

day86 our first Arduino circuit!

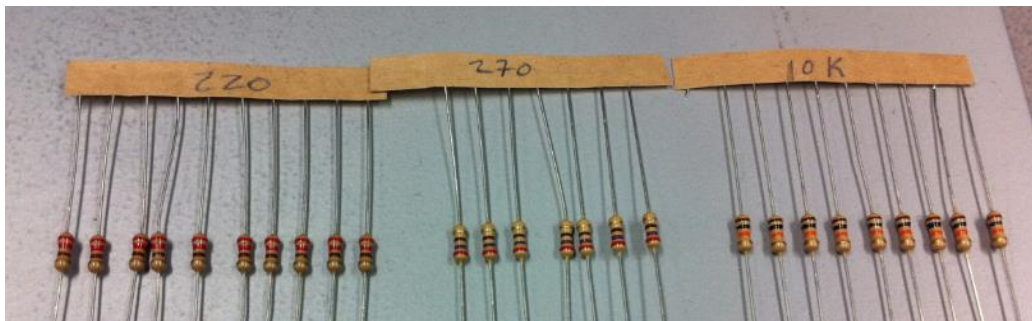
Due Wednesday 4/24/24

Steps:

1. Find a 10K ohm resistor, 3 jumper wires, and one LED from your kit of parts. Get out the breadboard and one Arduino. Here is a color key to which resistor is which for finding the 10K ohm one (they are color-coded.)



Or if this is an easier view:

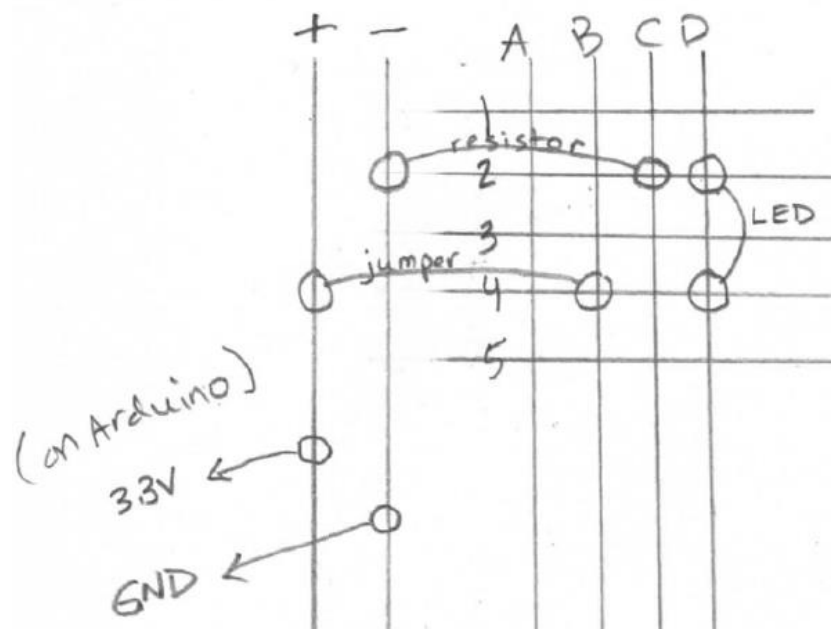


Working with your partner, do the following once:

1. Connect a jumper wire from 3.3V on the Arduino board to the (+) positive rail on the side that has ABCDE.
2. Connect a jumper wire from GND on the Arduino board to the (-) negative rail on the same side.
3. Find a 10K ohm resistor (see above).
4. Connect resistor from negative rail (any hole) to C2.
5. Insert the LED's long leg into D4 and short leg into D2.
6. Connect a jumper wire from B4 to the positive rail.
7. Plug the Arduino into your computer's USB port if it isn't already plugged in.

The LED should be lit. If it is not, figure out what went wrong. Call me over to get help, ask a neighbor who was already successful.

Once you get it working, continue onto the next page.



Programming the circuit:

Once your circuit is working, unplug the jumper wire that went from the Arduino's 3.3V pin to the positive power rail on the breadboard. Your light should go out. Also unplug the jumper wire that went from the positive side of the LED to the + power rail.

Plug a jumper wire from Arduino's pin 13 to location A4 on the breadboard. We are bypassing the + power rail because we don't use a power rail when we are powering an LED using a numbered pin like our pin 13.

Write a program named "day86" that blinks the light at pin 13 using a for loop. Have the light blink from 10 milliseconds to 150 milliseconds, in 2 millisecond jumps using a for loop. Put your name in a comment at the top of the program.

When you have your for loop running and the light blinking, call me over to check you off. Feel free to play with the values (you don't have to go up by 2, for example, try something else, etc.)

Work with your partner to build a single circuit, then trade the Arduino back and forth to load and test both of your programs (each of you writes your own program). Each person turns in their sketch on the Google Classroom.

Before class is over, unplug everything and put all the parts back neatly into the baggies and your tub.