Eclipse Activity Guide

Observe the Eclipse

Safety first! DO NOT LOOK AT THE SUN WITHOUT ISO CERTIFIED ECLIPSE GLASSES! Even a quick look can cause damage or blindness. If you don't have glasses, you can borrow one of our box viewers or pinhole projection tubes or boxes. Please ask!
Using eclipse glasses or a pinhole projector, you'll be able to see the moon's shadow gradually block the sun's rays. In some parts of the country, the sun will be covered completely for a short period. This is called *totality.* Where we live, we will have near full coverage—about 93%—but not full coverage of the sun. This is called a *partial eclipse*.

Observe Nature

Find a place away from crowds to look and listen, then come back when the sky is darker to see if you notice anything different. Do the birds make different sounds? Are the squirrels or ducks acting differently? You may even see flowers in the arboretum that close when the sky starts to darken. Pay close attention and record what you observe.

Track the Progress of the Eclipse

The eclipse will start at 9:08AM, and will last until 11:39AM—about 2-1/2 hours! At the start, the moon's shadow will look like it took a tiny bite out of the sun. The shadow will gradually get bigger, with the most coverage happening at about 10:20AM. A great way to track the progress of the eclipse is to keep a log of what is happening. Make observations at different times near the beginning, middle, and end of the eclipse and write down or draw what you see and hear on paper. Here are some things you may want to look for:

- Where is the sun? Is it low in the sky? Above the trees? Hidden by clouds? Draw a picture or write it down.
- How much of the sun is covered by the moon? Draw a picture of what the sun looks like with the moon's shadow, or glue down overlapping circles to represent the sun and the moon.
- As it gets closer to the maximum point of the eclipse, the sky will get darker. Make notes of what it looks and feels like. Is the temperature changing? What else do you notice?
- When the sky gets dark during an eclipse, animals may get confused and think it is night time. Pay attention to the sound and movement of birds, squirrels, and any other wildlife you might see. Do you notice a change as the sky gets darker?

Make a UV Bracelet

UV beads are colored with a special dye, or pigment, that reacts to ultraviolet light. Ultraviolet light is a kind of energy that comes from the sun, and is part of the electromagnetic spectrum. You are probably already familiar with the part of the electromagnetic spectrum that produces visible light—red, orange, yellow, green, blue, indigo, and violet. Ultraviolet light isn't visible, but it is all around us whenever the sun is out. Even when the sun is behind the clouds, there is still some UV radiation getting through.

Stop by picnic shelter #2 to pick up some UV beads and make a bracelet, or just keep them in the bag and observe how they react.

Make Pinhole Art

You can use a pinhole in a piece of paper to project a single image of the eclipse onto another piece of paper. If you make many pinholes, you can project multiple images at the same time to make a fun design At picnic shelter #2, you can draw a design on an index card and use a pushpin to poke holes along the lines in the design. When you are finished, we'll give you a second, larger index card and you'll move into the sun. With the sun behind you or to your side, hold the punched card over the second card to make a shadow. You'll see your design made up of many small eclipse images! Don't forget to have someone take a picture!

Look for pinhole projections in the shadows

Walk around the park and look for trees where the sun is filtering through the leaves. These are also pinholes just like the ones you made with the pushpin. They're made naturally by the spaces between the leaves and will also produce images of the eclipse!

Make pinhole projections with your fingers and other objects

Crisscross your fingers to make a waffle pattern and observe the shadow. You'll see eclipse images projected in the gaps between your fingers. Experiment with holding your hands in different ways or with different parts of your body. Do you have other objects with holes in them? Hats, keys, or even a cracker with holes can produce eclipse images. Get creative!

Check out the scale model of the sun, moon, and earth.

Look for a big yellow circle—that's the sun at about 1 billionth of its actual size! (The sun is 870,000 miles in diameter, and our scale model sun is only 4 feet in diameter, which is a scale of 1:1.1 billion). From the circle, you'll have to walk quite a ways before you reach another planet. Remember, the distance you would have to actually walk between planets would be 1.1 billion times farther—the planets are really far apart! Look for Mercury, Venus, the Earth and the Moon.

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