maycar
by jaycar

learn to solder:
Electronic Dice Kit

Thank you for purchasing the Electronic Dice Kit

Take your soldering skills to the next level with this Electronic Dice Kit.

Once built, you simply shake the module to generate a random number between one a six, indicated by the LEDs on the top!

Powered by a CR2032 battery (not included).

If this is the first time you are getting into electronics and handling a soldering iron, please download our Soldering Guide from our website.

**Build Instructions &
Soldering Guide available at:**
www.jaycar.com.au/p/KM1099

A GOOD SOLDER JOINT

The diagram here shows you a good solder joint and two bad solder joints. A good solder joint is clean and shiny with a "volcano" shape, which means the component's leg is fully soldered to the entire solder pad on the circuit board. If your solder joint is like the one shown in the middle, it means you have not applied enough heat to the solder pad on the circuit board. If your solder joint looks like the one on the right, it means the component leg was not heated enough by your soldering iron for the solder to join properly.

GOOD	BAD	BAD
Shiny "Volcano" type shape	The solder pad is too cold	Component leg too cold
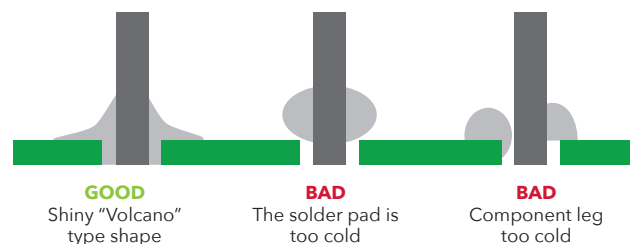
RECOMMENDED TOOLS. You will need the usual Maker essentials, including a soldering iron (TS1652 Soldering Iron Kit), solder (NS3010), and side cutters (TH1897). A third-hand PCB holder (TH1987) is also recommended to make soldering easier.

Disclaimer: Content can change without prior notice. Please visit the website page for the most up-to-date information.

Kit contents:

QTY	PRODUCT	PCB MARKING / COMMENT
1	Circuit Board Top	L1-L7 markings is the top board
1	Circuit Board Bottom	E1 marking is the bottom board
1	1MΩ Resistor (Brown-Black-Green-Gold)	R8
7	560Ω Resistor (Green-Blue-Brown-Gold)	R1 - R7
7	Red LEDs	L1 to L7
1	12F508-I/P IC	U1 (Align with the notch)
1	IC Socket	For the 12F508-I/P IC
1	10µF 50V Electrolytic Capacitor	C2
1	0.1µF Monolythic Capacitor	C1
10	M3 x 6mm Screws	For spacing the two PCBs
5	M3 x 20mm Metal Spacers	For spacing the two PCBs
1	CR2032 Battery Holder	E1
1	Tilt Switch (SW-200D)	S1

Solder components onto the top and bottom circuit boards, then fix together with the included spacers and screws.

Pay close attention to the way some of these components go in because some of them only work in one direction, including the LEDs.
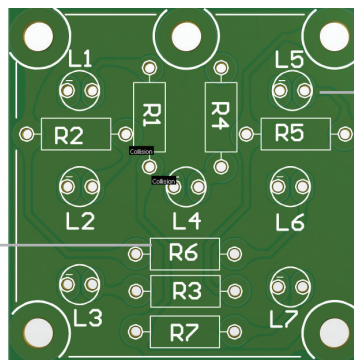
Cathode (-)
(Flat Edge)

Anode (+)

LEDs. The short leg of the LED is the negative (-) leg. These need to go into the circuit board marked with the - symbol.

TOP BOARD

RESISTORS. Resistors can go into the circuit board in either direction. The colour bands indicate the resistor value (See parts list for the colour bands). Make sure you insert the correct ones into the circuit board.
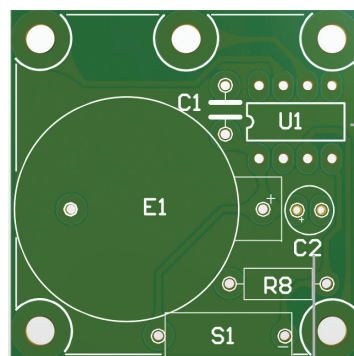
MONOLYTHIC CAPACITOR. This capacitor (C1) can be soldered in either way.

INTEGRATED CIRCUIT (IC). Instead of soldering the IC into the circuit board we have supplied an IC socket. Solder the IC socket into the circuit board, then insert the IC into that socket once all of the other soldering is complete. Make sure the IC is inserted with the notch in the end matching the diagram printed on the circuit board.
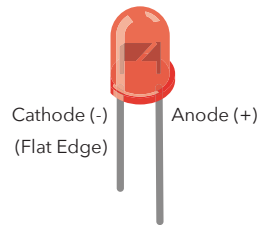
FINAL STEP. Solder in the switch (S1) and the battery holder (E1). Insert a CR2032 battery and then tightly screw the two boards together using the supplied spacers and screws. These need to be tight to make electrical connection between the two boards. Shake and the Dice should work.

BOTTOM BOARD
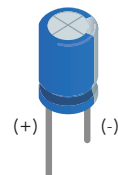
(+) (-)

ELECTROLYTIC CAPACITOR. This capacitor (C2) needs to be inserted into the circuit board with the longer leg going into the circuit board marked with the + symbol.