

Understanding LED Orientation and Function

The Importance of Polarity

LEDs are diodes, which means they have a specific polarity. This means they only conduct current in one direction. If the LED is connected incorrectly (reversed polarity), it won't light up.

The Role of Pins

The two pins on an LED are typically labeled "anode" and "cathode." The anode is usually the longer pin or the pin with a flat spot.

Connection to Arduino

When connecting an LED to an Arduino, it's crucial to ensure that the anode is connected to a digital pin that can output 5 volts, and the cathode is connected to ground.

The Effect of Rotation

If you rotate the LED, you might be inadvertently reversing the polarity. This means the anode is connected to ground and the cathode to the 5V pin. In this configuration, the LED won't light up.

Troubleshooting Steps

1. **Check Polarity:** Double-check that the anode is connected to the 5V pin and the cathode is connected to ground.
2. **Use a Multimeter:** If you have a multimeter, you can measure the voltage between the two pins. If it's negative, the LED is connected in reverse.
3. **Try a Different LED:** If you have another LED, try connecting it to the same pins. If it lights up, the problem is likely with the original LED.

Remember: Always ensure correct polarity when connecting LEDs to your Arduino projects. This will prevent issues like the one you're experiencing.