sparkfun ELECTRONICS

Tweaking Your Simon

Adding a photoresistor and changing code

Demo over view:

Arduino Software and Arduino hardware

Uploading different code onto the Simon
Disco Mode Code found:
www.sparkfun.com/tutorials/203

Adding a photocell and using Disco Mode

Downloading the Arduino Environment:

First go the Arduino website:
http://www.arduino.cc/

Then click on Download and follow the instructions

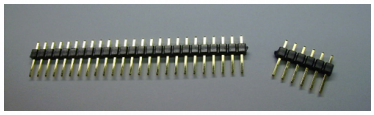
Hardware:

You will need the following:
A USB cable, an FTDI Breakout Board,
and six pins of Break Away Headers

Break Away Headers:

Headers come in strips of forty

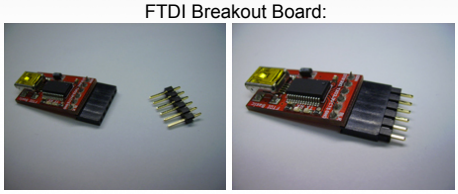
We just need six for the FTDI Breakout Board so clip off six of the forty by cutting through the seventh pin



FTDI and Headers:

Attach the FTDI Basic Breakout Board and Headers

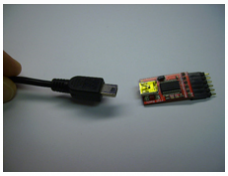
Make sure you plug the long side of the headers into the FTDI Breakout Board:



Plugging it All into the computer:

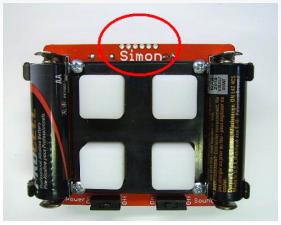
Plug the USB cord into the computer and then into the FTDI Board

The TX and RX LEDs will blink as you plug the FTDI in, this means the FTDI is talking to your computer



Plugging it All into the Simon:

Plug the Headers on the FTDI Board into the Programming Port on the Simon

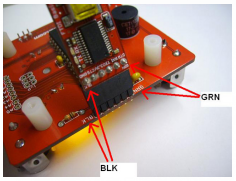


Plugging it All into the Simon:

Orient the FTDI properly,

GRN goes to GRN and BLK goes to BLK

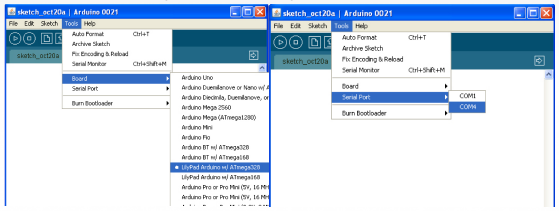
Also make sure to hold the FTDI at a 45 degree angle so the Headers make contact with all the ports



Before uploading code onto the Simon:

Open the Arduino Environment

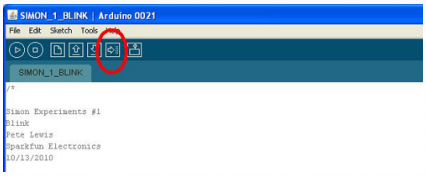
Choose your board type and serial port



Uploading Code onto the Simon:

We're finally ready to upload code

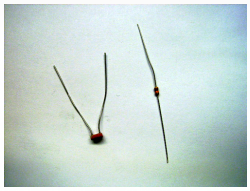
Open the Simon sketch in the Arduino Environment and click Upload



Adding a Photoresistor to the Simon:

We're ready to add a sensor to your Simon!

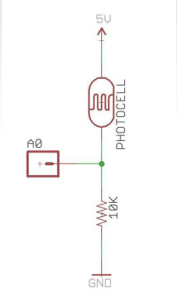
You'll need a photoresistor and a plain old 10K Ohm resistor:



Here's the Schematic:

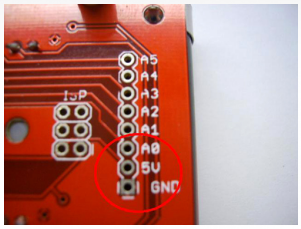
This schematic shows the three connections we will have to make

5V, GND and A0



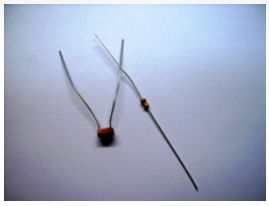
The Simon Analog Pins

The three holes (5V, GND and A0) you will connect to the photoresistor circuit



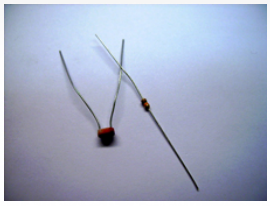
Creating the Circuit

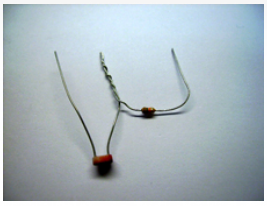
Make the photoresistor and regular resistor look like the schematic



Creating the Circuit

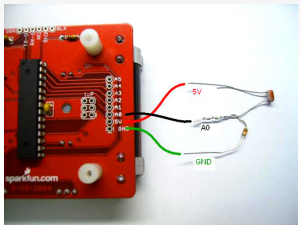
Make the photoresistor and regular resistor look like the schematic





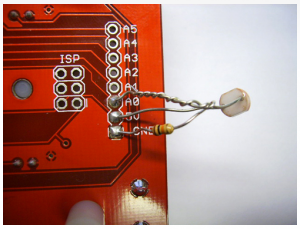
Connecting the Circuit

Just prior to soldering your photoresistor circuit should look like this



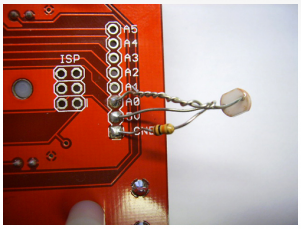
Connecting the Circuit

Just after soldering your photoresistor circuit should look something like this



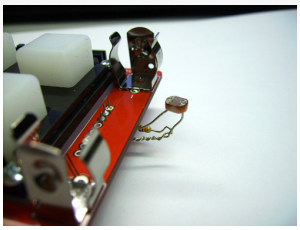
Connecting the Circuit

Just after soldering your photoresistor circuit should look something like this



Bending the Sensor

Bend the photoresistor around so it faces your light source



Insert Your Batteries and Bask in the Glory of Disco Mode

sparkfun ELECTRONICS

www.sparkfun.com
6175 Longbow Drive, Suite 200
Boulder, Colorado 80301