KALEIDOSCOPE for PHOTOGRAPHY

by **Thinkenstein** on August 2, 2009

Table of Contents

intro: KALEIDOSCOPE for PHOTOGRAPHY

Kaleidoscopes are fun to look through. They fragment what we see, multiply the fragments, and put them together again in amazingly complex variations based on the triangle.

This kaleidoscope is made out of three long rectangular pieces of mirror which are taped together with electrical tape. That, in itself, makes a working kaleidoscope. I added a clear piece of glass at either end of mine, holding the end pieces in place with silicone rubber. The glass ends keep the inside of the kaleidoscope dust-free,

Look through it and enjoy what you see. Stick a camera at one end, instead of your eye, and take some great pictures!

Image Notes
1. This is a computer screen shot, with the kaleidoscope end pressed against the screen. The triangular units are basically identical. Turn off the flash when you shoot. The screen puts out enough light for the shot.

step 1: Cut the Mirrors

Cutting glass is inherently a little risky. Be careful to not cut yourself, and it is always a good idea to wear eye protection, also.

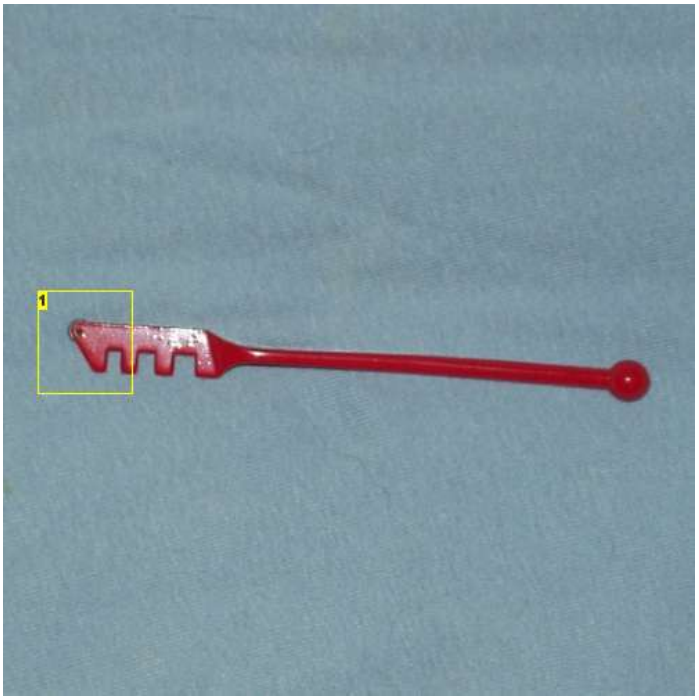
There is an art to cutting glass, but it is not especially difficult to learn. Mark your cuts with an erasable marker, or grease pencil. You can clean grease pencil marks later with a little lacquer thinner. You need a glass cutter, which is like a sharp wheel on a handle, to score the cut lines in the glass, and a straight edge to guide the cutter. After scoring the glass, you also need the edge of a table, where you can hold one side of the cut line firmly while pushing down on the other in order to snap the glass at the line. Press down quickly, firmly, and decisively.

The sharp wheel on the glass cutter scores a line in the glass. When you press to break the glass, the crack line tends to follow the line scored in the glass.

Mirrors come in different thicknesses of glass. Thin glass is easier to cut than thick glass, especially if you are cutting small pieces. I scored the lines on the front side of the mirror, not on the silvered back side. Hold the glass with the scored line facing up when you press down over the edge of the table to snap it.

After you cut the mirror pieces, use a little sand paper to smooth the edges so you don't cut yourself later.

My kaleidoscope is made out of three pieces of 1/16 inch thick mirror material, about 2 inches wide and 11 inches long.



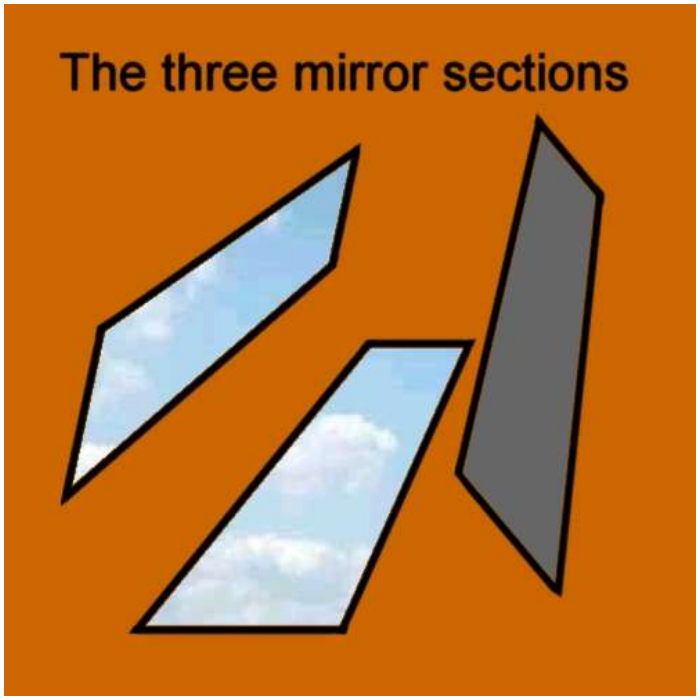
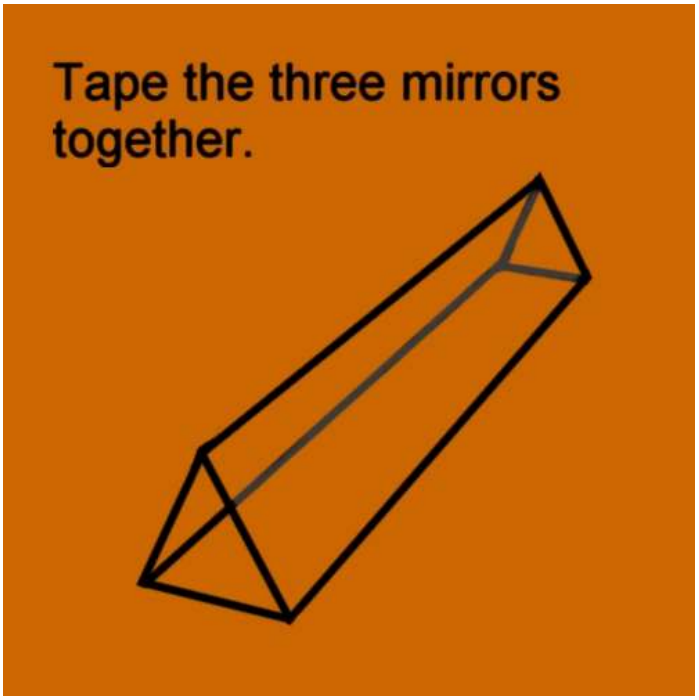


Image Notes
1. This is the business end of the glass cutter. The sharp-edge wheel scores a line in the glass. When the glass cracks, it tends to follow the line. Any breaks in the line can result in a wild break in the glass.

step 2: Taping the Three Mirror Pieces

The triangle is a very stable geometric shape. Hold the three pieces of mirror together to make a long triangular tunnel, with the reflective side facing inward. Tape them together with pieces of tape and then wrap the whole length with electrical tape. The tape protects you from any sharp edges of glass, and protects the silvered surface of the mirrors from scratches. Also, if the kaleidoscope ever breaks, the tape will keep the pieces under control. The finished unit should be pretty solid.

I used electrical tape, but for those who love duct tape, you could use that instead.



step 3: Clear Glass Ends

If you want to have clear glass ends on your kaleidoscope, cut two triangular pieces of glass and glue them on the ends of the unit you just made with silicone rubber. Silicone rubber sticks well to glass.

This step has advantages and disadvantages. The clear glass ends will keep dust from the inside of the kaleidoscope. As far as photography goes, however, it means two layers of glass to shoot through, so the ends have to be kept clean. Without end pieces there can never be a problem with their cleanliness, or light possibly reflecting off of them into the camera.

In other words, you can just skip this step and have an open-ended kaleidoscope. It will work just as well for photography.

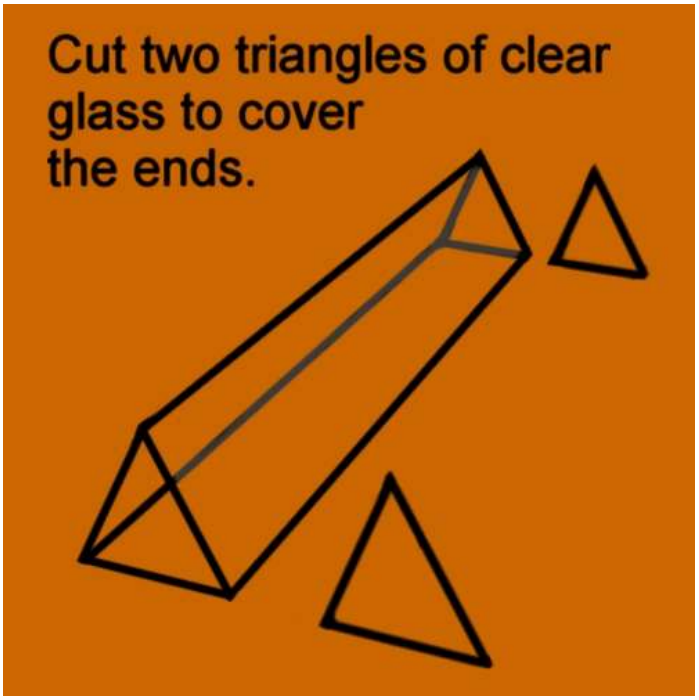


Image Notes
1. I'm just faking it here for the photo.
2. 100% clear RTV Silicone Rubber, available at hardware stores.

step 4: Playing with your New Toy

The raceme of flowers shown is called heliconia. One of the pictures was shot looking through the kaleidoscope at the flowers themselves. Another of the pictures was shot looking through the kaleidoscope at a picture of heliconia flowers on the computer monitor, with the kaleidoscope pressed against the screen.

Notice that the pattern of the shot using the computer screen is geometrically more precise. You need to have the target image right at the end of the kaleidoscope to have that kind of precision. If the target image is away from the end of the kaleidoscope, the photo will be more irregular, although it will still show image faceting.

Image Notes
1. This is a shot of heliconia from a distance. Note how the triangular segments are not identical.

Image Notes
1. This is a computer screen shot, with the kaleidoscope end pressed against the screen. The triangular units are basically identical. Turn off the flash when you shoot. The screen puts out enough light for the shot.

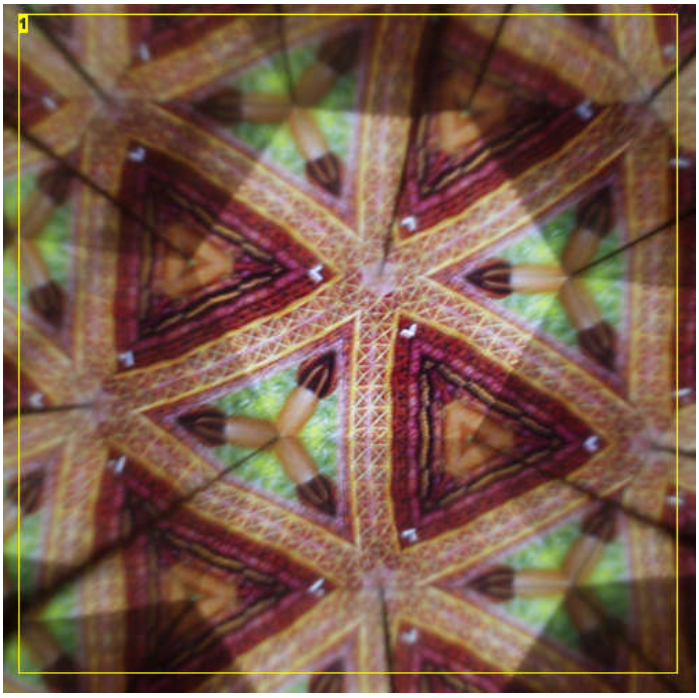


Image Notes
1. This is a screen shot of an image with cloth patterns.

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lemonie says: Aug 19, 2009. 12:35 PM **REPLY**

I'm impressed that you got good photos of the effect out of this.

L