Skill Demo 2: Introduction to Arduino should result in

Understanding of how to solder pin headers on to a board
Ability to program and communicate with your Teensy
Ability to sense a switch and light a LED with your Teensy

Tools/supplies:

Teensy
pin headers (2 rows of 12)
various resistors
LED
laptop
breadboard
USB cable
soldering iro
solder

Background:

CS 3651 videos that should have been watched by this time:
CS3651 - Intro to Multimeters
CS3651 - Using Multimeter in a Circuit
CS 3651 Introduction to Circuit Schematics
CS 3651 Introduction to Resistors
CS 3651 Introduction to Capacitors
IntroToLED.mov
pullupdown1.mov
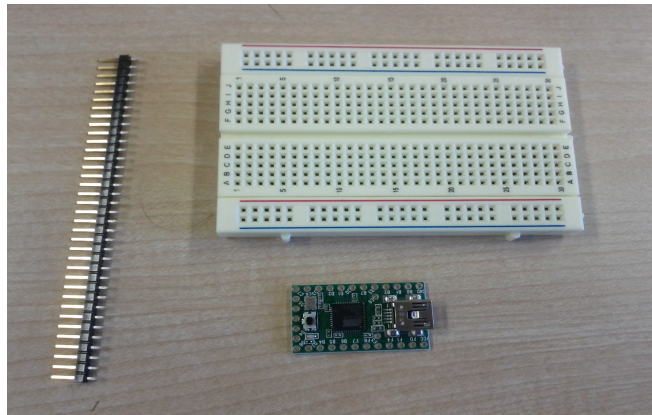How and WHY to Solder Correctly (if did not attend class)
[Introduction to Breadboard (Protoboards)](#) (if don't remember from ECE2031)
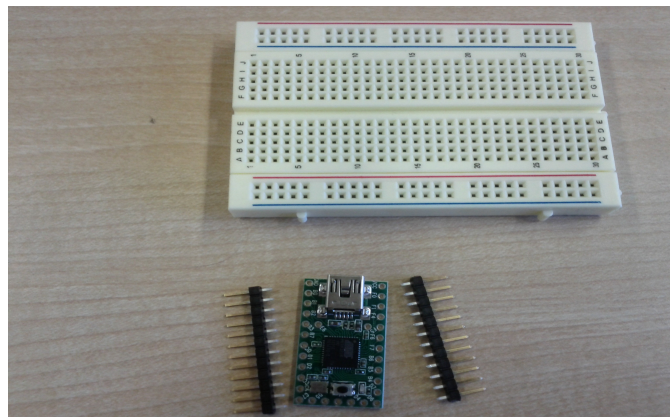CS 3651 Pull-up resistors
CS 3651 - APIA - Pull down resistors

Relevant section of book (Practical Electronics for Inventors 2000 edition): pages 1-14
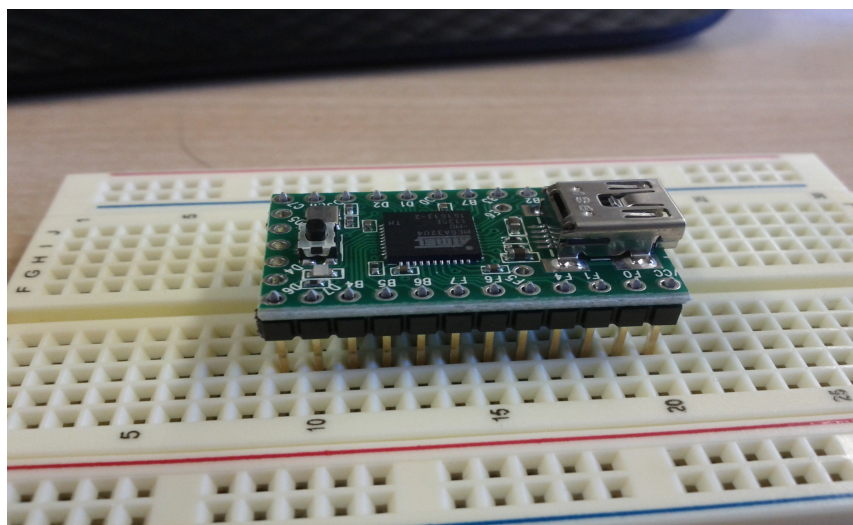
1. Get a **Teensy** and **pin header (36 pins)**.

2. Break set of header pins into two groups of 12

3. Place header pins into breadboard so that the Teensy can rest comfortably on top. The short side of the pins should be in the Teensy. **Do not** press the pins all the way into the breadboard (or else when we solder, the breadboard will melt). Just make sure they do not move around.

4. Solder the header pins to the pads on the Teensy board. To do this:
   1. Touch your soldering iron to the top of a header
   2. Touch the end of your solder to the point where the pad and pin meet
   3. Repeat until you have soldered all of the header pins

The soldering will have a conical shape if applied correctly as shown in the soldering videos. If it is spherical the connection is not strong. **After you have finished soldering, have one of the mentors confirm that you've done it correctly.**
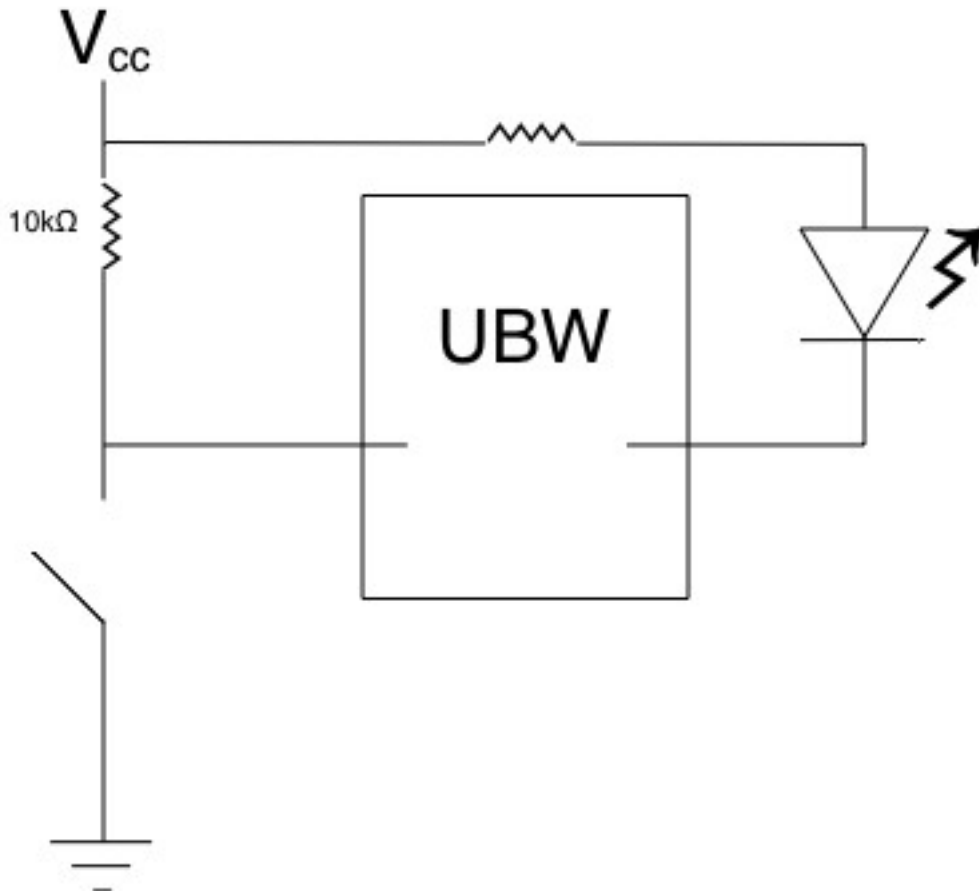
Sign-off initials:_____   Date:_____   Time:_____

5. Connect the Teensy to your laptop and connect to it using Arduino software.

6. Create the following circuit and create a program the shows the state of the switch (open or closed) on your laptop screen.
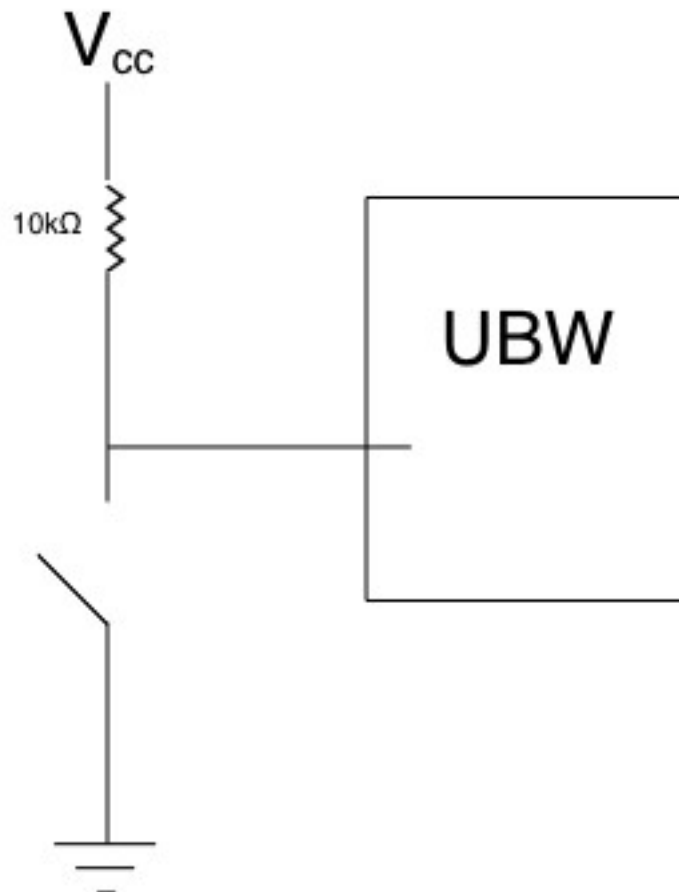
Sign-off initials:_____   Date:_____   Time:_____

7. Attach an LED to a different pin. Write a program which performs the previous step and uses the continual input from the input pin to turn on/off the LED.
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V_{CC}

10kΩ

UBW

Sign-off initials:_____   Date:_____   Time:_____