

Step by step
visual guide to

BUILD A MATCHBOX PINHOLE CAMERA



YOU WILL NEED

Matchbox (small box)

A new roll of 35mm film. Any type will do (keep the box!)

An empty roll of 35mm film with at least 1cm stub of film sticking out.

(Your local photo lab may give you some of these for free!)

Empty drinks can

Black PVC electricians tape

Normal clear tape

A pin

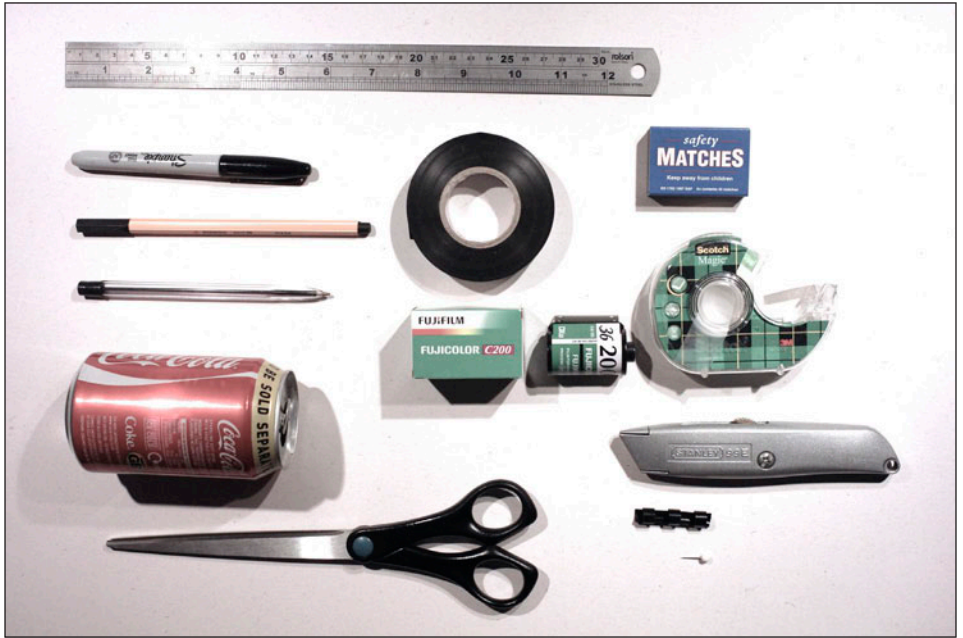
Scissors

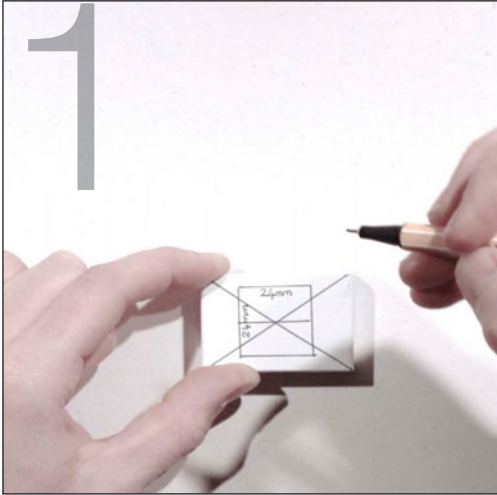
Craft knife

Ruller

Thin and thick black marker pen

Plastic spiral binder (optional)



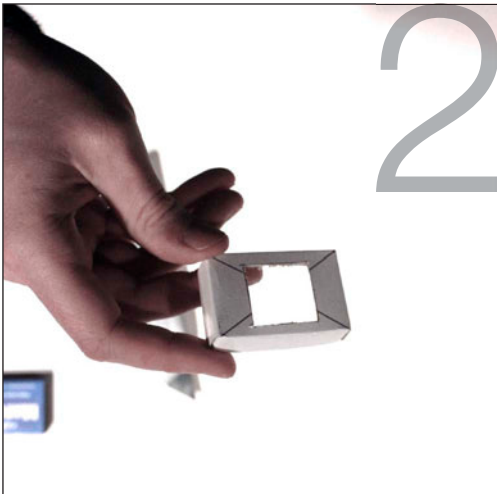


1
Mark out the center of the inner matchbox sleeve with an x

Now draw a line through the center, 24mm long

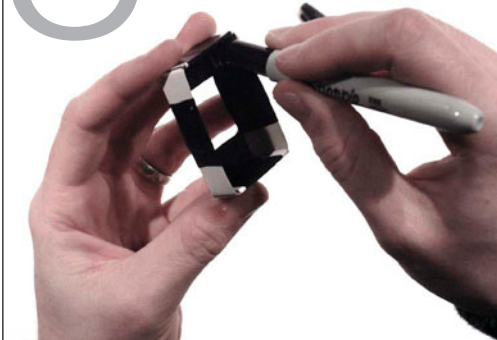
Use this line to draw a square 24mm x 24mm

This square will make the frame of your photographs



2
Very carefully cut out the square with a sharp craft knife

3



Now using your thick black marker, colour the inside of the matchbox

This is to ensure light does not bounce around inside the box!

(In this photo I have some tape around the cut square, but it can make the matchbox quite tight, so I would recommend not taping around the square! I took it off!!)



4

Mark out the center of the matchbox sleeve with an x

Draw a small box about 7mm x7mm at the center point



Carefully cut out this small square using a sharp craft knife



Colour the inside of the matchbox sleeve completely with the thick black marker

Note:

This can be tricky! It is essential to stop light bouncing around the inside of the box

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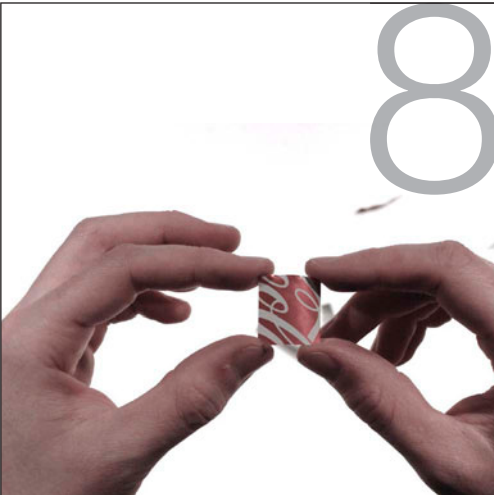


BE VERY CAREFUL!!

Cut out a small portion of the aluminium can

This piece of aluminium will be used to let light into the camera through a pin hole

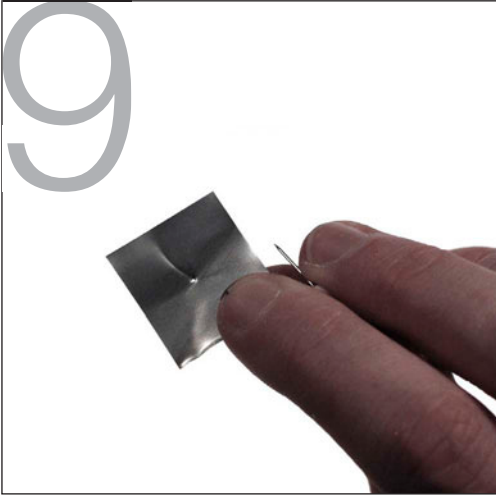
8



Using Scissors, trim down the piece of aluminium taken from the can to around 15mm x 15mm

Careful the edges are sharp!

9



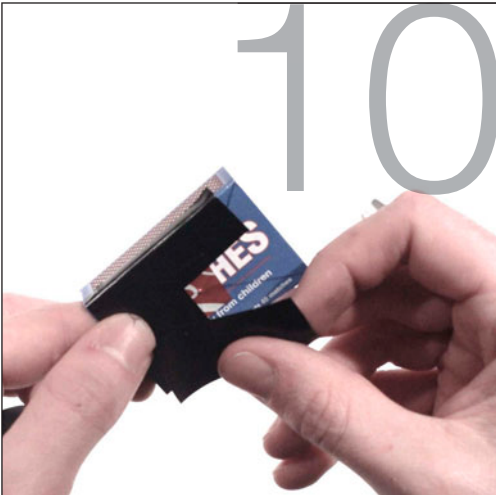
To make the pinhole we will need to create a very small hole in the aluminium

Place the aluminium on a cutting mat

Place the pin in the center and start rolling the pin between your fingers....This will drill a very small hole

Try a few times until you just see the hole and nothing more!

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Tape the pinhole over the square opening in the matchbox sleeve

Make sure the pinhole is not covered by cardboard!

Look into the matchbox sleeve and see if you can see a little dot of light!



Now, cut a portion of the film box about 35 x 35mm

Cut another piece about 20 x 40mm
This will be used later for the camera shutter

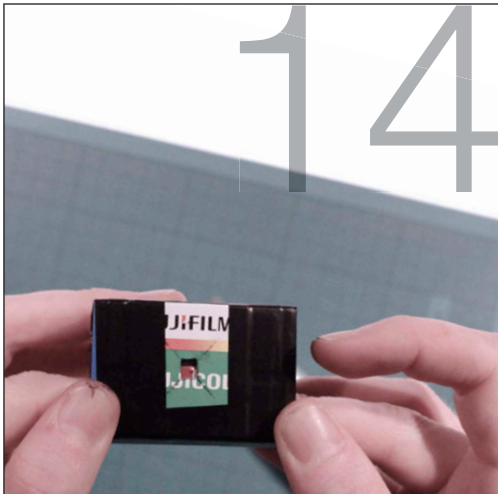


On the square piece of card (35mm x 35mm), mark out the center with an x

Draw a square 7mm x 7mm (same as in the matchbox sleeve)



Cut out the square using a craft knife on a cutting mat



Line up the cardboard with the pinhole taped onto the matchbox sleeve

Tape down using BLACK PVC TAPE on 3 sides. Leave the top edge untapped

The top side remains open so that you can slide your shutter into place



Slide the shutter into place, hiding the pinhole

Make sure that the card is easy to slide in and out. If it is not free moving you will shake your camera when taking pictures

Trim the card if required



Now open your New Film

Do not pull the film out too far

Trim the end so that it is square

Note: You can tape a piece of a spiral binder to the film making a click when you move the film on, but sometime it can rip the film!



Now, roll the film through the matchbox sleeve

Make sure the film is touching the back of the camera, not along the front touching the pinhole



Now take the empty used film, with the short stump, and align it with the new film as shown

This film should look upside down!

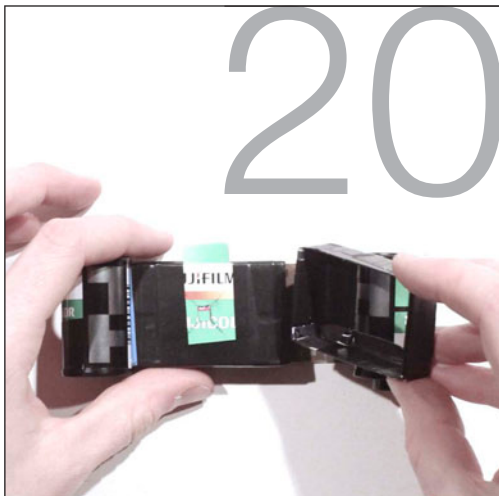


Carefully tape the two pieces of film together using some clear tape

Do not overlap the film

It is important that they are not taped at an angle

Only use 1 layer of tape as it needs to run back into the film holder



It is now time to put the matchbox back together

Make sure that you slide the black box in so that the film is at the back of the camera, touching the cutout square



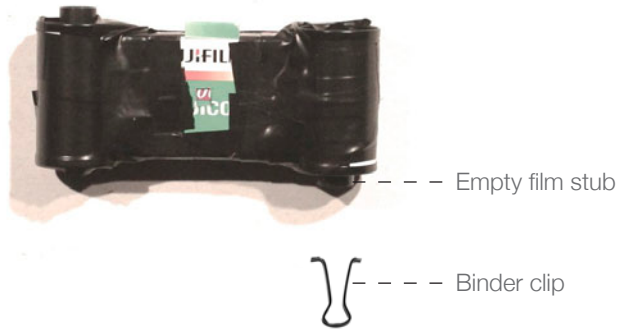
Now roll the film up tight so that there is no film showing



Tape the film reels to the matchbox using BLACK PVC TAPE

Make sure the film reels are tight to the matchbox before taping and that there are no gaps to let light in

Also tape the top and bottom where the film reels meet the matchbox



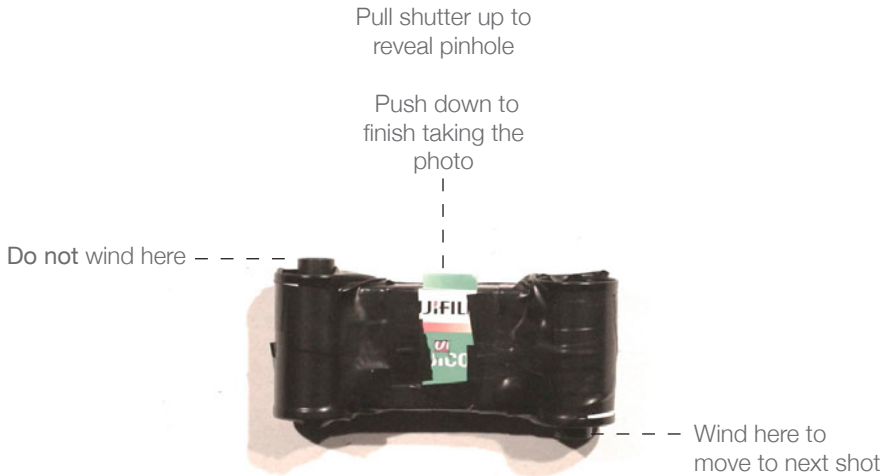
This is my finished camera

(Almost!)

You may want to attach something onto the empty (upside down film) so that you can wind the film on easier

I drilled two holes in the stub of the empty film, and inserted part of a binder clip as shown below

HOW IT WORKS



Step 1: Wind film on two turns before 1st shot

Step 2: Place camera on a level surface and hold steady

Step 3: Lift cardboard shutter to start exposure

Step 4: Push down cardboard shutter to end exposure

Step 5: Wind film on about 1.5 turns to take next shot

Exposure time is about 1 second outside in daylight

1-3 seconds when cloudy and

30 seconds - 5 mins indoors depending on lighting

This based on iso 400 film! Adjust times as necessary

There is no need to worry about being exact with times, just experiment and have fun!