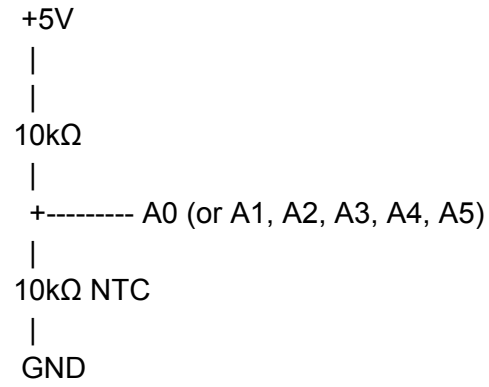
System Overview

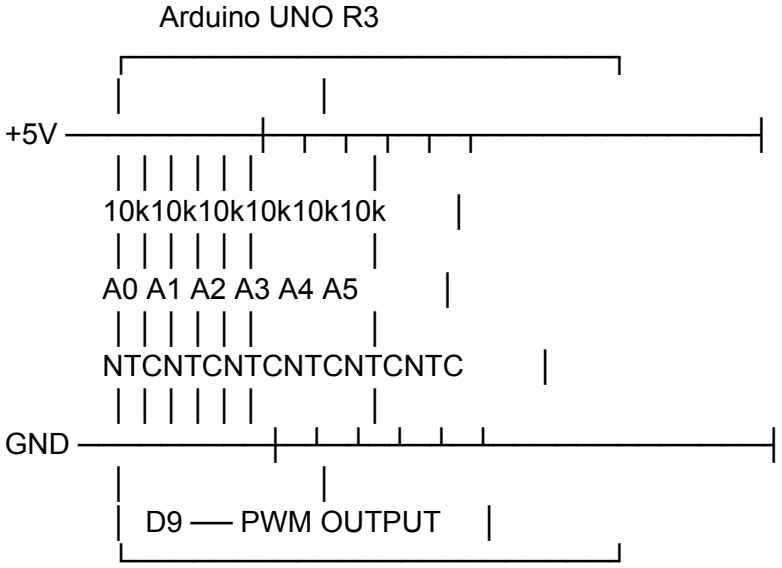
- **6× identical temperature sensors**
- Each sensor = **10k fixed resistor + 10k NTC thermistor**
- Arduino reads **A0–A5**
- Arduino selects **coldest sensor**
- Output is **PWM on D9 (0–5V via filter if needed)**

Wiring Diagram (Text / ASCII)

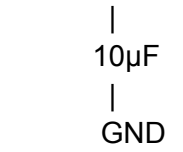
One Sensor (repeat for A0–A5)



All Sensors Combined



Optional (Recommended): PWM Smoothing Filter



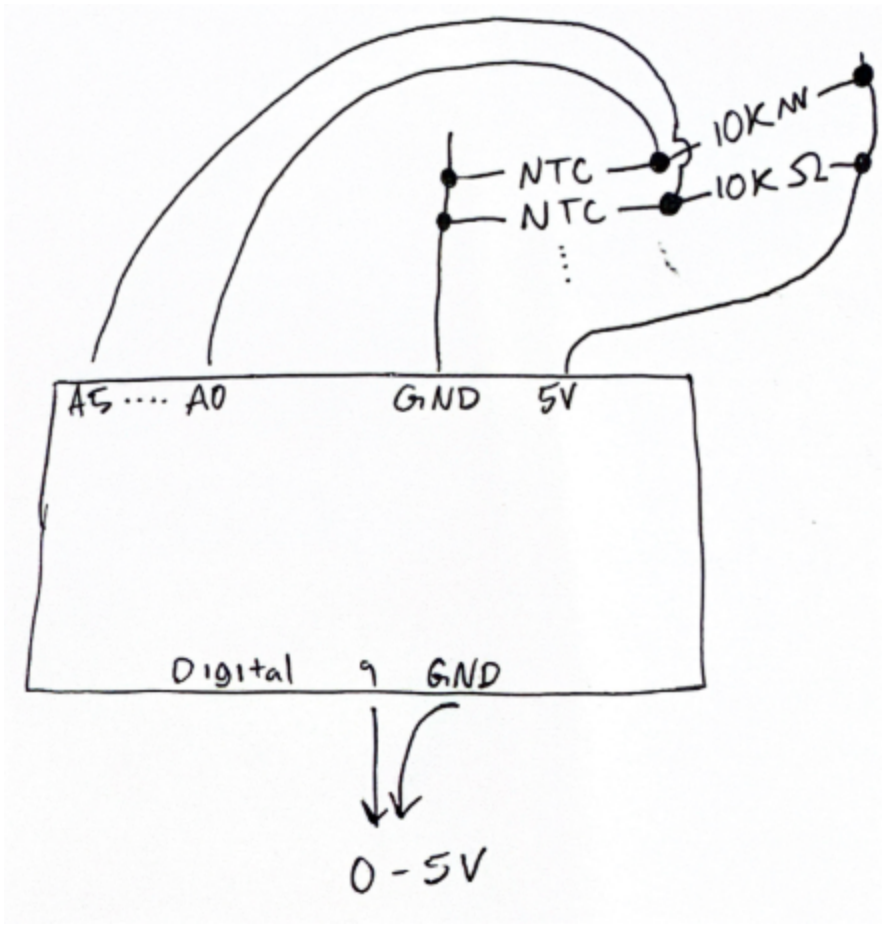
✔ Makes PWM behave like a real DAC
✔ Stable voltage for PLCs, comparators, or ADCs

Important Notes

- **Each thermistor MUST have its own 10k resistor**
- **All grounds must be common**
- Do **NOT** share junctions between sensors
- Use **20kΩ meter range** to verify components

Bill of Materials (per board)

Item	Qty
Arduino UNO R3	1
10k NTC Thermistor	6
10k 1% Resistor	6
0.1 µF Capacitor (optional, noise)	6
10 µF Capacitor (PWM filter)	1
Jumper wires	as needed


NTC
NTC
10KΩ
10KΩ
A5 .... A0
GND
5V
Digital 9
GND
0-5V