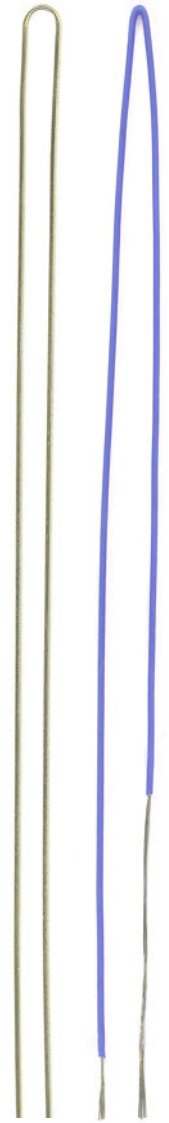
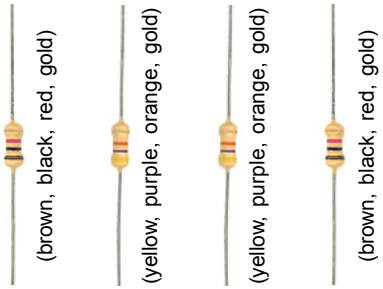
WONKY WIRE

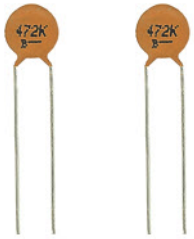
you need a steady hand to beat this old time fave game



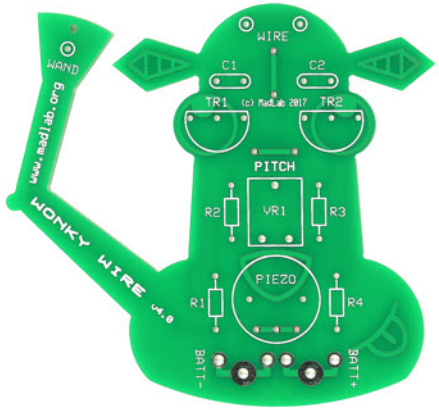
WIRE WAND



R1 (1k) R2 (47k) R3 (47k) R4 (1k)



C1 (4n7) C2 (4n7)



Circuit board

VR1 (47k preset)

BATT+

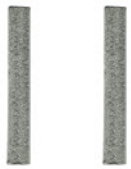
Spindle

BATT-

PIEZO

TR1 (BC547/8/9)

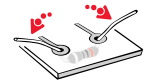
TR2 (BC547/8/9)



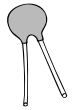
Sleeving

1. Identify the different components using the spotter chart.

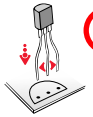
2. Find the resistors (R1, R2, R3 and R4) telling them apart by the coloured bands around their bodies. Bend the legs into a U-shape then fit them flat onto the picture side of the circuit board. Bend the legs outwards into a V-shape to hold them in place. They can be fitted either way around.



3. Fit the capacitors (C1 and C2) to the board either way around. Bend the legs outwards to hold them in place.

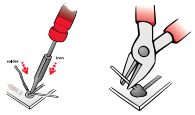


4. Fit the variable resistor (VR1) to the board and bend the legs a little to hold it in place.



5. Open the legs of the transistors (TR1 and TR2) a little and fit them to the board matching the half-circle shape of the transistor to the half-circle shape on the board. Push the transistors half way down and bend their legs.

6. Solder the legs of all the components to the metal side of the board then clip the legs close to each solder joint.



7. Solder the speaker (PIEZO) to the board either way around and clip its legs.

8. Fit the battery connectors (BATT+ and BATT-) to the **back of the board** matching the shape to the symbol on the board (the hexagonal connector is positive, the circular negative). Ensure the connectors are pushed fully into the board and are at right angles to it. Solder the battery connectors to the **front side** of the board making sure all the holes are well filled with solder.

9. Push the two pieces of sleeving onto the two ends of the solid wire then solder the ends of the wire to the holes marked WIRE. Slide the sleeving down towards the holes and bend the solid wire into the shape of a pair of antlers.

10. Take the piece of flexible wire, pull the loose insulation off, and twist the metal strands together. Push the other end up through the large hole and then solder it to the small hole on the board marked WAND. Form a loop with the metal strands of the other end around the solid wire (see overleaf).

11. Firmly push the spindle into the small hole in the top of VR1.

12. Connect a battery **(9V PP3)** to the battery snap. Touch the wand against the twisted wire and a beep should sound. You can change the tone by turning the spindle. Now try to get the loop from one end of the wire to the other without touching!

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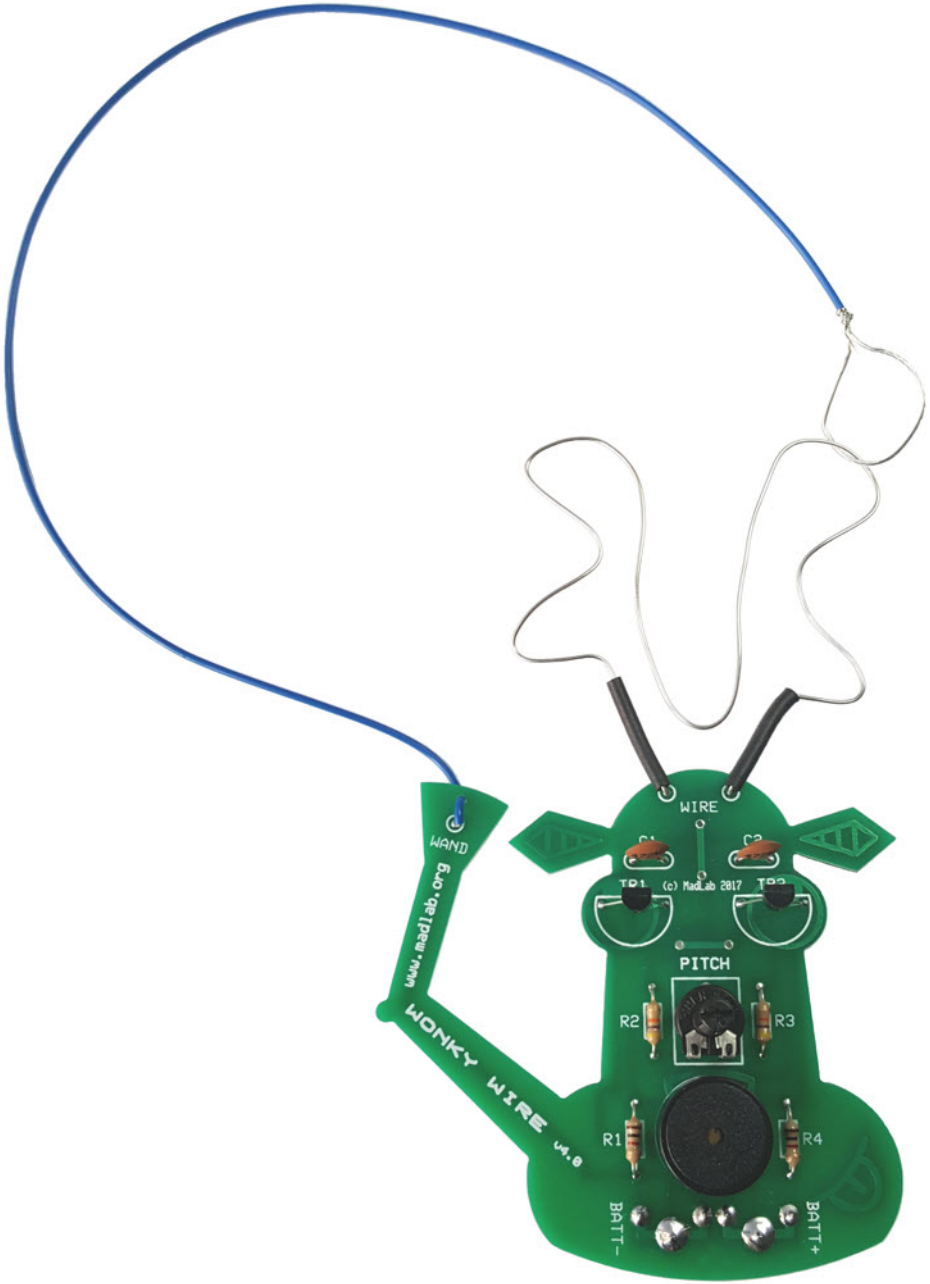
WAND
www.madlab.org
WONKY WIRE v4.0
WIRE
(c) MadLab 2017
PITCH
R1
R2
R3
R4
BATT-
BATT+