

Steady Hand Game

Includes a Circuit Diagram and extra notes at the end!

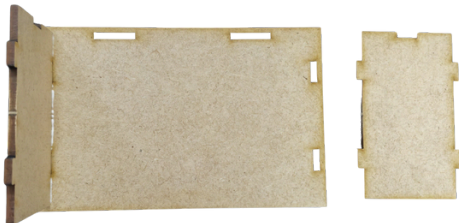
Follow each step in sequence and glue the pieces together as indicated in the images.

1



Start with the 3 pieces in the image. Lay them out first to make sure you are gluing them in the correct positions. The flat edges should line up facing you as in the image above.

3



Glue it into place by slotting the tabs into the 2 slots of the side of the base piece. Apply some pressure for a few seconds to make sure it glues securely.

2



Take one of the side pieces and put glue along the long edge, leaving the tabs without glue.

4



Repeat steps 3 & 4 to glue the second side panel into place just like the first.

5



Now take the longer tabbed piece, this will form the back of the box.

6



Put glue along **ONLY ONE** long side, leaving the tabs without glue.

7



Put some glue onto each of the shorter side tabs, as in the image above.

8



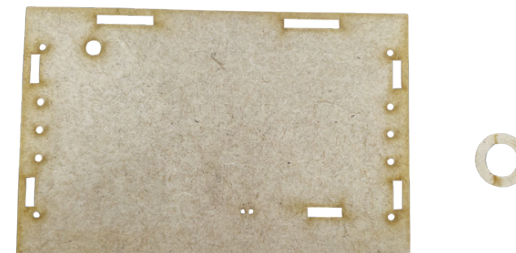
Lastly, put glue along the edge of both of the short sides, leaving the edge of the tabs without glue.

9



Glue the back panel into place as in the image above, slotting the tabs into the spaces in the base and side pieces. Apply some pressure for a few seconds to make sure it glues securely. Set aside to dry.

10



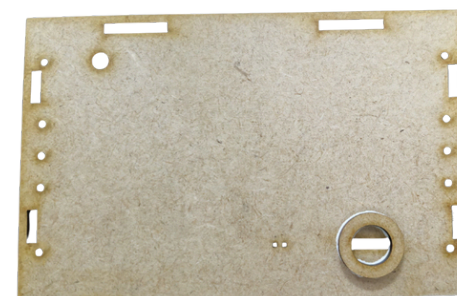
Take the two pieces in the image above. Take note of the orientation of the lid, make sure yours matches the image above, or your box will not turn out correctly.

11



Put some glue on the bottom of the small circular piece. This is the collar that will hold your buzzer in place.

12



Glue the collar onto the top of the lid, around the slot in the image above. Try your best to get the slot exactly in the middle of the circle. Apply some pressure to make sure it glues securely, and set aside to dry.

13



Take your 10x20cm piece of cardboard and turn it on its side to see in which direction the fluting is going. You want to see zigzags like in the image above, this is important!

14



Put your cardboard flat again, measure 2cm from the edge where you can see the zigzags and draw a line. Cut along this line using a craft knife. Try not to squish the flutes as you cut the cardboard.

15



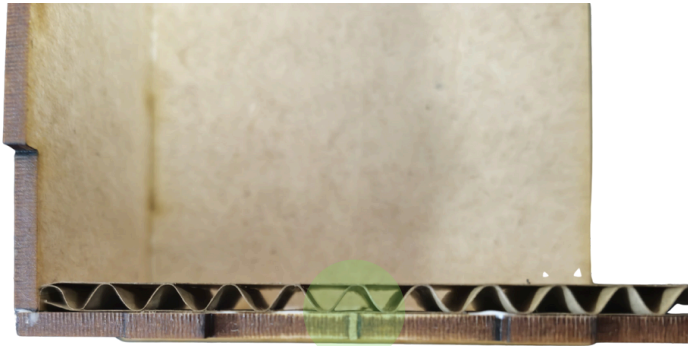
Now take your new 2cm-wide piece and cut it to the length of 8cm.

16



Repeat steps 14 & 15 to make a second piece of 2cmx8cm.

17



Take one of the 8cm pieces, and glue it along the inside edge of one side of the box. *Make sure to line the middle flute up with the middle-line on the side piece, as in the image above.*

19



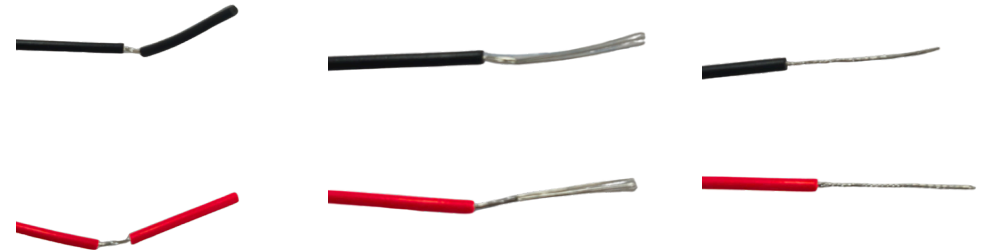
Take your battery pack. You will see that it has 2 lead wires, with the ends of the wires stripped to expose the internal wires.

18



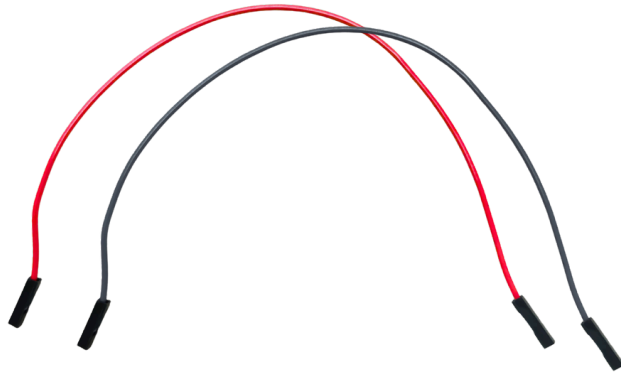
Do the same with the other piece on the other side of the box. Don't let the cardboard stick out above the edge of the sides, or the lid will not close. Set aside to dry.

20



Pull the rubber ends off the 2 wires to expose the internal wires. To keep all the wires together, twist them together to neaten them up.

21



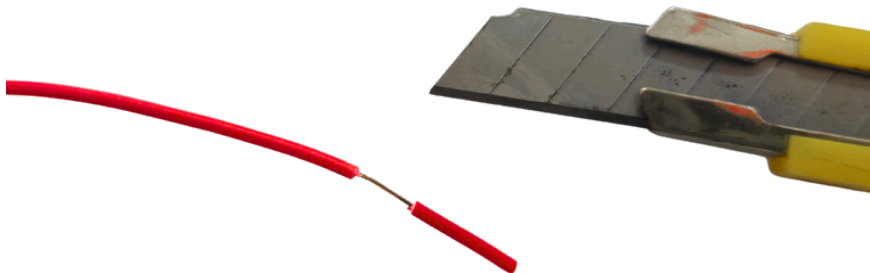
You have a pack of lead wires in your kit, separate the red and black wires from the pack.

22



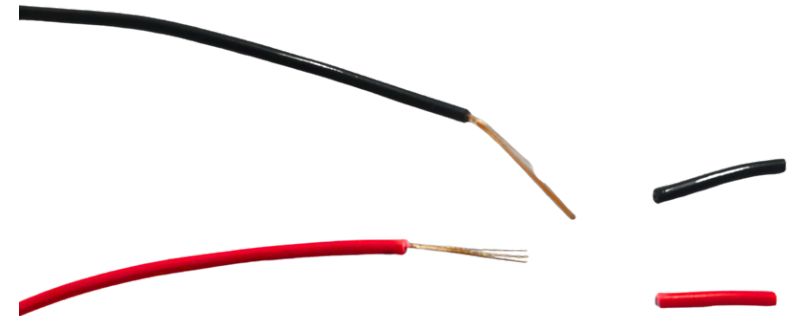
Cut one end off of both lead wires. Leave the other end as it is.

23



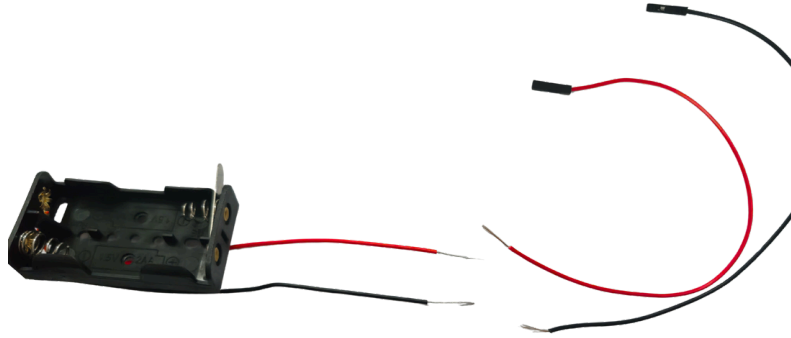
Use a craft knife and roll it gently around the end of the wires you just cut, making sure only to cut through the rubber to expose the wires inside. **Be careful not to cut yourself!**

24



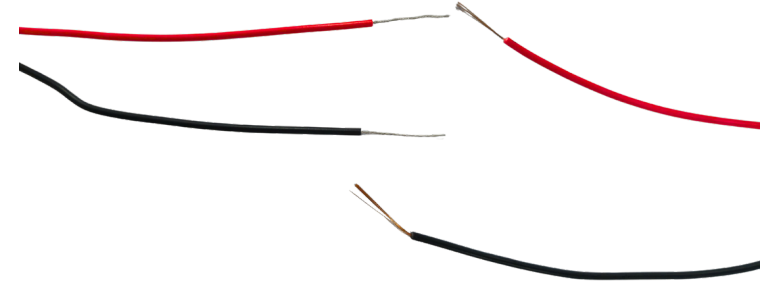
Pull the rubber ends off the 2 wires to expose the internal wires. To keep all the wires together, twist them together to neaten them up.

25



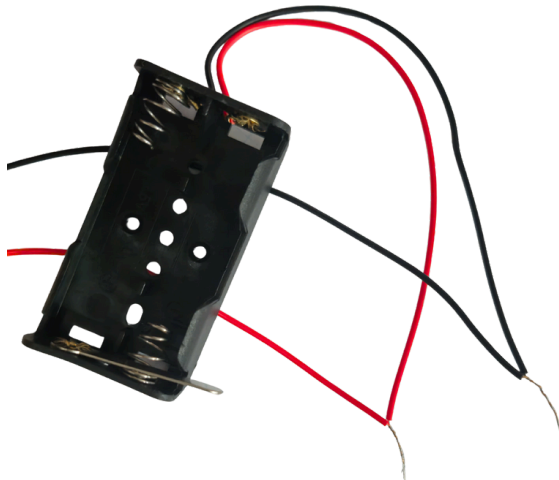
Now take your battery pack with its exposed wires, and the 2 new lead wires you just made.

26



Line the corresponding colours up, red with red and black with black.

27



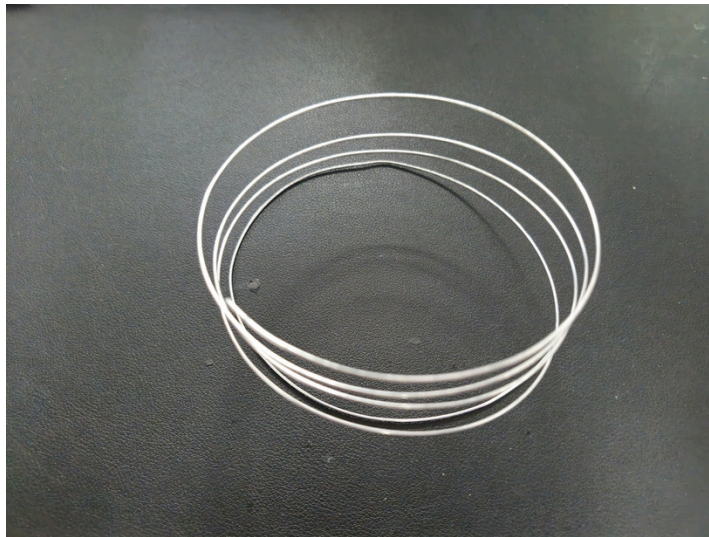
Twist the exposed ends of the corresponding coloured wires together.

28



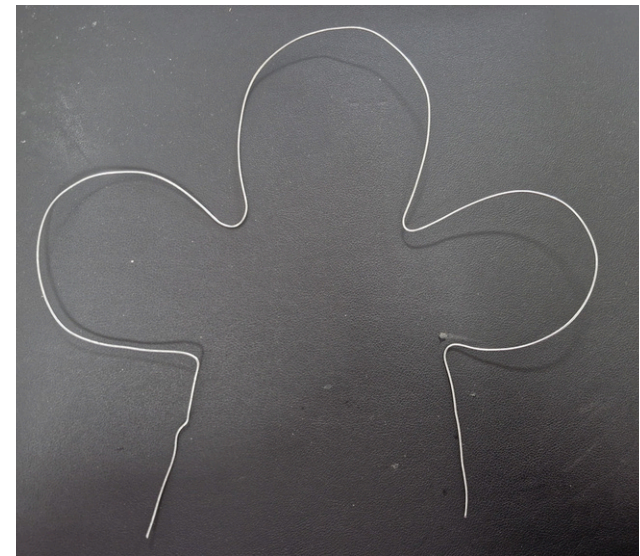
Take the twisted ends and wrap them around each join to secure everything. You can cover the join with some tape if you would like.

29



You have a small roll of wire in your pack. Take some time to unwind it and straighten it out, so that it is easier to bend into the shape you want.

30



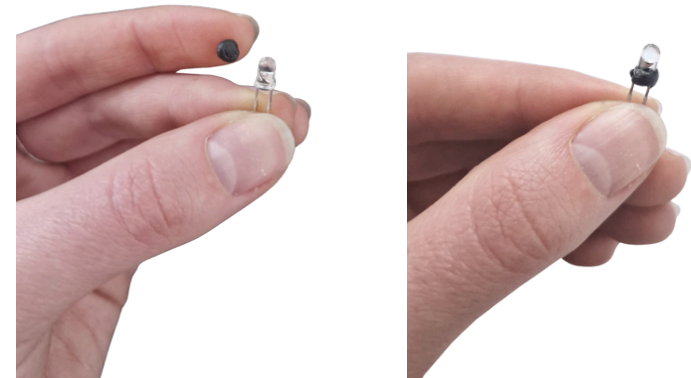
Bend your wire into the shape you would like for your maze. Try and make sure that the bottom ends up being the width of your box. you can cut some wire off if it is too long.

31



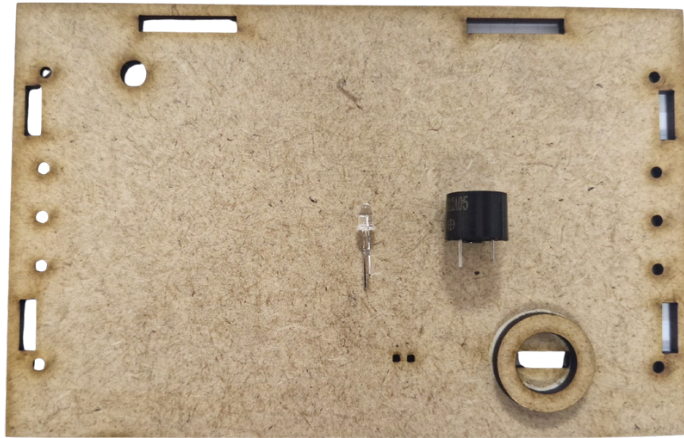
Take the LED from your pack, and use a scissors to cut the legs shorter. You will see that there is 1 short and 1 long leg. Cut the longer leg to 12mm, and the shorter leg to 9mm. **Don't mix them up!**

32



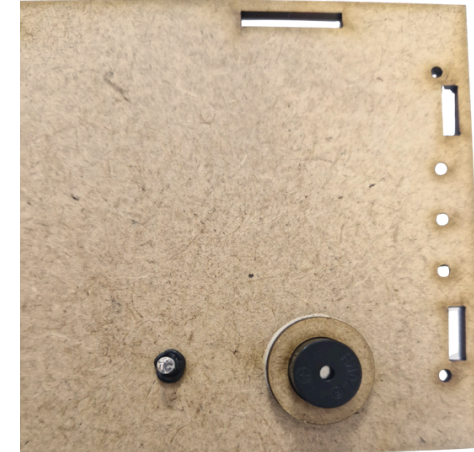
Take a tiny bit of Curious Gum and put it under the bottom of the LED. This will help secure it to the lid when we put everything together.

33



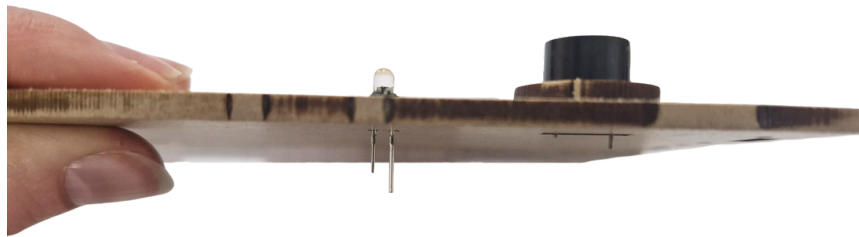
Your lid should now be dry, you can take your LED and your buzzer so we can start putting everything together.

34



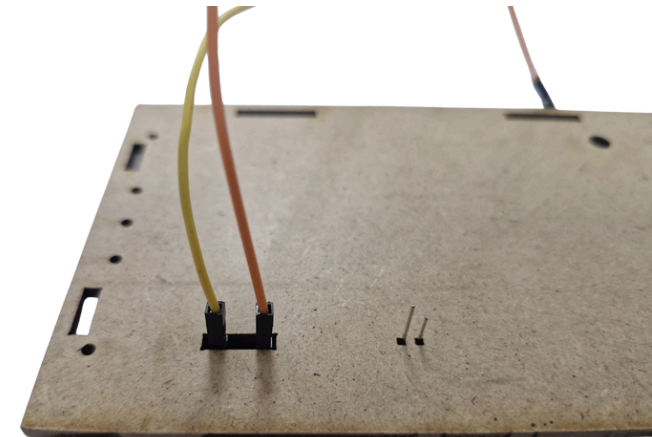
Insert your LED into the 2 little holes, and push it down so that the Curious gum can secure it to the lid. Take your buzzer and slot it into the circle, lining the 2 little pins up with the rectangular slot.

35



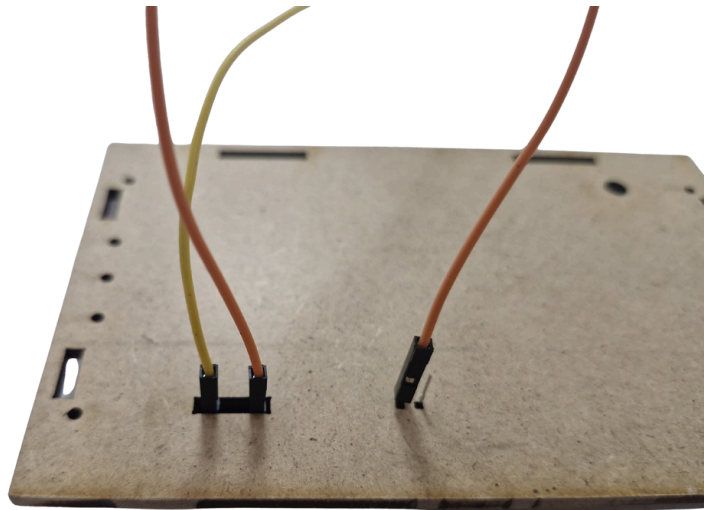
Your lid should look like this from the side, with the pins of the buzzer and LED sticking out the bottom.

36



Separate another 2 lead wires from your pack, and attach them to the 2 legs of the buzzer (Attach orange to the short pin and yellow to the long pin). Make sure they slide onto the pins all the way, you might need to apply some pressure to make sure, but be careful not to bend the pins!

37



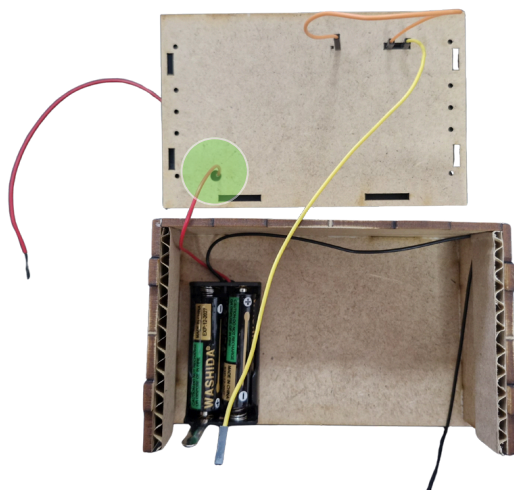
Now take the orange wire that is attached to the short pin of the buzzer, and attach it to the long pin of the LED. Set this aside.

38



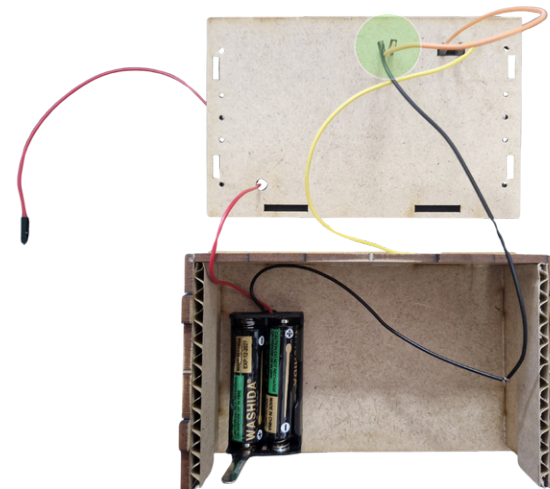
Take your battery pack, insert your batteries (but don't close the switch). Put 2 small pieces of Curious gum on the bottom of the pack, and stick it in place like in the image above, leaving a little bit of space on the left side.

39



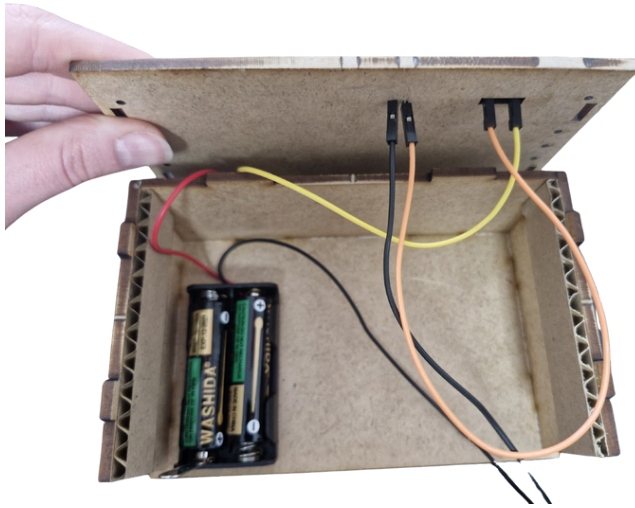
Bring your lid with the LED and buzzer back, and lay it upside down behind your box. Take the red wire from earlier and thread it through the hole in the corner of the lid, so that when the lid is on, it will stick out the top.

40



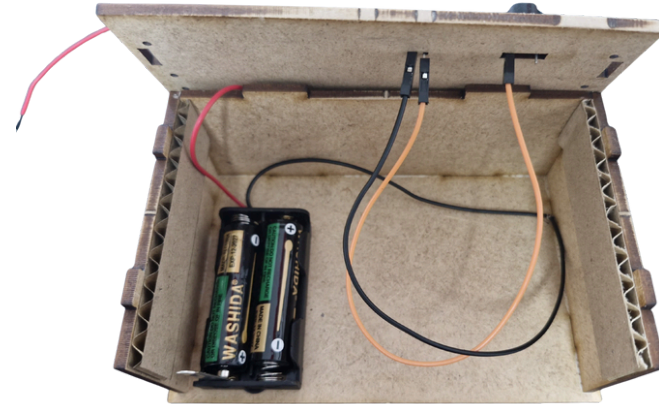
Now take the black wire from earlier, and attach it to the remaining short pin of the LED.

41



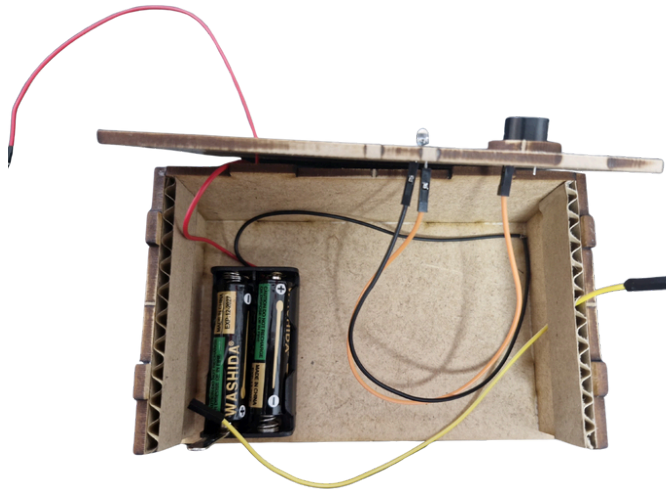
Your wiring should now look like this.

42



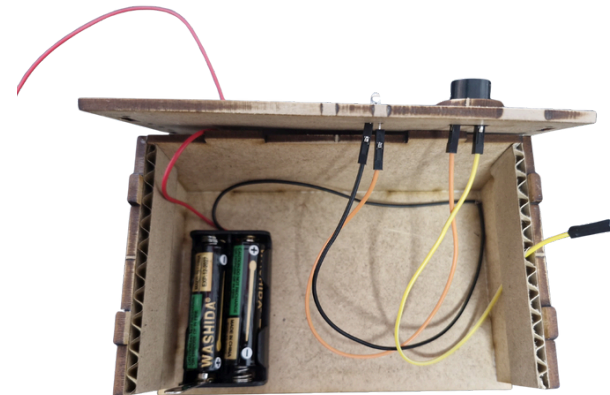
Remove your yellow wire from the buzzer's long pin.

43



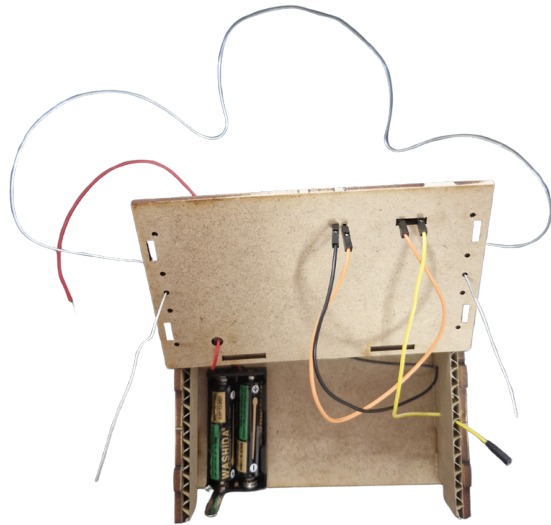
Thread the yellow wire through the **middle** flute of the cardboard on the right side of the box, so that one half is sticking out the top while the other half is inside the box.

44



You can now reattach the yellow wire on the inside of the box, to the long pin of the buzzer.

45



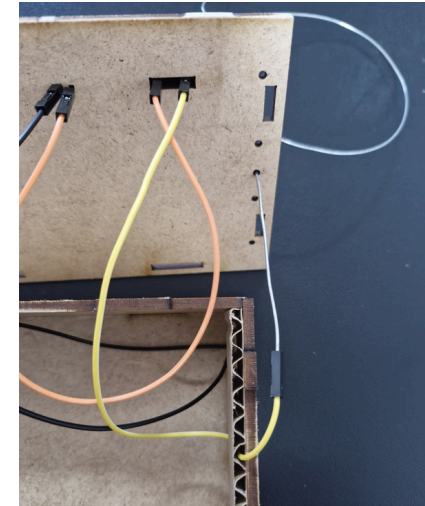
You can now take your wire shape from earlier, and thread each leg through the middle hole on each side of the lid, from the top through to the bottom.

47



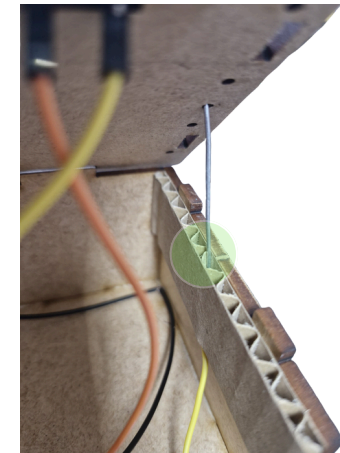
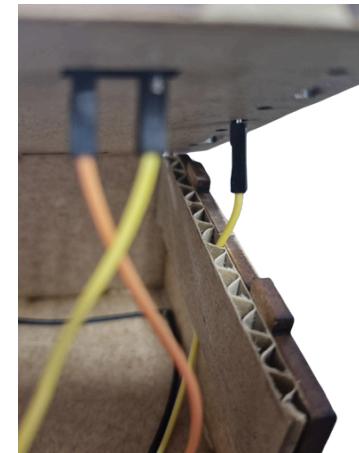
Line up the left leg of your wire shape with the middle flute of cardboard. When you close your lid, this is where the leg will slot into.

46



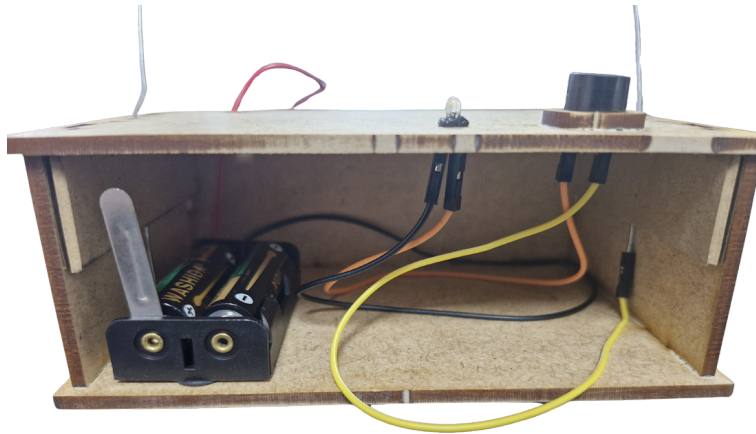
Attach the remaining end of the yellow wire, to the right leg of your wire shape. You will need to apply some force to insert it all the way.

48



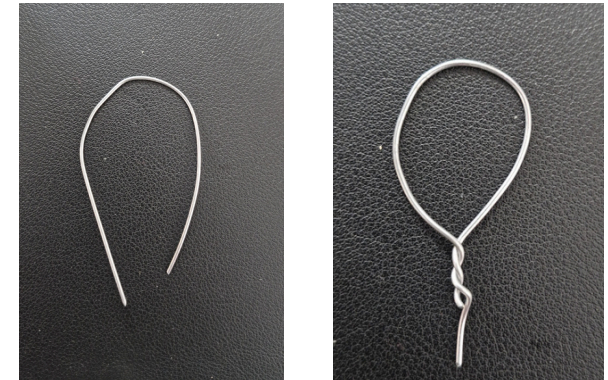
Now that your yellow wire is attached to the right leg of your wire shape, you can slide the wire leg down through the fluted cardboard as you close the lid.

49



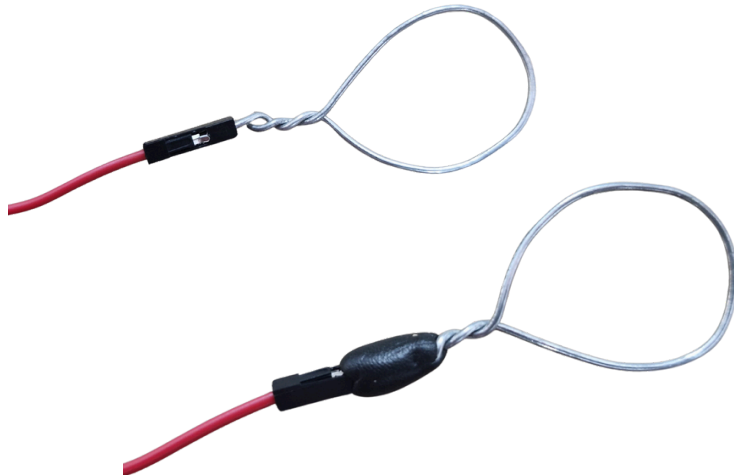
Close your lid tightly, inserting the tabs into the slots, and make sure none of your connections have come undone.

50



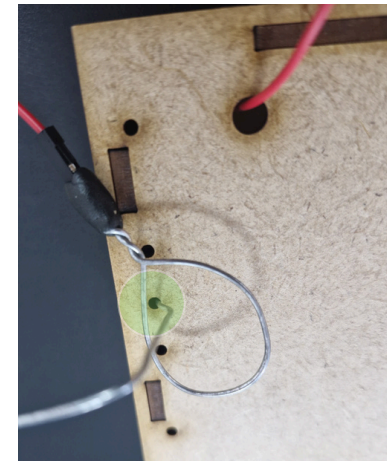
Now take a small piece of wire, about 6cm long (If you want a bigger loop to make your maze easier, you can make this longer). Bend it into an oval shape, with one end longer than the other, and wrap the 2 ends around each other to form a closed loop. You should have a small straight piece at the bottom that is not twisted, this will attach to your last wire.

51



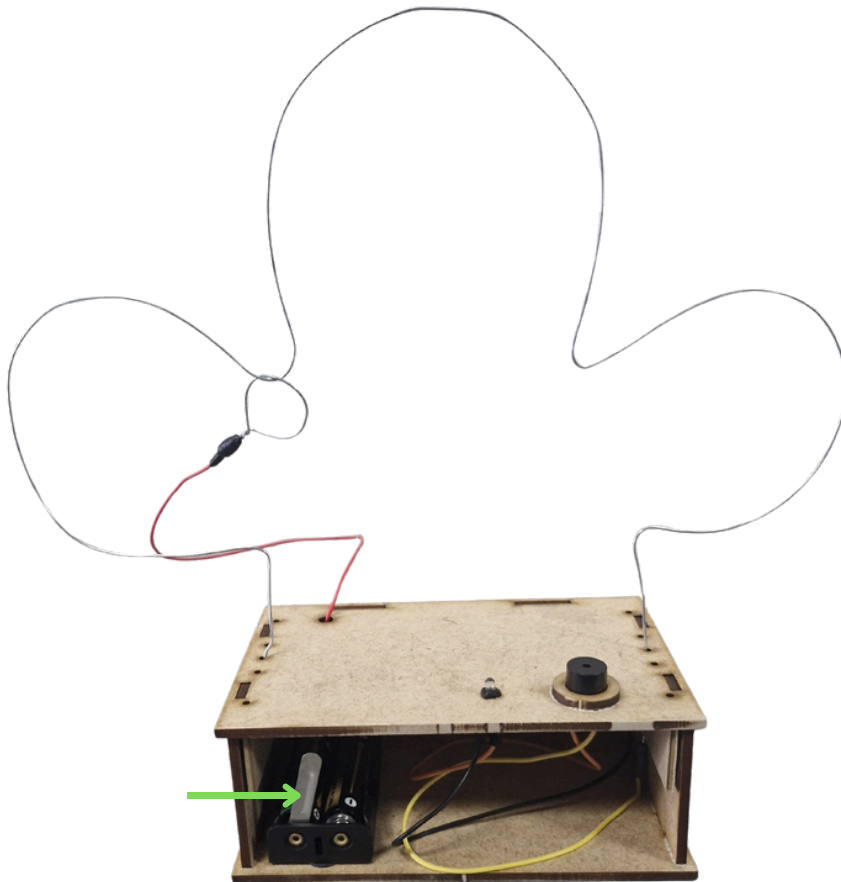
Take the end of your red wire that is sticking out the top of your lid, and insert the straight part of your wire loop into the black connector. Apply some force to make sure it is in properly, and you can use some Curious gum to secure it.

52



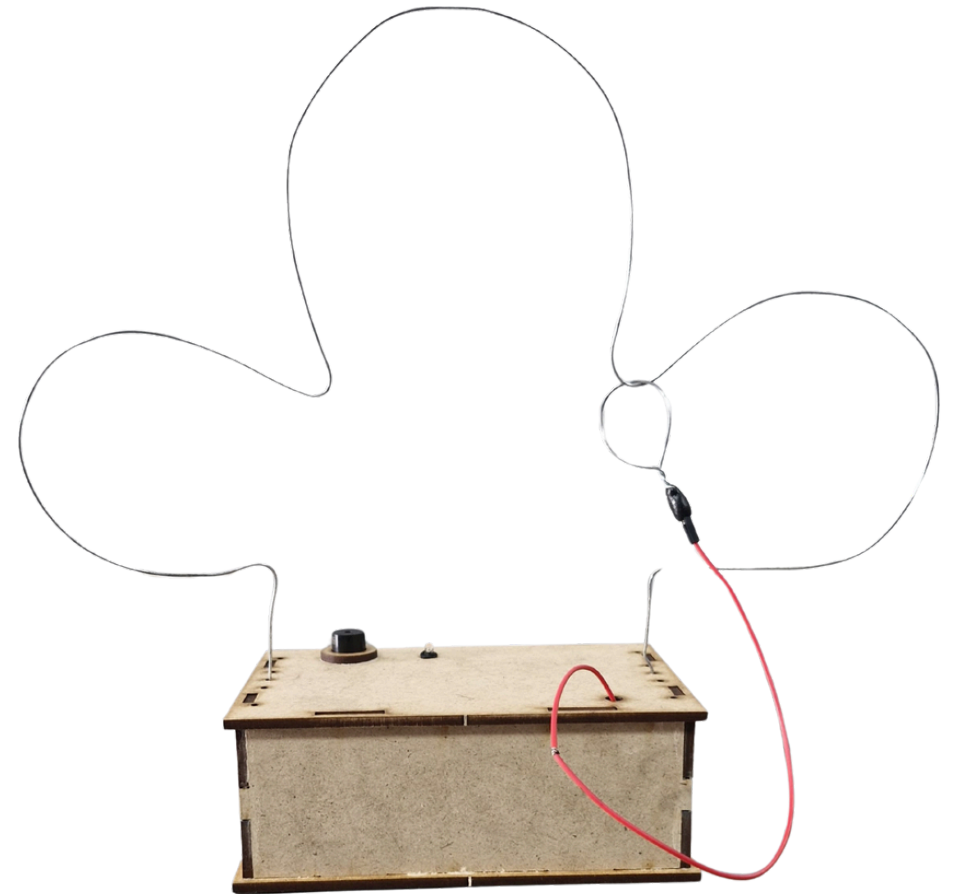
Gently pull the left side of your wire shape out of the hole in the lid, slide your loop onto the end of the wire shape, and insert the wire shape back into the hole.

53



Your Steady Hand Game is complete, and should look like this from the back. Close the switch on the battery pack to power the circuit and start your game!

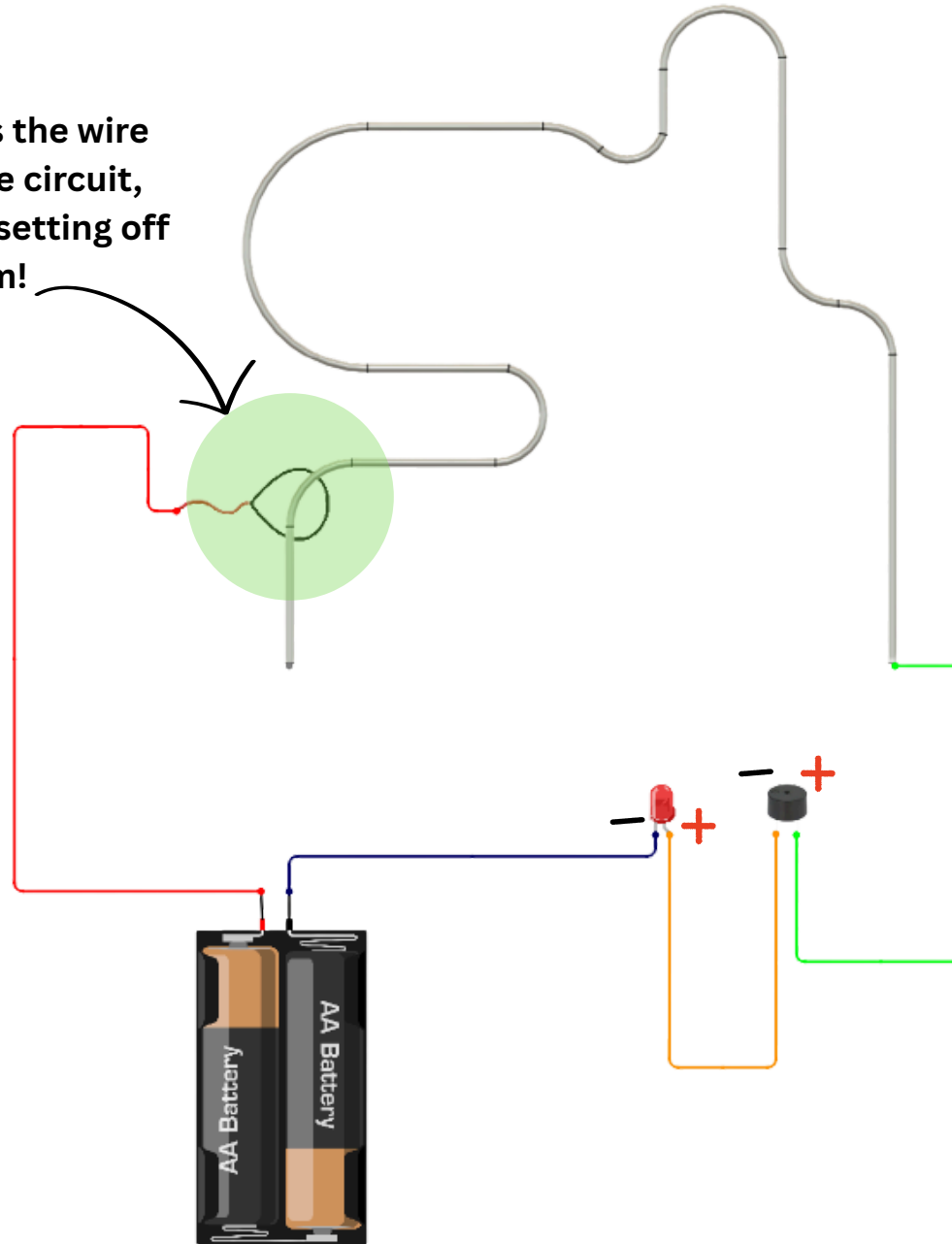
54



Turn your box around to the front, and you can now go and test your friends...**who will make it through your maze without setting off the alarm?**

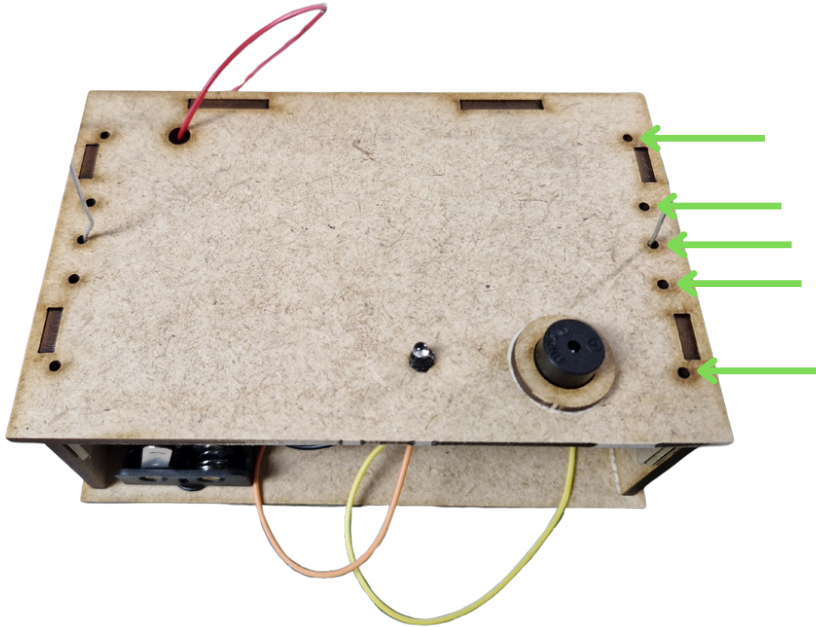
Circuit Diagram

When the loop touches the wire shape, it completes the circuit, lighting up the LED and setting off the buzzer alarm!



Extra Notes

Maze Design



You will see a row of tiny holes along each side of the box, we used the middle holes for the purpose of these instructions.

If you would like to modify the design of your maze shape, you can use the other holes to insert your wire shape into, so that you can go diagonally, or twist it around more, it is up to your imagination! The fluting of the cardboard should line up with each of the holes, giving you a channel to slot your wires into.

Buzzer and LED



If your LED is working but not your buzzer, detach your lead wires from the buzzer and reconnect them to the opposite pins. If your buzzer is working but not your LED, do the same thing with the LED, swap the wires around to the opposite pins and reconnect them.