

# HOMEMADE INCUBATOR

Supplies:



1 styrofoam ice chest or a chest that is used to ship frozen foods. A Coleman cooler will work, too.



1 hot water heater (lower) thermostat (\$8, temp ranges from 90 - 150 F)

25w - 40w light bulb

1 lamp kit (bottle version)

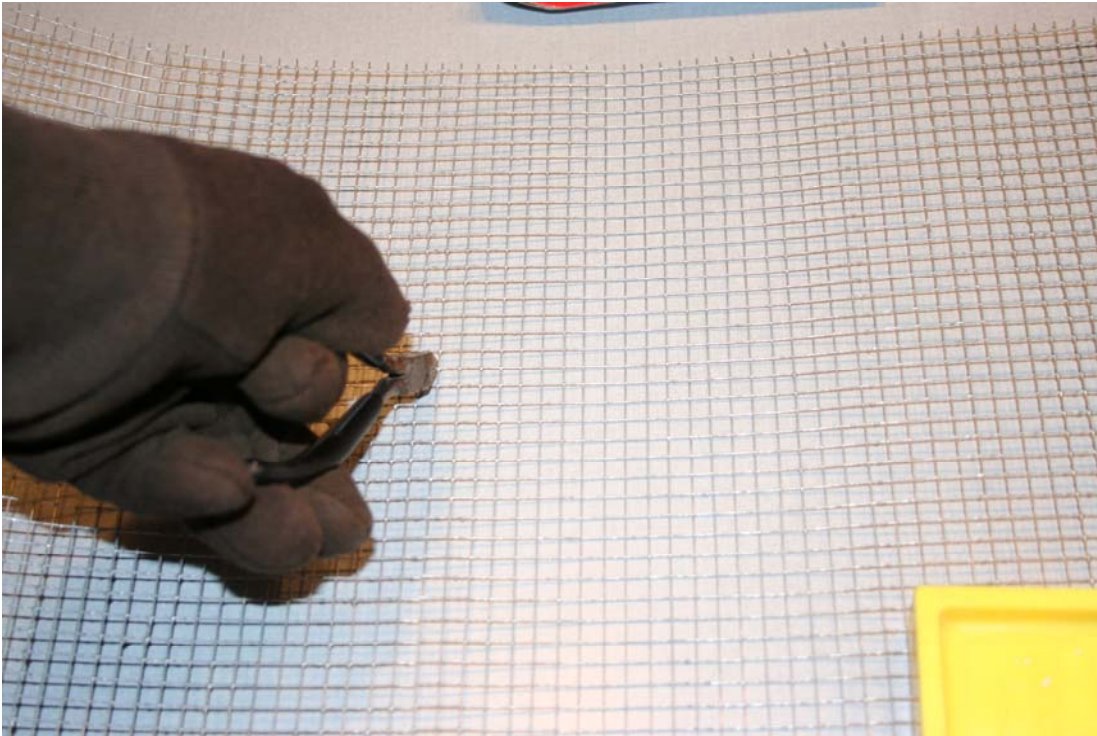
4 old wine corks

1 surge protector

***Not pictured***

Hardware cloth ( $\frac{1}{4}$ " is best for quail,  $\frac{1}{2}$ " is ok for chickens and larger birds), water dish, old computer fan, adaptor/transformer (either of which can be found at a used-computer store or thrift store) 1water wiggler (used to simulate the temperature inside the eggs).

Cut and bend the hardware cloth to make a rack that fit into the ice chest. Place an old dish in the bottom to provide more surface area for the water to help with humidity and also to rest the hardware cloth rack on. Be careful because the cloth will scratch you as you work with it. Cut out the area where the light bulb would be installed to keep the light low in the box because heat rises. Generally a  $\frac{1}{2}$ " or  $\frac{3}{4}$ " drill bit will work to drill into the side of the cooler.



The thermostat is a lower water heater thermostat. The temperature range on this model is 90 - 150 F. The screw at the top is numbered #1 and the lower is #2.

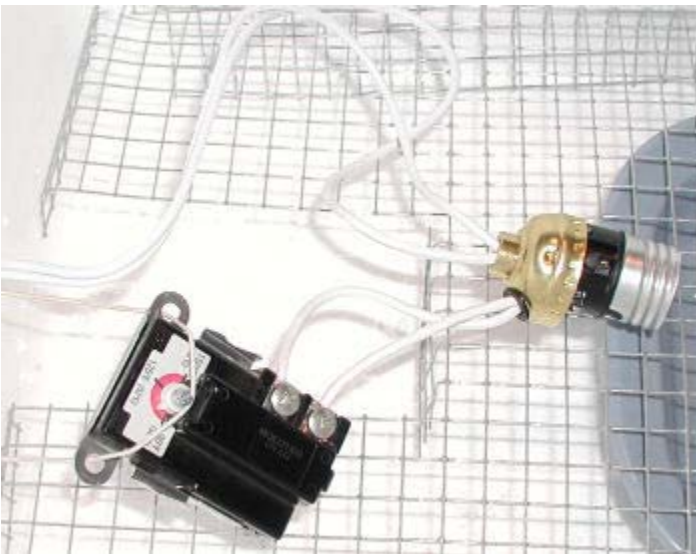


I used a bottle lamp kit because it has an opening on the side so that the kit can be wired straight from the bottom or from the side. This was perfect for this project because it allowed me to run the wires, connect them, then seal the base closed. Everything will be contained neatly and hidden away.

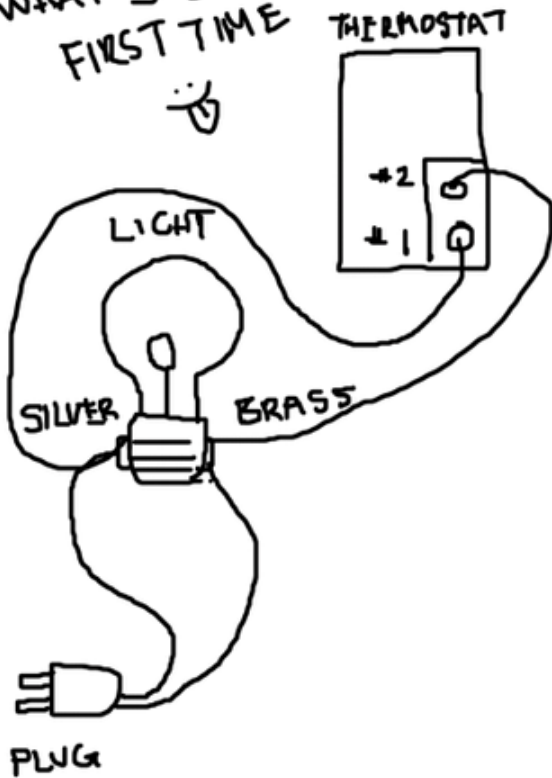
On the kit the ribbed wire was to be connected to the silver screw.

Cut off a piece of the cord about 8 inches long to have wire to work with to connect the thermostat.

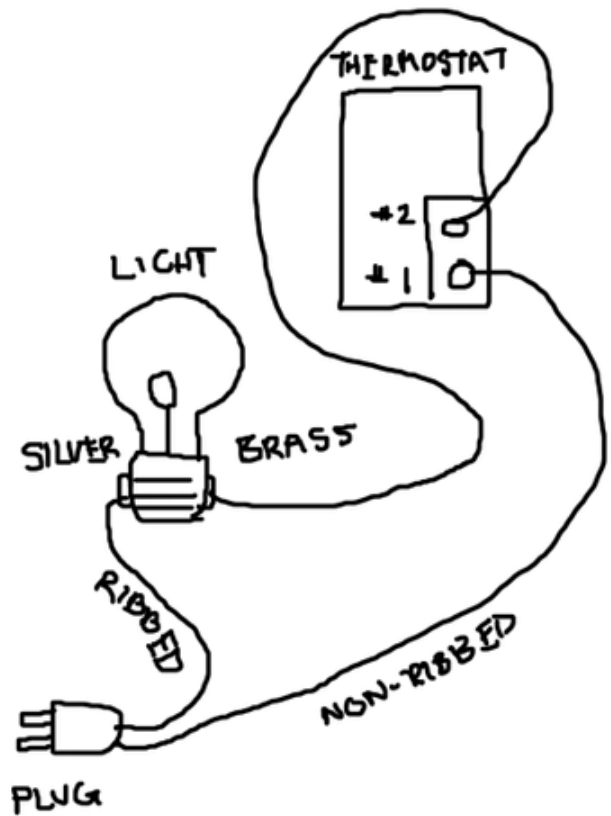
With the ribbed wire connected to the silver screw use the 8" piece of the wire you cut to wire from the brass screw to the thermostat #2 screw, then use the non-ribbed wire of the cord to wire it to the #1 thermostat screw. The wire is run through the base screw and then over through the side opening to that everything is sealed shut when the lamp assembly is closed.



WRONG!  
WHAT I DID THE  
FIRST TIME



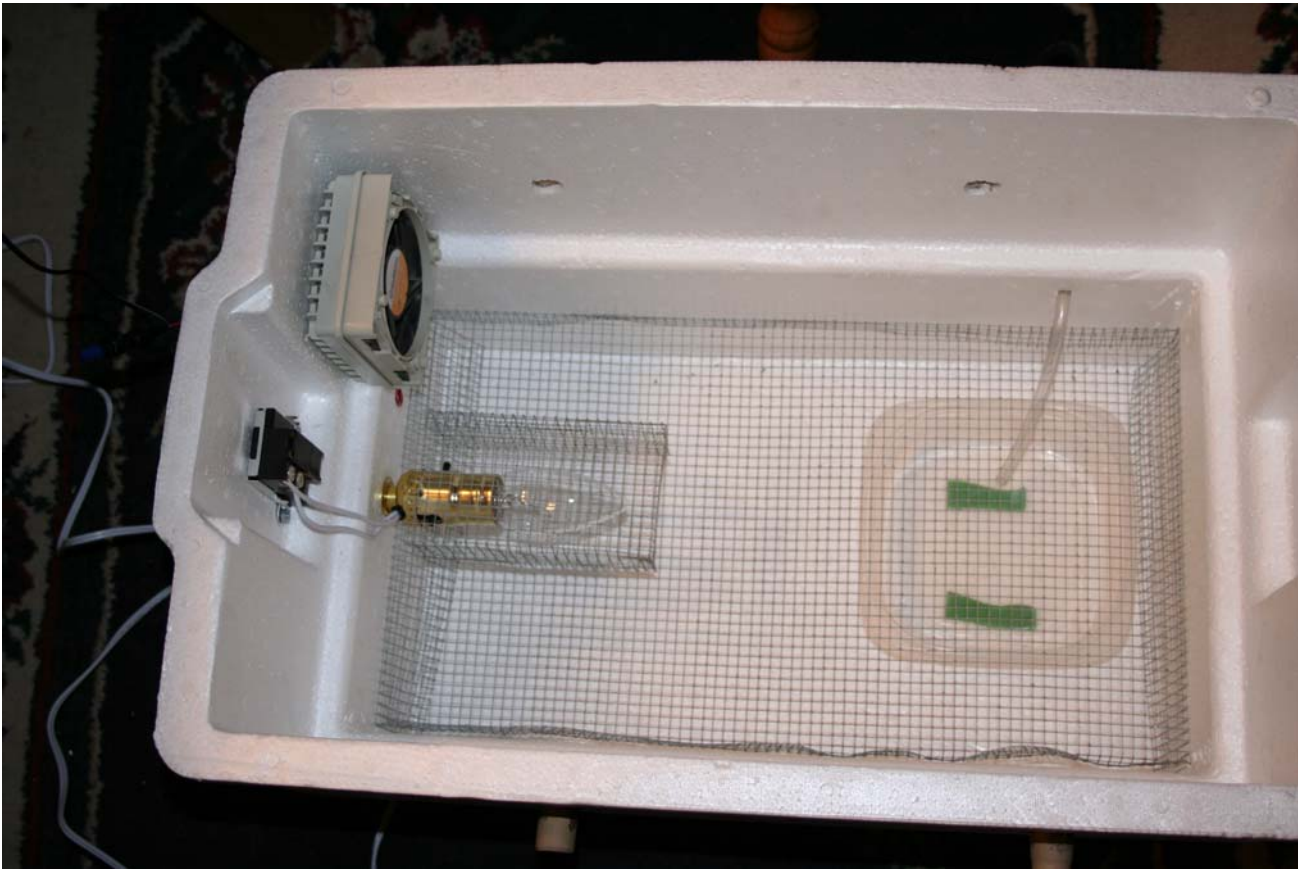
RIGHT !!!



Then carefully whittle out around the inside hole I made to insert the lamp assembly so that everything was snug and tight. Carefully cut away around the bolt opening so that the light assembly screws together snug and tight so the bulb does not wiggle around and pose a fire threat by melting the styrofoam.



Assembly on the outside.



And from the inside. (Since this photo was taken, I have moved the fan so that it sits in the corner of the cooler, making a triangle. This allows better airflow through the fan.)

Make sure you thread your wires through your tiny holes before assembling them.

Next snip the end of an old adaptor (some called it a transformer), 120v input 12v DC output, and wire it to an old pc fan.



Wire the black to the black and the red to the other mixed color wire. Secure the wiring with electrical tape and wire nuts. Secure the fan in place. We've found that placing it in the corner of the cooler, so there's more air-flow, is the best position for it.

Drill or cut out 4 air vent holes and use the old wine corks to plug them up. Position two of the holes near the top, two near the bottom, making sure that one is near the water pan for easier filling (you can use a tube and old soda bottle to squeeze water in without opening the cooler). You can use a hot nail to melt a hole in the side.



Next, cut out a large rectangle in the lid and cover it with an old window glass pane or piece of plexiglass.

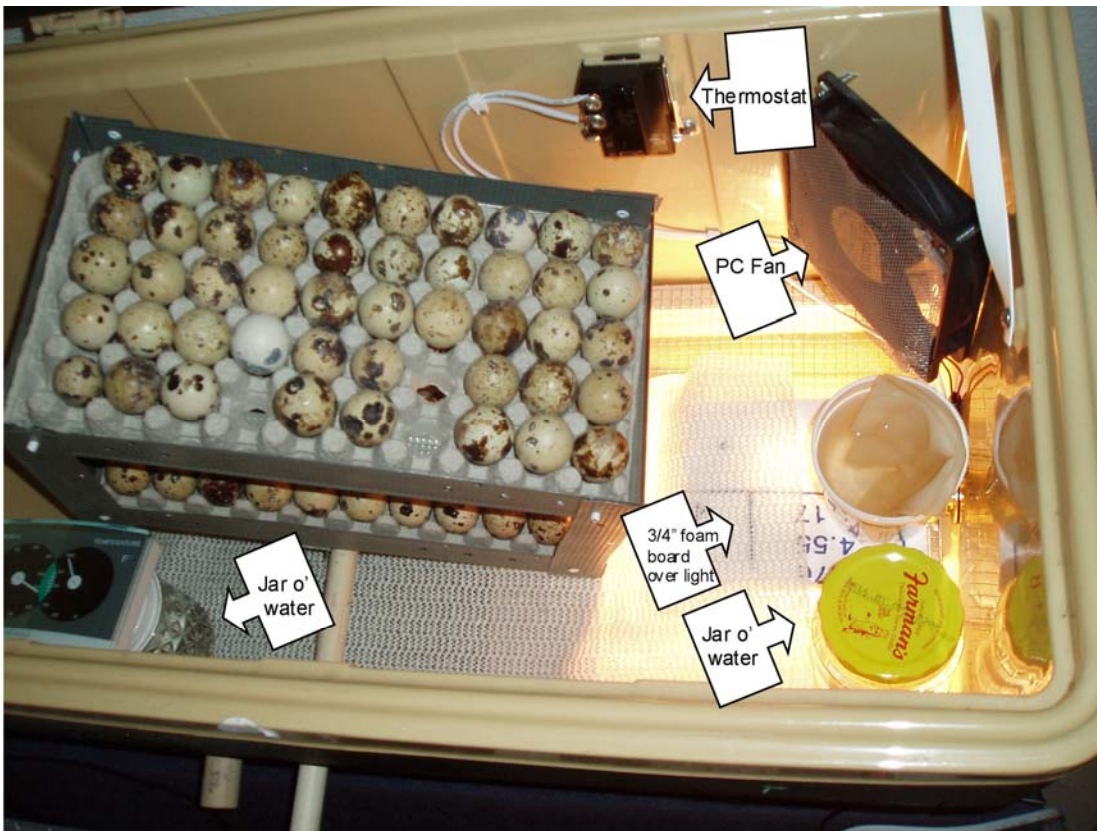


Duct tape the edges to secure the glass and cover the edges of the glass.

Here's another cooler we made into an incubator...



Inside... the jars of water are used as heat-sinks... keep the temps constant. The foam board over the light didn't work as well as we'd hoped... it did eventually start to melt.



These instructions were originally posted by A. Rapids of Virginia. We have now made 3 incubators using various coolers, and modified the instructions slightly. We have found that the best position for the thermostat is along the back wall of the cooler, away from the light on the end. The fan is still best placed in the corner, so that the sides are each touching a different side of the cooler.

Happy Hatching!