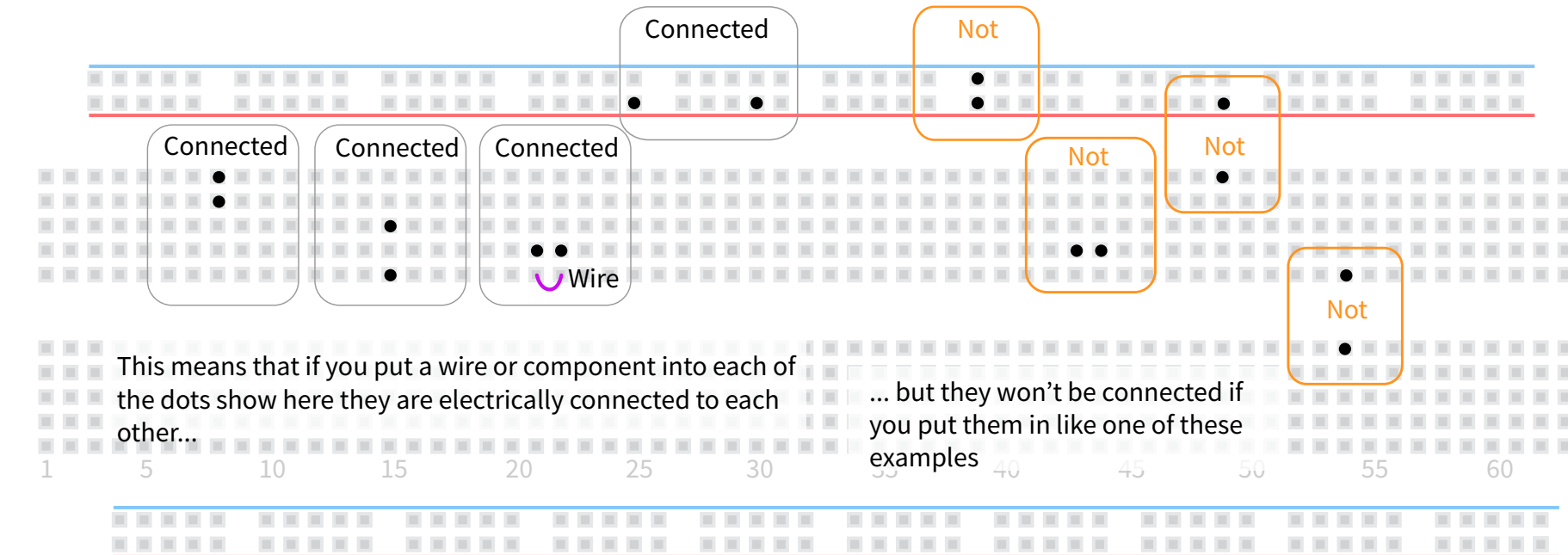


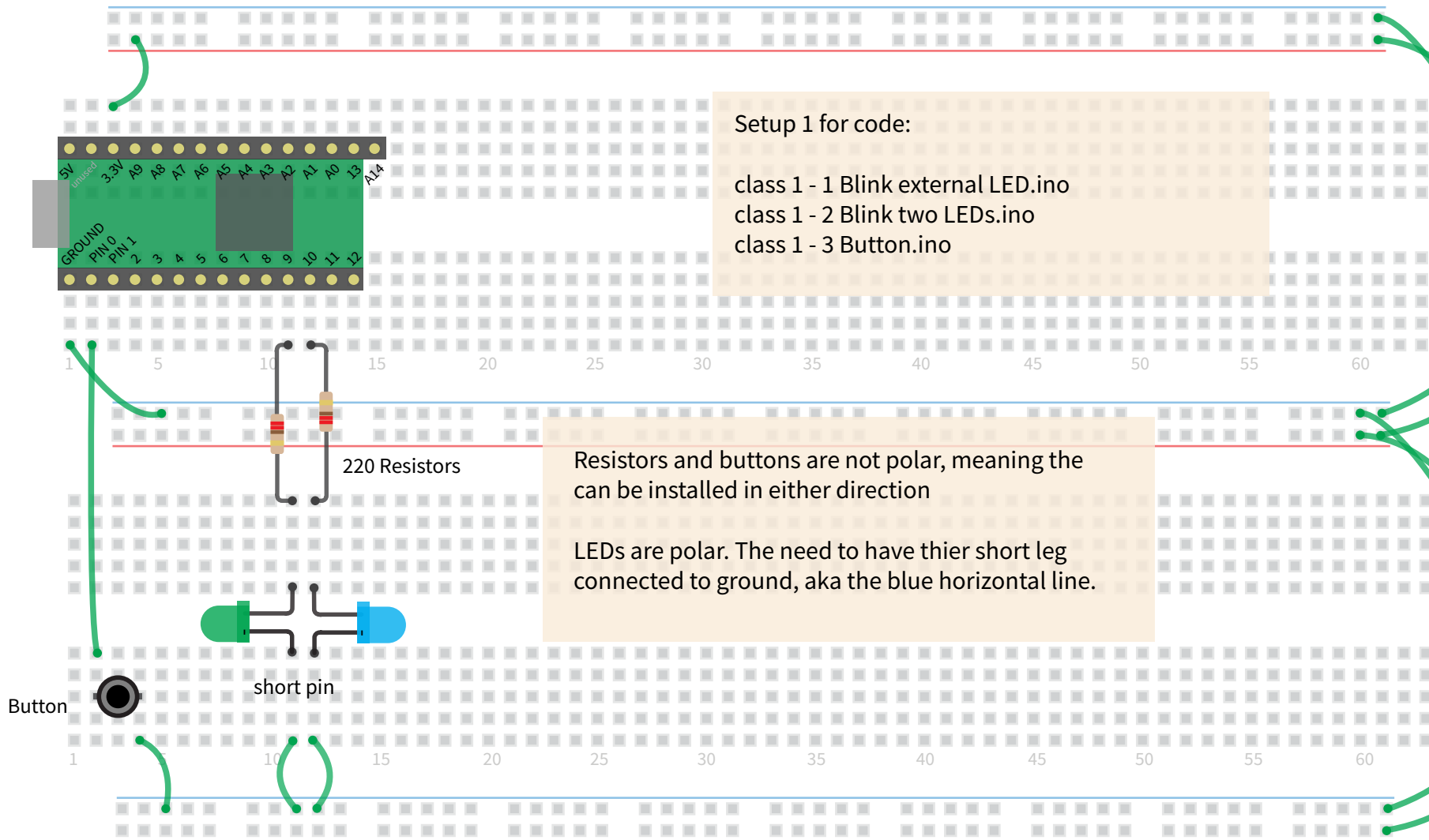
Breadboards make it easy to assemble electronic circuits without soldering

The holes on a breadboard are connected as show with the colored lines.
The vertical strips on either side of the central gap are connected in groups of five.
The horizontal red and blue “bus” lines are connected all the way across the board.



This means that if you put a wire or component into each of the dots show here they are electrically connected to each other...

... but they won't be connected if you put them in like one of these examples



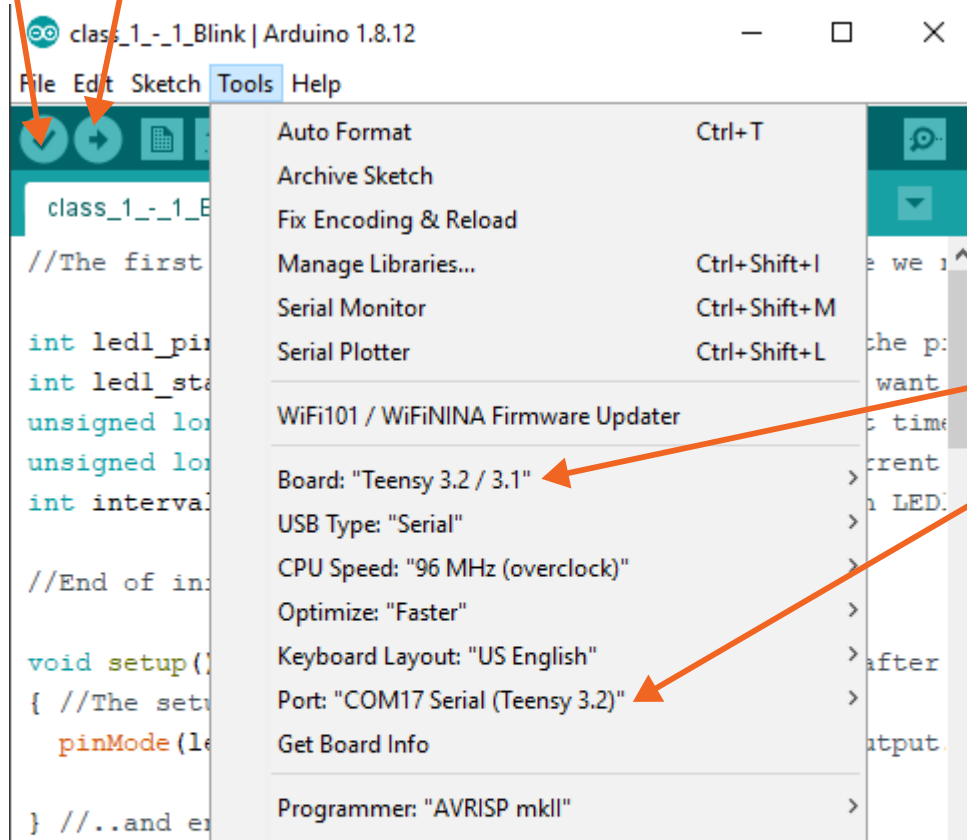
The Arduino IDE is how we'll code and communicate with the teensy

Verify

Check that the code doesn't have any errors and can compile but don't upload it.

Upload

Compile the code and put it on your device



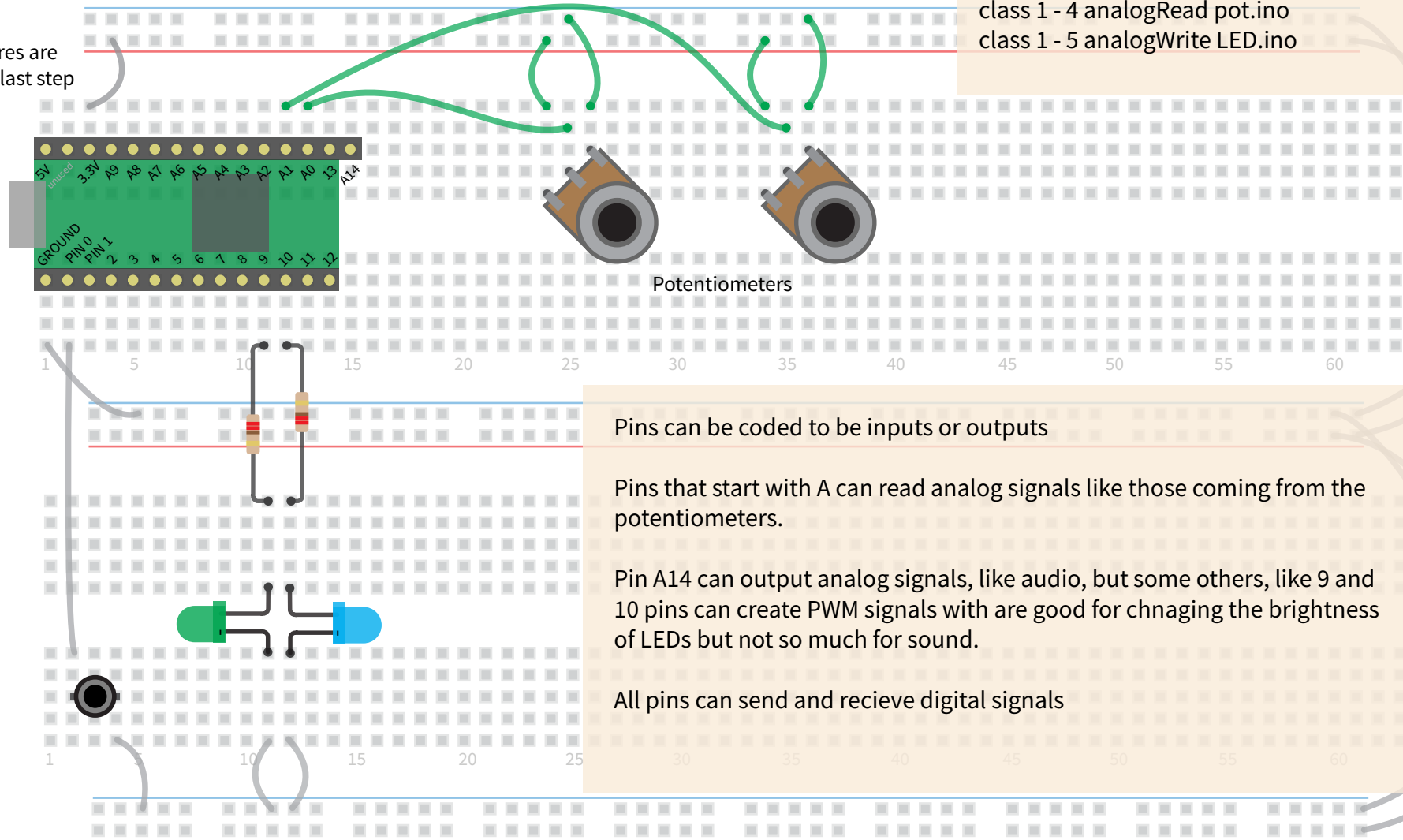
Before you can upload your code you must select the teensy board and the port it is connected to

Go to Tools and select Teensy 3.2/3.1 under board.

Plug your device in to USB and select whatever port shows "Teensy" on it.

You don't need to worry about the rest for now.

Grey wires are from the last step



Setup 2 for code:

class 1 - 4 analogRead pot.ino
class 1 - 5 analogWrite LED.ino

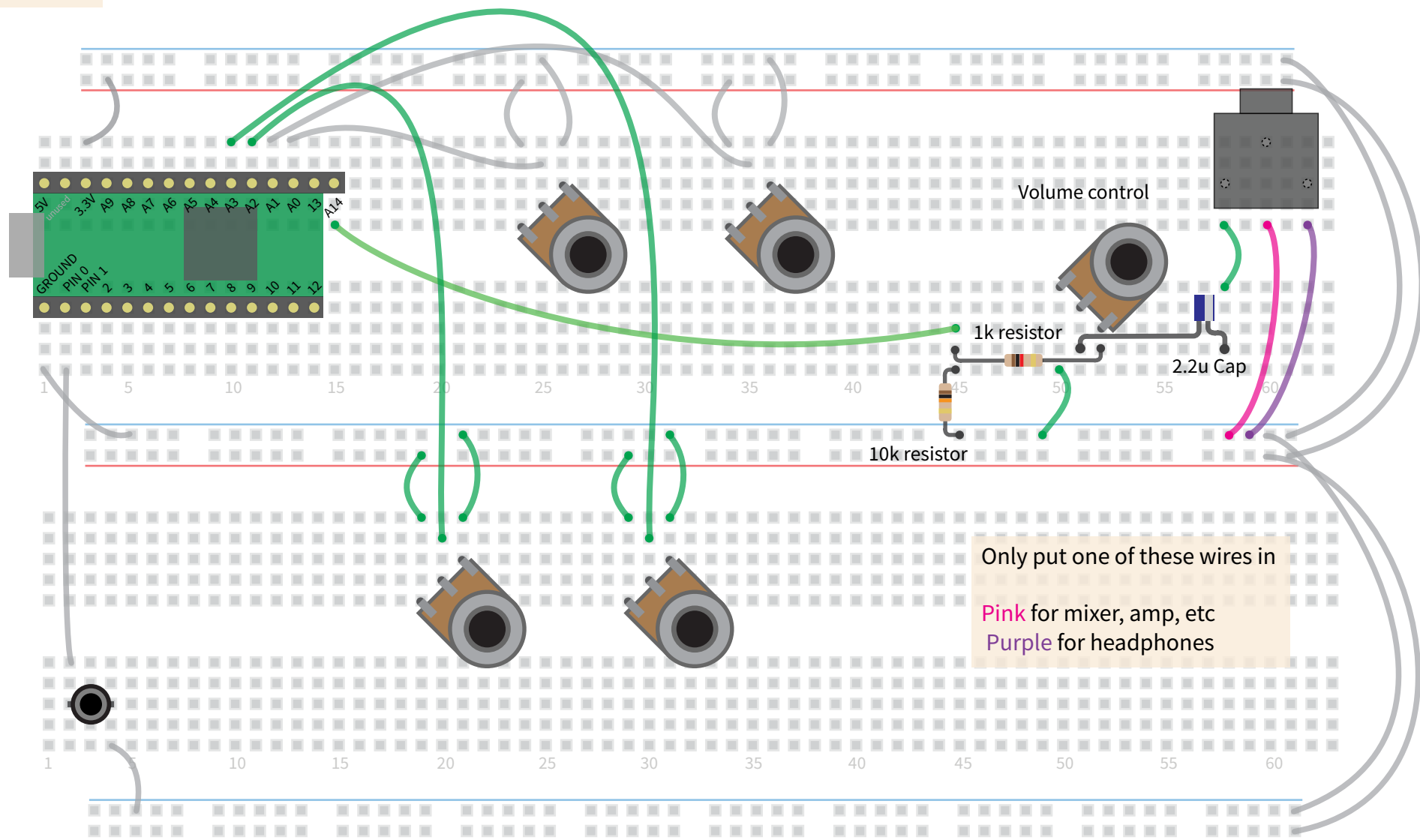
Pins can be coded to be inputs or outputs

Pins that start with A can read analog signals like those coming from the potentiometers.

Pin A14 can output analog signals, like audio, but some others, like 9 and 10 pins can create PWM signals with are good for chnaging the brightness of LEDs but not so much for sound.

All pins can send and recieve digital signals

Setup 4 for class 2



Arduino is a platform.

A programming environment, hardware, software, and a community.

We program devices compatible with the platform in the C language with lots of Arduino specific code libraries.

There is no operating system or anything like that. The code you upload is all there is.

The Teensy 3.2 device we use is based on a microprocessor chip that already existed. Paul Stoffregen of PJRC decided to make work with the Arduino platform and it's become one of the main Arduino devices people use due to its price, formfactor, and power. The original Arduino UNO is still a useful device though. It just can't do audio at near the level we will.

