

Preparing For Project 1

Objectives:

1. The student will be able to load the code from the computer to the Arduino car.
2. The student will be able to verify the code loaded.
3. The student will be able to test the car for proper movement

Time:

30 minutes

Introduction:

Uploading and verifying code will be used in each project as we progress through the lessons. It is necessary for the students to master the skills associated with transferring the code now, so that they can repeat the process for each new concept.

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Part 1. Install Arduino IDE Software

Step 1. If you have not done so already, download the Arduino IDE software onto your computer from arduino.nacase.org. You will continue to use this site for the codes needed in the following projects. **You will also need a program to unzip files such as WinZip or UnRAR Metro.**

Part 2. Loading the Code

Step 1.

- A. Download the code from the “Downloads” page on Arduino.nacase.org for this project.
 - a. Click on the file link to begin the download and save to your computer
 - b. Once the download is complete, unzip the file or right click—Open With—UnRAR Metro. This will extract the file and save it to your computer.

Step 2.

- A. Upload the code to Arduino IDE
 - a. Connect the Uno board on your car to your computer with the USB cable in your kit.
Tip: A green light on your Uno board should come on and a yellow light should begin blinking.
 - b. Open Arduino IDE, select File, Open, then select the downloaded code (be sure to use the unzipped file).
 - c. You may receive a message that says the file may need to be inside a sketch folder. Click OK.
 - d. Your code will appear in the box with the title of the project across the tab.

Step 3.

- A. Verify your code.
 - a. Verify your code by clicking on the checkmark in the upper left hand corner of your computer monitor.

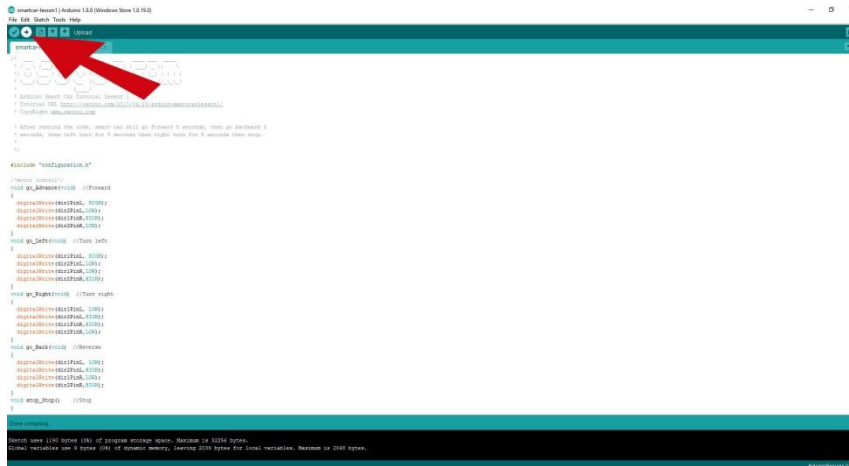


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- b. When finished you should see the phrase “Done Compiling” toward the bottom of your screen.

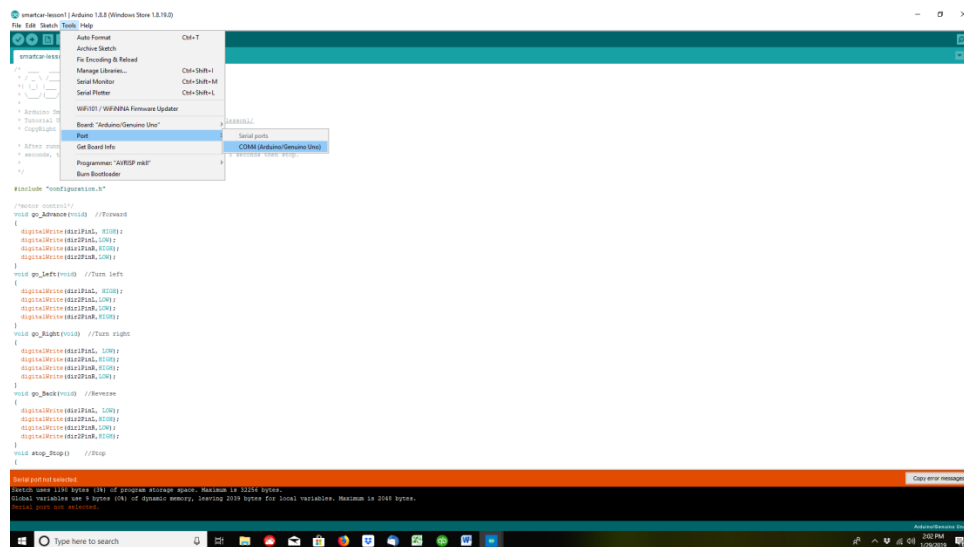
Step 4.

- A. Upload the code from your computer to the Uno board.
 - a. Upload the code by clicking on the arrow in the upper left hand corner of your computer screen. It is next to the checkmark you just used.



- b. If you get an error message toward the bottom of the screen saying “serial port not selected”, you must follow these steps next:
 - a. Select Tools >>port> Com 4

(Arduino/Genuino Uno)



- b. Click on the upload arrow once again.

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Step 5.

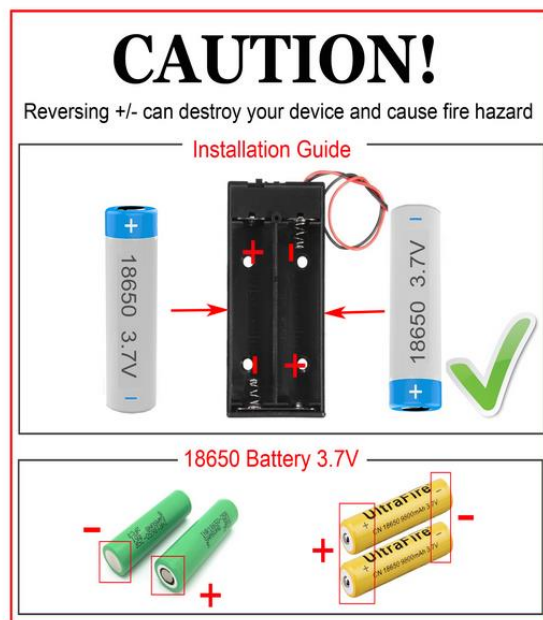
A. You should now see a message towards the bottom of the screen that says “Done uploading”

****Disconnect your Arduino Uno board
from your computer****

Part 3. Turn on the car

Step 1.

- A. Disconnect your Uno board from your computer.
- B. Make sure the on/off switch (located on the battery box) is in the **off** position.
 - a. If you installed the 9V battery, unplug the battery connector from the Uno board
- C. Install the batteries into the battery box using the guide below.



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Part 4. Testing the car

Step 1.

- A. Set the car on the floor to test it. Be sure that you have enough room for the car to move. It will go forward for 2 seconds, backward for 2 seconds, spin in a circle counter-clockwise for 2 seconds, spin in a circle clockwise for 2 seconds and then stop.
- B. Turn the battery box on. If the car does not move in the way described above, check your wire connections. Your voltage meter should read above 7.2 V.