# **TAPING PAPER CIRCUITS**

## SIMPLE CIRCUIT



In the simplest circuit, the + tab of an LED is connected to + on the battery and the - tab of this LED is connected to - on the battery. Connections are made with copper tape (shown in grey in the diagram).

The LED can be taped or soldered to the copper.

To secure the battery and create electrical connections between it and the copper tape, fold a corner of the page over and clip it around the battery.

Behavior: LED is always on.

#### **CIRCUIT W/ SWITCH**



In this simple circuit with a switch, the - tab of an LED is connected to - on the battery and the + tab of this LED is connected to a piece of copper tape. A third piece of tape is connected to + on the battery. A gap (shown at the bottom of the diagram) is left between these two pieces.

When a conductive material is placed between the gap, the switch is "closed" and the LED turns on. Use another piece of copper tape or any conductive material (paper clip, aluminum foil, keys...) to close the gap.

**Behavior:** LED is on when the switch (gap) is closed.

### **ADDING LEDS**



Add LEDs by connecting the + tabs of additional LEDs to the + tab of the first LED and the - tabs of additional LEDs to the - tab of the first LED.

This is called adding LEDs "in parallel". You can add as many LEDs as you want. As you add more, they'll all get slightly dimmer.

Junctions between two different pieces of copper tape need to be soldered together to create a robust electrical connection.

**Behavior:** All LEDs are on when switch is closed.

high-low tee

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### **NOTTUA HRUG A**



| middle layer |  |
|--------------|--|

| 11 |  |
|----|--|
|    |  |

a second piece of paper. button design with additional layers cut from with a switch, but it uses a 3 layer push This circuit is similar to the simple circuit

they're cut out. LED. Tape all the layers together once down it will close the switch and turn on the copper tape. When any strip is pressed pressed. The top layer has 3 strips of switch from closing when it is not being The middle layer is a spacer to keep the

is slid across the switch. closed. LED blinks on and off when a finger Behavior: LED is on when the switch is

### *SJAIRETAM*

Digikey: http://www.digikey.com/ All electronics can be purchased from

Digikey part # P033-ND Coin cell battery, CR1220



line, an arrow or green coloring. the - side is often marked with a dot, a Digikey part # 160-1737-1-ND Surface mount LED





Digikey part # 3M1181A-ND 1/4" copper tape





+ card stock paper Clear tape or soldering iron & solder







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