



## SOLAR ECLIPSE – SAFETY WARNING

On **Friday 20 March 2015**, the whole of the UK will be treated to a partial eclipse of the Sun. These are quite rare, and this one will be a major event. That morning, the Moon will pass right in front of the Sun, blotting out up to 90% of its disc. The Sun will look like a crescent instead of a disc. In the Leicester area the eclipse will start at 8.26am, reach its maximum coverage at 9.32am and be finished by 10.42am.

However, please be aware that **YOU MUST NEVER LOOK DIRECTLY AT THE SUN, EVEN DURING AN ECLIPSE.** The Sun is so bright that just looking at it can blind you; you cannot feel pain nor have any indication that the eye is being damaged.

There are various ways to observe it safely, using both everyday materials and telescopes or binoculars. We have detailed some ideas on the reverse of this letter to assist you. Further information can be found on the following websites:

[http://www.ras.org.uk/images/solar\\_eclipse\\_leaflet.pdf](http://www.ras.org.uk/images/solar_eclipse_leaflet.pdf)

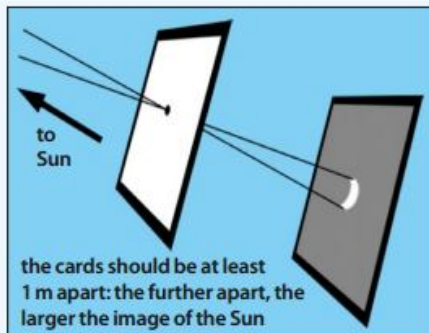
<http://www.solareclipse2015.org.uk/chasing-the-shadow/about-the-eclipse/>

In school, we will not be going outside; instead we will be discussing the eclipse with the children in their classrooms and watching it live on dedicated websites.

**Please keep safe.**

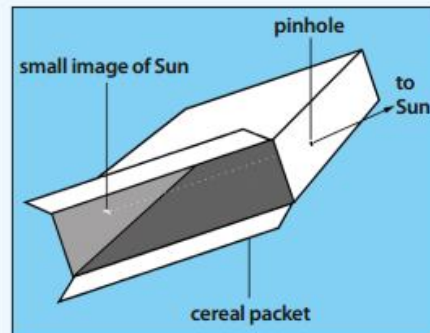


## Pinhole viewers



A simple yet safe way to view the solar eclipse is by making a pinhole viewer.

Pinholes allow light through them, and can create an image like a lens. All you need for this are two pieces of white card. Poke a small hole in one piece of card using a compass or a similar tool. Stand with your back to the Sun. Hold both cards up, with the one with the pinhole closer to the Sun. The light through the pinhole can be projected on to the other



piece of card, allowing the eclipse to be viewed safely.

An alternative to this is to use a cereal box or similar. Make a pinhole in one edge. Point this towards the Sun and you'll see a tiny image of the Sun projected on to the inside of the packet. Put white paper or card on the inside to make it easier to see.

*Never look through the pinhole at the Sun, but only at the projected image.*

## Eclipse viewers

If you are able to find a pair of eclipse viewers or shades then that is a safe and enjoyable way to view the eclipse directly. Eclipse viewers are made of card with special material inlaid, and you hold them up to the eclipse to view it. If you manage to get hold of a viewer, you should check it for damage such as holes or scratches, as only undamaged filters are safe to use.

Eclipse shades are a bit like the 3D card glasses you used to get at the cinema, but they have special dark material in them to cut down the Sun's light by 100,000 times.

Never use material that just looks dark, such as bin liner or gift wrap. Even though



it cuts down the visible light, it might not cut out the dangerous infrared light, so you could still do permanent damage to your eyes.

Don't look up at the Sun then hold up the viewer – put the viewer to your eyes before you look at the Sun!

## Colanders

By far the simplest way to view an eclipse is to use an item you normally find in the kitchen: a colander. Stand with your back to the Sun and hold the colander in one hand and a piece of paper in the other. Hold the colander between the Sun and the paper and watch as you safely observe many images of the eclipse on one piece of paper!

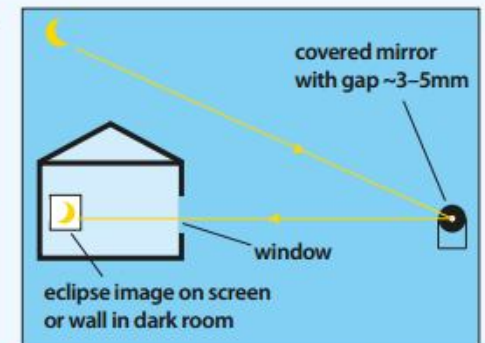


## Mirrors

A small mirror, such as a make-up mirror, can be used to reflect the image of the eclipse onto a white wall. Do not use a magnifying mirror. Do not look into the mirror at the eclipse as this is just as dangerous as looking directly at the Sun.

Cover the mirror with paper in which you have made a hole no more than 5 mm across. Stand with your back to the eclipse. Use the mirror to reflect an image of the Sun onto a light-coloured wall, being careful not to reflect the sunlight into anyone's eyes.

This works well when you are about 5m away from the wall. The smaller the mirror and the further away the wall, the sharper the image you should get. Experimenting with the distances



and mirror size should make the image brighter. To make the image clearer to see, use an indoor wall in a house and reflect the image in through a window.

Notice that the shape of the hole – even a triangle – still gives a circular disc of the Sun.