# Check the following connections before you turn on the board:

1. Power Supply

Check that the power supply is plugged in to a power source.

2. Serial Header

Reprap communicates with the computer through a USB cable.

* The cable has one end with a Sparkfun circuit chip. Connect this end to the motherboard’s Serial Headers (with the side of “Sparkfun.com” facing **downward**).
* Connect the other end to your computer

3. These three wires (green, orange, and black, as shown in figure..) connects the motherboard with the extruder.

* At the stepper motor driver side, the connections are:
  + orange with pin D9
  + green with pin D10
  + black with nothing;
* At the motherboard side, the connections are:
  + orange with SCL;
  + green with SCA;
  + black with nothing

4. Opto-end stop

All of a Reprap’s axes need a datum (also known as home position or end-stop to reference their movement. At the start of each build each axis needs to back up until the datum point is reached. We use one opto-switch for each axis to define its position.

* X: use your hand to move the racket which the extruder sits on toward the opto-end stop, and make sure that the aluminum plate on the racket can stick in the two slots of the end stop.
* Y: use your hand to move the stepper motor toward the opto-end stop at the corner. Adjust the orientation of the circuit and/or the shape of the plate with black tape if the plate cannot stick into the end stop.
* Z:
  + Gently pull the belt along the negative (right-hand-rule) orientation to raise the Z-bed. Make sure that the aluminum plate with black tape can stick into the slots of the opto-end stop.
  + Turn on the power. The green light on the end stop will turn off when the plate leaves the slot. Adjust the height of the end stop, so that the green light turns off when the Z-bed is 1.5mm-2mm from the tip of the nozzle.

5. Masking Tape

Cover the Z-bed using the blue Masking Tape. If you print plastic pieces directly to the Z-bed, it will be almost impossible to take off the printed pieces afterwards.

6. Filament

Untangle about 1 meter of plastic filament from the scroll before each print. Keep an eye on the scroll during each print and make sure that the scroll is not pulling the filament.

# How to print an STL file.

Turn on the switch of the motherboard.

Open up the software and check the temperature connection:

* Click the shortcut “Reprap” from your desktop. Three windows should pop out: “Reprap Console”, “Reprap”, and a DOS-style window.
* Go to the “Reprap Console”, and then click the “Extruder 0” tab. If the thermal extruder is correctly connected to the motherboard, you should have a non-zero reading at the “Current temperature” window. Check the connection of the thermal extruder.

Load STL and Generate G-code:

* Go to the “Print” tab.
* Click the “Send GCodes to File”
* Click the “Load STL” button and click the STL file that you want to print.
* A “Material Selection” window will pop up after you load the STL file. Choose “PLA” and click “OK”.
* Click the green “Print” button. The console will ask for the location to store the G-Code. Choose your location and click “Save” and the Console will start to generate GCode layer after layer.

Print your piece

* At the “Print” tab, click the “Print on G-Code Reprap” button.
* Click “Load GCode” and find the GCode file that you generated;
* Click “Print”