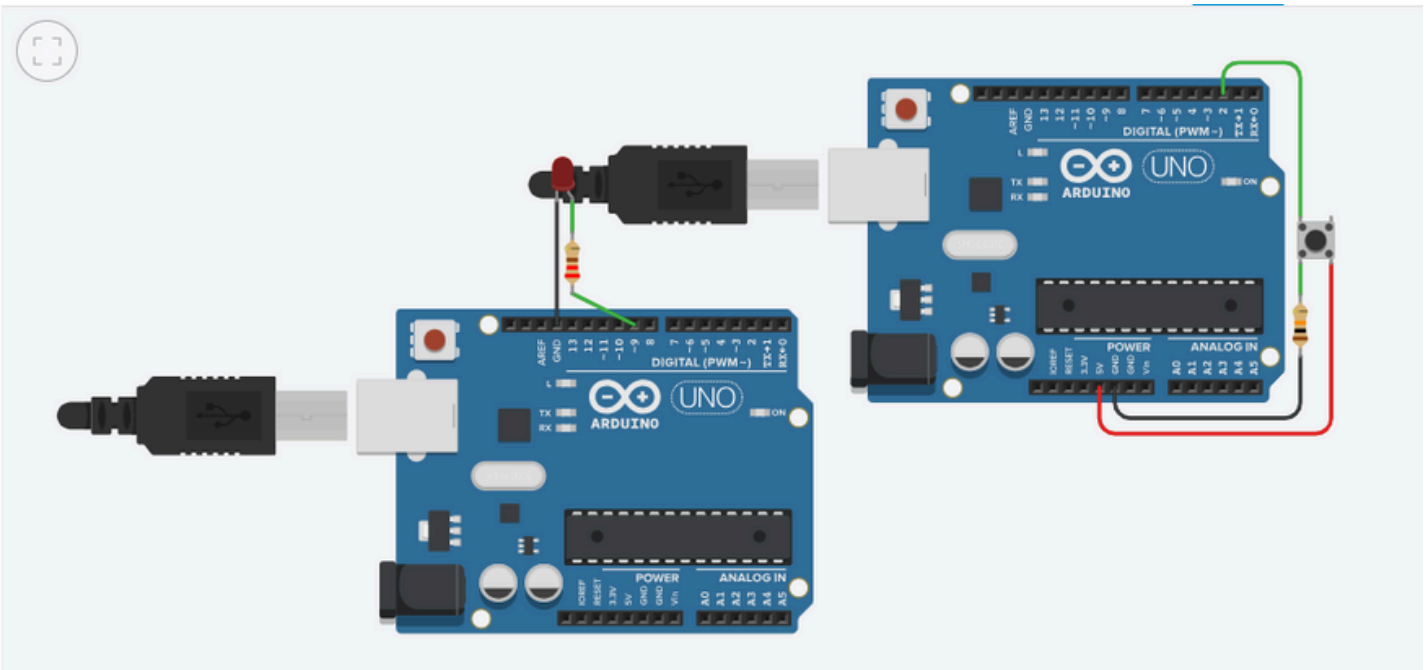
Blink an LED With Arduino in Tinkercad

Let's learn how to blink an LED (light emitting diode) using Arduino's digital output. If you're new to Arduino, this is a great place to start. We'll connect an LED to the Arduino Uno and compose a simple program to turn the LED on and off.



Name	Quantity	Component
U1 U2	2	Arduino Uno R3
R1	1	220 Ω Resistor
D1	1	Red LED
R2	1	10 kΩ Resistor
S1	1	Pushbutton

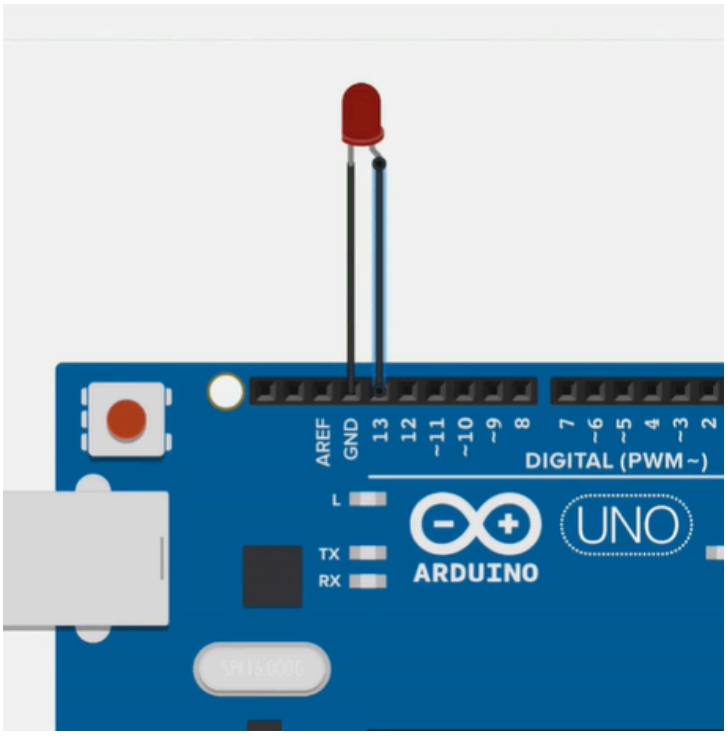
Step 1: LED Resistor Circuit

To connect an LED to an Arduino:

1. Connect the LED's longer leg (anode) to Arduino's digital pin 13 through a resistor (220 ohms is ideal).

2. Connect the LED's shorter leg (cathode) to Arduino's ground (GND).

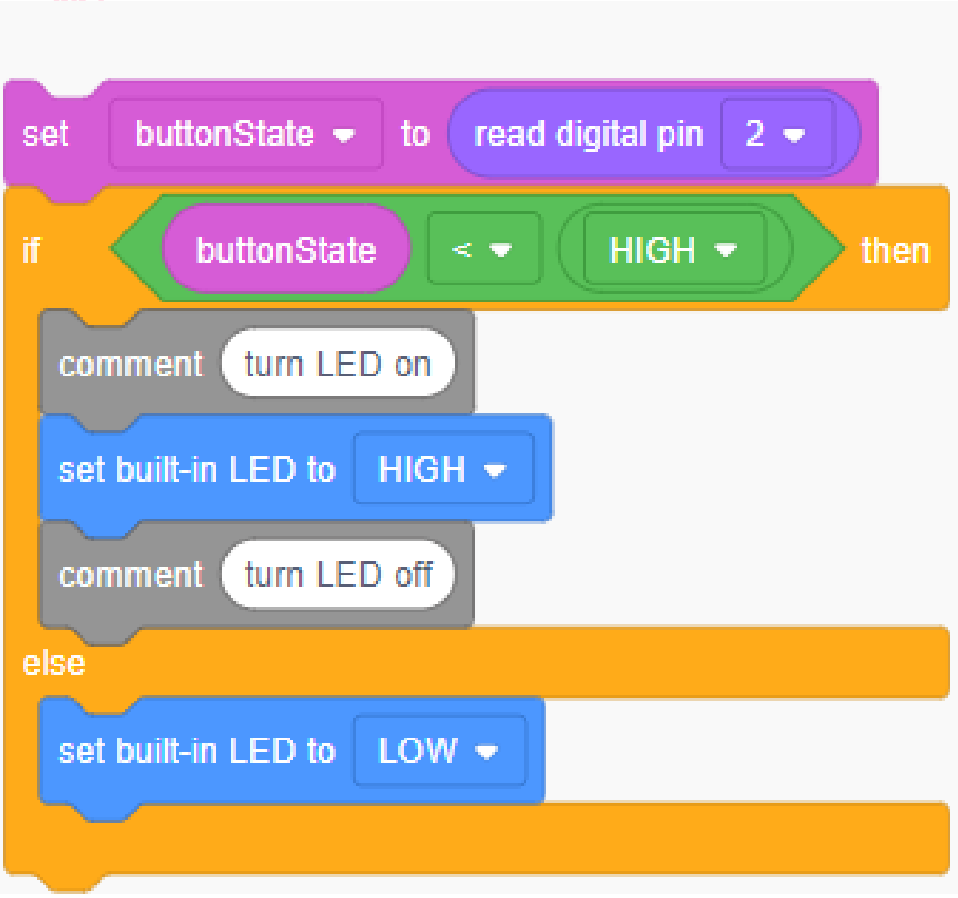
3. Ensure the resistor limits current to prevent LED damage.

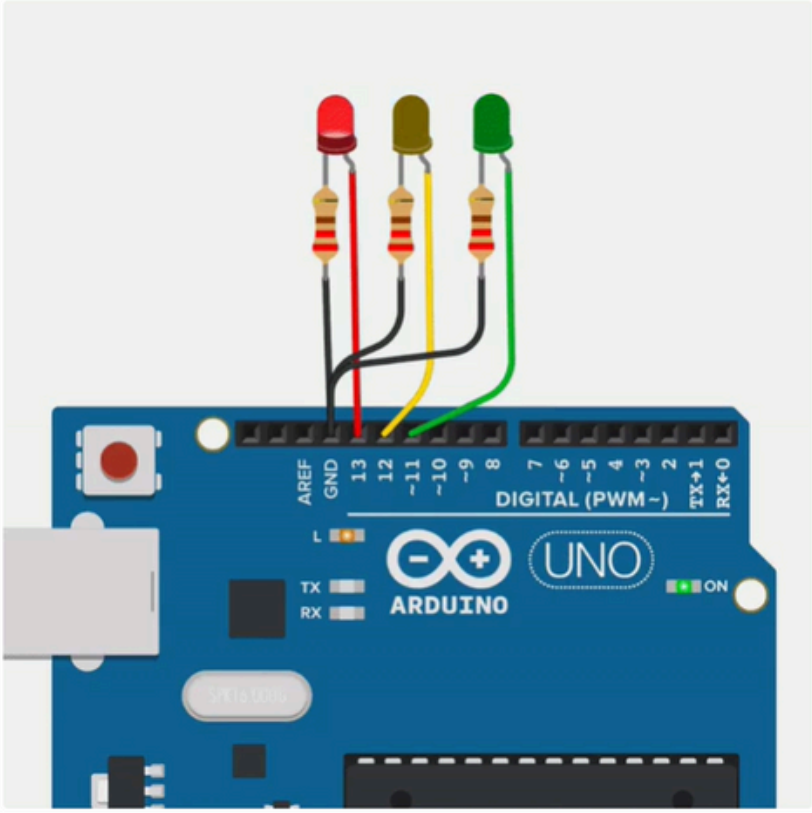


Step 2: Simple Code With Blocks

To connect an LED to an Arduino:

- Let's go through the simple code controlling the blink by opening the code editor (button labeled "Code").
- You can resize the code editor by clicking and dragging the left edge.
- The code starts out with two gray comment blocks, which are just notes for us humans to read.
- The first blue output block sets the built-in LED HIGH, which is Arduino's way of describing "on." This output command will activate a 5V signal to anything connected to the specified pin.
- Next up is a a yellow command block that waits for one second. So the program will pause while the LED is on for one second.
- Next after another comment is a blue output block to set the LED back to LOW, or "off,"
- followed by another second-long pause. Try customizing this code by changing the wait times, and clicking "Start Simulation". You can even add more output and wait blocks to create longer flashing patterns.


set buttonState to read digital pin 2
if buttonState < HIGH then
comment turn LED on
set built-in LED to HIGH
comment turn LED off
else
set built-in LED to LOW


AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM~)
L
TX
RX
ARDUINO
UNO
ON

Congratulations!

You have learned to blink an LED With Arduino in Tinkercad