FLINN SCIENTIFIC

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 cm × 20 cm × 20 cm, what should be the size of the pinhole to produce the best image?