



## Pinhole Camera

### Materials in Kit:

2 Pieces of Cardstock  
Electrical Tape  
Aluminum Foil  
Paper Clip

### Materials Needed:

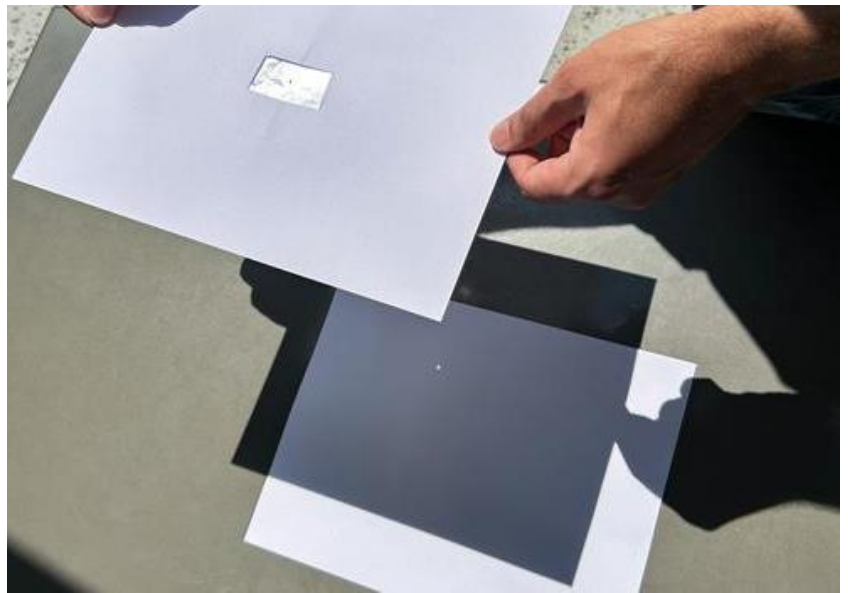
Scissors

### Vocabulary:

Eclipse	Lunar Eclipse	Solar Eclipse
Sun	Moon	Earth
Light	Shadow	

### Directions:

1. Cut a 1-inch to 2-inch square or rectangular hole in the middle of one of the pieces of card stock.
2. Tape a piece of aluminum foil over the hole.
3. Flip over your paper and use your pin, paper clip, or pencil to poke a small hole in the aluminum foil.
4. 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.
5. 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.
6. 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.



### The STEAM Behind the Experiment:

A solar eclipse happens when our view of the sun is blocked by the moon. A lunar eclipse happens when the moon passes into the Earth's shadow. When the 3.5 cm clay ball (representing Earth) is facing downward, it is hard to line up the shadow of the smaller moon due to the distance between the two. When you flip the meter stick so that the 1 cm clay ball (moon) is closer to the ground, it is much easier to make an eclipse, since the shadow from the 3.5 cm clay ball (Earth) is much larger.

### Make It Awesome:

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.

### Extensions:

1. Make a Solar Eclipse Model: <https://www.generationgenius.com/activities/solar-eclipse-model-activity-for-kids/>
2. Make a Solar Eclipse Viewer: <https://kids.nationalgeographic.com/space/article/solar-eclipse-viewer>
3. Make a Pinhole Camera: <https://www.jpl.nasa.gov/edu/learn/project/how-to-make-a-pinhole-camera/>

## Websites and Links:

1. Video: April 8 Solar Eclipse: <https://youtu.be/791qJZivHpk?si=5-4qFIEFcvOSB0k>
2. Video: Solar Eclipse Explained: <https://youtu.be/E6OtLfszaVI?si=QpvWgSAsJEkh4rIK>
3. Video: Solar Eclipse Explained: [https://youtu.be/hyf5JF\\_VxwM](https://youtu.be/hyf5JF_VxwM)
4. Video: Phases of the Moon: <https://youtu.be/aefJlxTs5yk?si=1VbqehREljDNha7o>

Connect with Make, Bake and Destroy!

Scan the QR Code!

