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Shoebox pinhole eclipse viewer download

The pinhole projection system can be easily assembled using shoeboxes (Reference Figures 1 and 2). Choose the biggest shoebox you can find. Tape the top to the box. At one end of the box, cut 2-3 inches from the top. There is a white paper on the box at this end. The white paper will be the display area where the projected image of the sun is visible for safe observation. Use white paper to increase the contrast of the image. The most important step of this system is to cut a small hole at the opposite end of the shoebox. Tape a part of the aluminum foil on top of this hole. Make a pinhole in the foil over a hole cut from the shoebox. Foil is used because the pinholes in it produce nice round holes (the pinholes in cardboard boxes become rough and irregular). The pinhole projection display device is complete. Observe the eclipse, stand with your back to the sun, place a shoebox on your shoulder with a pinhole end (E) facing the sun, and look at the white paper observation area inside the shoebox (C). Reference Figure 3. There you will see a bright projected image of the sun. The image is about 1/4 inch smaller in diameter, but easier to see. If you want a larger image, you can replace the long-stem rose box instead, but the image will be slightly larger. For example, to produce an image with a diameter of 1 inch, you need a box that is about 9 feet long (a little difficult to hold on the shoulder). Regardless of the size of the image, this method is safe because it forces the observer to look in the direction away from the sun. There is less temptation to keep looking directly at the sun, as other methods tend to do. Watching the eclipse in this way is like watching a movie screen or slideshow. Figure 1 Figure 2 Figure 3 Illustration by Ruth Flanagan Guhupa. Severe eye damage or loss can result from a direct look at the sun. Don't lose an eye for an overlook. Save your sight for many of the other spectacular astronomical events you see from time to time. Keep your eyes on the sky but be protected for this amazing event! safety note: it is recommended that you build and use a pinhole projector with adult supervision. Sharp objects such as scissors, knives and pins/thumbtacks should only be used with adult presents. Pinhole cameras are another way to watch the eclipse. Instead of requiring special glasses, the pinhole camera projects images of the eclipse onto the back wall. The photograph was taken like this a long time ago. This homemade projector allows you to safely see images of the eclipse on the wall. You can make a pinhole projector using the items you have at home!Pin or thumbtack * sharp knife or paper cutter * blank paper * parent supervision and assistance is required. Step 1: With the help of a parent, cut a small rectangular hole vertically at one end of the box. Step 2: Using scissors, cut the aluminum foil, which is a little larger than the hole cut into the box. Step 3: Using tape, cover the hole and secure the foil to the inside of the box. Step 4: Use a pin or thumbtack to poke a small hole in the center of the foil. Step 5: Tape the blank sheet to the inside of the box directly opposite with aluminum foil. Step 6: Stand with the box outside and your back towards the sun. Have the box so that the aluminum foil faces the sun. Now, look at the negative projection of the sun and its shadow on white paper in a box! Note: This pinhole projector activity for early learners (grade PS-2) is aligned in the following NGSS Science Standard domain: 1-PS4-2 Home » Hobbies & Projects » BL Workshop » How to make eclipse viewer safety first: Ask an adult to help you with a tool you haven't used before. On August 21, the sun darkens with a total solar eclipse, one of the greatest sights in nature. This phenomenon occurs when the moon passes between the Earth and the sun, blocking the sun for several minutes. The path of the total solar eclipse will cross Oregon, Idaho, Wyoming, Nebraska, Kansas, Missouri, Illinois, Kentucky, Tennessee, North Carolina, Georgia and South Carolina. The rest of North America will see a partial eclipse. Are you near those states? You can watch NASA's live stream at nasa.gov/eclipselive. If you are watching the eclipse, you can safely see it in this shoebox solar viewer. This type of viewer is also known as pinhole projection because images of the eclipse are projected through pinholes onto the display surface. What you need a small box with a lid (a shoebox is perfect). Small square white paper utility knife or hobby knife tape pin in aluminum foil what you do one. Cut a square hole of 1 in the lower right corner of the small end of the box. 2. Tape the aluminum foil over the cut-out square and poke the pinhole into the center of the foil. Pinholes are where the sun shines. 3. Tape the white paper to the inside of the box directly opposite the aluminum foil square with a pinhole. An image of the sun is displayed. 4. Cut another square hole in the lower right corner of the long side of the box. This square hole is the one you see. A blank sheet of paper can be seen from this hole. 5. Stand with your back to the sun, close the lid and look at the open square on white paper. Focus the sunlight on pinholes and white square paper. This type of viewer is also known as pinhole projection.Images of the eclipse are projected onto the viewing surface through pinholes. You will not be looking directly at the sun, but at the projection of the eclipse. Warning: Do not look directly at the sun Seeing the sun directly is like using a magnifying glass to burn a piece of paper. Sunlight is concentrated in the back of the eye. The film behind your eyes is called Letina and it can easily be damaged without your knowing. Retina in your eyes doesn't have pain receptors, so you won't even feel the damage being done. You may not know that you have damaged your eyesight until much later. Important Note: Upload only photos of your project. Due to privacy rules, you can't post photos that show your face. Be sure to ask for parental permission before uploading to the website. Articles Share these books with your young readers, along with simple scientific activities that complement each title. Article Your child's textbook can be a launching table for innovative, independent learning. Articles brighten up the day with the science of light and color. Kids of all ages videos can be part of these easy and fun backyard moments. Article Introduce these fiction and nonfiction books about the universe and planets to middle school children. Article encourages STEAM skills with crafts that your child can make dazzling crystal dioramas. The pinhole projection system can be easily assembled using shoeboxes (Reference Figures 1 and 2). Choose the biggest shoebox you can find. Tape the top to the box. At one end of the box, cut 2-3 inches from the top. There is a white paper on the box at this end. The white paper will be the display area where the projected image of the sun is visible for safe observation. Use white paper to increase the contrast of the image. The most important step of this system is to cut a small hole at the opposite end of the shoebox. Tape a part of the aluminum foil on top of this hole. Make a pinhole in the foil over a hole cut from the shoebox. Foil is used because the pinholes in it produce nice round holes (the pinholes in cardboard boxes become rough and irregular). The pinhole projection display device is complete. 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Supplies: long cardboard boxes (large shoeboxes do) scissors * duct tape or scotch tape aluminum foil A pin or thumbtack * sharp knife or paper cutter * white paper * parent supervision and assistance is required. Step 1: With the help of a parent, cut a small rectangular hole vertically at one end of the box. Step 2: Using scissors, cut the aluminum foil, which is a little larger than the hole cut into the box. Step 3: Using tape, cover the hole and secure the foil to the inside of the box. Step 4: Use a pin or thumbtack to poke a small hole in the center of the foil. Step 5: Tape the blank sheet to the inside of the box directly opposite with aluminum foil. Step 6: Stand with the box outside and your back towards the sun. Have the box so that the aluminum foil faces the sun. Now, look at the negative projection of the sun and its shadow on white paper in a box! 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