

I. [Arduino Electronic Dice Project with Accelerometer](#)

Here's how it works - pick up the die, shake it, watch while the numbers change until it stops on a number between 1 and 6. It's that simple... It's just like a real die except it's huge and has circuitry and a 3D printed enclosure.

<https://github.com/gmossy/Accelerometer-eDice>

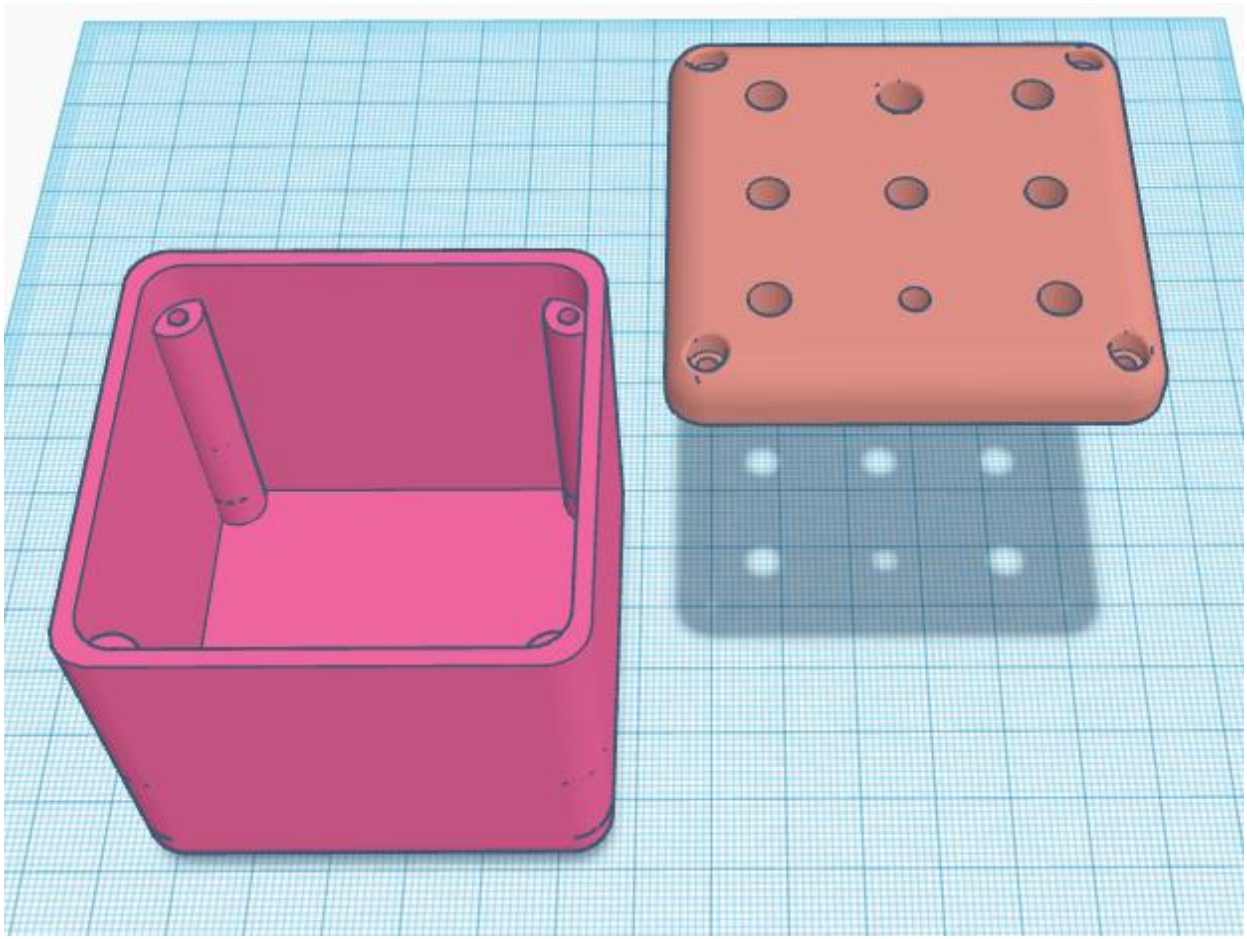


Figure 1 The 3D Printed Enclosure



Figure 2 Original idea: <https://www.thingiverse.com/thing:972220>

II. Arduino Dice Parts List

1. Arduino Nano

ELEGOO for Arduino Nano V3.0, Nano Board CH340/ATmega328P with USB Cable, Com...

https://www.amazon.com/dp/B071NMBP4S/ref=cm_sw_r_tw_dp_U_x_mKxpCbMRBHE9Y

□ You could download the driver of Elegoo Nano V3.0 at: <http://bit.ly/2jKIJMO>

□ The Nano is using the chips ATmega328P and CH340, not FT232 as official Arduino, so pls. use the driver from above link.

2. MMA7361 3-axis Accelerometer Sensor Module accelerometer

<https://moderndevice.com/product/3-axis-accelerometer-module/>

or

https://www.amazon.com/dp/B00UJ67S8W/ref=cm_sw_r_tw_dp_U_x_PD2pCbTW2K0W7

3. 7 Leds

https://www.amazon.com/dp/B07DLF1RCW/ref=cm_sw_r_tw_dp_U_x_yu2pCbNDSMHF4

4. 7 330 ohm resistors

Resistor 330 Ohm 1/4 Watt PTH

<https://www.sparkfun.com/products/14490>

5. 10k ohm Resistor 10K Ohm 1/4 Watt PTH

<https://www.sparkfun.com/products/14491>

6. Small push button

MakerSpot 6mm 2 Pin Panel PCB Momentary Tactile Tact Push Button Switch Throu...

https://www.amazon.com/dp/B06XT3FLVM/ref=cm_sw_r_tw_dp_U_x_7lxpCbW1Y1Z36

or

Mini Micro Momentary SPST Push Button Switch On/Off Normally Open 1A 250V AC 2 Pins Automatic Reset Button Switch, 15 Pac

https://www.amazon.com/dp/B07HH2QZ1Z/ref=cm_sw_r_tw_dp_U_x_rl2pCb0PSD787

7. Piezo Buzzer

Uxcell a12081600ux0477 12 mm Diameter 5 Piece DC 5V 2 Terminals Electronic Co...

https://www.amazon.com/dp/B00B0Q4KKO/ref=cm_sw_r_tw_dp_U_x_sGxpCb6CGB98D

8. Li-po charger

5pcs 3.7V 400 mAh 303040 Li-polymer battery Li-Po \$10.99 for 5, Model: LP303040/033040, 400mAh, Width 30mm x 3mm

<https://www.ebay.com/itm/5pcs-3-7V-400-mAh-303040-Li-polymer-battery-Li-Po-for-bluetooth-mp3-mp4-reader-/253527372480>

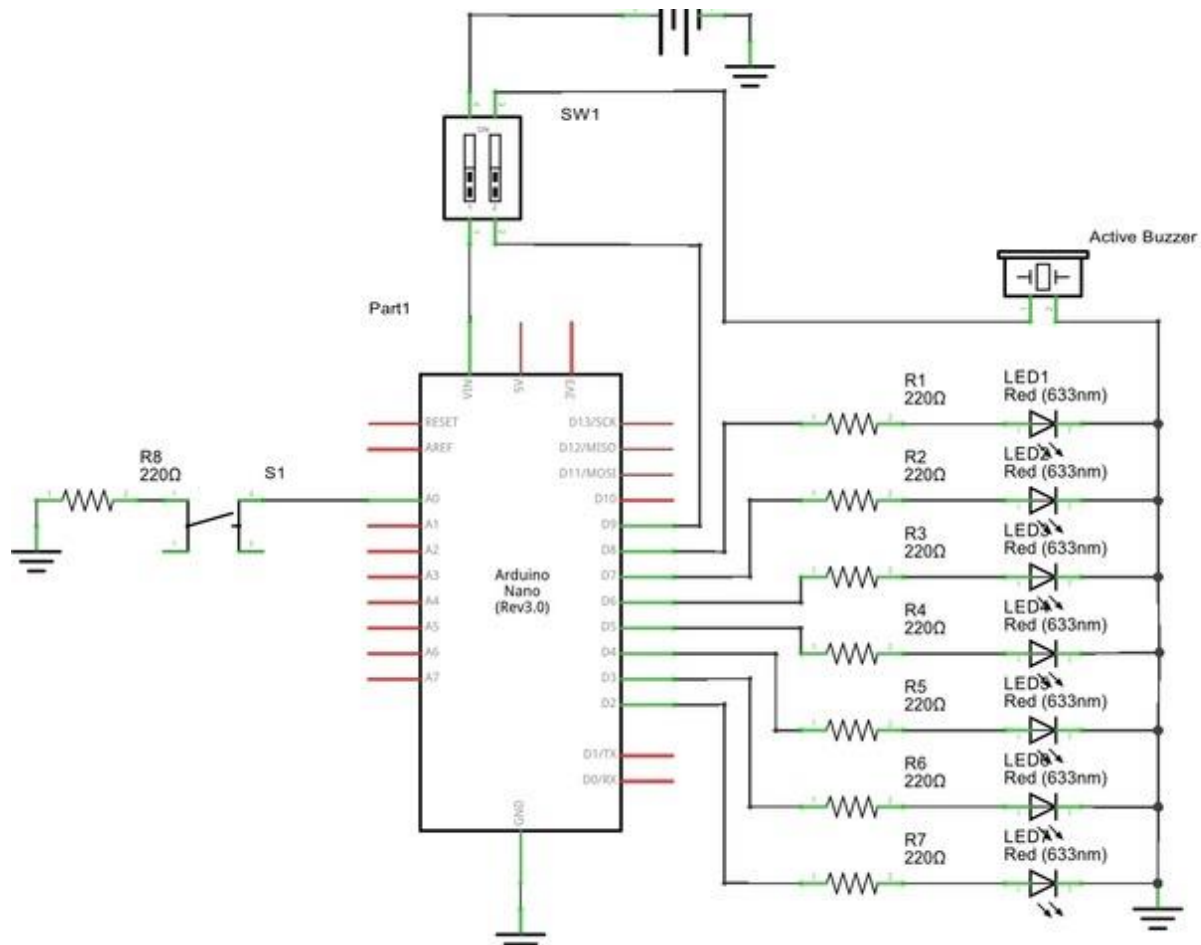
or

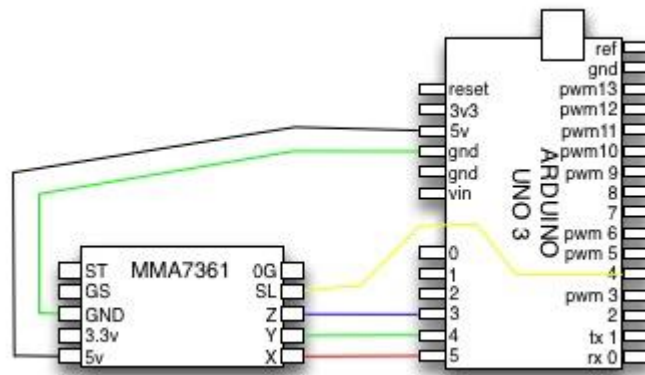
Icstation TP4056 Micro USB 5V 1A 18650 Lithium Battery Charger Board

https://www.amazon.com/dp/B01LHD9D7E/ref=cm_sw_r_tw_dp_U_x_IG2pCbMDBM69F

9. STL file: Original thing: <https://www.thingiverse.com/thing:972220>

III. Schematic





IV. Components

a. The Arduino Nano

Arduino Nano Pinout Description

Taking this pin-out diagram below as reference, we shall discuss all the functionalities of each and every pin.

<http://www.circuitstoday.com/arduino-nano-tutorial-pinout-schematics>

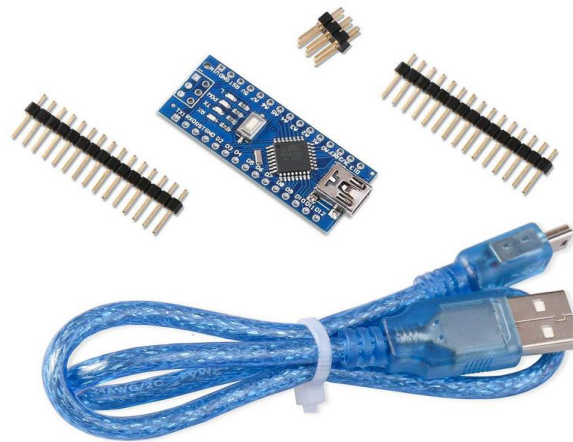
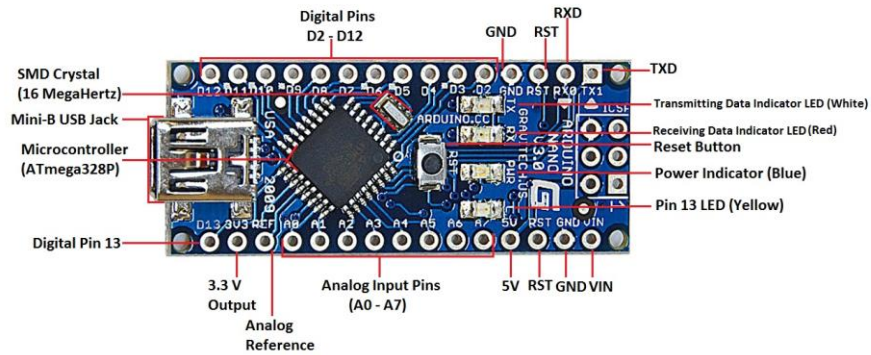
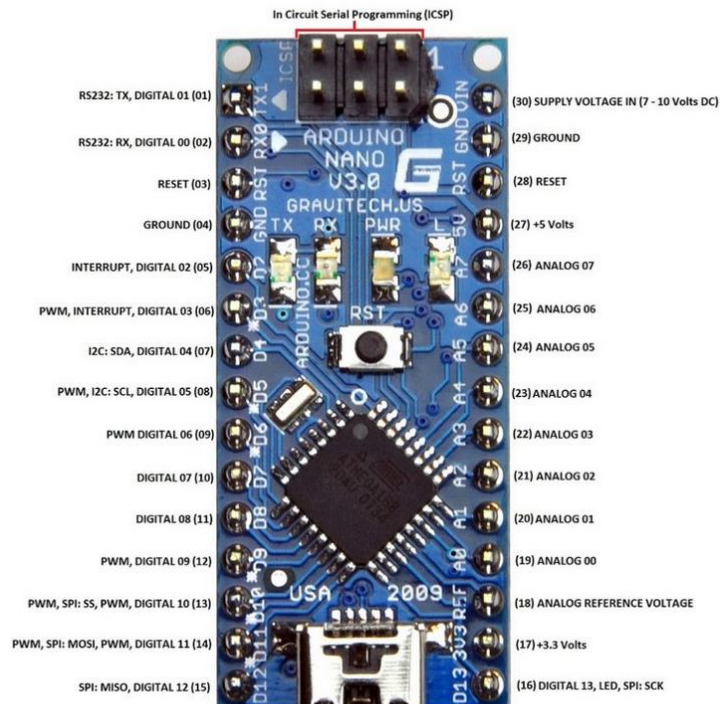


Figure 3 ELEGOO for Arduino Nano V3.0, Nano Board CH340/ATmega328P with USB Cable, and Compatible with Arduino Nano V3.0



Arduino Nano V3.0 Pinout

www.CircuitsToday.com

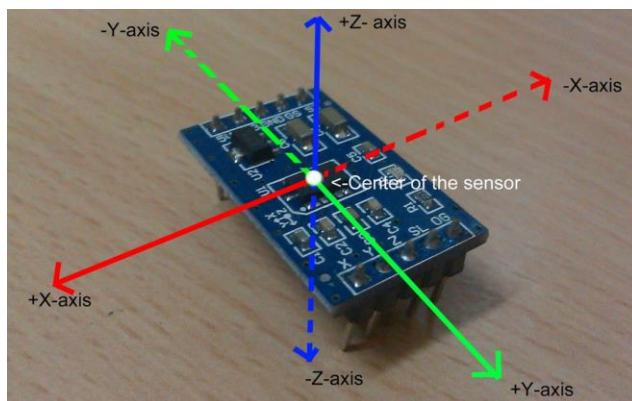
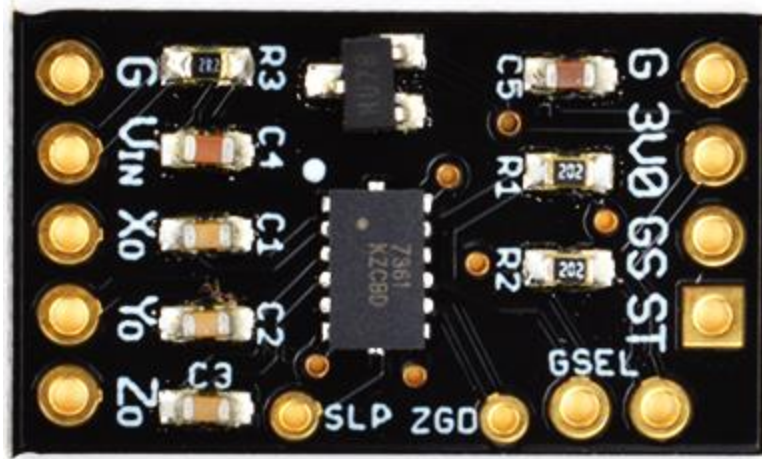


Arduino Nano V3 - Pin Description

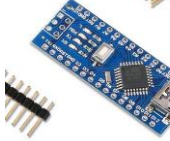



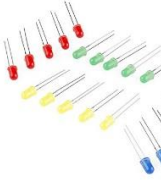



www.CircuitsToday.com

V. The MA7361 Acccelerometer

<https://moderndevice.com/product/3-axis-accelerometer-module/>



VI. Parts

							
<p>Arduino Nano</p>	<p>MMA 7361 3-Axis Accelerometer</p>	<p>Mini Micro Momentary SPST Push Button Switch</p>	<p>The Piezo Transducer Uxcell a12081600 ux0477 12 mm</p>	<p>LED- Assorted</p>	<p>Icstation TP4056 Micro USB 5V 1A 18650 Lithium Battery Charger Board</p>	<p>330 Ohm Resistors</p>	<p>10K ohm Resistor</p>

I. The Code

VI. References

Measuring tilt using an Accelerometer(Part 2):Details of Accelerometer MMA7361L and its board

<https://www.youtube.com/watch?v=H4p-usK4tqw>

// Arduino Dice

// by Glenn Mossy Dec 13, 2018

// add interrupts <http://gammon.com.au/interrupts>

/* Thingiverse case:

* <https://www.thingiverse.com/thing:972220>

*/

//Dice functions "sides" derived from edice @ thing:972220.

//Some parts derived from Gus @ pimylifeup.com

//Accelerometer code derived from <http://crackeconcept.blogspot.com/2014/11/using-accelerometer-with-arduino-with.html>

//

<https://www.thingiverse.com/thing:972220>

<https://pimylifeup.com/arduino-dice/>

<http://crackeconcept.blogspot.com/2014/11/using-accelerometer-with-arduino-with.html>

[Tutorial to make a PCB with Eagle](#)

<https://learn.sparkfun.com/tutorials/using-eagle-schematic/all>

[3D Printed bar graph](#)

<https://bikerglen.com/blog/custom-3d-printed-led-bar-graphs/>

