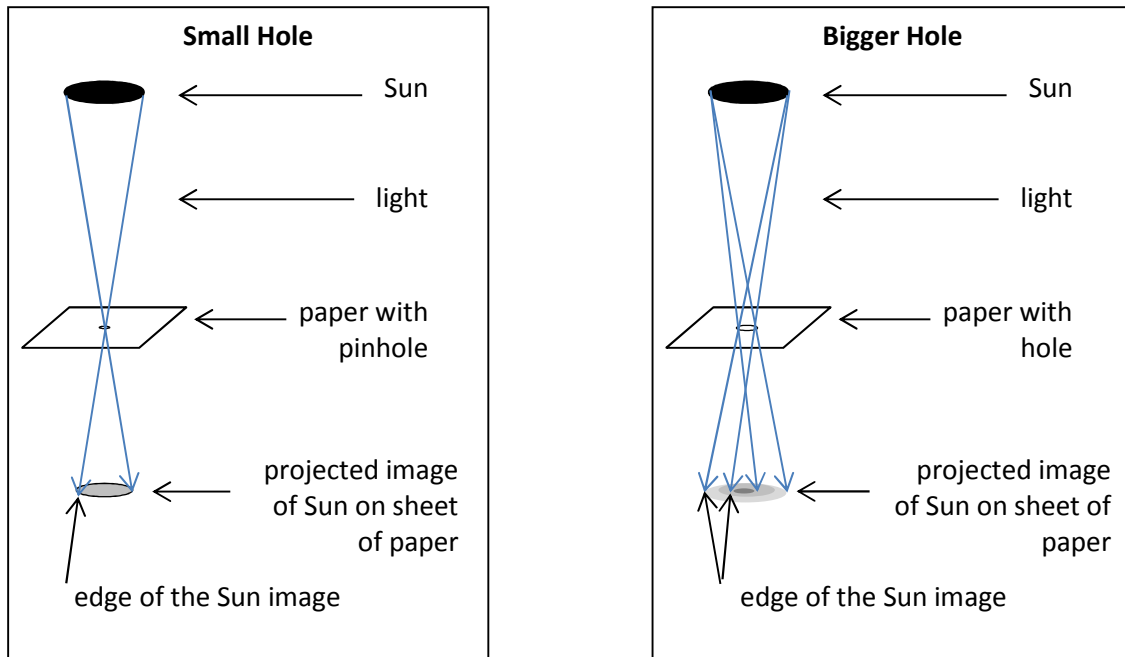


# PINHOLE PROJECTION HOW IT WORKS

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**Key Concept:** Light travels in straight lines (Grade 8)

**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:**

- 1) A larger pinhole will let \_\_\_\_\_ (more / less) light through, so the image will be \_\_\_\_\_ (brighter / fainter).
- 2) 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.
- 3) If the pinhole is moved higher, the image will be \_\_\_\_\_ (larger / smaller).

**Experiment:**

Do this outside on a sunny day. Use two sheets of paper – one for the pinhole, one on the ground (you might need to hold it at an angle, so the Sun shines straight onto it). Experiment with different size pinholes, and changing the distance from the pinhole to the projection.

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 (round) images of the Sun. Can you work out which come from larger “pinholes” (the gaps between the leaves)? Look for these images during the eclipse on 1 Sept 2016 – they will be eclipsed!