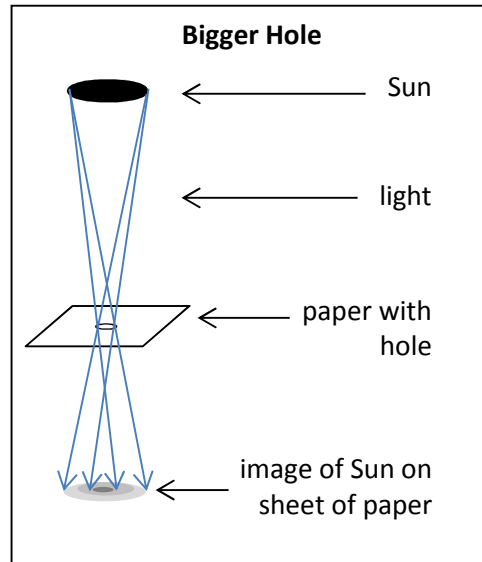
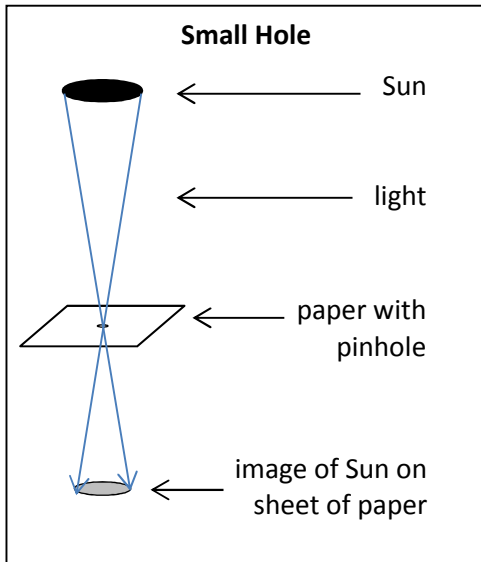


## PINHOLE PROJECTION FOR WATCHING PARTIAL SOLAR ECLIPSES AND MEASURING THE SIZE OF THE SUN

www.moonshadowmix.co.za

**How it Works:**



The small pinhole ensures that light from each part of the Sun shines on one small point of the image – the image is in focus. It doesn't matter what shape the pinhole is – it must just be small.

**Predict (and then experiment):**

A larger pinhole will let \_\_\_\_\_ (more / less) light through, so the image will be \_\_\_\_\_ (brighter / fainter).

A larger pinhole lets the light-rays from the edge of the Sun spread on the image, so the edge of the image will be \_\_\_\_\_ (more / less) sharp and clear.

If the pinhole is moved higher, the image will be \_\_\_\_\_ (larger / smaller).

The best pinholes for eclipse viewing are the gaps between the leaves of a tree – put a sheet of paper on the ground under a tree, and look for the images of the Sun.

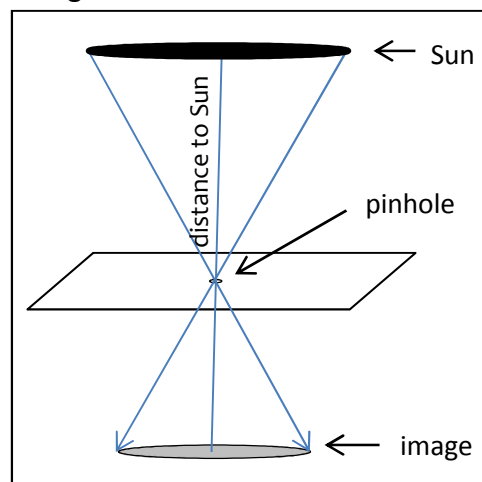
**Measuring the size of the Sun**

Measure:

- distance from the pinhole to the ground
- size of the image

The Sun is 150 000 000 km from Earth.

Look for similar triangles in the diagram, and use them to work out the size of the Sun.



Answer: the Sun is 1 400 000 km diameter