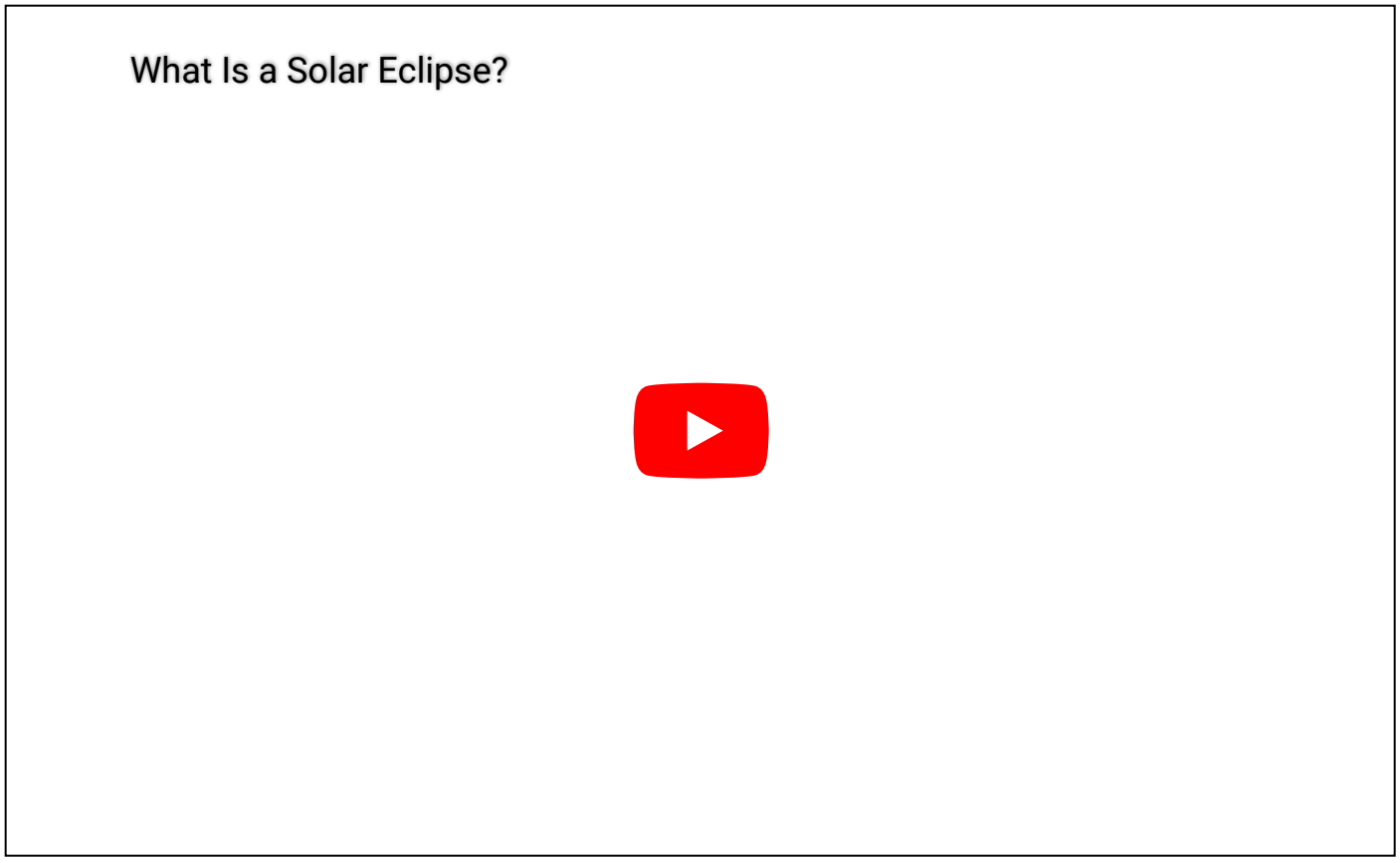
How to Make a Pinhole Camera

You don't need fancy glasses or equipment to enjoy one of the sky's most awesome shows: a solar eclipse. With a few simple supplies, you can make a pinhole camera that lets you watch a solar eclipse safely and easily from anywhere.

Materials

- 2 pieces of white card stock
- Aluminum foil
- Tape
- Pin, paper clip, OR pencil

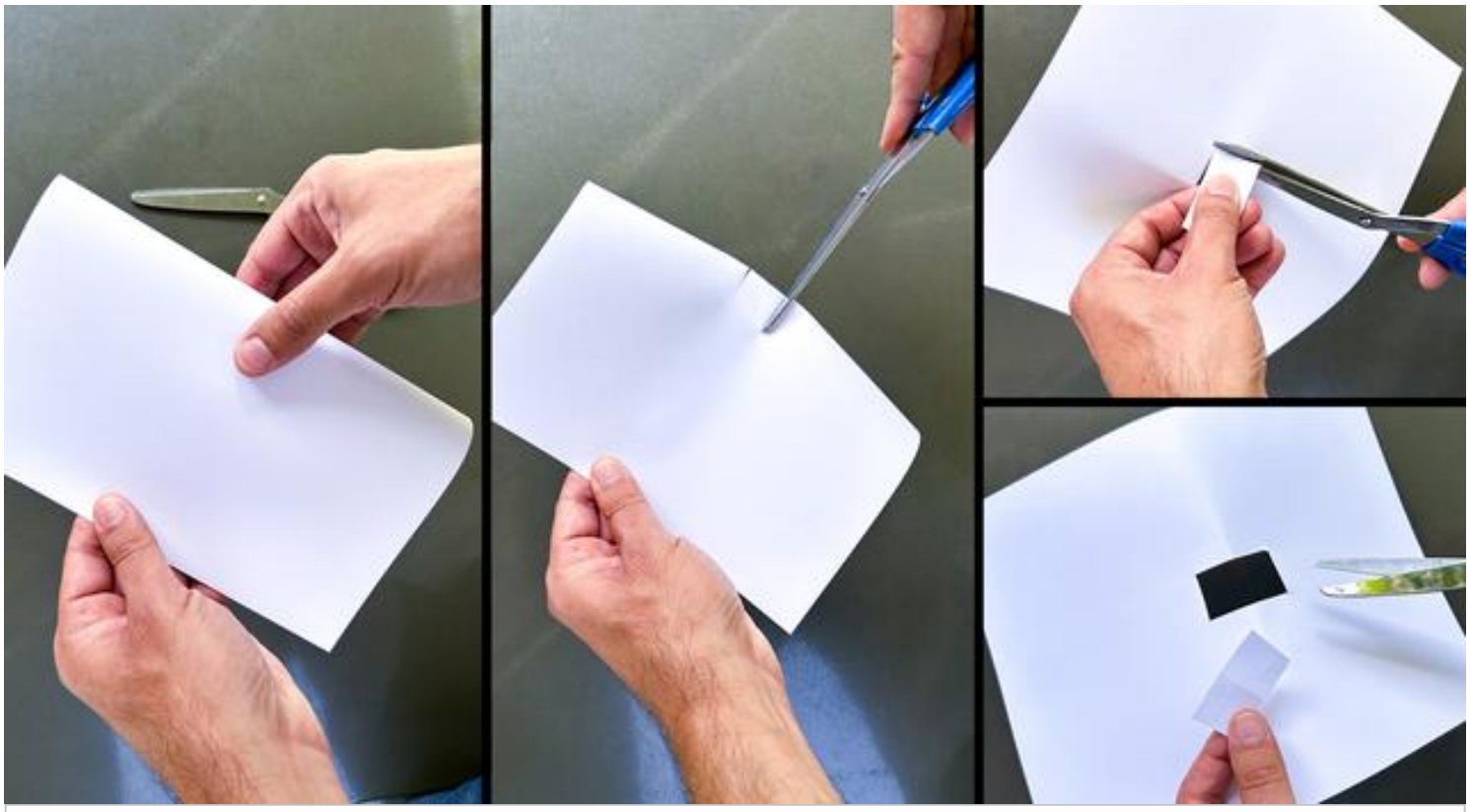
1. Learn about solar eclipses



Watch the video above to learn about how the Moon plays an important role in solar eclipses. Then find out more about solar eclipses from NASA's Space Place.

En Español

- ¿Qué es un eclipse solar?
- Eclipses lunares y solares



2. Start making your pinhole camera

Cut a 1-inch to 2-inch square or rectangular hole in the middle of one of the pieces of card stock.

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3. Tape on the foil

Tape a piece of aluminum foil over the hole.

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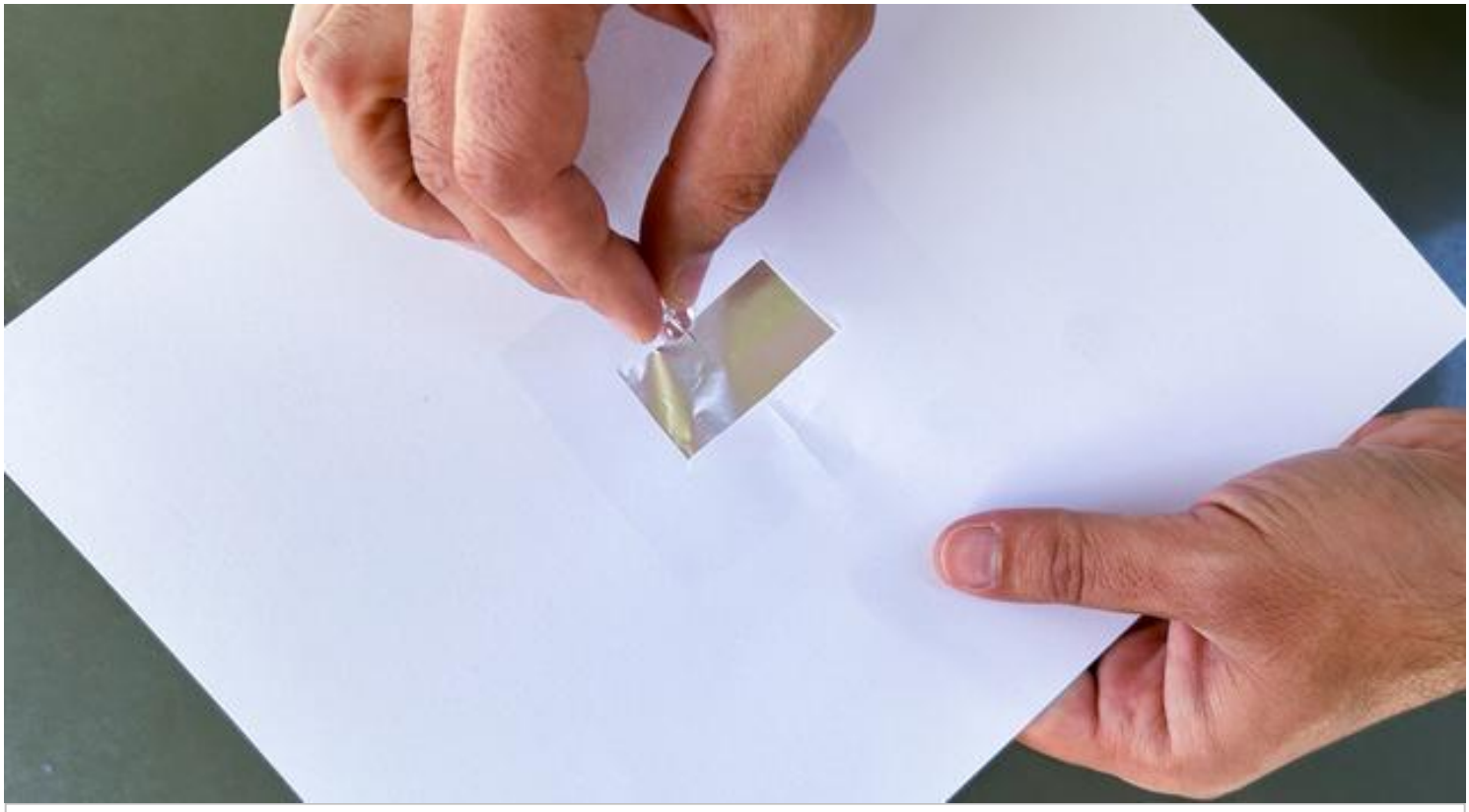

4. Poke a hole

Flip over your paper and use your pin, paper clip, or pencil to poke a small hole in the aluminum foil.

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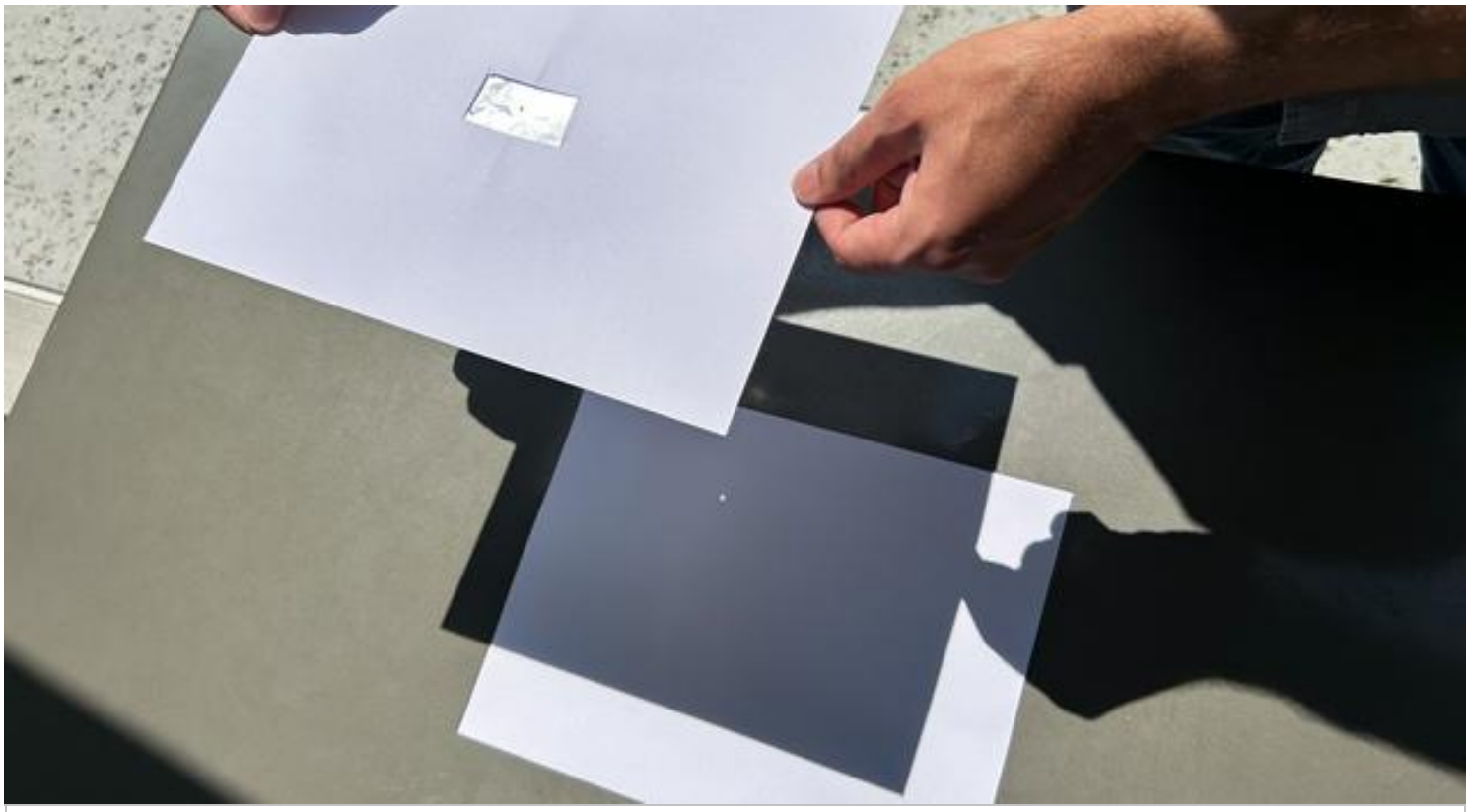
5. Read this important safety note!

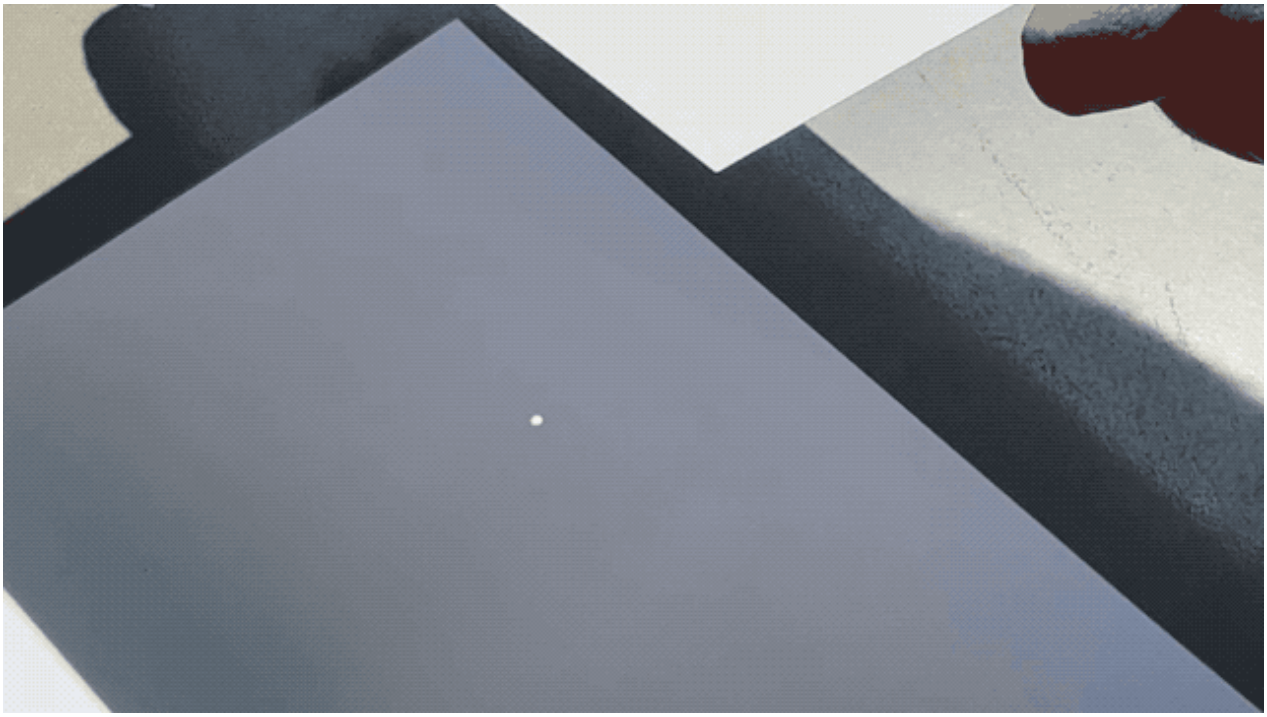
Your pinhole camera will let you see an image of the Sun that is safe to look at. But remember to **never look directly at the Sun without equipment that's specifically designed for looking at the Sun**. Note that sunglasses, binoculars, and telescopes do NOT count as proper protection.

For more information on safe eclipse viewing, visit the NASA Eclipse website.



6. Try it out

Place your second piece of card stock on the ground and hold the piece with aluminum foil above it (foil facing up). Stand with the Sun behind you and view the projected image on the card stock below! The farther away you hold your camera, the bigger your projected image will be.



To make your projection a bit more defined, try putting the bottom piece of card stock in a shadowed area while you hold the other piece in the sunlight.

+ Expand image

7. Get creative

For extra fun, try poking multiple holes in your foil to make shapes, patterns, and other designs. Each hole you create will turn into its own projection of the Sun, making for some neat effects.

Grab a helper to take photos of your designs for a stellar art project you can enjoy even after the eclipse has ended.

+ Expand image

8. What else can you use as a pinhole camera?

Look for items around the house or classroom with small holes in them – like a colander – to act as your pinhole camera. As before, hold it over the card stock on the ground to see the projected image.

What do you notice about the light shining through different objects? What about when you move the objects closer to your projected image or farther away?

9. How it works

A pinhole camera works because the small hole you made with your pin, paper clip, or pencil acts like a tiny camera lens.

Light from the Sun enters the pinhole (or the holes in an object like a colander), it gets focused, and then it is projected out of the other side of the hole. When the projected light reaches a surface, like the second piece of paper, you can see the image that passed through the pinhole.

Learn more in the video above from artist Bob Miller's Light Walk at the Exploratorium in San Francisco, California.

10. Take it to the next level

Using what you learned while building your pinhole camera, challenge yourself to make this cereal box eclipse viewer.

How to Make a Pinhole Projector to View the Solar Eclipse

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