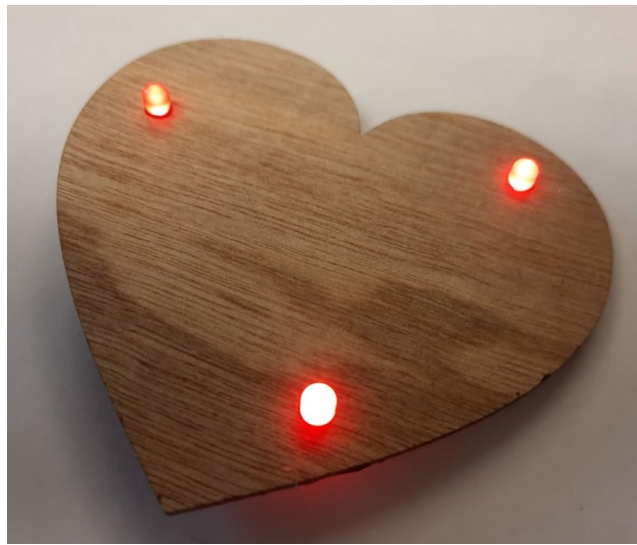


# LED Heart Copper Tape Circuit

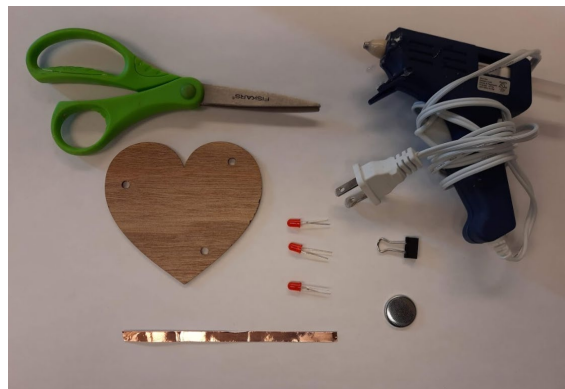


## ADST Project

# Copper Tape Circuits (Heart)

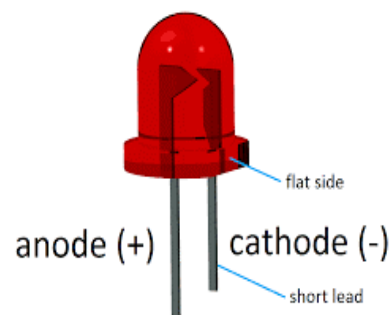
## SUPPLIES YOU WILL NEED

- Wooden Laser Cut Heart
- 3 Leds (red, green, yellow of your choice)
- CR2032 Coin battery
- 40cm of copper tape
- Binder Clip (as a switch)
- Scissors
- Hot Glue gun (to hold LEDs, switch & Battery)



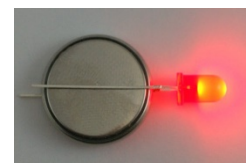
## BEFORE STARTING

- 1) Have the Heart ALREADY painted on the front so LEDs don't get painted accidentally.
- 2) LEDs have a positive and negative (see diagram). Make sure they are in the correct way around or they will NOT light up!! Each LED has a different brightness. Red are the brightest.
- 3) NEVER have the positive and negative of the battery touch through the copper tape. This is called a short circuit and will kill the battery.



## TROUBLESHOOTING THE CIRCUIT (Lots can actually go wrong here...)

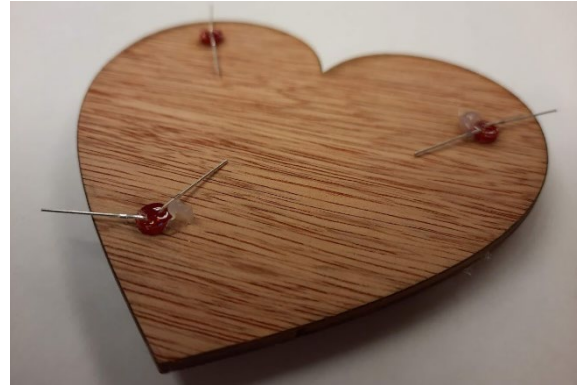
- 1) Is the copper tape connected to all the LEDs? Press down on the copper tape where it connects to the LEDs or even bend the legs over the copper tape and use the remaining tape to go over them again.
- 2) Is the battery Dead? With the "Binder Clip/Switch" NOT connected to the battery, place a spare LED directly across the Battery (Long Leg to positive "+" side of battery), does it illuminate?
- 3) Is there a place in your circuit that the copper tape from the negative side of the battery is connecting to the positive side? This is a short circuit which is BAD!!!
- 4) Is the Binder Clip making contact with the copper tape & Battery?
- 5) Are the LEDs in Backwards or the legs touching each other?



# LED Heart INSTRUCTIONS



- 1) Insert 3 LEDs into the holes. You may want to use a SMALL amount of hot glue to keep them in place depending on how tight the fit.



- 2) Bend the SHORT legs (negative) down towards the center and the LONG Legs (positive) towards the outside as shown. Do NOT cross the legs!!



- 3) Cut 20cm of tape. Carefully peel away a SMALL amount of the copper tape.



- 4) CAREFULLY place the copper tape over the POSITIVE LEGS (longer leg) of the LEDs as shown. BE CAREFUL handling the tape!



- 5) Cut more tape and then CAREFULLY tape the NEGATIVE LEGS of the LEDs as shown



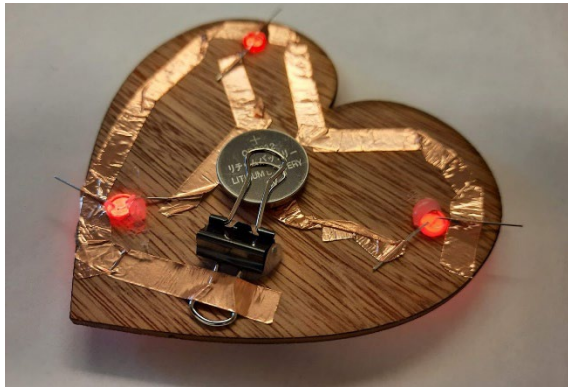
- 6) Make a "Loop" with the tape as show and "Stick it" to the battery. Now, stick the Coin Battery in place to the negative. The "Positive" side (has text and "+" symbol) faces up.



7) Hot Glue a Binder Clip in place by the battery as shown



8) Placed copper tape across the binder clip and connect it to the tape already connected to the POSITIVE LEGS



9) Test to see if the LEDs light up. If they do not, start troubleshooting (LEDS backwards, copper tape not connected, short circuit, etc)



10) You are done!!!