



# STUDENT ACTIVITY

Name - \_\_\_\_\_

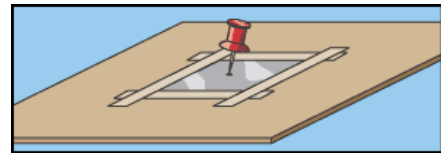
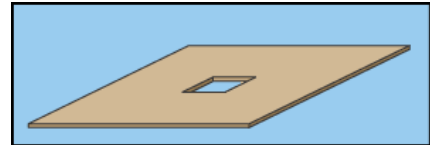
Per - \_\_\_\_\_ Table - \_\_\_\_\_

## Finding the Diameter of the Sun!

**About this Activity:** In this activity you'll learn how to build a simple pinhole viewer. This apparatus can be used to project images from a variety of light sources. When used to project an image of the Sun, the pinhole viewer can be used to determine the diameter of Sun.

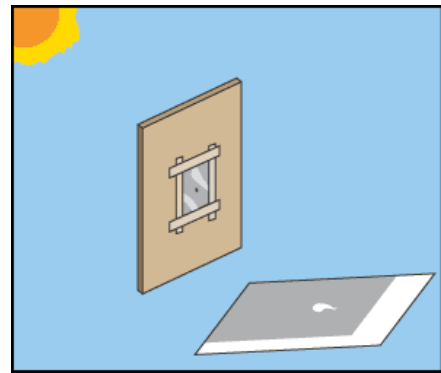
### Make the Pinhole Viewer:

1. Cut a square about (2 x 2 centimeters) out of the center of the cardboard.
2. Place the piece of aluminum foil over the opening and tape it in place at the edges.
3. Using the pin or other sharp point, puncture the foil to produce a small hole. You now have a pinhole viewer.



### Measuring the Size of the Sun:

Hold the pinhole viewer so that the light from the Sun passes through the hole and falls on a sheet of white paper behind the hole. Try to make the distance between the pinhole and the paper as large as possible.



held

### Using Your Ruler, Measure:

A) The diameter of the image of the Sun on the paper = \_\_\_\_\_ cm

B) The distance from the pinhole to the paper = \_\_\_\_\_ cm

### Measuring the Size of the Sun:

You can calculate the diameter of the Sun using the following formula: Note: The distance from the Earth to the Sun is approximately 93,000,000 miles (149,600,000 kilometers). **Use Kilometers!**

Diameter of the  
image of the sun (cm)

Distance from the  
pinhole to the paper (cm)

X

Distance from Earth  
to the Sun (km)

=

Diameter of  
the sun (km)

Calculation area:

Your Diameter of the Sun answer in Kilometers: \_\_\_\_\_ km