

## CST8227 Lab 01: Teensy Lab Kit

### Lab Objectives:

1. **\*\* Important \*\***: Pickup your lab kit, featuring the Teensy 3.2 microcontroller and various components, from the Connections bookstore, located on the Woodroffe campus.
  - a. You'll need to bring photo ID – to identify who you are.
  - b. Show your timetable – to show you're enrolled in CST8227.

Detailed instructions regarding pickup are posted on Brightspace. Please read.

### Required Equipment:

- Your laptop, as specified in BYOD
- **IMPORTANT**: you need to provide your own USB cable with 5-pin micro-B connector
  - the USB cable must be rated for charging (i.e. power) **AND** data transfer (!)

### Part A: Protoboard Preparation and Layouts

Welcome to CST8227 – Interfacing!

Your lab kit for the course include the following items:

- 1 x Teensy 3.2, a 32-bit Arduino-compatible microcontroller
  - 1 x Teensy 3.2 Reference Card
  - 1 x Teensyduino Tutorials 1 to 4 Parts Kit
  - 1 x protoboard
  - 1 x wire set
  - 4 x switch, large (12mm)
  - 8 x red LEDs
  - 4 x green LEDs
  - 4 x yellow LEDs
  - 2 x shift registers (Texas Instruments)
  - 2 x 7 segment displays
  - 1 x Piezo buzzer
  - 1 x light dependent resistor (LDR), otherwise known as a CdS (Cadmium-Sulfide) or a photoresistor
  - resistors:
    - 16 x 220-ohm resistors
    - 8 x 180-ohm resistors
1. Remove the protoboard from its packaging and dispose unwanted packaging by either recycling or putting into a trash can.

2. Remove the “sticky-tape” from the bottom of the protoboard and attach the conductive plate (aluminum).

Do a better job of *squaring* the conductive plate to the protoboard than what I did ☹



3. Attach your Teensy to the protoboard according to this schematic:

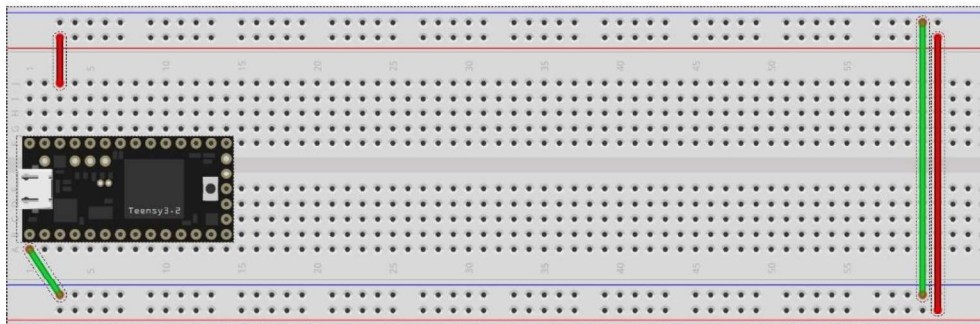
**CST8227 - Interfacing  
Lab 01 - Teensy Lab Kit**

Attach your Teensy to the protoboard thusly.  
Stick the aluminum plate squarely (edge-to-edge) to the underside of the protoboard.

Course Standard for Wire Colours:

- \* Red when attaching to Vcc rail
- \* Green when attaching to GND rail; Black and Blue are permitted as well

pharab@AlgonquinCollege.com



a. The fritzing app, by default, does not include a Teensy 3.2 part, so I made one:

hurdleg/Fritzing\_Part\_Teensy\_3.2

bin Added: Installation instructions to ReadMe. 23 hours ago

core Initial commit (moi). yesterday

unit-test Unit Acceptance Test for Fritzing Part: Teensy 3.2 23 hours ago

.gitignore Initial commit (moi). yesterday

README.md Added: Installation instructions to ReadMe. 23 hours ago

Teensy\_3.2.fzpz FIX: changed to ZIP from TAR. yesterday

**Fritzing Part - Teensy 3.2**

**Description**

The Teensy is a complete USB-based microcontroller development system, in a very small footprint, capable of implementing many types of projects. All programming is done via the USB port. No special programmer is needed, only a standard micro-USB cable and a PC or Macintosh with a USB port. It has a USB keyboard/mouse/joystick emulation stack and can be programmed through Arduino IDE.

For more information: <http://www.pjrc.com/teensy>

Deliverable:

Use your mobile device and take a “selfie” of you and your prized Teensy attached to the protoboard. If you are uncomfortable taking a self-photo, please substitute with your Algonquin College Student ID Card.

Upload your photo to Brightspace before the due date.

Postlab:

Congratulations on receiving *your* lab kit ---- it's yours to keep as you've paid for it 😊

FAQ: I have a Teensy... that's nice. What can I do with it?

Answer: The Teensy is a popular microcontroller and developers often post their projects to [PJRC.com](http://PJRC.com), home of the Teensy.

Enjoy!