Department of
ELECTRICAL & COMPUTER ENGINEERING
THE UNIVERSITY OF UTAH

featuring a
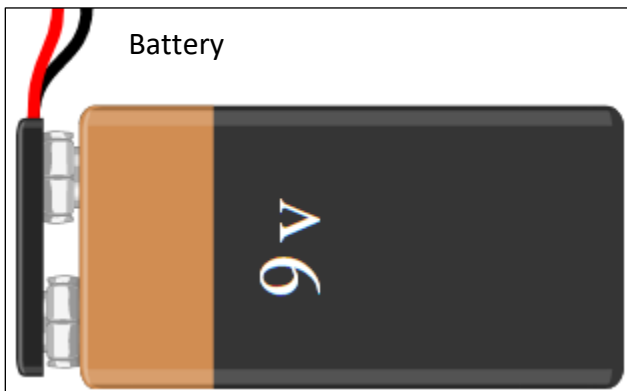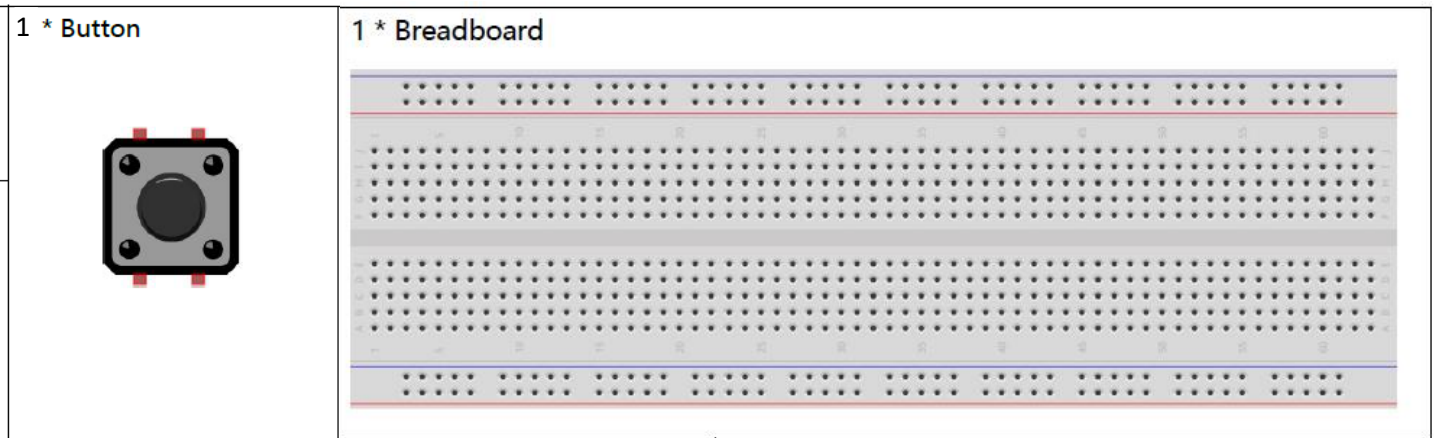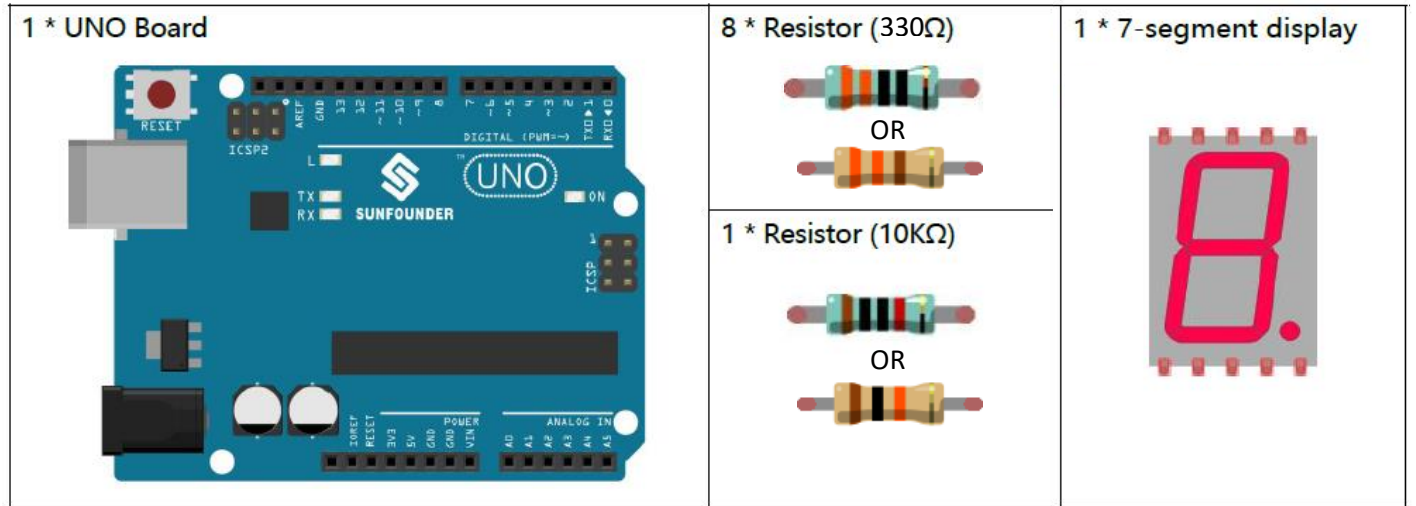SunFounder
Arduino Kit Activity

Building Digital Dice

Today we will build a circuit simulates rolling a die. When you press the button a random number 1-6 will appear on the digital display. Our goal is to build a working circuit, and it is ok if we do not understand exactly how each part works. And as always, do not be afraid to ask questions—that is how we learn!

STEP 1: Parts Needed   Open your lab kit and find the following parts.

1 * UNO Board	8 * Resistor (330Ω)	1 * 7-segment display
	OR	
	1 * Resistor (10KΩ)	
	OR	

1 * Button	1 * Breadboard

Battery

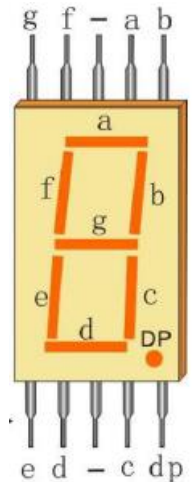Battery Connector

Several Jumper Wires
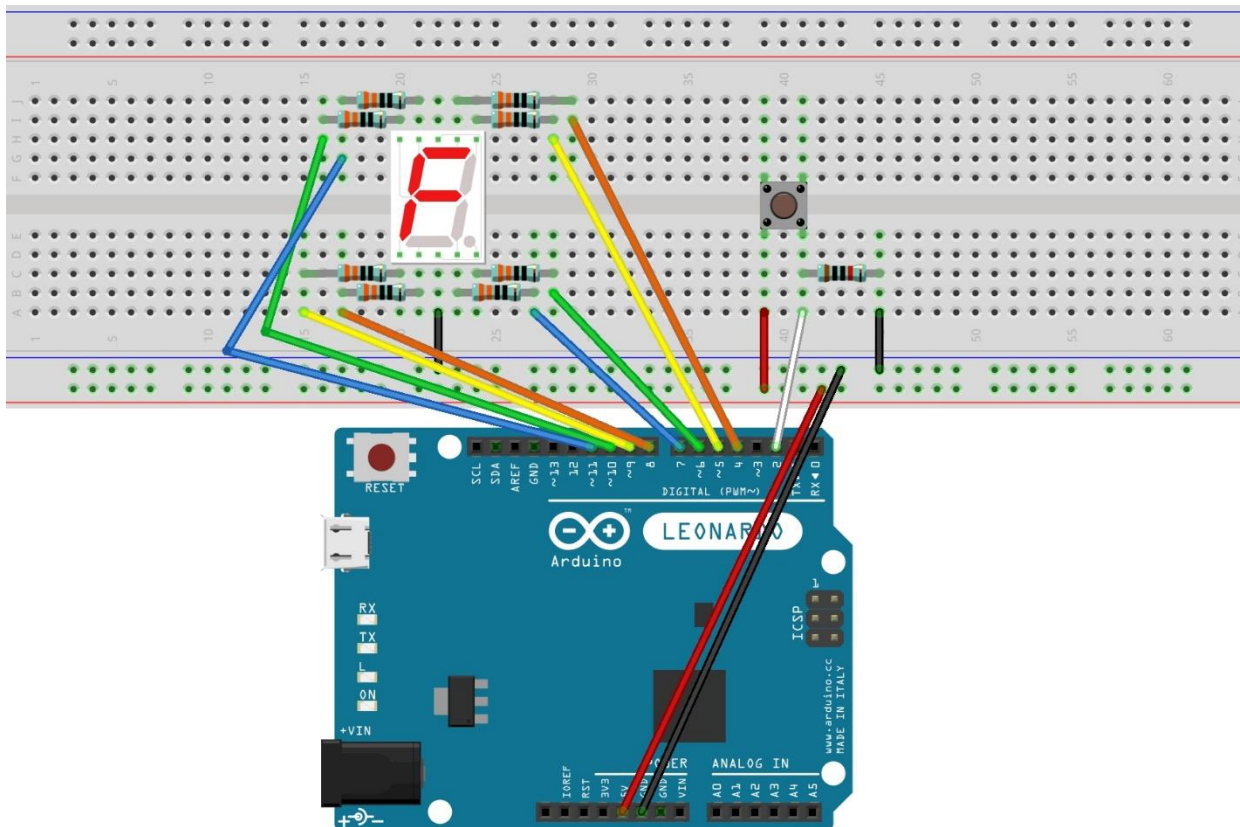
STEP 2: How the Segment Display Works

The segment display has 7 different segments that can be individually lit up to create numbers and letters.   Applying 5 volts to the pin for each segment will turn it on.

STEP 3: Build the Circuit

Go clockwise (from 12 o'clock) around the digital display connecting the wires to pins 4-11.

Segment	a	b	dp	c	d	e	g	f
Arduino Pin	4	5	6	7	8	9	10	11

STEP 4: Power the Circuit   Connect the battery to the microcontroller (UNO board).
(The code to run the circuit is already preinstalled.)

STEP 5: Play with the Circuit   Are the numbers truly random? Are there any problems when you double click the button really quick?

Did you enjoy the activity today?

We used the SunFounder Arduino Uno R3 Starter Kit today.
This is just one of dozens of fun activities that comes with this kit.
You can buy this kit for $40 on Amazon, and try them all!

Get the
kit here!

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