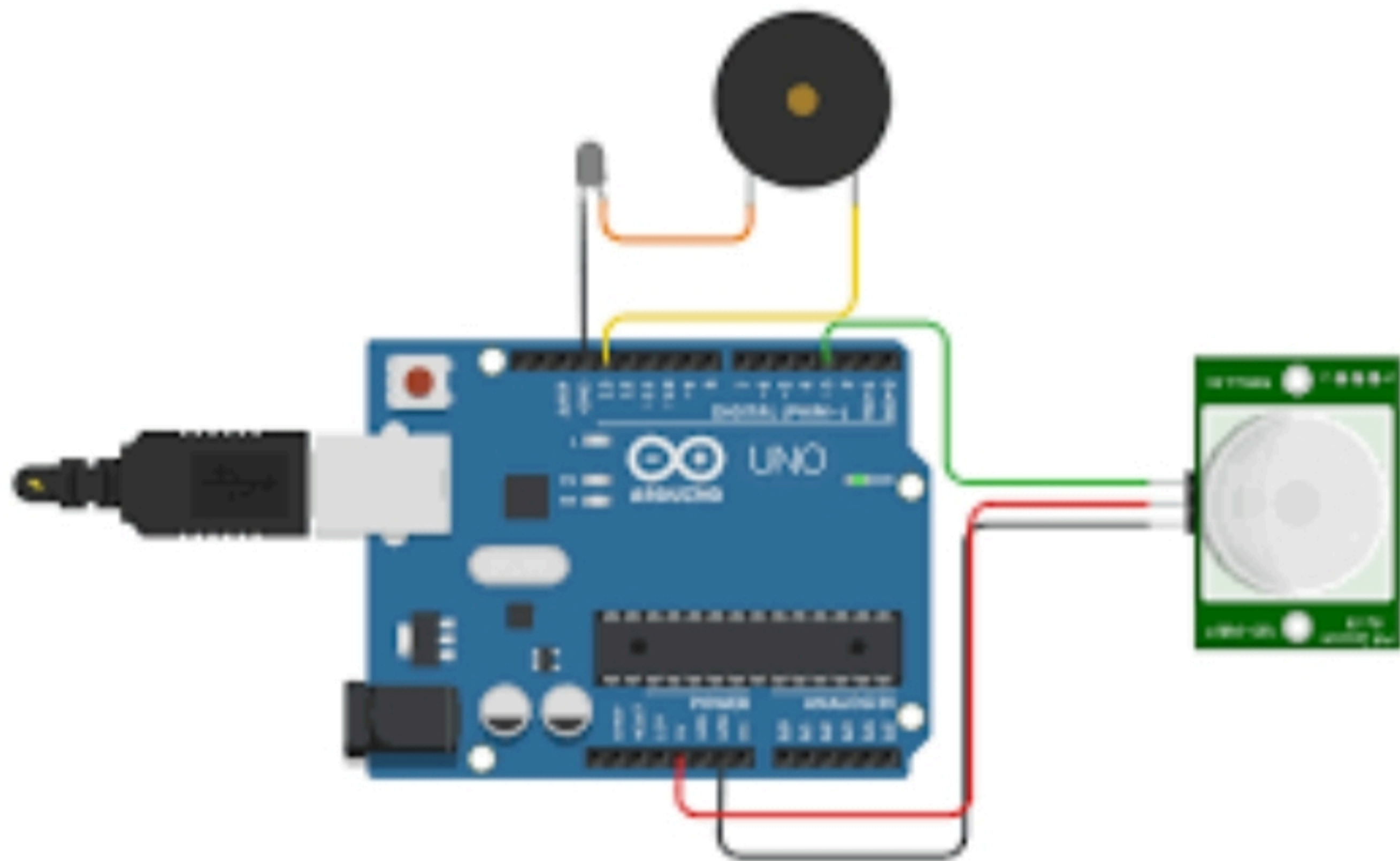


The LED's legs are connected to two pins on the Arduino: ground and pin 13. The component between the LED and pin 13 is a resistor, which helps limit the current to prevent the LED from burning itself out. Without it, you'll get a warning that the LED might burn out soon. It doesn't matter whether the resistor comes before or after the LED in the circuit, or which way around it goes. The colored stripes identify the resistor's value, and for this circuit, anywhere from 100 ohms to 1000 ohms will work great.

The LED, on the other hand, is polarized, which means it only works when the legs are connected a certain way. The positive leg, called the anode, usually has a longer leg, and gets wired to power, in this case coming from your Arduino's output pin. The negative leg, called the cathode, with its shorter leg, connects to ground.

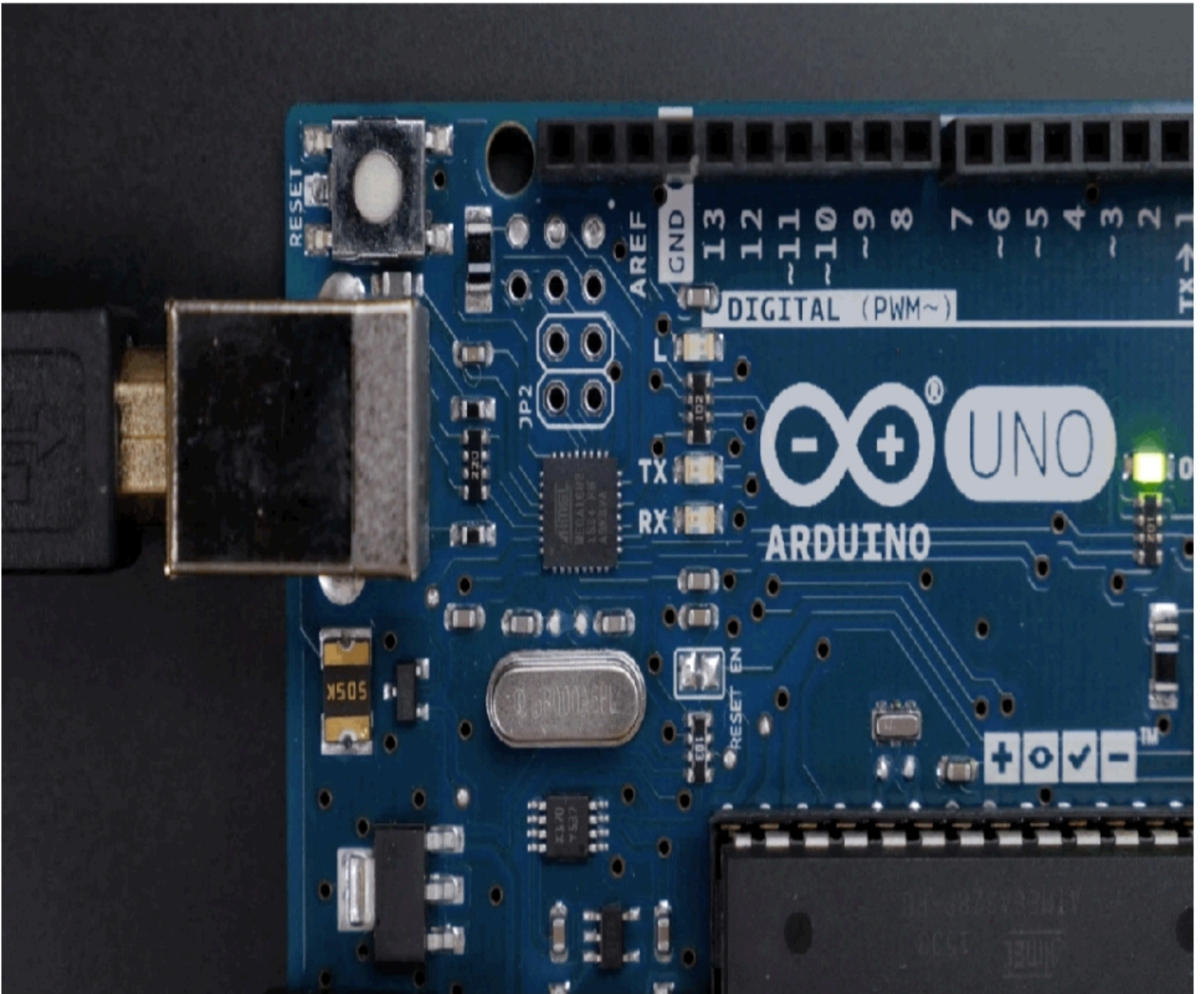




In the Tinkercad Circuits components panel, drag a resistor and LED onto the workplane. Edit the resistor's value by adjusting it to 220 ohms in the component inspector which appears when the resistor is selected. Back in the components panel, find and bring over an Arduino Uno board. Click once to connect a wire to a component or pin, and click again to connect the other end. Connect your resistor to either side of the LED. If you connected your resistor to the LED's anode (positive, longer), connect the resistor's other leg to Arduino's digital pin 13. If you connected your resistor to the LED's cathode (negative, shorter leg), connect the resistor's other leg to Arduino's ground pin (GND). Create another wire between the unconnected LED leg and pin 13 or ground, whichever is still not connected.



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.



Did you notice the small LED flashing on the board itself? This built in LED is also connected to pin 13, and is meant to be used for testing purposes without the need to connect any external components. It even has its own tiny resistor, soldered directly to the surface of the board.