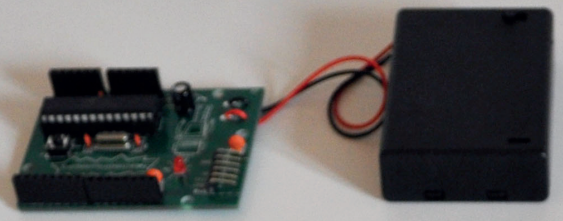
Maak een stoplicht
Onderdelen

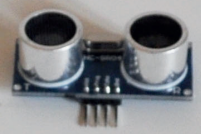
Fabschoolino



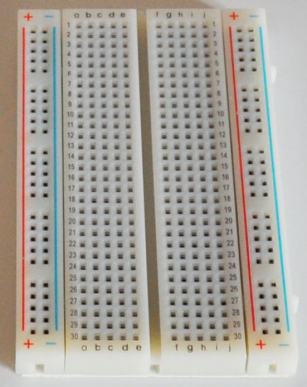
Programmeer Kabel

2 x weerstand 1K ohm

Ultrasone Sensor

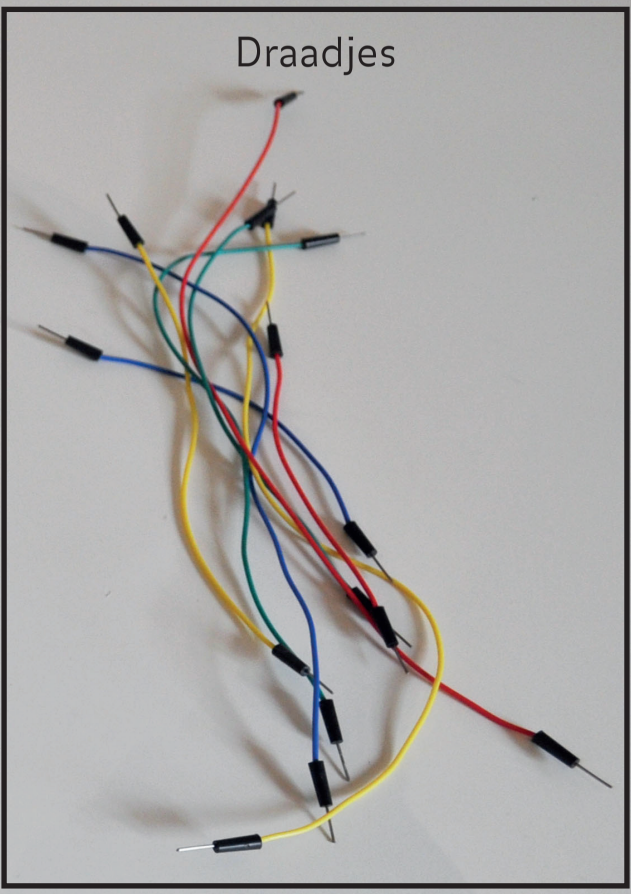


Breadbord



LED rood en groen

Draadjes



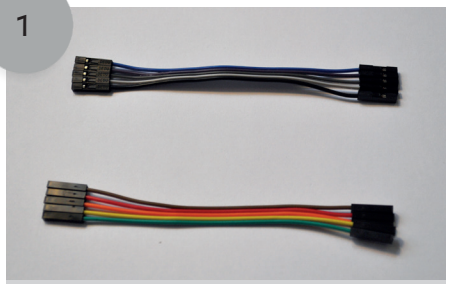
Dit is een overzicht van onderdelen uit zakje 2, 3 en de Fabschoolino uit de Fabschoolino kit van Waag Society.
Begin je net aan de Instructable? Check dan of je alle bovenstaandebenodigde materialen hebt.

fabschoolino Connecting a USB connector

CODE / HACK / PLAY

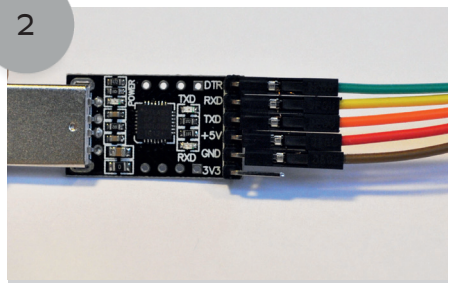
The following four steps will show you how to connect the USB connector so you can upload code onto your Fabschoolino. If you already know how to do this, just skip this section.

1



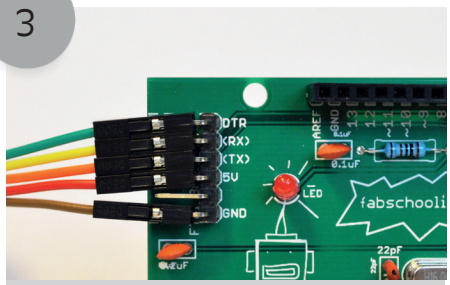
The colour of your cable may differ from those in the Instructable, but don't worry. The cables are exactly the same no matter the colour.

2



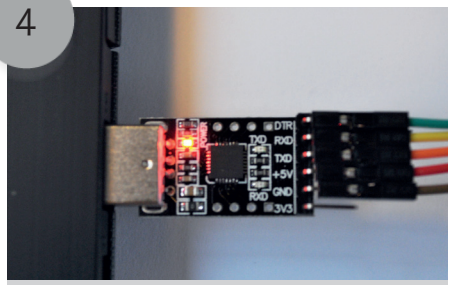
On your USB connector, you'll see a few letters behind each pin. Insert a wire from your cable into each of the pins except for the pin where 3v3 is written.

3



On your Fabschoolino, you'll see the same letters as you see on the USB connector. Insert the wires from the other end of the cable into the pins. Make sure the colours correspond to the USB connector.

4



Take out the Fabschoolino's battery. Once you've done this, you can insert the USB connector into the USB port on your computer. Then the LED on the connector should light up.

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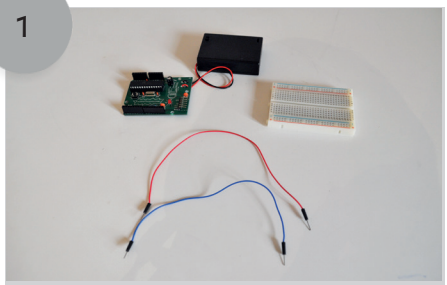
fabschoolino

CODE / HACK / PLAY

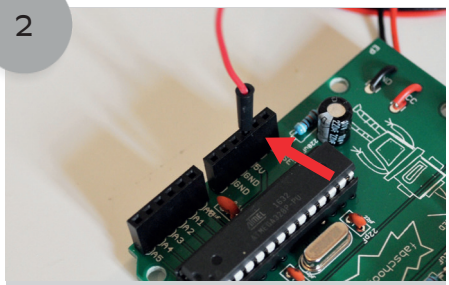
Create a stop light

1



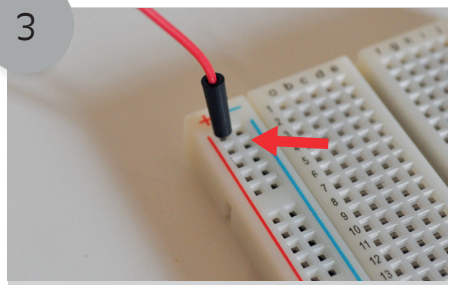
You will first connect your Fabschoolino with the breadboard. You'll need: your Fabschoolino, a breadboard and two wires.

2



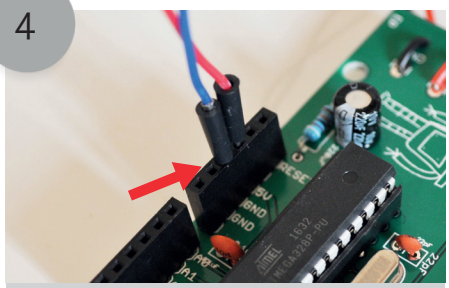
Insert the end of one of your wires in the header pin where 5V is written.

3



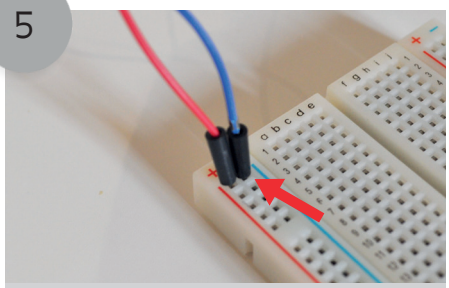
Insert the other end of the wire into the breadboard. Do this on the side on the side where you see the red plus sign.

4



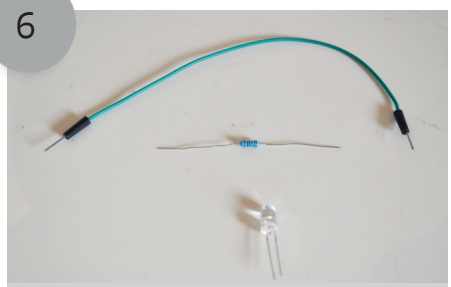
Now take another wire and insert it into the header pin where GND is written on the Fabschoolino.

5



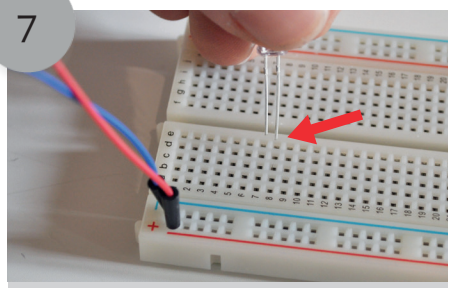
Insert the other end of this wire into the breadboard. Do this on the side where you see the blue minus sign.

6



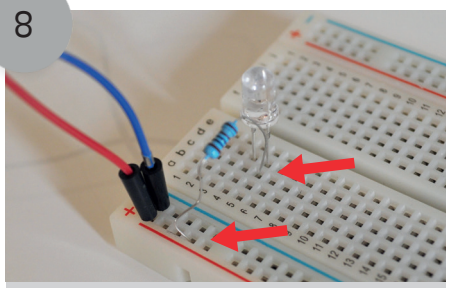
We will now install the first LED. You'll need: an LED, a 1K ohm resistor, and a wire.

7



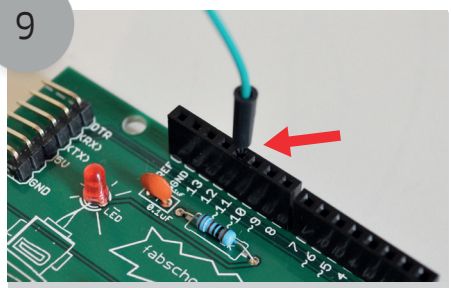
Insert the LED into the breadboard. NOTE: Make sure you place the long leg to the right as in the picture above.

8



Insert the resistor into the breadboard. Plug one end of the resistor in a hole just under the long leg of the LED. Plug the other end into a hole under the red plus sign.

9



Take a wire and plug it into header pin 11 of your Fabschoolino.

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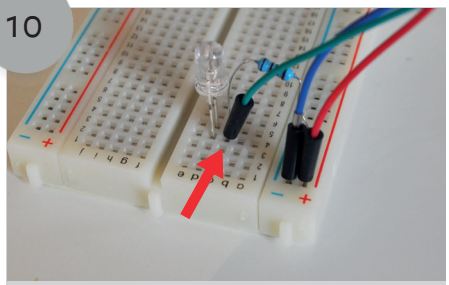
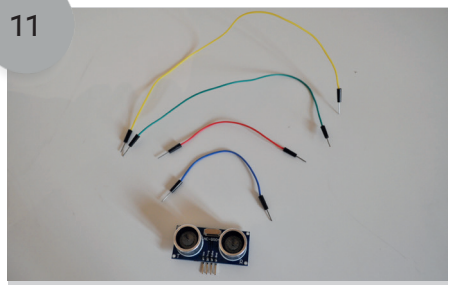
Create a stop light

10



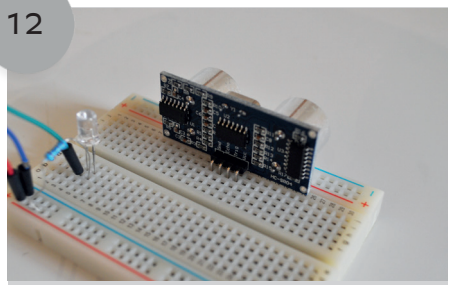
Insert the other end of the wire into a hole under the short leg of the LED.

11



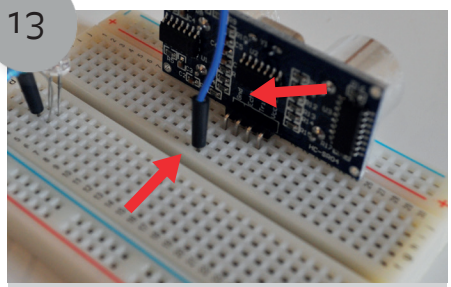
Now you'll install the ultrasonic sensor. You'll need: the ultrasonic sensor and 4 wires.

12



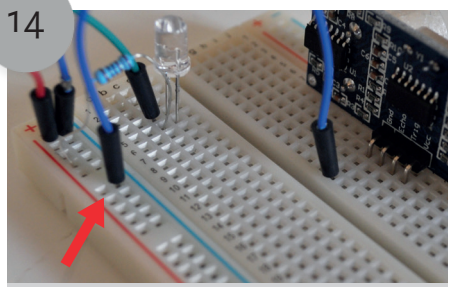
Install the sensor on your breadboard by inserting the sensor's four pins into the breadboard. Do this as pictured above to ensure that you have enough space.

13



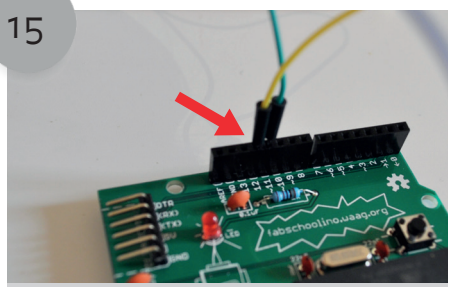
Grab a wire and insert it in the row below the sensor's pin where you see GND written.

14



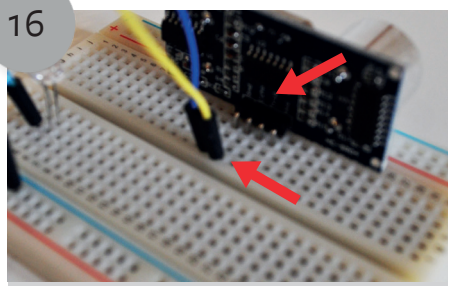
Insert the other end of this wire into the breadboard. Do this on the side where you see the blue minus sign.

15



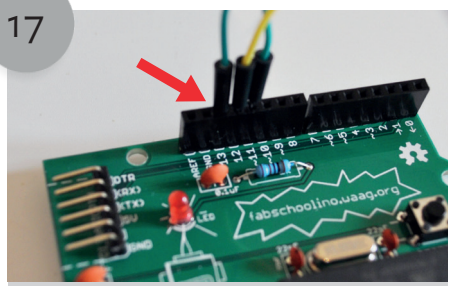
Insert a new wire into header pin 12 of your Fabschoolino.

16



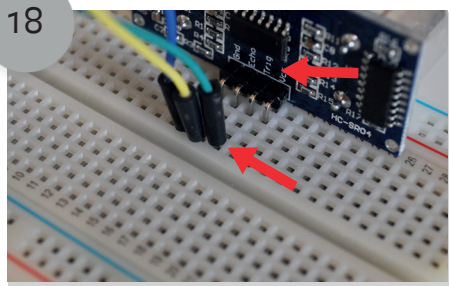
Plug the other end of this wire under the sensor's pin (you'll see "Echo" written above it).

17



Now take another wire and plug it into header pin 13 of your Fabschoolino.

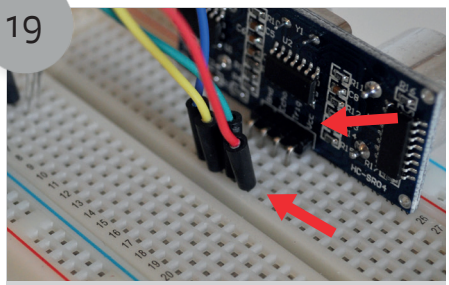
18



Insert the other end of the wire under the sensor's pin where "Trig" is written.

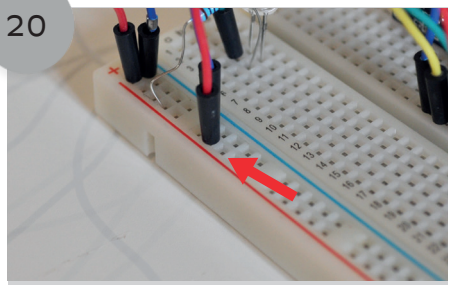
Create a stop light

19



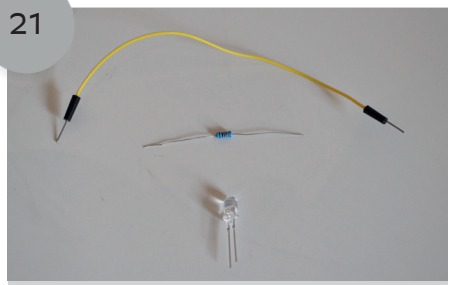
Grab a wire and insert it into the row below the sensor's pin (you'll see "Vcc" written above it).

20



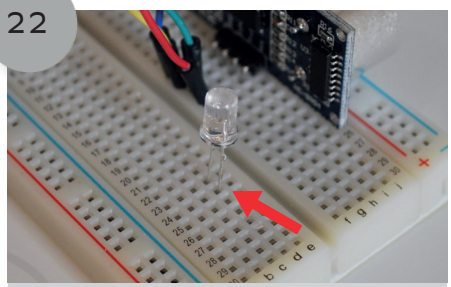
Plug the other end of this wire into the breadboard on the side where you see the red plus sign.

21



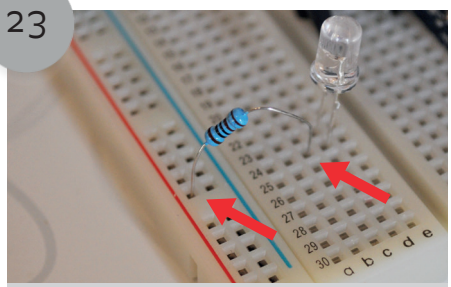
Now you'll install the second LED. You'll need: an LED, a 1K ohm resistor and a wire.

22



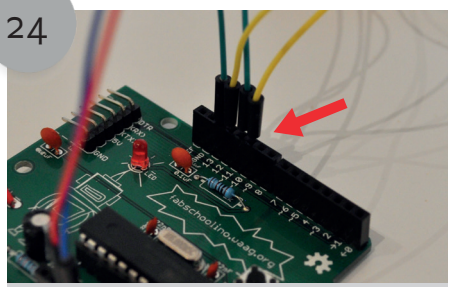
Insert the LED into the breadboard. NOTE: Make sure you put the long leg in the right place. In the image above, the long leg is marked with an arrow.

23



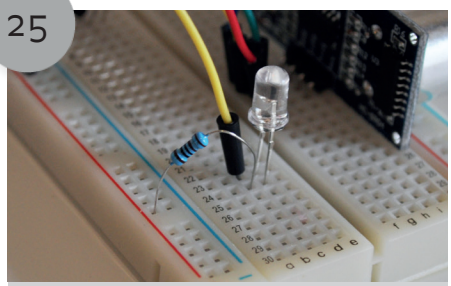
Now you'll insert the resistor into the breadboard. Plug one end of the resistor in a hole under the long leg of the LED. Plug the other end into a hole under where you see the red plus sign.

24



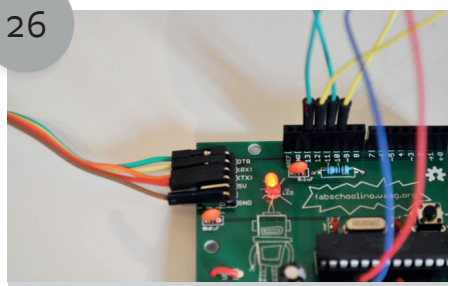
Now take the wire and plug it into header pin 10 of the Fabschoolino.

25



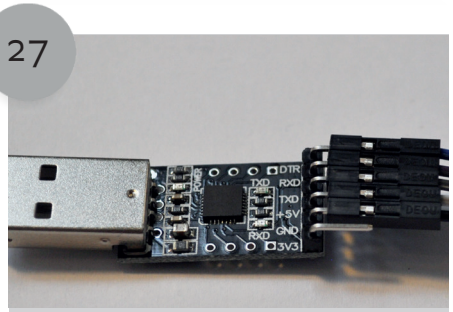
Insert the other end of the wire into the hole under the short leg of the LED.

26



Now it's time to put some code onto your Fabschoolino. Follow the instructions in the attachment if you've forgotten how to connect the Fabschoolino to your computer.

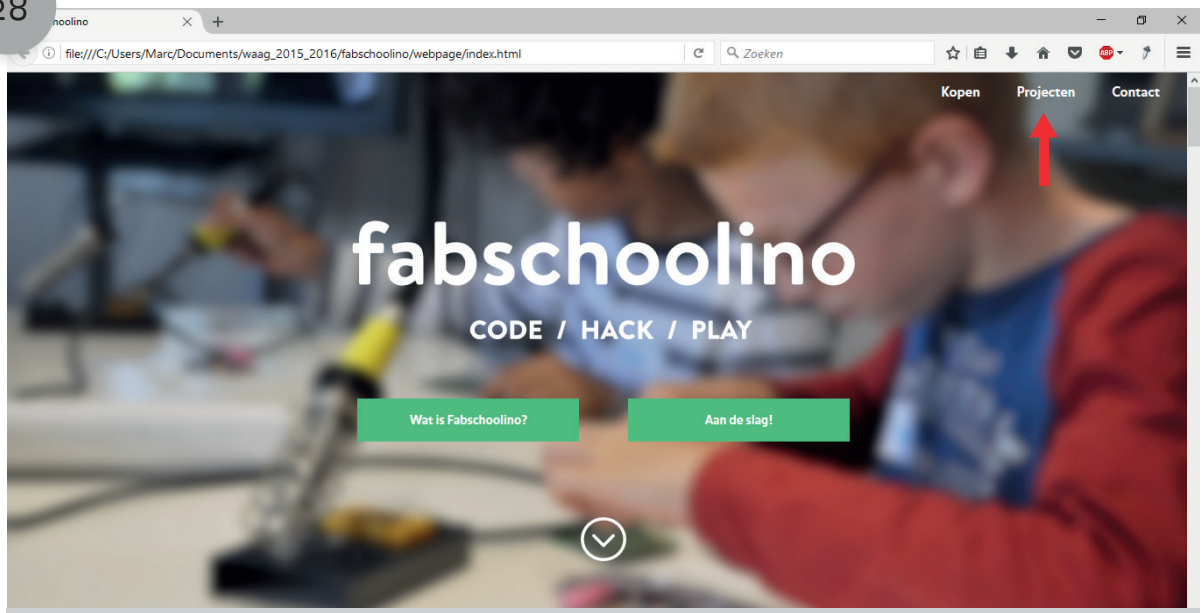
27



Make sure you take the battery out of the Fabschoolino. Then insert the USB into the computer. Make sure that all cables are correctly connected as is shown in the manual.

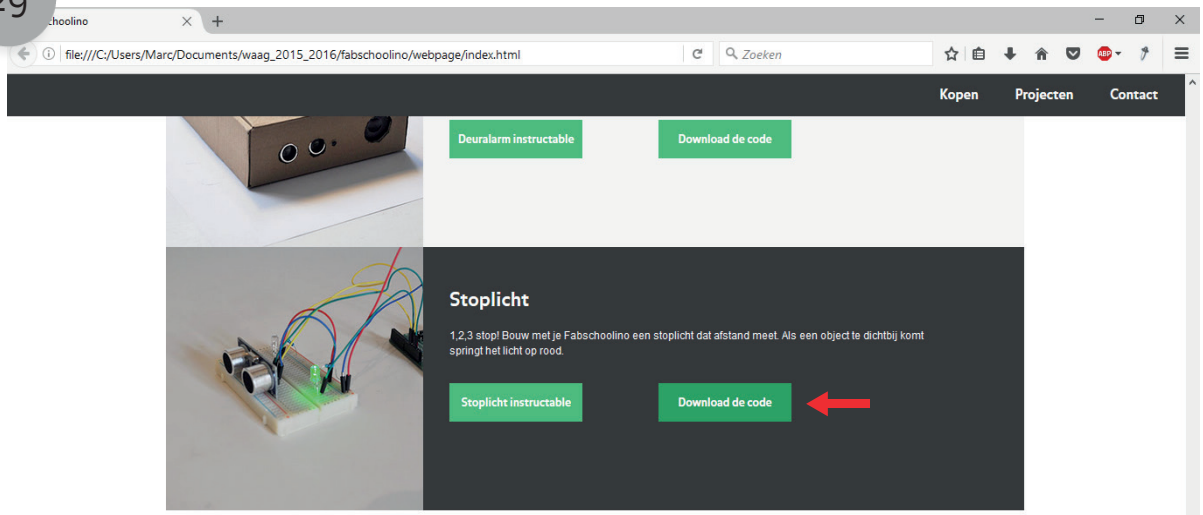
Create a stop light

28



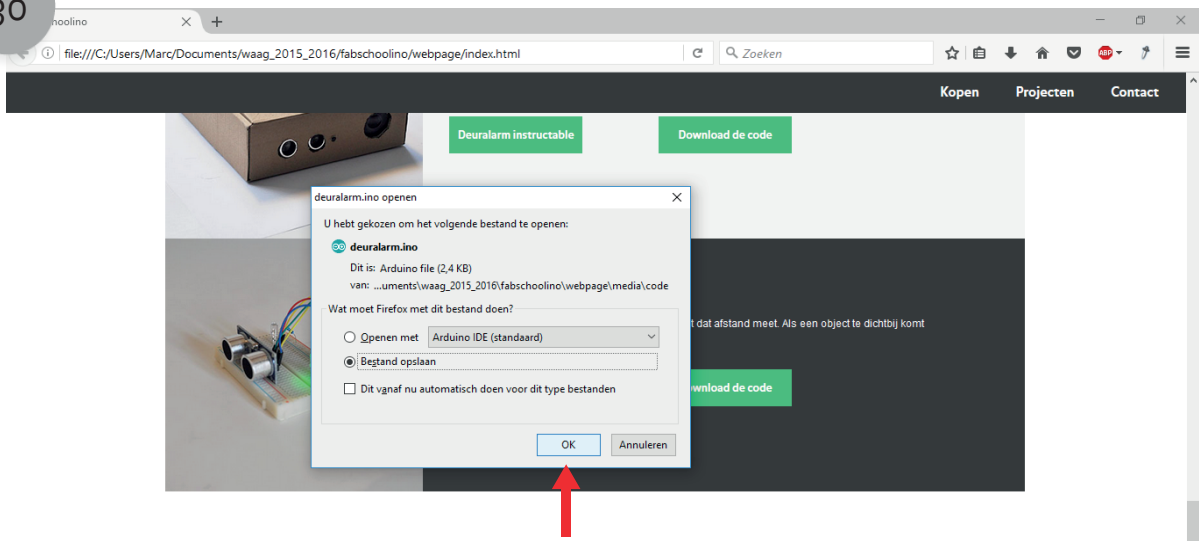
Now to put the code on the Fabschoolino. Go to fabschoolino.waag.org and click on "projects."

29



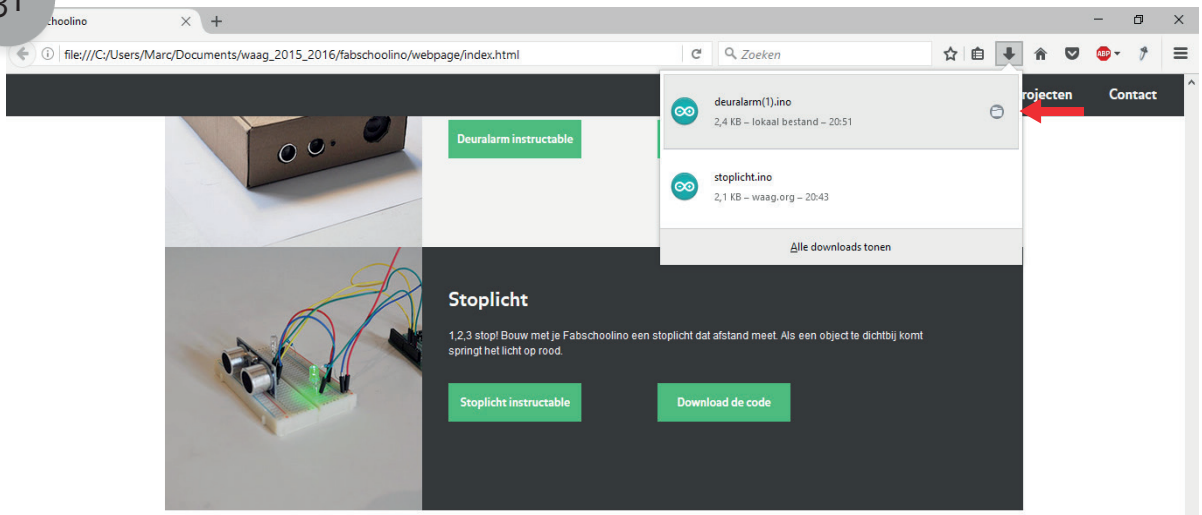
You should see the stop light project (Stoplicht). To download the code, click "Download de code".

30



Select "Save File" and click OK.

31

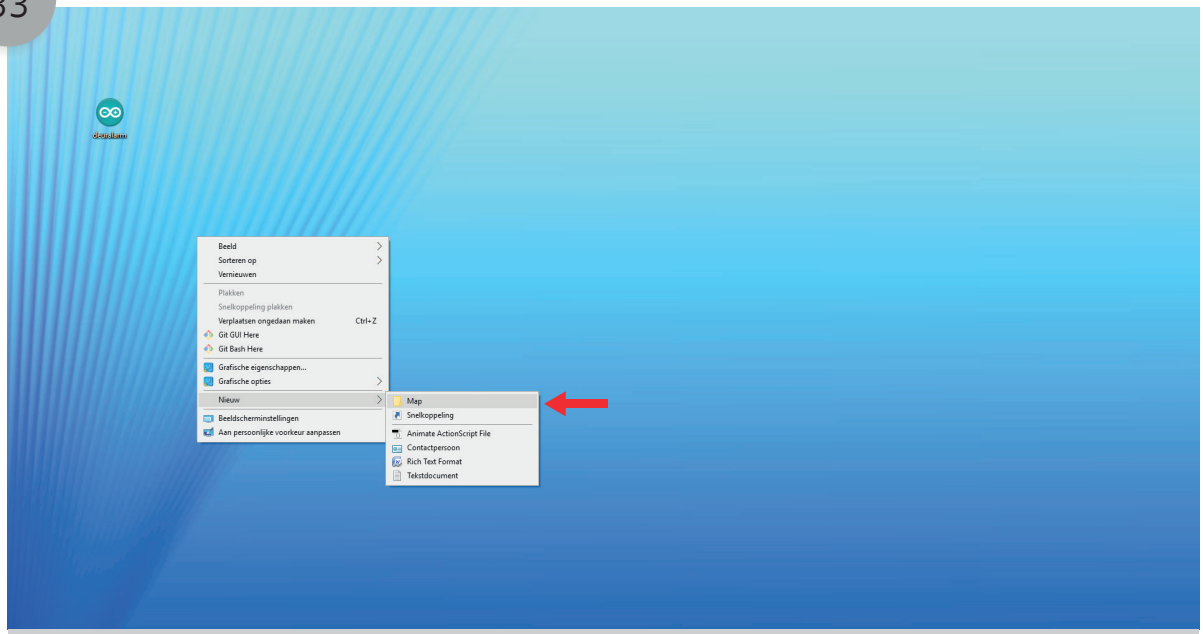


Once you've downloaded the file, select the folder, then cut the file and paste it to your desktop (or drag and drop it).

32

The file is now on your desktop.

33

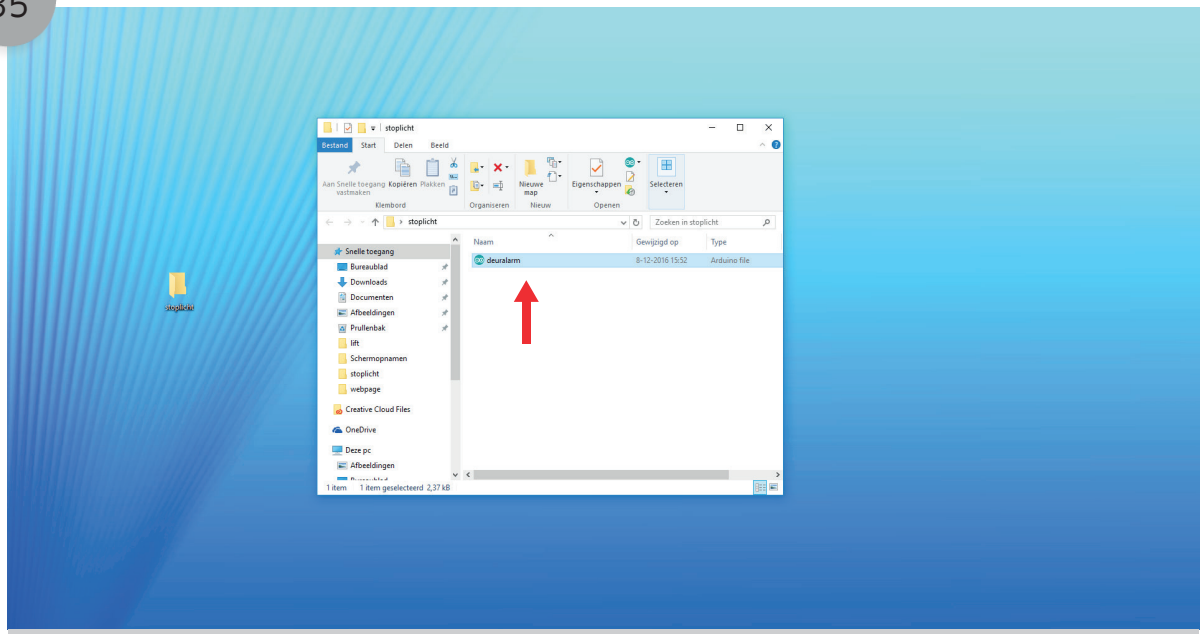


Click the right mouse button and go to "New"> "Folder" to create a new folder on your desktop.

34

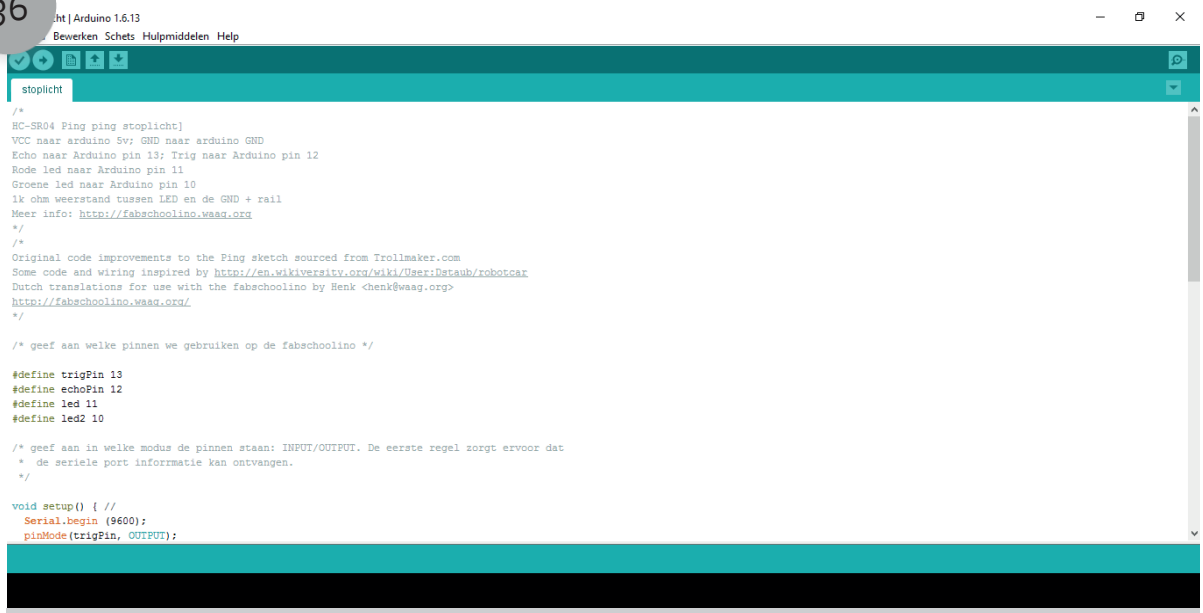
Name the folder "stoplight" and then drag the file that you just downloaded into this folder.

35



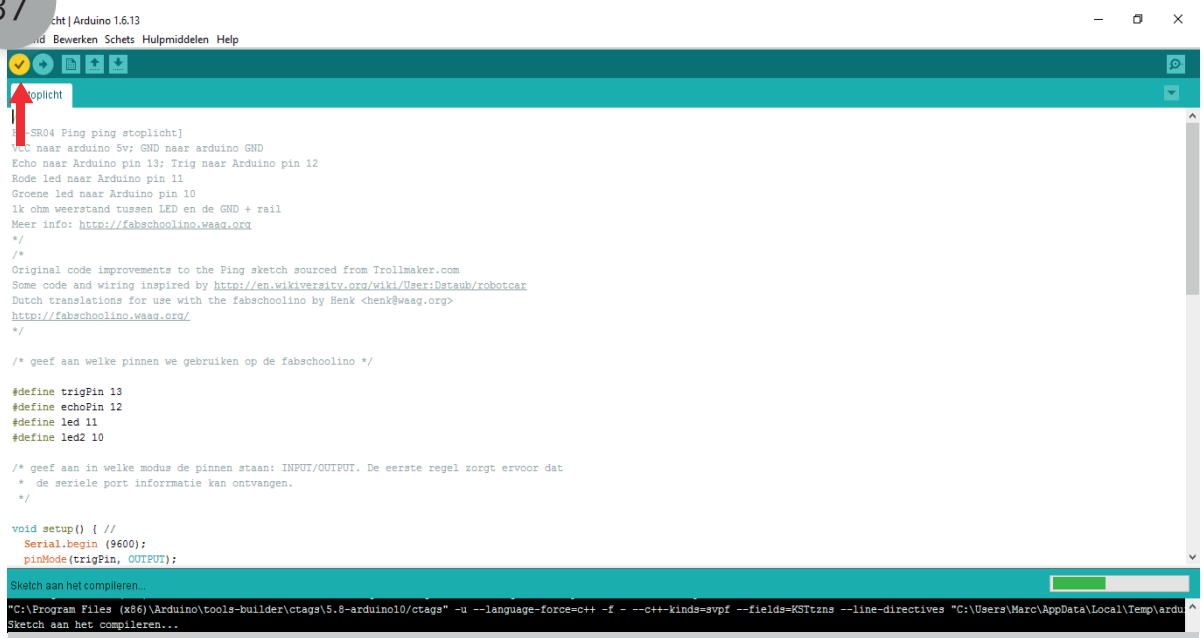
Double-click the file to open it in Arduino.

36



The file is now open. If you want, you can read the notes above the code, which will tell you step-by-step what your code does.

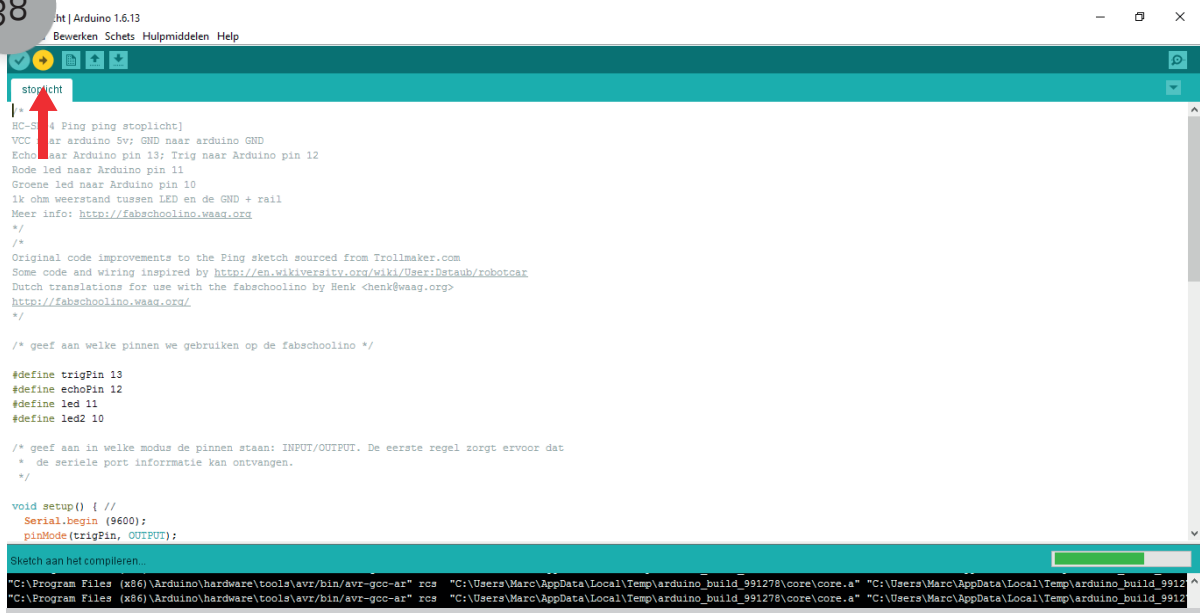
37



Click the checkmark to compile your code. “Compile” means that the code is converted to a readable format for the Fabschoolino.

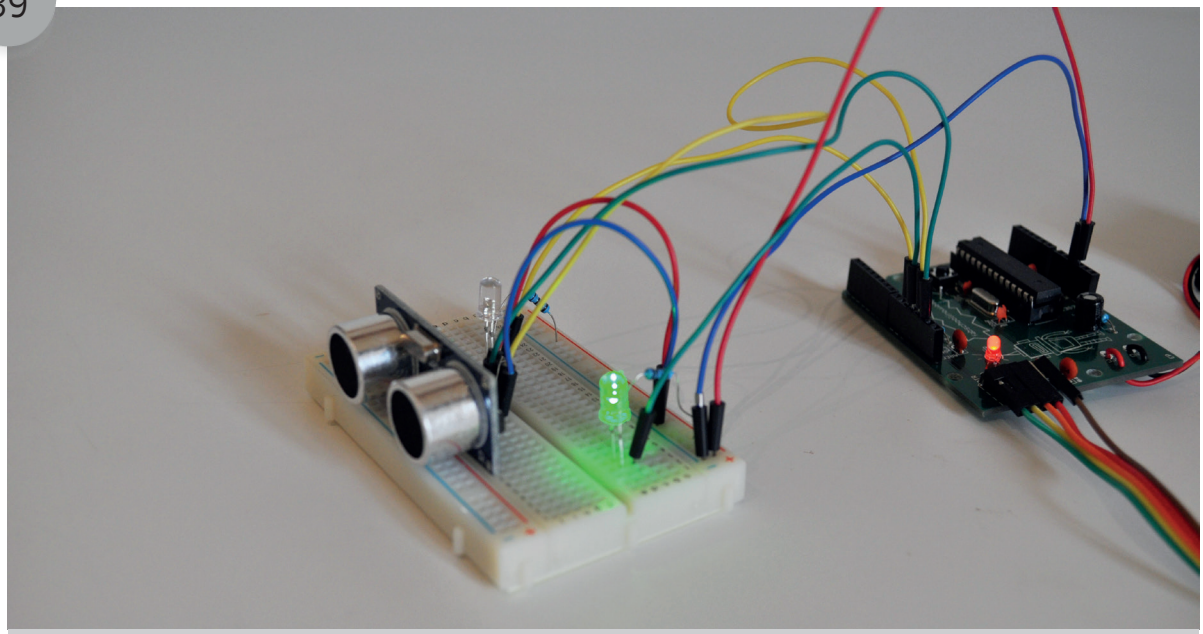
Create a stop light

38



Now click the arrow to the top of the screen to transfer the code onto your Fabschoolino.

39



Congratulations! You've built your very own traffic light. Hold your hand in front the sensor and see what happens!