

## Pinhole Box Directions

The purpose of this box is to provide an opportunity for students to “see” inside a box that holds an object that allows no light to enter and therefore since no light enters, no light can be reflected off of the object and therefore the object cannot be “seen.” It also then provides the opportunity to allow a moderate amount of light to be introduced to the box and finally full light. The directions are explained below with pictures for your assistance.

Materials: Shoebox painted black, 4ml roofers plastic (it needs to be this thick so that light does not penetrate the plastic), black electrical tape, exacto knife, tag board.



### Step #1:

Cut a triangle into the top of the shoebox approximately one-third the way from one edge. This will serve as the entry point at which you will attach the eye tube for students to look through.



**Step #2:**

Take a piece of the roofers plastic that is 10 inches long and 4 inches wide. Keeping the length of the plastic, fold over one third (on the short side) and seal with electrical tape. Repeat with the last flap so that the you now have a triangular shaped tube and seal with electrical tape. From one end of the tube, slice up the length of the plastic approximately 1.5 inches to make flaps.



**Step #3.** Insert the flaps through the hole that you cut in the top of the shoe box and tape to the underside making sure to seal all edges so that no light comes through. The remainder of the tube should be sticking through the top of the shoe box and will be where students look through. (The picture below shows the inside of the box lid where the flaps have been taped down)





Step #4.

Next to the tube on the shoebox lid, cut a rectangle approximately three inches by 2 inches. Place a piece of cardboard over this square that can be lifted easily. This is the spot that you will shine a flashlight through for the second step.



## Step #5

It is recommended that you place a cardboard under the location of the tube in the box as well so you know where to put an object so that alignment of the tube and the object are also easy to do.



Finished Box

