

Intro to Robotics with Arduino

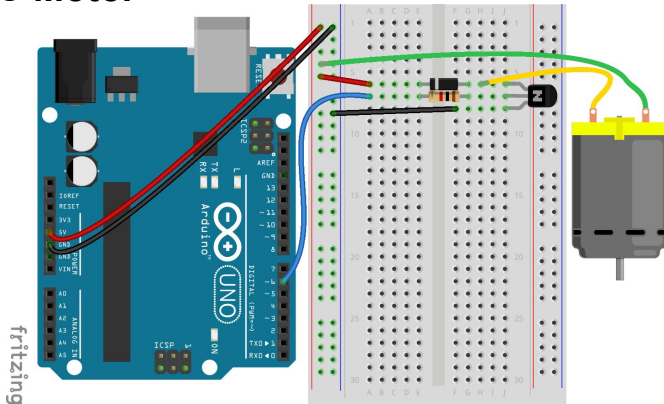
Workshop with Shawn Hymel

Name: _____

Date: _____

Prerequisite: Download Arduino IDE from arduino.cc

1 DC Motor



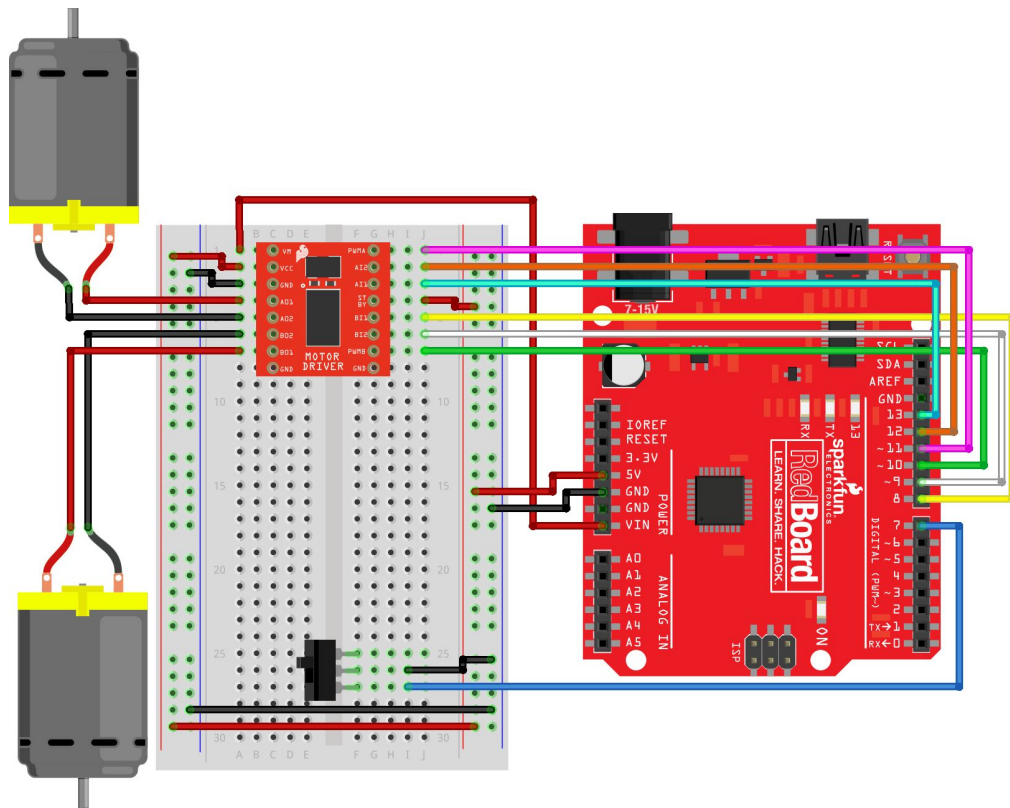
```
const int motor_pin = 6;

void setup() {
  pinMode(motor_pin, OUTPUT);
}

void loop() {
  analogWrite(motor_pin, 80);
  delay(1000);
  analogWrite(motor_pin, 255);
  delay(1000);
}
```

Challenge: From full speed, slow to a stop over the course of 2 seconds and then stay stopped for 2 seconds before repeating. (Hint: use a *for loop*)

2 Simple Rover



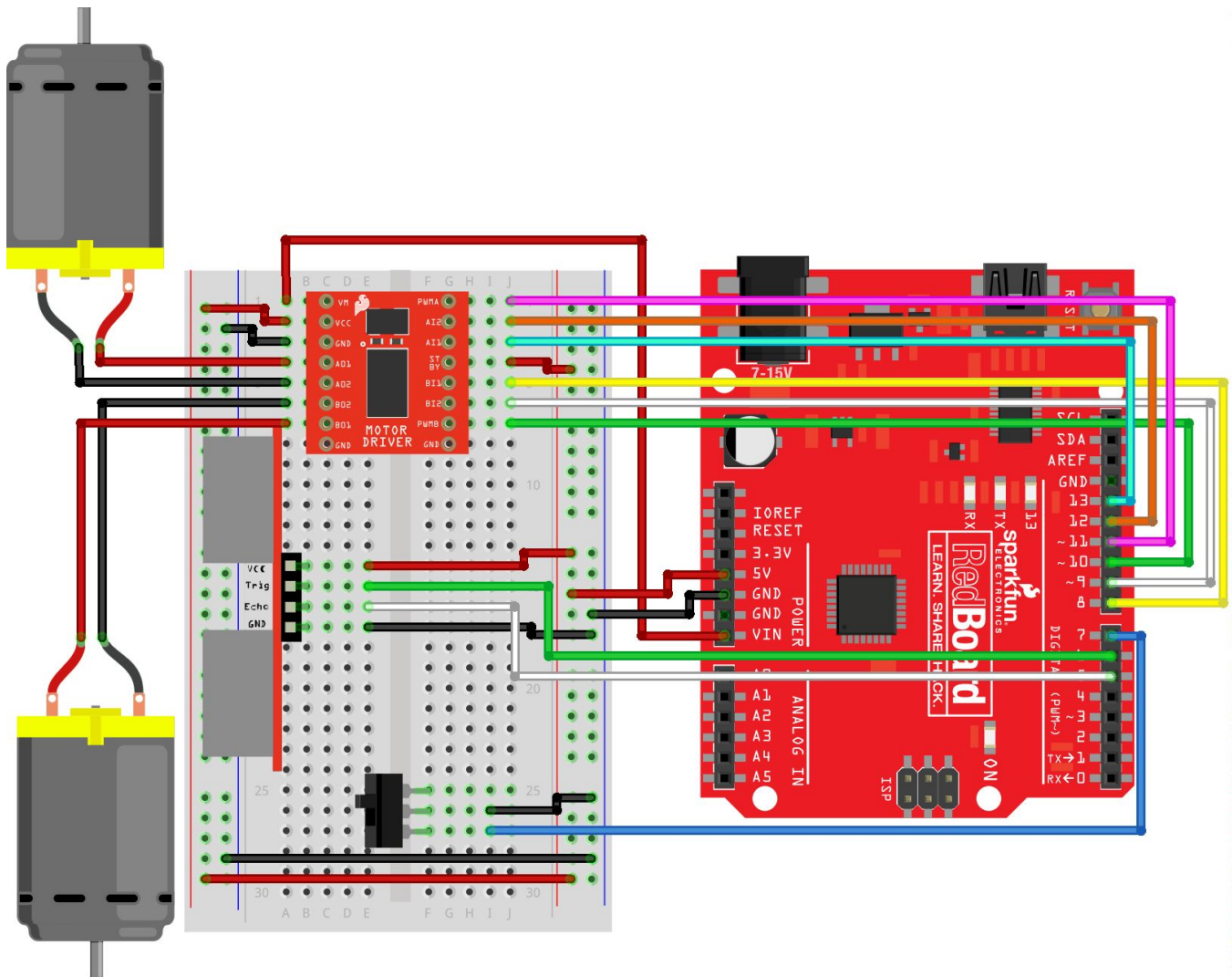
fritzing

Code: <https://bit.ly/2SX1RFm>

Connect parts to make a robot: <https://bit.ly/2TGsG5R>

Challenge: Combine the `leftMotor()` and `rightMotor()` functions into one function called `drive(int, int)` that takes 2 parameters, one for left motor and one for right motor.

3 Adding autonomy



fritzing

Code: <https://bit.ly/2Cg8mO7>

- Challenge 1
 - Have the robot back up for a farther distance and turn left instead of right
- Challenge 2
 - Have the robot follow your hand in a straight line if you move it away from the sensor
- Challenge 3
 - Have the robot follow your hand if you move it side to side
 - Note: the robot might be VERY slow at this task