Class 1: Introduction to physical computing, circuits, tools

- What is physical computing?

Interactive systems that talks to physical world through a combination of hardware and programming.

- What is a micro controller? What is Arduino?

Programmable integrated circuits with a processor and memory. Arduino is a board based on a micro controller. It comes with multiple useful interfaces.

- What are voltage, current and resistance?

Voltage (V): Amount of difference in charges between two nodes. Unit: Volts (V)

Current (I): Amount of charges passing through an object. Unit: Ampere (A)

Resistance (R): A conductor's ability allow current. Unit: Ohm (Ω)

Ohm's Law: V = I x R

- What are the differences between analog and digital?

They are two different ways of interpreting data. Digital simplifies so that you can think in larger terms (millions of signals). Analog looks at detail (one signal but infinite values).

- What is a transistor?

Transistors are the building blocks of electronics, computers, etc... They are active devices whose behavior change with the voltage applied. The can be seen as switches that can also amplify, dampen, filter, create, enhance signals.

- Principles of Electricity (movie)

http://www.youtube.com/watch?v=IpaEGhjpZgc

http://www.youtube.com/watch?v=nZjMARe6APs

Assignment 1 (Due 7/10)

- Find a cool physical computing project at http://thecreatorsproject.vice.com/en_us and be ready to talk about why you like it and how they do it in a very simple way.
- Download Processing 1.5.1 from https://www.processing.org/download/?processing