Memory Game

version 1.0 or 1.1

Build Instructions

FOUR BIT INDUSTRIES.COM

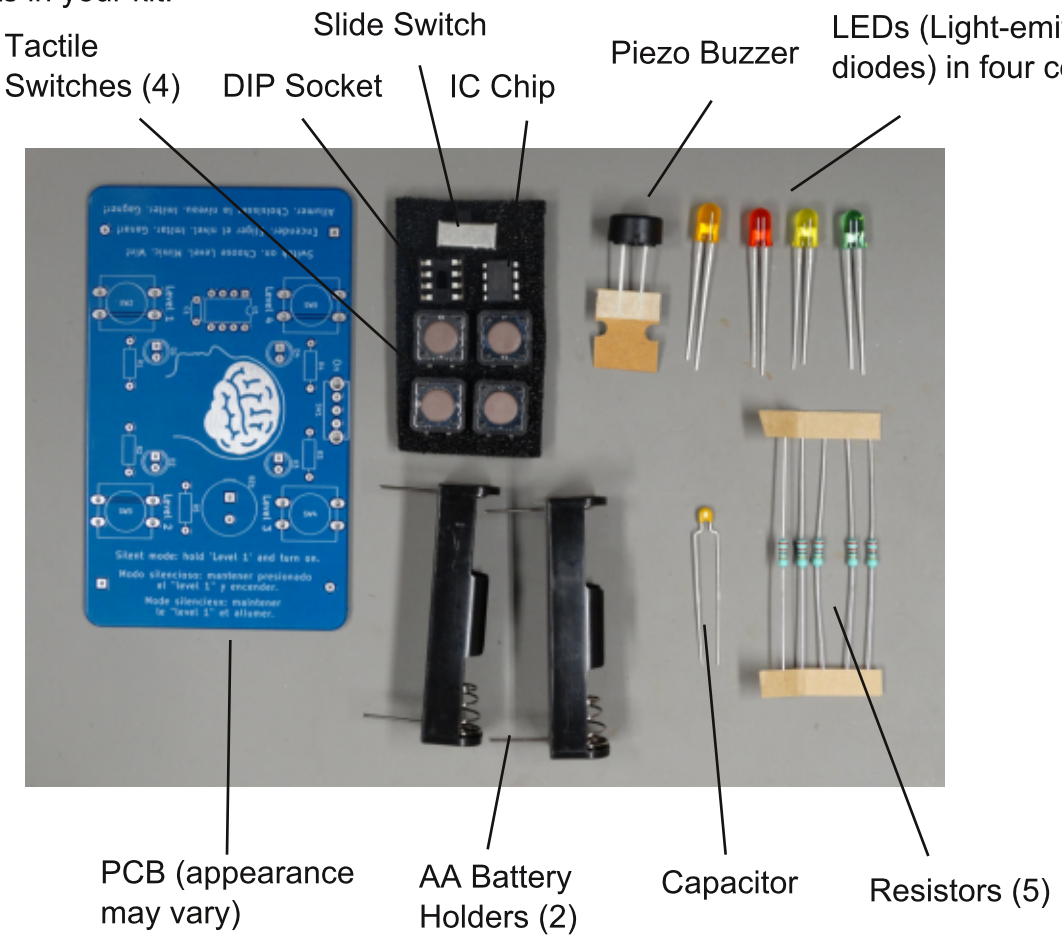
Thank you for purchasing our Memory Game kit. The instructions below will show you the proper placement of all parts into the PCB. Be sure to follow the directions closely as many parts are polarized and will not work if inserted backwards.

If you've never soldered before, consider taking a class at your local hackerspace! We have found a good introductory video from curiousinventor.com on youtube at https://youtu.be/IpkkfK937mU or by following the QR code at right.

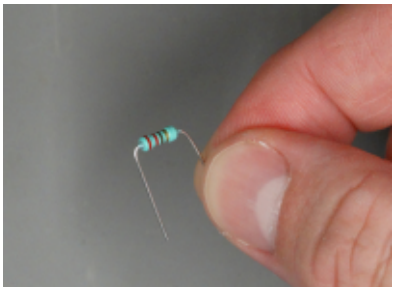
WARNINGS

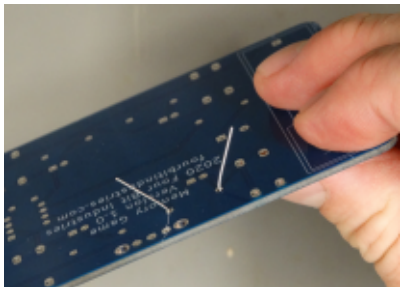
Always follow best safety practices for soldering, including the wearing of eye protection and adequate fume extraction. This kit is not for children.

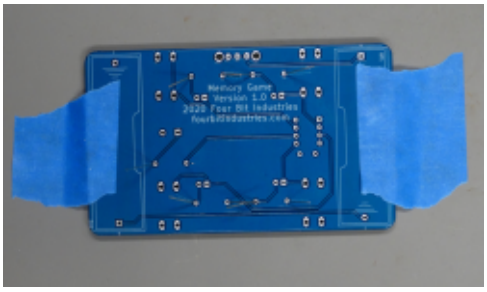
1. Verify the parts in your kit.



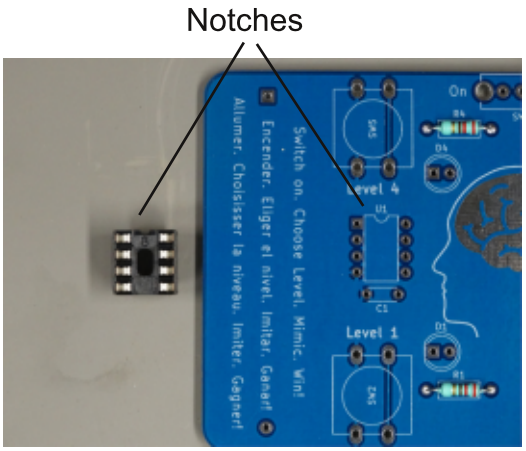
2. Begin by putting in place the five resistors. These parts are all identical and are non-polarized so it doesn't matter which lead is soldered to which pad. Locate the spot marked R1 in the lower left of the PCB. Bend the leads of the resistor so they can go throught the holes on either side of R1. Insert the resistor's leads through the holes and then bend them slightly on the other side of the PCB to hold the resistor in place for soldering. Then solder the leads to the PCB on the back side of the board. You can tape the PCB to your work surface for stability. Do the same for R2 to R5.



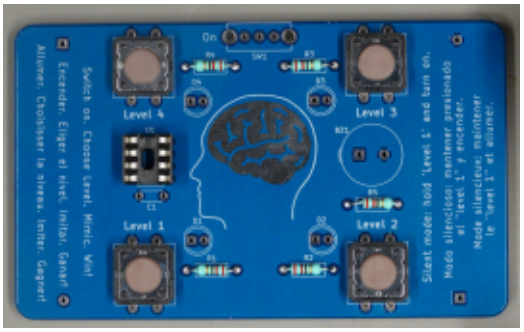




3. Next we will insert the DIP socket. Notice there is a notch in one end of the socket. This notch matches the notch drawn on the PCB. Insert the socket so the notches match and then tape into place. Turn the board over and solder just one pin into place. Check the socket again to make sure it is flush against the board. If it isn't, you can heat the solder joint and nudge it into position. Then proceed to solder the other seven pins.

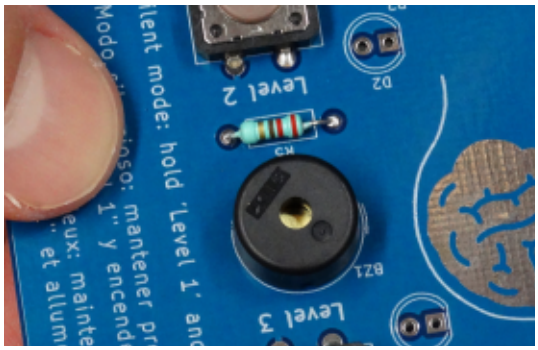


4. The four 12mm tactile switches have bent leads that hold them into place for soldering. Insert them into positions SW2 through SW5 and solder into place.

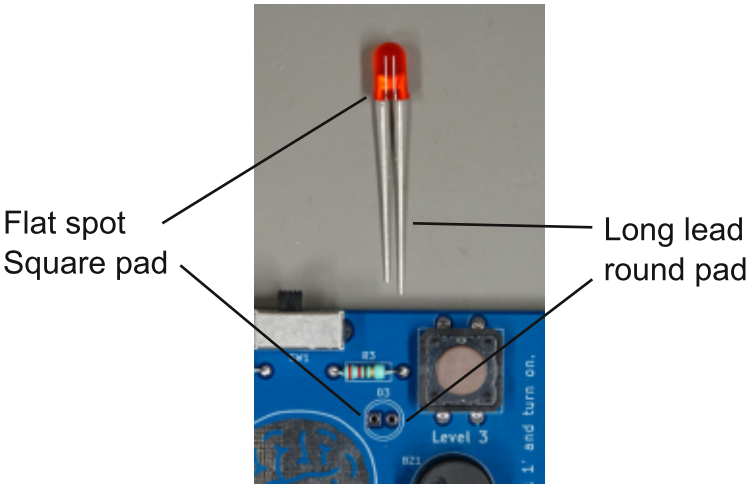


5. Insert the slide switch into position SW1. This one will need to be taped to hold it into place. Solder the three center pins and then solder the two large legs at either end. The legs will require more solder and potentially a higher temperature from your iron, to solder effectively.

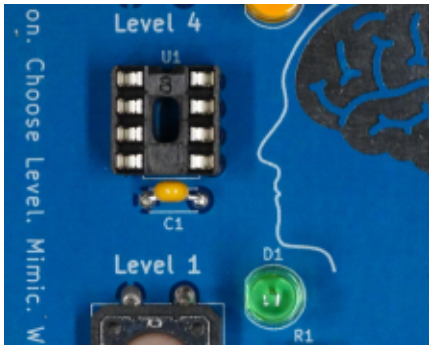
6. Next, insert the piezo buzzer into position BZ1. Unlike many piezo buzzers, this one is not polarized. You can insert it either way around. You can bend the legs on the other side of the board for soldering.



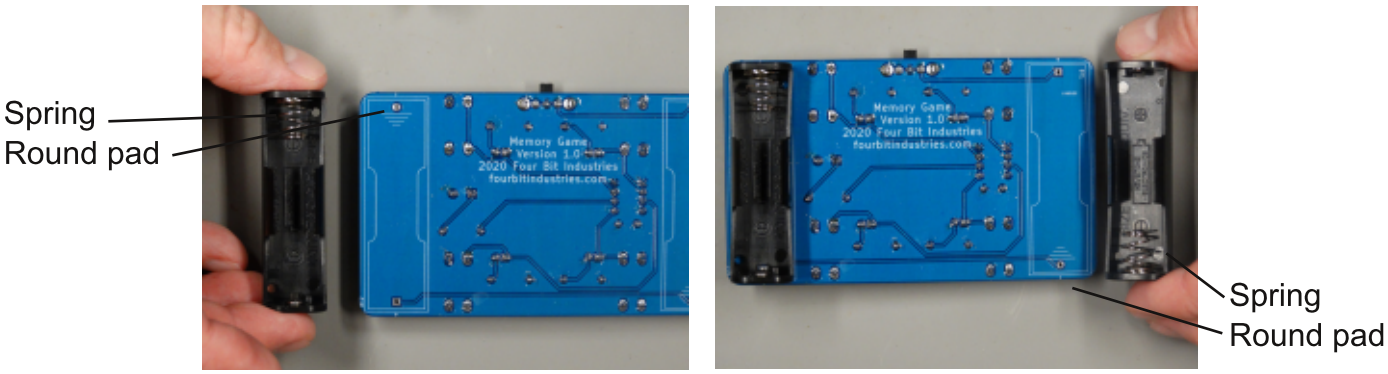
7. It is important to insert the four LEDs in the proper orientation. You will notice there is a long lead and a short lead. The long lead should go throught the hole with the round pad. You can also identify a flat spot on the rim at the base of the LED. This flat spot matches the hole with the square pad and the flat spot on the outline drawn on the PCB. We like arranging the LEDs into D1 through D4 in the order green, yellow, red, orange, but you can insert them in any order you like.



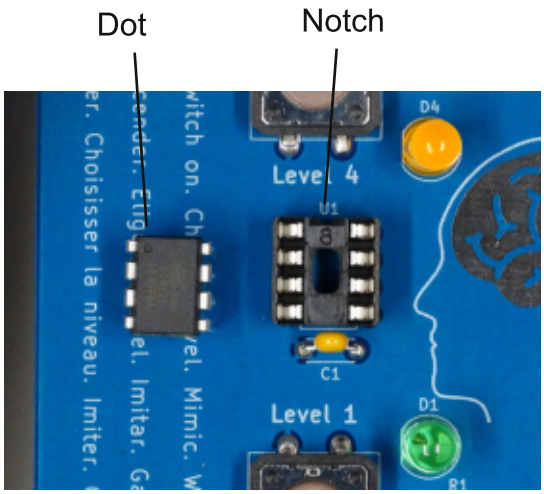
8. We are almost done! There is a small ceramic capacitor that can be soldered into place just below the DIP socket in the spot labeled C1. This capacitor is non-polar. Insert and bend the leads to solder just as you would a resistor.



9. The last item to solder into place are the battery holders. We recommend inserting the battery holders from the bottom of the PCB and soldering them on the top. These must be inserted the correct way around. Match the end with the spring to the round pad with the spring-looking lines drawn by it.



10. Lastly we must insert the IC chip. This must be inserted so that the dot in the upper left is at the same end of the socket as the notch. The leads of your chip will probably flare out so they are hard to insert. To straighten them, roll the chip against the table so that all the leads on one side are bent vertical at once. Then bend the leads on the other side of the chip the same way.



To Play:
1. Insert two AA batteries in the holders on the bottom. Then slide the switch at the top into the "On" position. To activate silent mode, hold the 'level 1' button while switching on the game.
2. Each button has a level number next to it. Choose your level by pressing the corresponding button. The level chosen decides how long a sequence of lights counts as a 'win': Level 1: 6; Level 2: 10; Level 3: 16; Level 4: 24.
3. The game will confirm your sellection by flashing the closest light 5 times. Then it will pause.
4. The game will start by flashing a single light. Then you must press the button next to that light. The game will then light two lights in sequence. You must press the buttons by those lights in sequence. The sequence will get longer and longer until you make an error or win the game.
5. If you make an error, the game will make a sad noise and activate the light next to the button you should have pressed. If you win, the game will play a happy song. Good luck!

Did you know?
Four Bit Industries is happy to customize kits like this one!
Contact us!
mrfourbits@fourbitindustries.com