

The Foldable Fusion Cooker



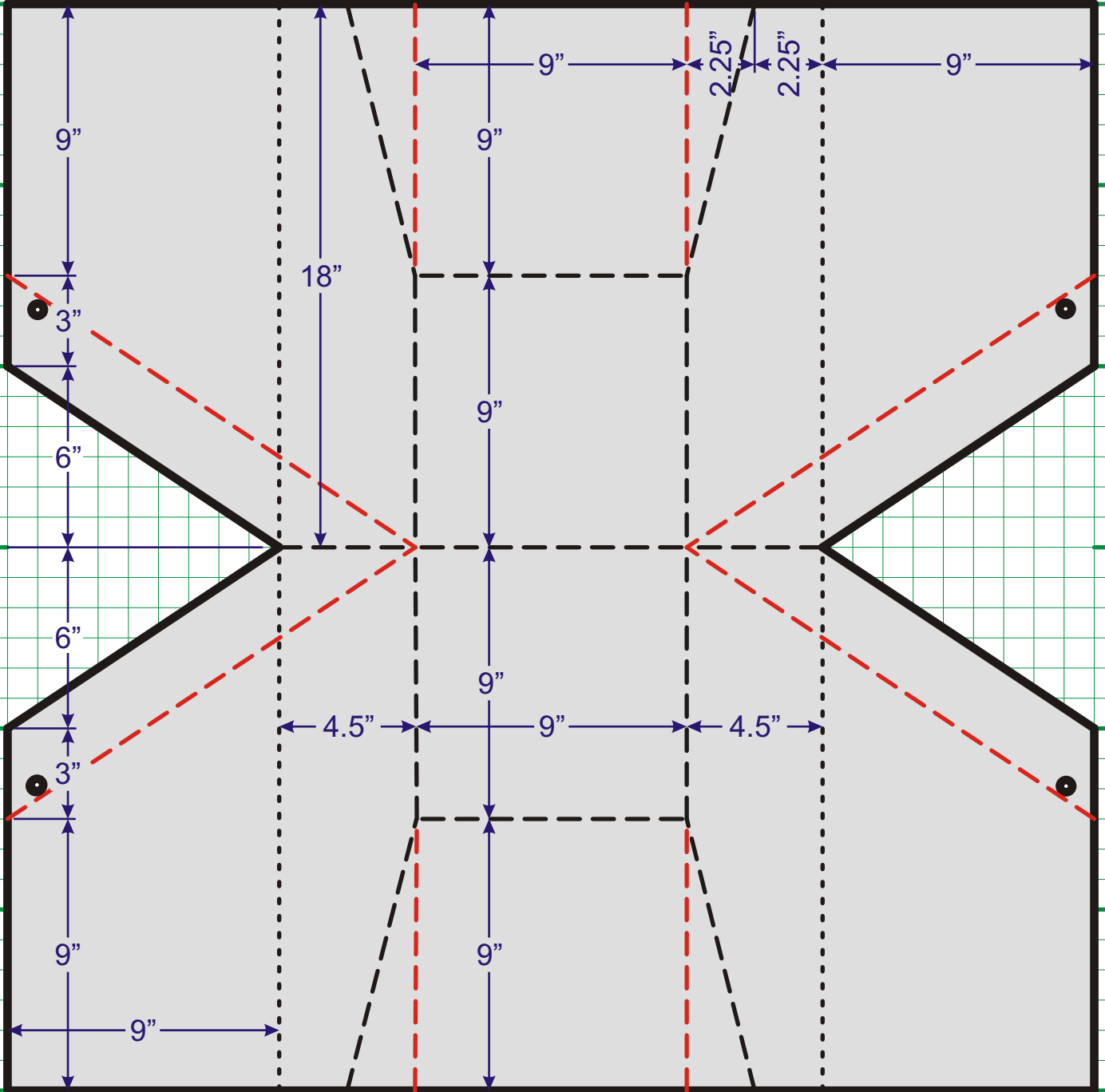
It is common practice for the refugees who solar cook in Africa to tie their Cookits to rocks with strings as well as placing rocks on the flat surfaces of their Cookits to prevent them from being blown away by strong gusts of wind.

Learning from the refugees, I have incorporated a string into the new Fusion Cooker design. The string helps in forming the shape of the cooker while the free ends of the string can be used to tie the cooker down. The shadow of the string, which falls on the inside of the cooker, acts as a visual guide in positioning of the cooker to the best pitch angle to capture the sunlight. Once removed, the string can be used to tie the folded cooker for storage or transportation.

A simple cardboard wedge is placed inside the cooker to keep the cooking pot as horizontal as possible when the cooker is repositioned to a different pitch angle.

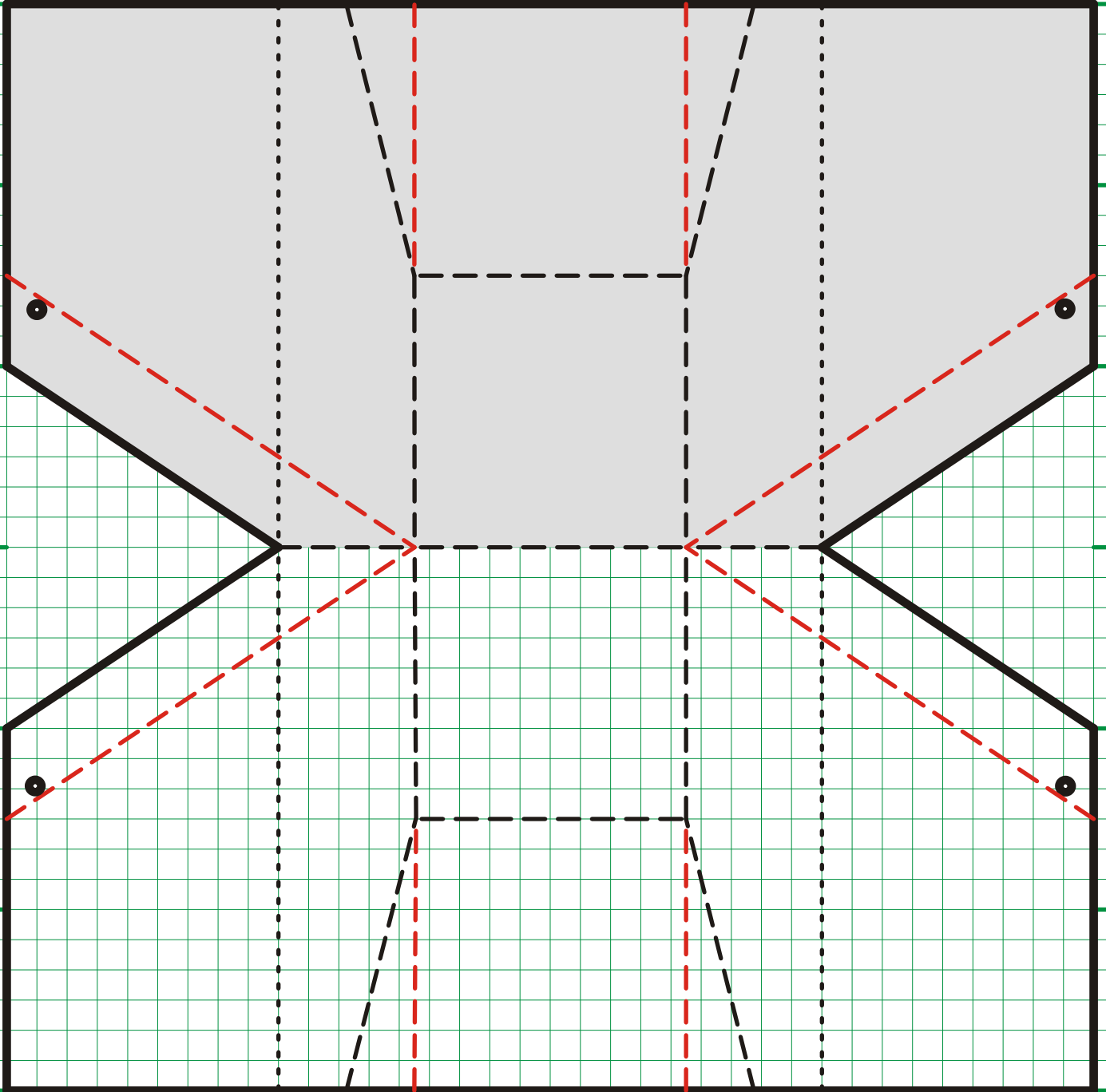
When not in use, the cooker can be folded in half, 36" x 18" x 0.5", for storage or in quarter, 18" x 18" x 1", for transportation. The plan and construction steps for the Fusion Cooker are available in the following pages.

Foldable Fusion Cooker



- - - Mountain fold line
- Cut line
- - - Valley fold line
- · · Fold line for storage use

Foldable Fusion Cooker



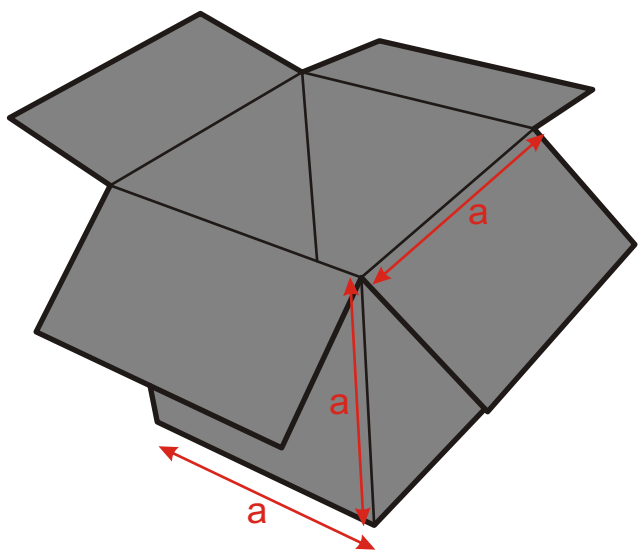
--- Mountain fold line

— Cut line

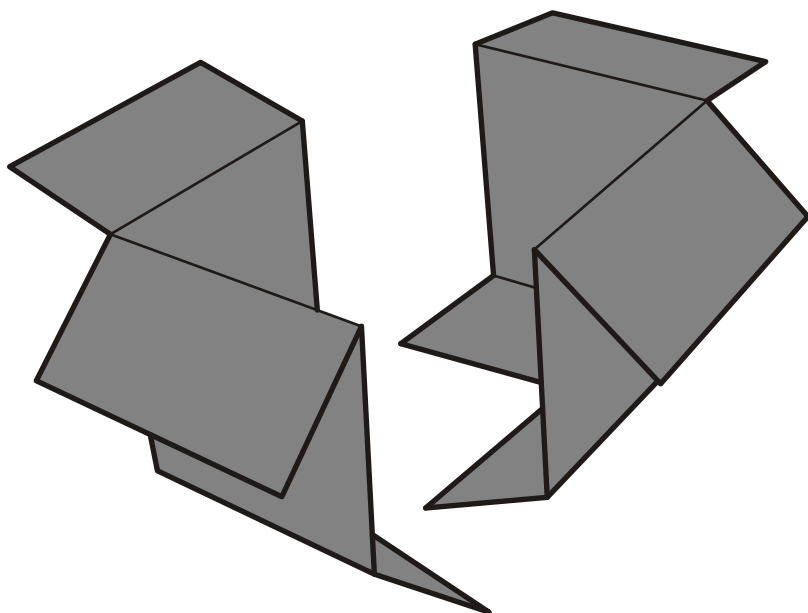
--- Valley fold line

... Fold line for storage use

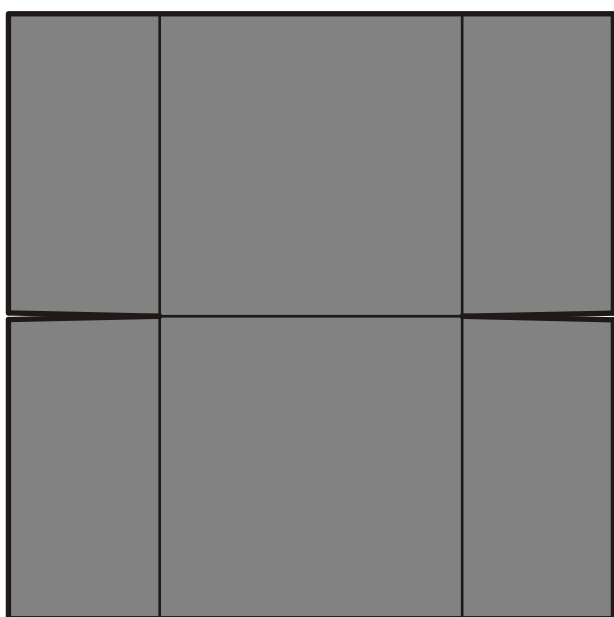
The Foldable Fusion Cooker Construction Steps



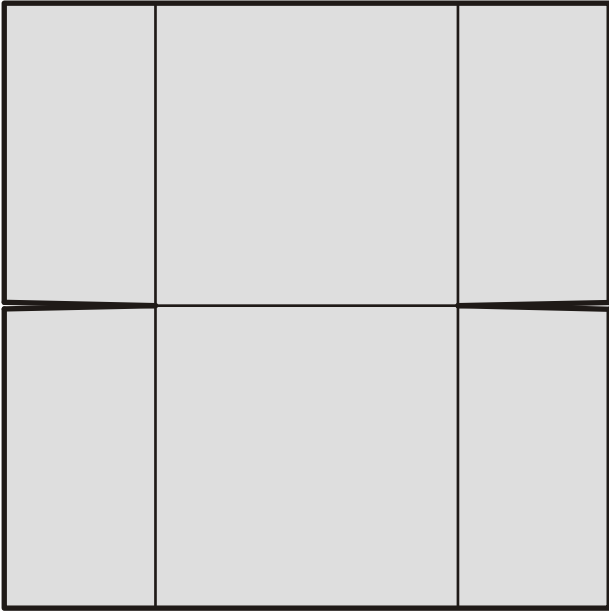
Start with a cube-shaped box having all equal sides. I used a box with $a = 18''$. A simple guide is $a = 2 \times$ the diameter of the pot to be used.



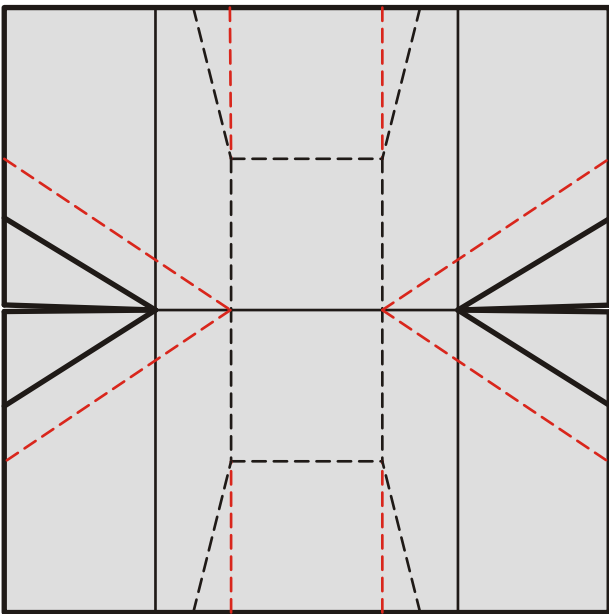
Split the box into two halves. Each half of the box consist of two squares and four smaller rectangles.



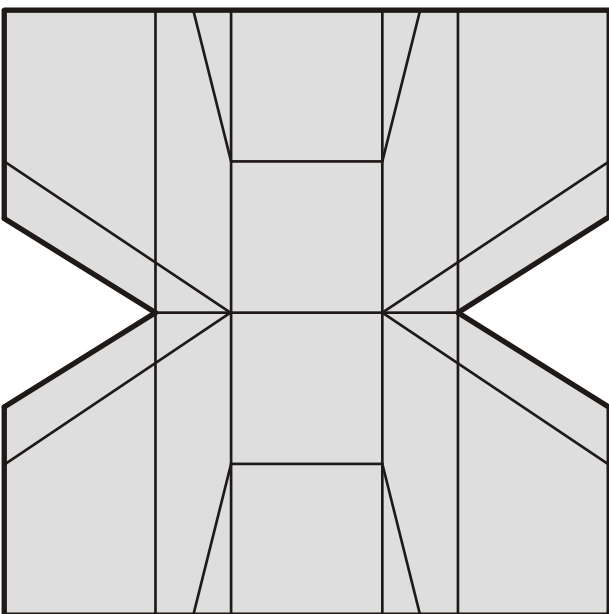
Only half of the box is needed to make a Fusion Cooker.



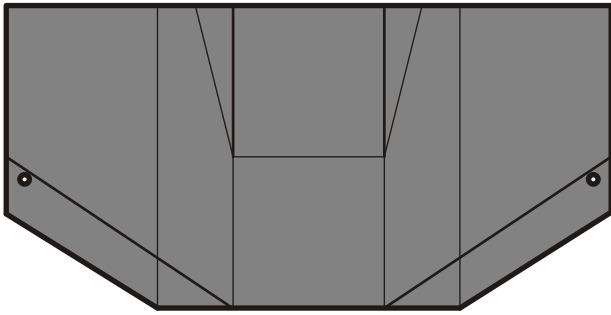
Glue aluminum foil to one side of the cardboard.



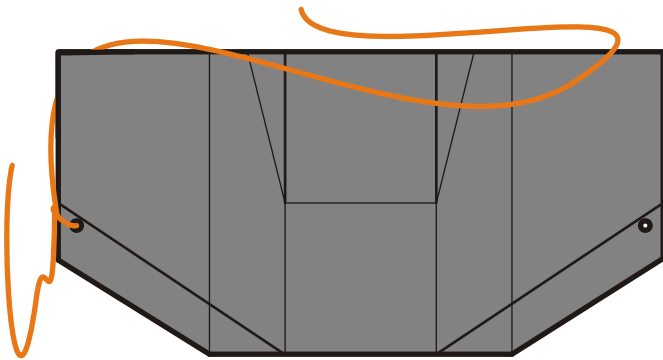
Draw the fold lines and the cut lines on the foiled cardboard according to the plan provided.



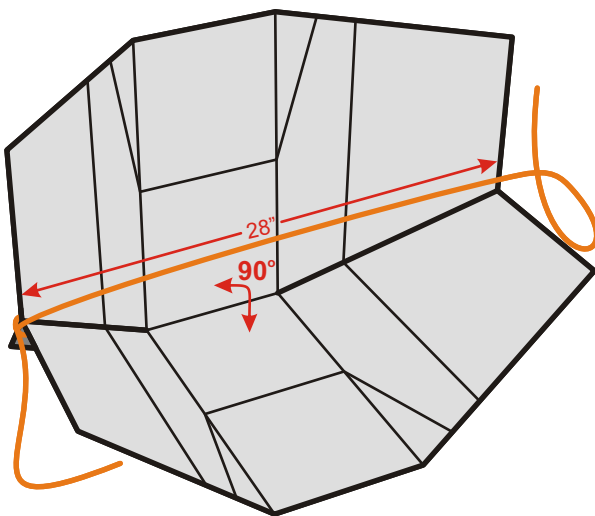
Cut away the unwanted sections and crease all the fold lines.



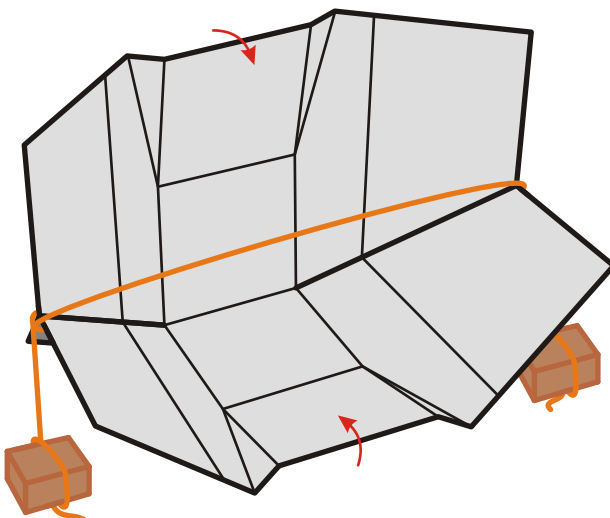
Fold the cardboard in half along the middle. The foiled side stays on the inside. Punch two holes as shown on the diagram.



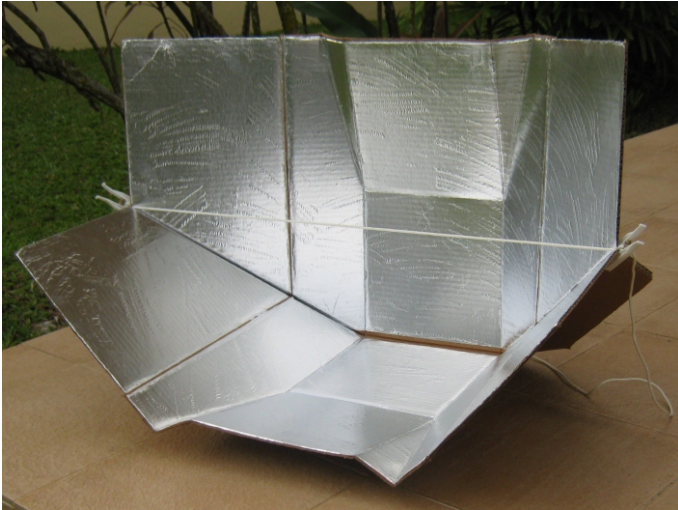
Tie the left side of the folded cardboard together with a string as shown.



Open up the cooker. Pull the string across and tie the other side of the folded cardboard together. The two square panels, in the middle, form a 90 degree angle with each other. The center section of the string, which is straight, is about 28" long.



Flip the two outer square panels inward, along the crease lines, as shown in the diagram. Tie the two ends of the string to heavy objects to hold the cooker down when it is windy.



Another way to setup the cooker is to use two clothes pins, which are tied about 28" apart on a string. Just clip the pins to the two sides of the cooker as shown to hold the cooker together.

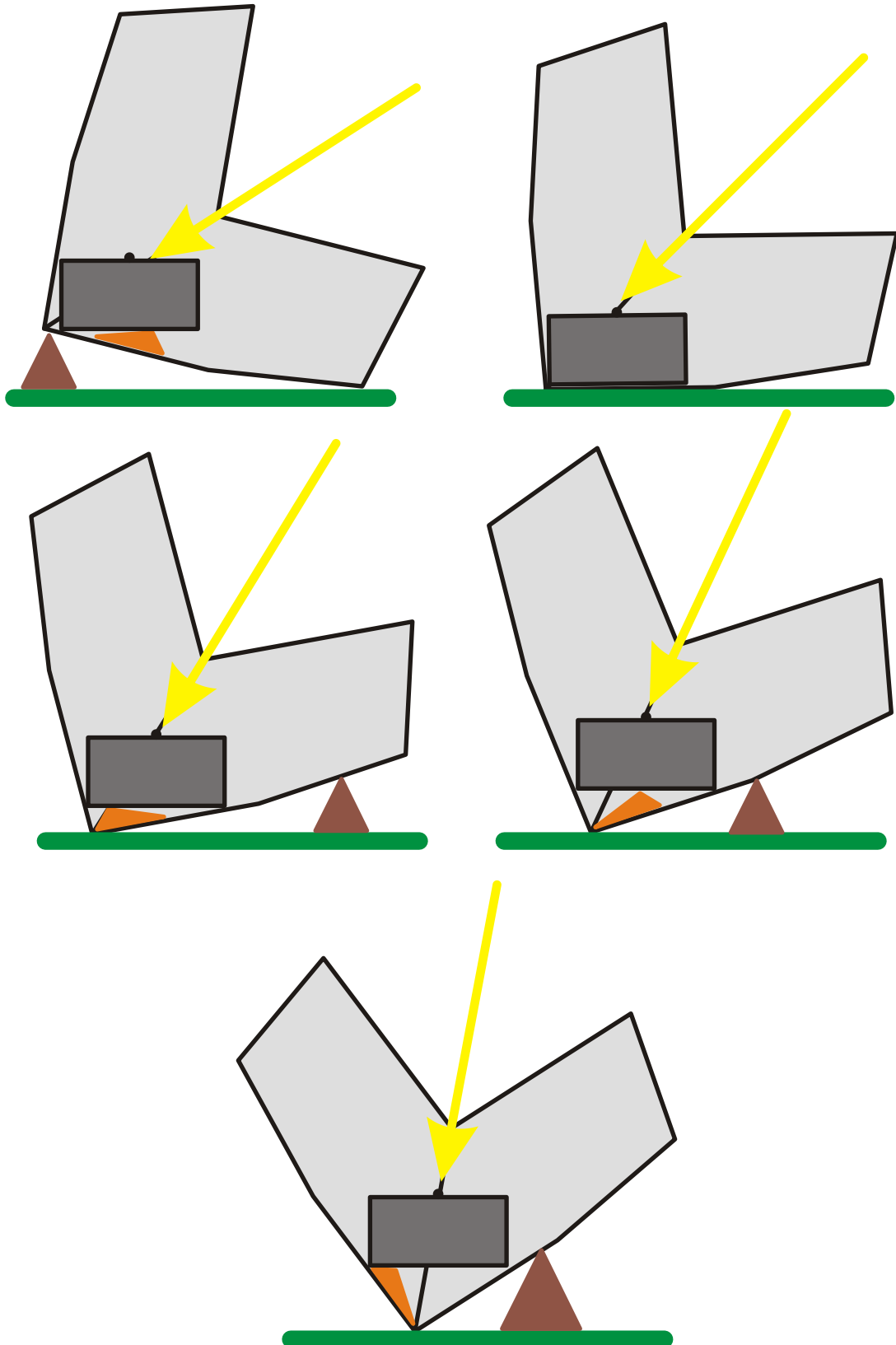


I used the PRESSA clothes pins from IKEA. They come in a pack of 50 for about USD2.00.

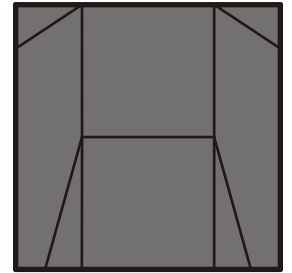
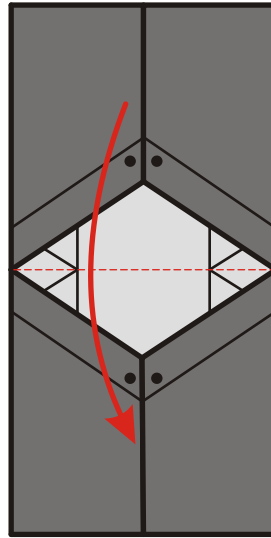
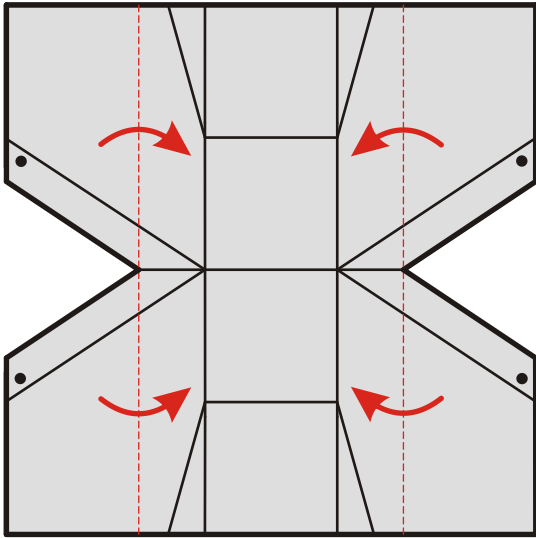


The one-piece PRESSA clothes pin has a continuous center pivot, which is ideal for securing the string with just a simple overhand or thumb knot.

A wedge is used to keep the cooking pot in a horizontal position at various cooker pitch angles

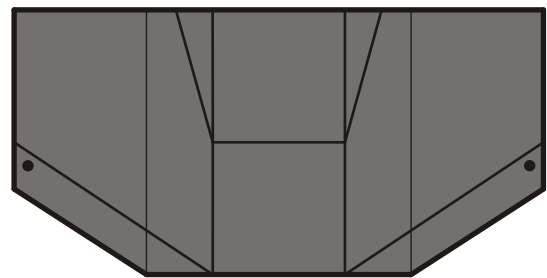
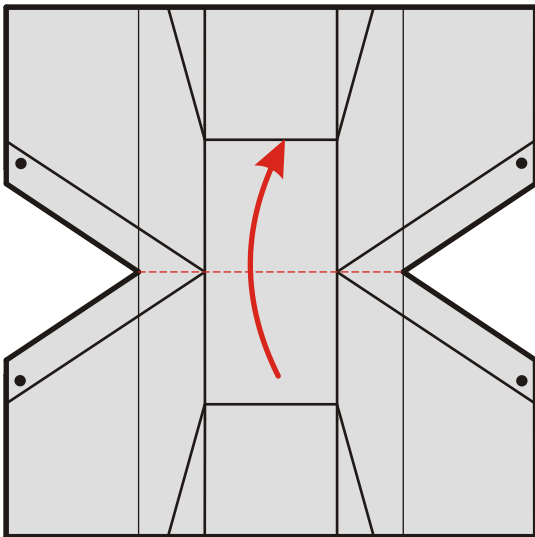


Folding the cooker into quarter size



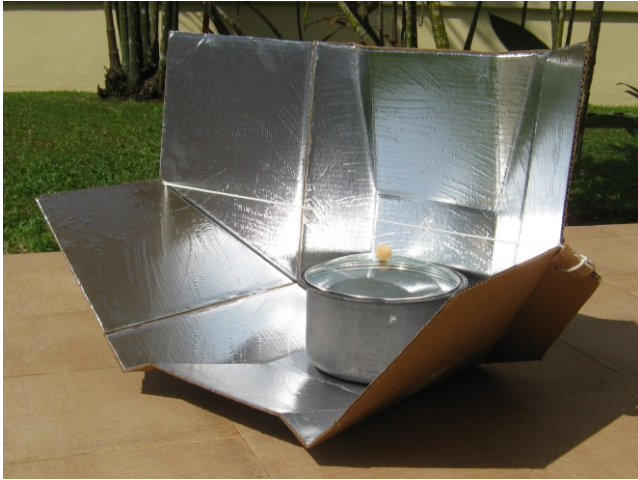
Quarter Size

Folding the cooker into half size



Half Size

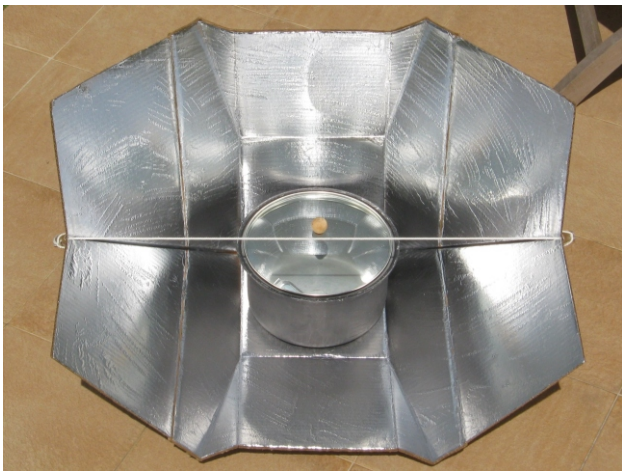
Foldable Fusion Cooker



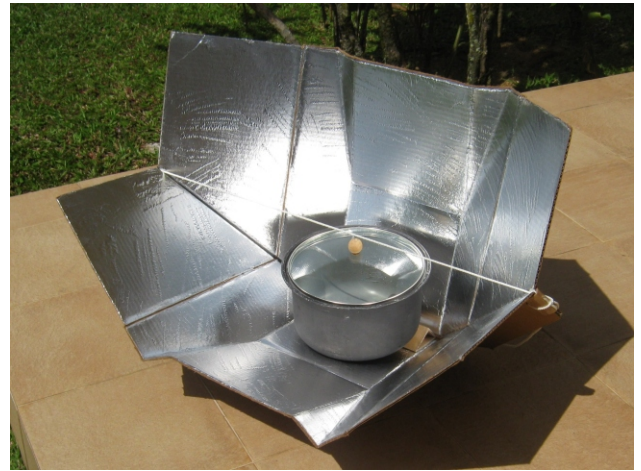
Oblique View



Rear View



Front View



Tilted Position



Half Folded



Fully Folded