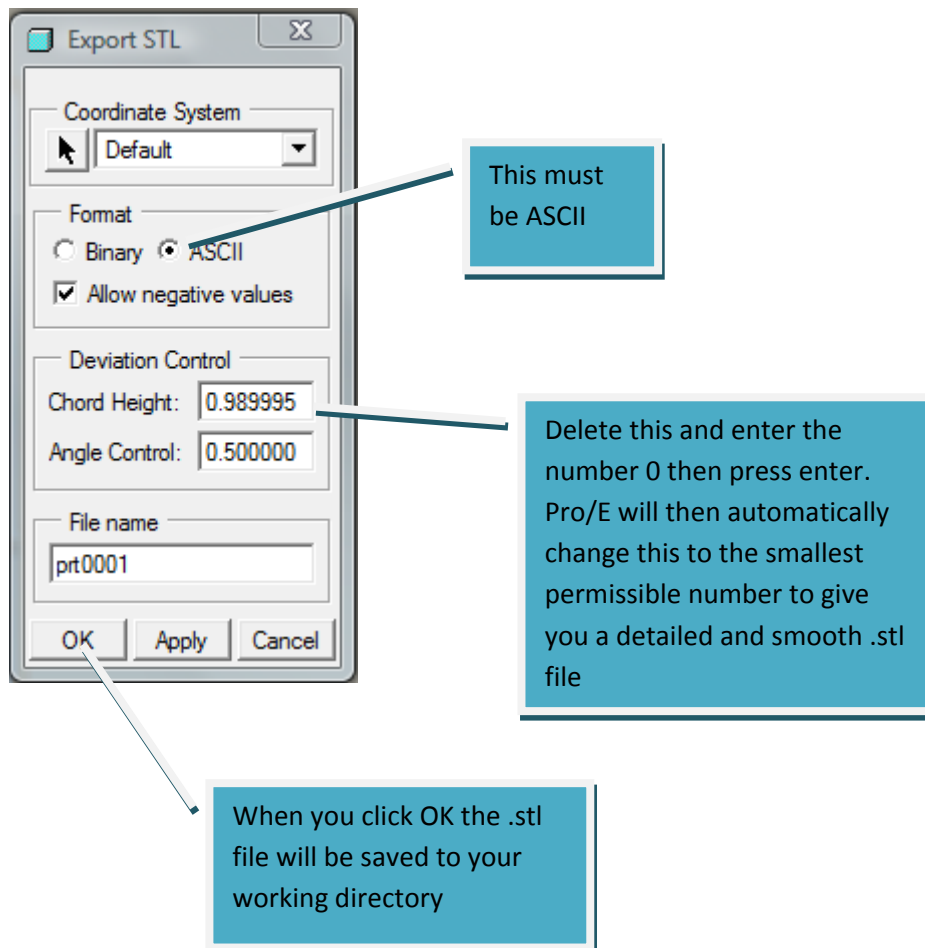A few clues for 3D printing with a Rapman in schools.

In most schools the students will be able to create their 3D design work using Pro/DESKTOP or Pro/ENGINEER. These are fine but you will have to do a bit of work on the files before you start printing.

To get the correct orientation you need to create your model on the correct plane in Pro/E. It's not obvious and maybe even looks wrong way round on screen. You need to create the model on the "FRONT" plane. A good way to imagine it is as if the front plane is the bed of the Rapman. (it looks like it has been tipped up to face you).

It's a good idea when starting not to print anything too large as it can take a long time. If a design is acceptable when reduced in size then scale it down (in Pro/E use the EDIT- Scale Model command)

The files from Pro/D or Pro/E must be saved as a stereo lithography file (.stl). In Pro/E click "File-Save a copy" and in the "type" drop down select STL (.stl). a dialogue box will open and you need to change a few settings...

This must be ASCII

Delete this and enter the number 0 then press enter. Pro/E will then automatically change this to the smallest permissible number to give you a detailed and smooth .stl file

When you click OK the .stl file will be saved to your working directory

Now you have your .stl file you need to convert it to a G Code file that will work on the Rapman.

To convert the .stl file to G-Code you need a program called "Skeinforge".

This can be downloaded from the reprap forum http://forums.reprap.org/read.php?12,20013

It's a good idea to keep checking back here as it's updated frequently!

To run skeinforge you will need to install another program called "Python" first. Python is a cross platform language so it will run on all versions of windows as well as Linux (not certain about Macs but in theory it should work)

Be sure to download the correct version of Python. At the moment V 2.6 seems to work best. http://www.python.org/download/

It is also worth installing another program called "Psyco" http://psyco.sourceforge.net/ All this does is speeds up the number crunching as Skeinforge is very processor intensive. Not absolutely necessary but worthwhile.

It does sound a bit involved but it's not really all that bad!

After installing all the above all you do is double click the skeinforge.py file and it should run. Skeinforge is not a pretty program. All you see is a series of buttons with strange names like "raft" or "speed" .... you will need to click on these in turn and enter your own settings for the Rapman. These settings are well documented in the Forum or the Blog http://rapmanv3.blogspot.com/2009/05/skienforge-settings.html

Finally, all you do then is click the "Skeinforge" button at the bottom of the window and then browse to your .stl file. If everything works as it should a couple of new windows will open. One of these gives you a 3D preview of your print and the other allows you to step up and down through the layers to see how they are printed..... The G Code file is automatically saved to the same folder as your .stl file.

All that's left to do is copy the G Code to a SD Card and run it on the Rapman.

Good Luck!