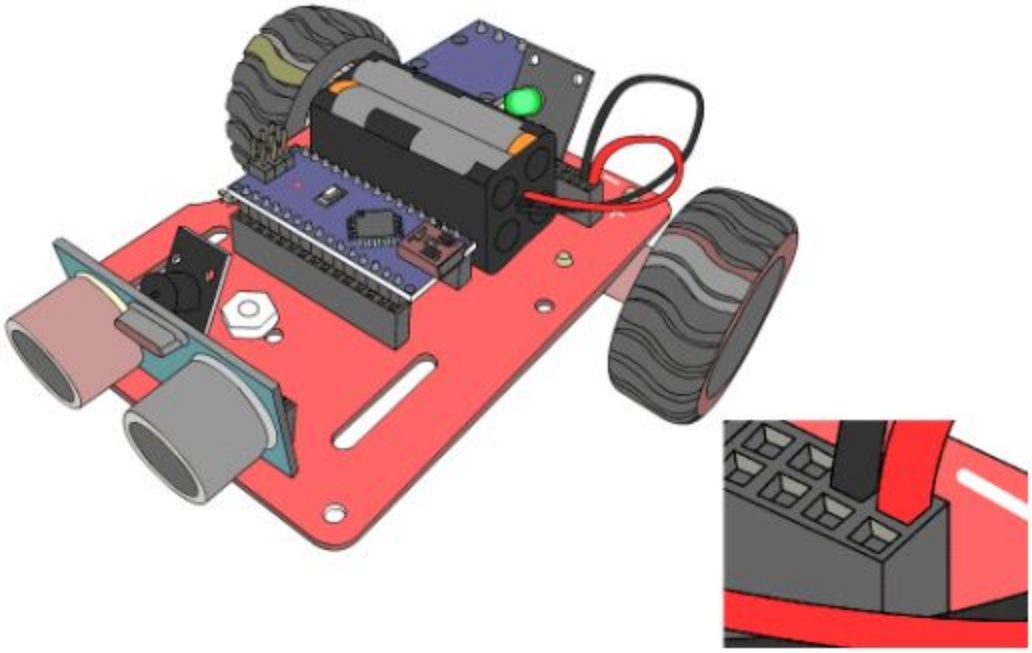
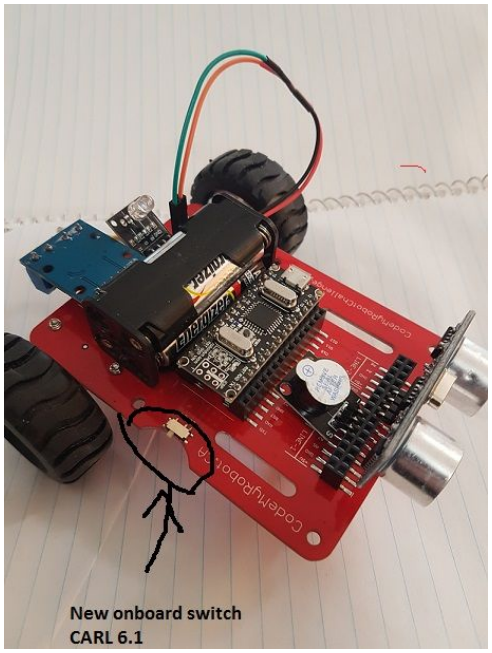


Battery storage, please remove batteries from the holder when robot not in use

See above for battery connection terminals. Small white switch is at the side of the Robot

CARL 6.1 Living Manual on Google

Open source manual, cut and paste what you need, share edits with us



GOAL:

1. To support teachers of youth by giving them a small coding robot
2. This starts the conversation, and the problem solving steps needed to code the robot
3. We provide some beginning code to ensure initial success
4. Students get the opportunity to learn at their own pace
5. Teachers can upload video clips to the students robot dancing, see rules on website

This manual is open for everyone to write, short helpful ideas, join us with suggestions and solutions, share your best practices, email us to join codemyrobot@mail.com

CodeMyRobot made possible by our sponsors.

Current version of this live document Version 1.2 Nov 10 2018

Where do I start?	take it slow, each idea built on the top of the last idea, and in no time, all will make sense. Trust me I went through this.
IT is about	**making**, and **empowering**, and **collaborating**.
IT is not about	**answering all the questions and being an expert .** We have moved from a sage on a stage, to a guide on the side, or marauder in the middle if you will..
And most important	**it is all about problem solving and finding ways to make things work while learning how to slow down, analysis, compare, contrast, diagnose, test and solve.**
	it is all about problem solving and finding ways to make things work while learning how to slow down, analysis, compare, contrast, diagnose, test and solve.
Other cool things	1. Make posters on how to use the robot 2. Write out the code 3. Create a robot club 4. Draw the robot in tinkercad.com 5. Make cool video clips on ho wto use the robot 6. Research the sensors 7 Research careers in computational thinking.
it is not about dancing the robot and you're all done	IT's about learning how you control the robot with code. It's about being inspired, creating problem solving skills, while being kind, helpful, and collaborating with other.
Safety	**Take batteries out of holder when robot not in use**
How to attach power	Red wire goes into the + red pin header and the black - wire goes into the black pin header, switch is at the side
	Ok lets get on to some ideas

Here are some things to try:

Learning about the parts	Print out the picture of the robot and the name of the parts: ask the student to do a slideshow with one part on each slide 1. Arduino Nano 2. RGB LED, 3. HBridge motor controller, Ultra Sonic and Buzzer
Learn how to 3D model	SketchUP is a free modeling software and students can download it and draw the robots, we can send you a short sketchup tutorial, to get you started.
Teachers can choose the degree of engagement	1. **High problem solving,** just handout the box and ask the student to provide video of clock and maze dance 2. **Advanced PS,** provide computer and box 3. **Medium PS,** Illustrate how code works, and arduino IDE 4. **Starter PS,** provide and overview of all the steps 5. **Instructional PS,** work with the student, guiding learning
Train the trainer	Have each successful student, teach or train the next student, a lesson in collaboration
CARL 6.1	You can code the robot to dance and do the clock and maze challenge From there you can add the RGB LED lights and color code those From there you can add the ultrasonic sensor and the robot will avoid hitting the wall. We hope to have other challenges with the ultrasonic sensor in 2019
What is next	You will find the CARL 6.1 allows you to snap out the Nano and the battery to be used on other projects Research these keywords for possible next steps Arduino.cc - OSEPP - VEX - First robotics - Hackaday.com - instructables.com - thingaiverse.com - make.com

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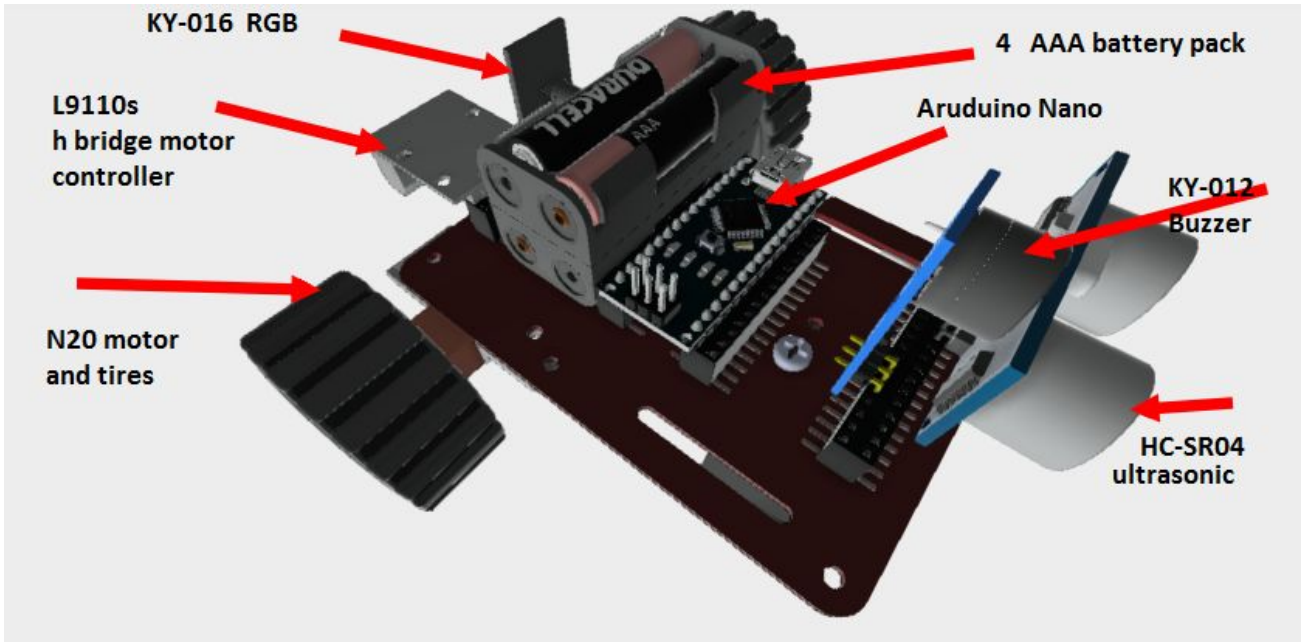
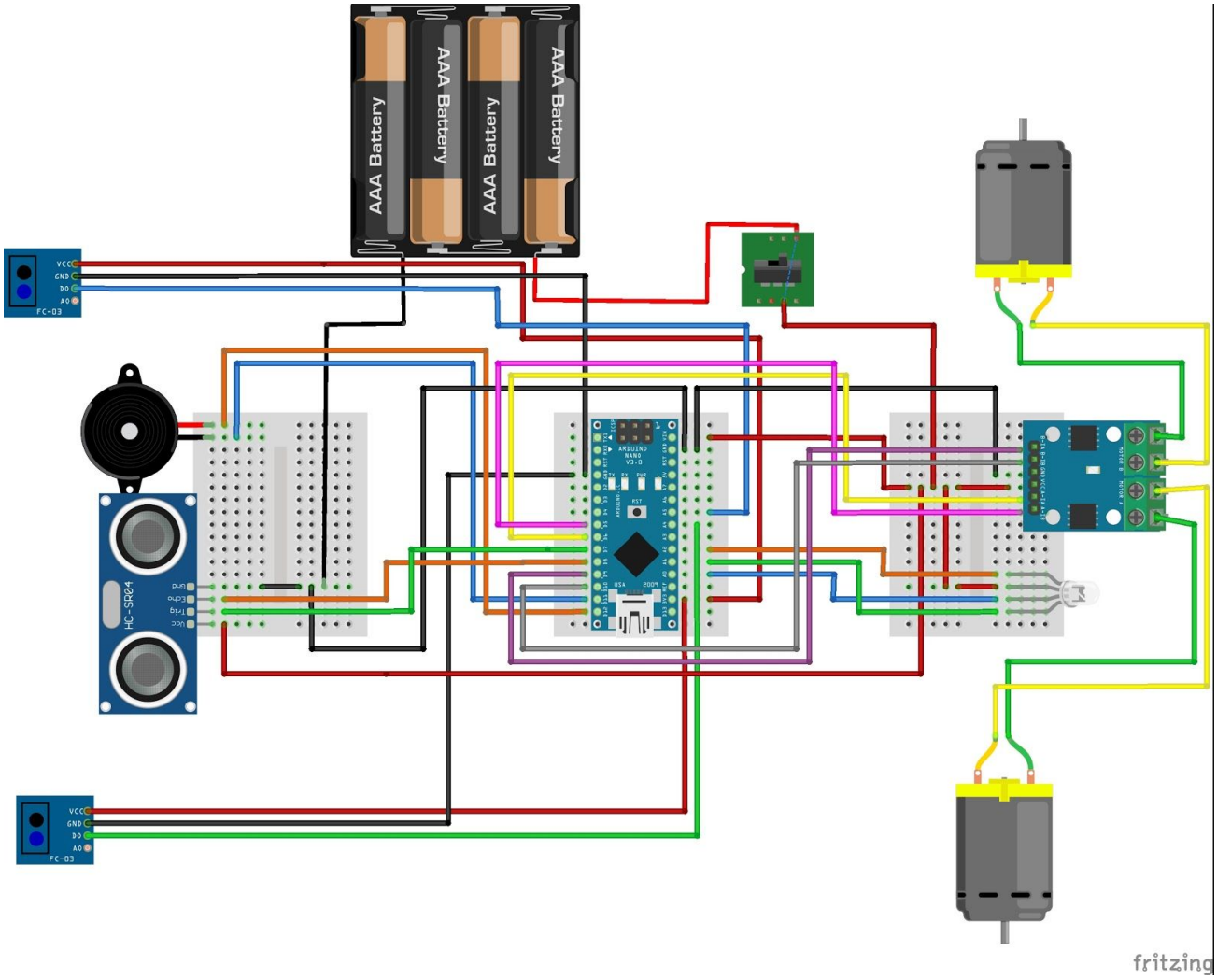
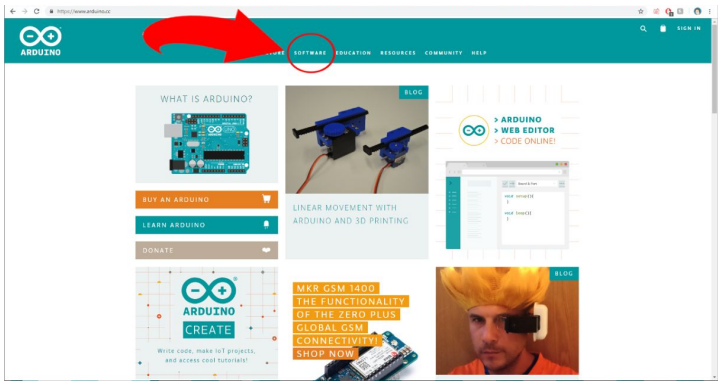
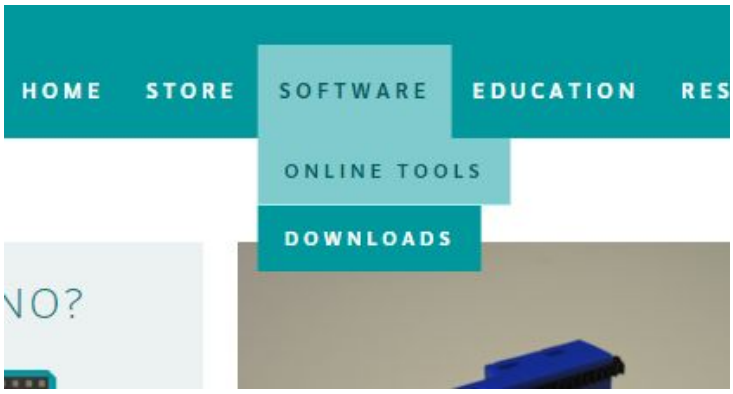
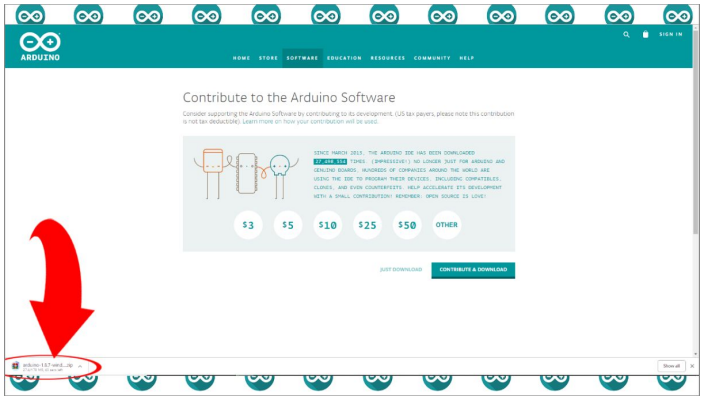
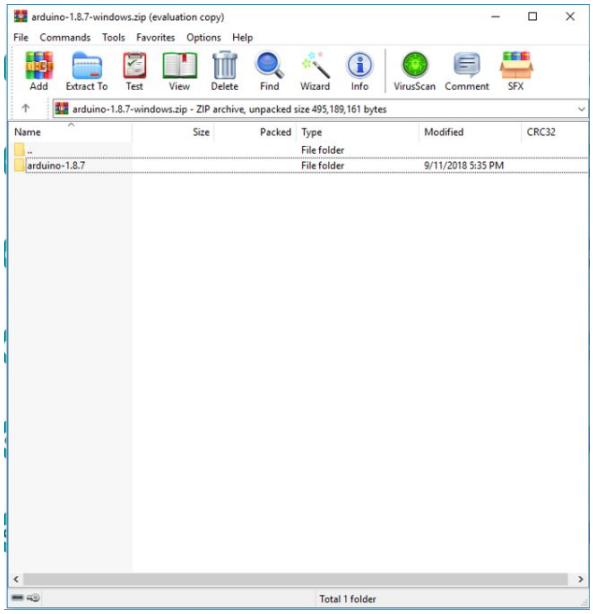
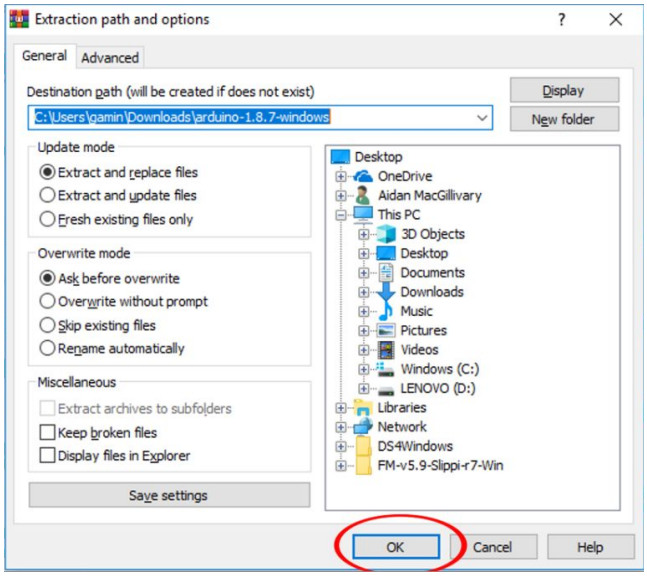
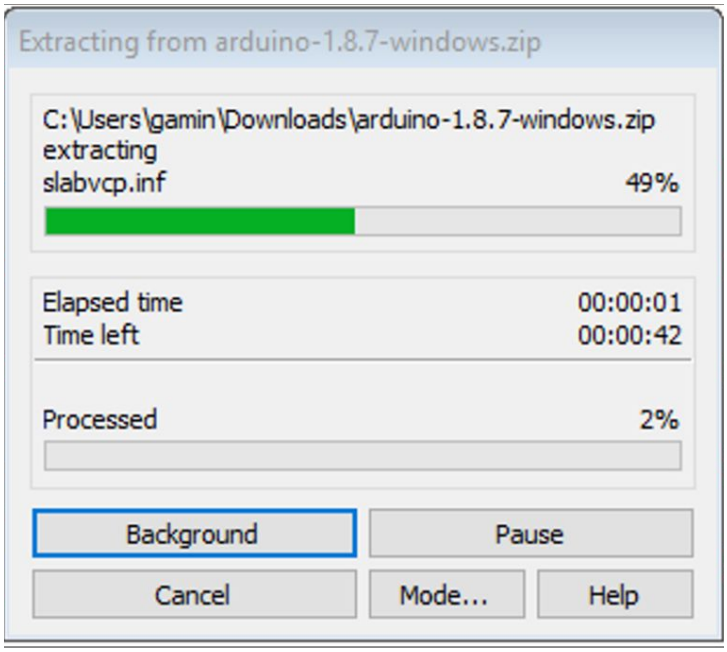

KY-016 RGB
4 AAA battery pack
L9110s
h bridge motor
controller
Aruduino Nano
KY-012
Buzzer
N20 motor
and tires
HC-SR04
ultrasonic

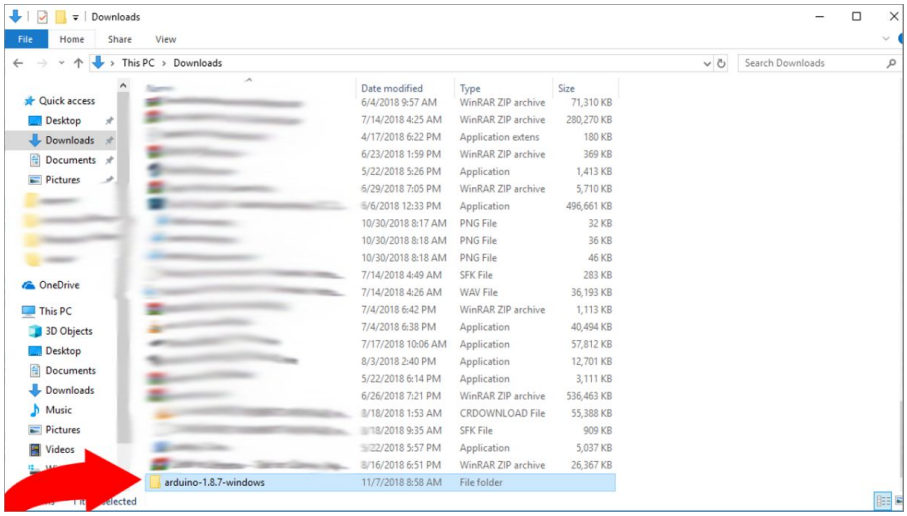
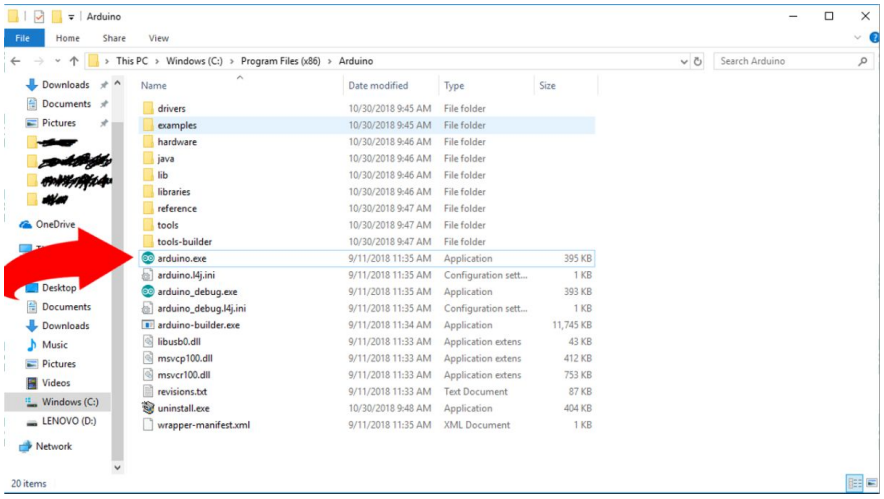

AAA Battery
AAA Battery
AAA Battery
AAA Battery
HC-SR04
fritzing

How to Download Arduino

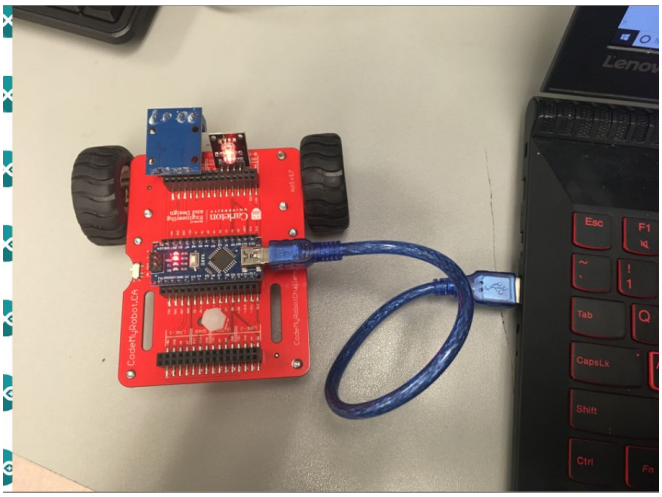
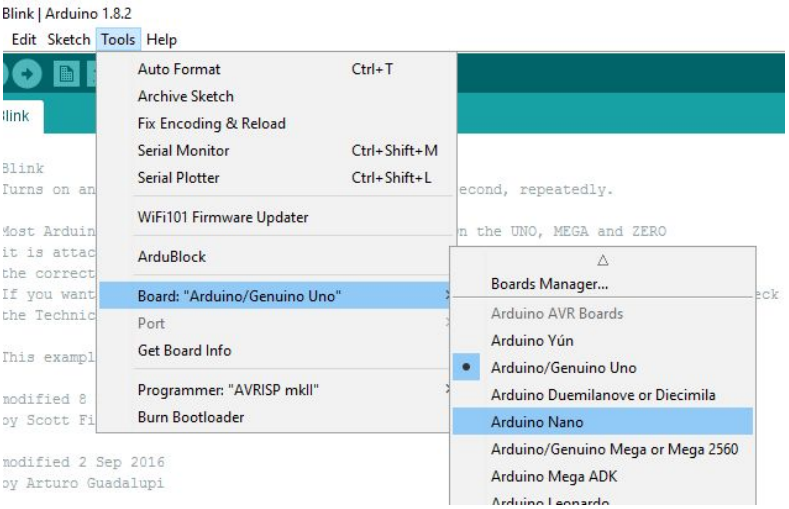
1. **Open up the arduino website (https://arduino.cc) and hover over the software tab.**	
2. **Click on Downloads.**	
3. **Download the windows ZIP file.**	

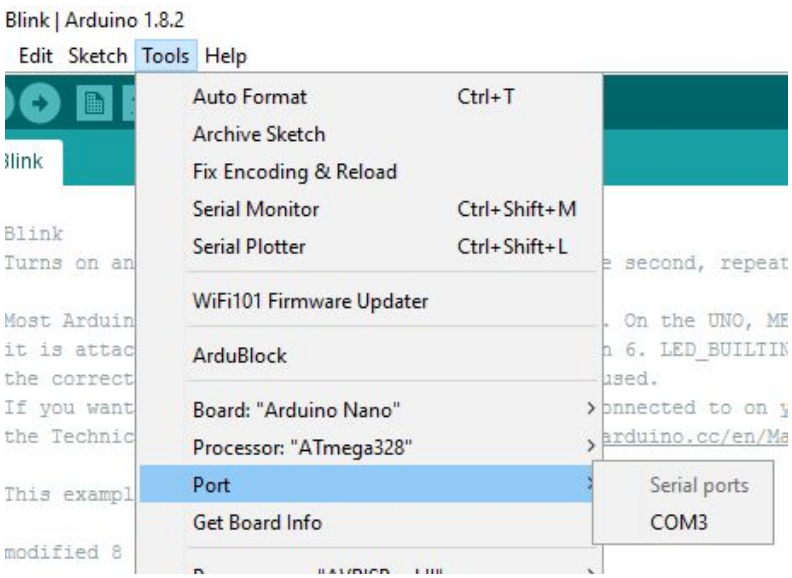
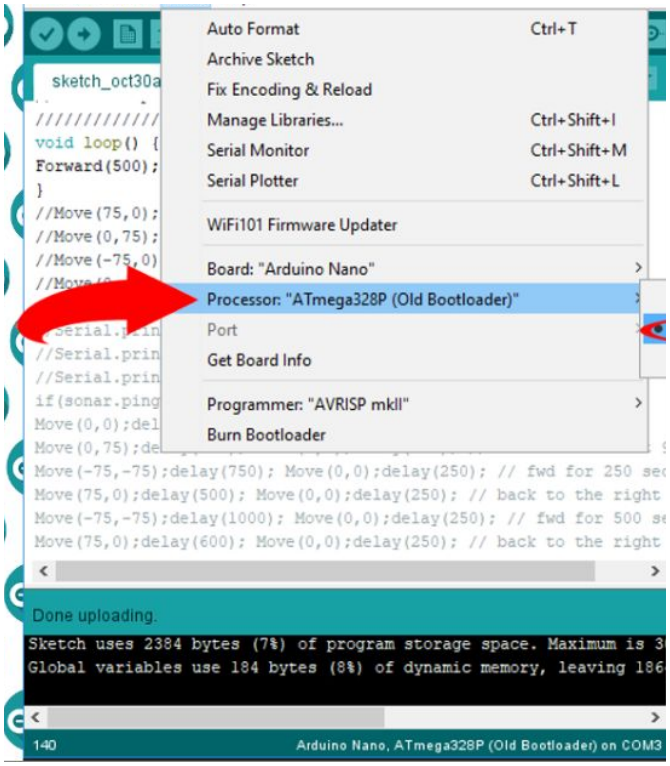
4. Click on Just Download.	
5. Open the download in the bottom left once it is done.	
6. Right click the arduino folder, then click extract to specified folder.	

7. Choose the directory then click ‘OK.’	
8. Wait for it to extract.	

9. Open the folder it extracted to.	
10. Open arduino.exe	

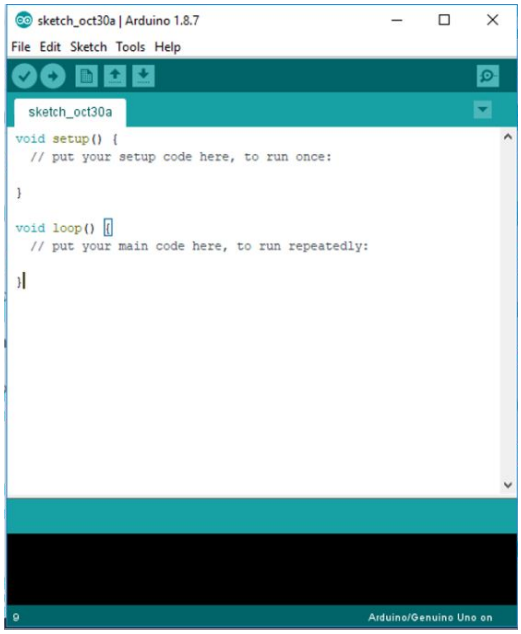
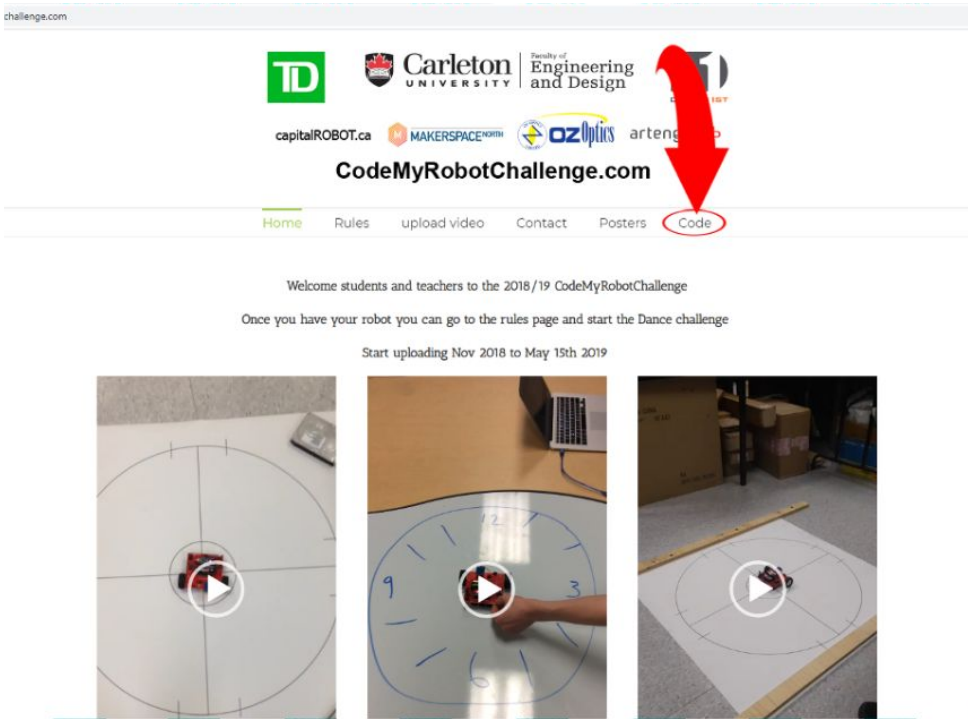
How to Change Settings for Robot

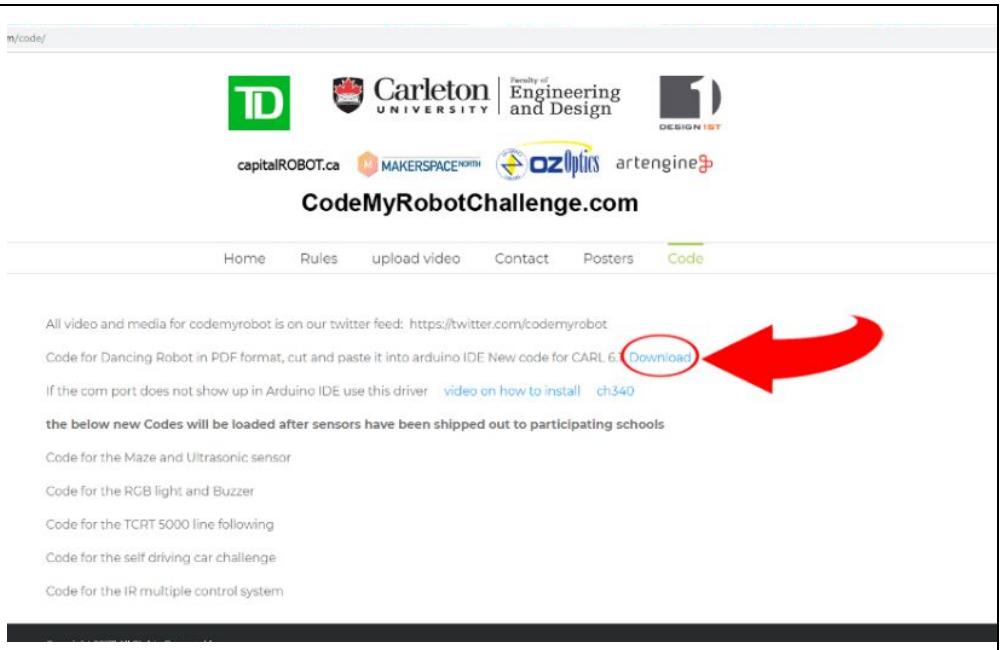
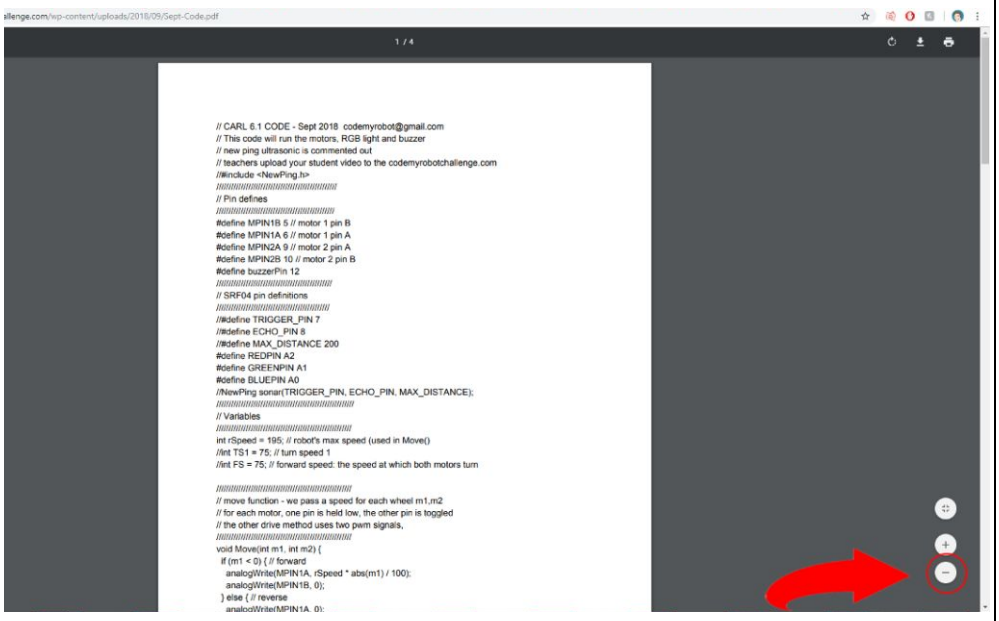
1. **4 Plug in the robot using a USB A to B adapter. You may have to turn it over as the wheels may turn as power is now plugged in.**	
2. **Click on Tools>Board:>Arduino Nano**	

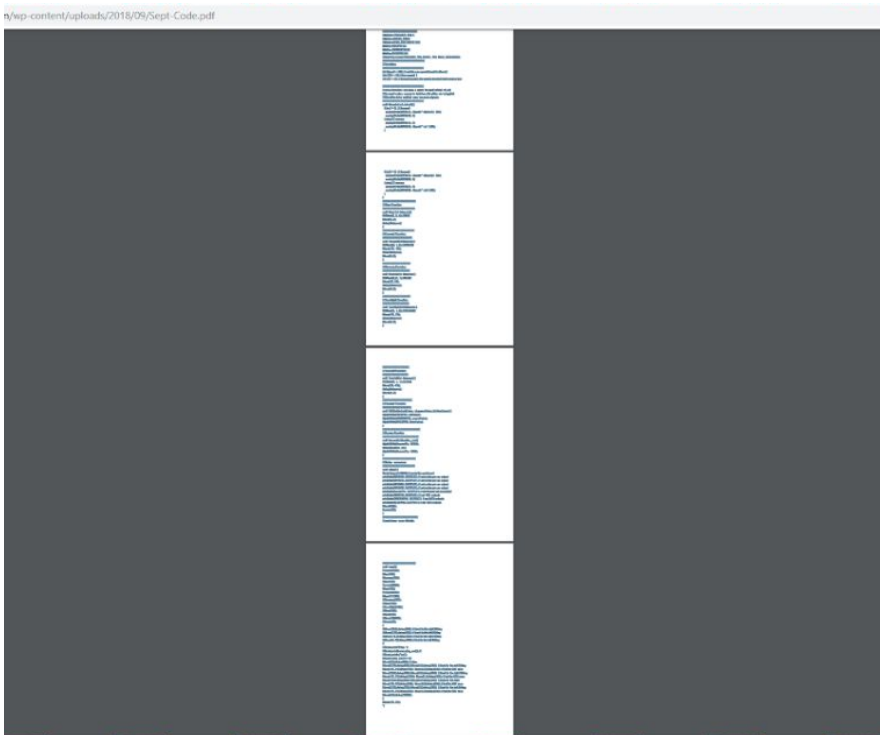
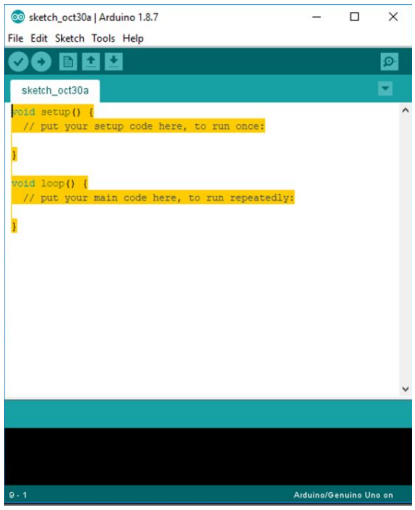
3. Select the port you've plugged the robot into. **This example is Com 3 but it can be Com 5 or Com 7** **You can tell by unplugging the cord and check tools, whatever Com port that is missing is the correct port.**	
4. Select ATmega328 (Old Bootloader) for the Processor	

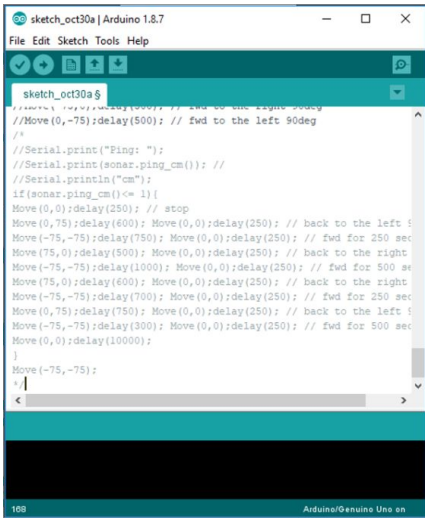
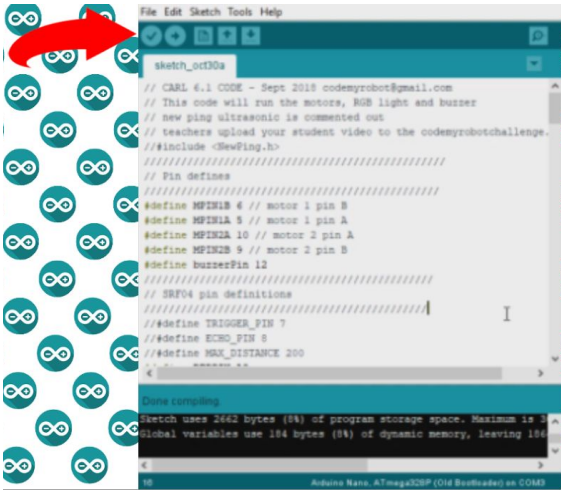
That is it …. You now have the settings to use the Arduino IDE

How to Get the Code for the Robot

1. **Make sure you already have Arduino open.**	
2. **Go to https://codemyrobotchallenge.com and click on Code.**	

3. Click on Download.	
4. Zoom out by clicking the button in the bottom right.	

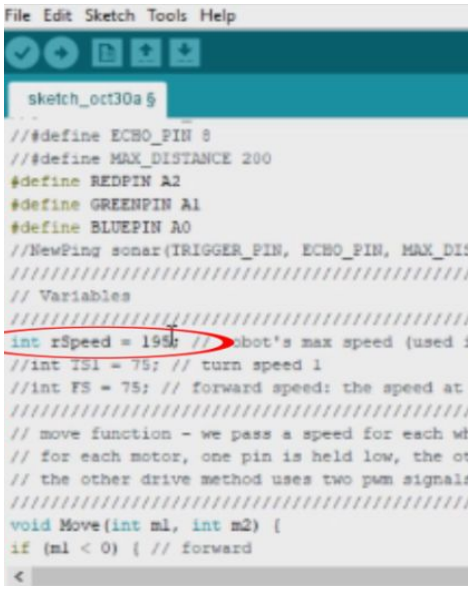
5. **Select everything and copy it (Ctrl + A then Ctrl + C).**	
6. **Go back to arduino and select all the text.**	

7. Paste the code (Ctrl + V).	
8. Verify the code by clicking the checkmark button in the top left.	

How to Change Code Settings

1. Scroll up to the line that says, “int rSpeed = 195;”

   The speed can be edited by changing the number after the “=” sign.



2. Scroll down to the line that says, “void loop() {“

   Delete the commands there and then write in your own. This includes:

- Forward(x);
- Reverse(x);
- TurnLeft(x);
- TurnRight(x);
- Stop(x);

Where x = the number of milliseconds the command runs for.

NOTE: The lines of code with 2 slashes (//) before are just comments and will not change anything.