Name

Camera Obscura Worksheet

Post-Lab Questions

1. In your own words, explain how a pinhole can be used to form an image.

- 2. What would happen to the image if you recaptured your photo, but the camera was flipped upside down?
- 3. What is the focal length of a pinhole camera?
- 4. How would your image change if you captured an image at noon as opposed to 4:00 p.m.?
- 5. (Advanced) For the best image to be produced, the opening should be 1/100 or less of the distance between the camera and the projected image.

 $d = 2\sqrt{f\lambda}$

where

d is pinhole diameter, f is focal length (distance from pinhole to image plane), and λ is wavelength.

If your friend wants to make his own pinhole camera but has a box of $20 \text{ cm} \times 20 \text{ cm} \times 20 \text{ cm}$, what should be the size of the pinhole to produce the best image?

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