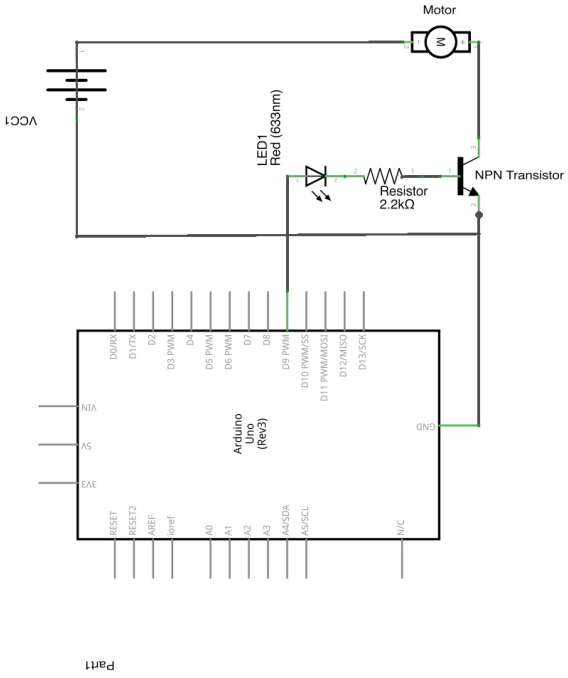
Conceptual

You can use the Arduino microcontroller to turn on a transistor using a digital output pin.

- ☐ Draw a connection diagram the circuit below. Note: this is your prior NPN bipolar transistor circuit that is now hooked to pin 9 of an Arduino. The Arduino will act like the switch.
- ☐ What is the purpose of the other wire that is connected to the Arduino "GND"?

Basic Make

- ☐ Make this circuit
- ☐ Make a program to control the load (motor)



Advanced/Extended Make

- ☐ Power circuit from Arduino (USB)
- ☐ Power circuit and Arduino from external power pack
  - What is the difference between the 5V and V_{IN} pins?
- ☐ Add a switch that the Arduino reads and turns on load when it is pressed.
- ☐ Duplicate diagrams using Fritzing

Equipment

- ☐ Computer with access to Fritzing and Arduino
- ☐ Circuit components: Arduino and misc electronic parts

Objective

Physics Concepts

- ☐ Problem solving
- ☐ Logical thinking

Experimental analysis

- ☐ Circuit design

Technology Concepts

- ☐ Schematic Symbols
- ☐ Programming Syntax