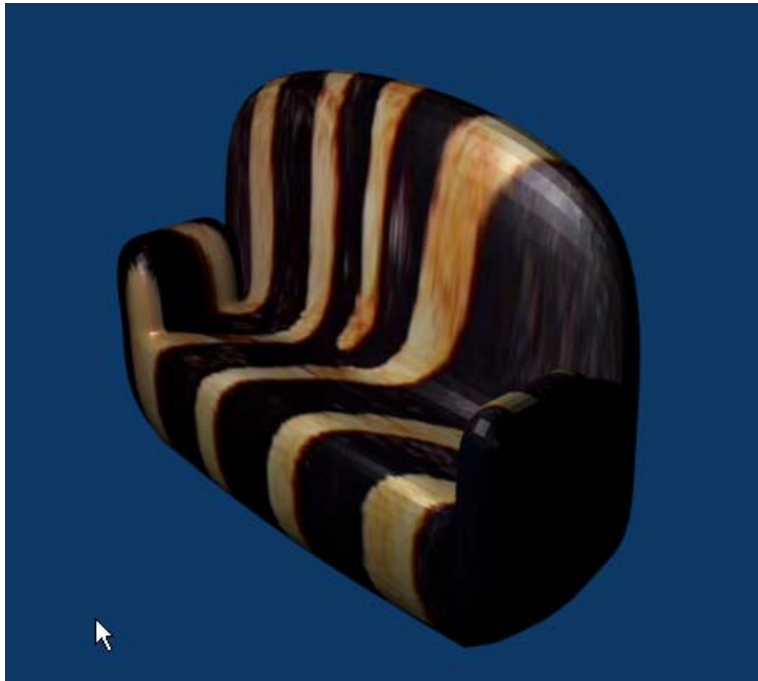
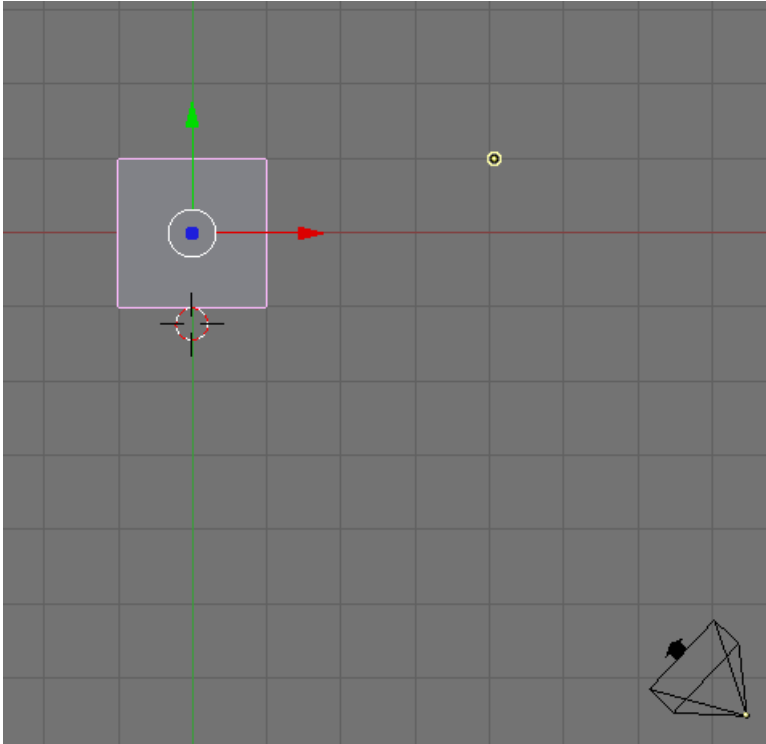


Course: 3D Design
Title: Mesh Modeling – Sofa
Dropbox File: Sofa.zip
Blender: Version 2.45
Level: Beginning
Author; Neal Hirsig (nhirsig@tufts.edu)

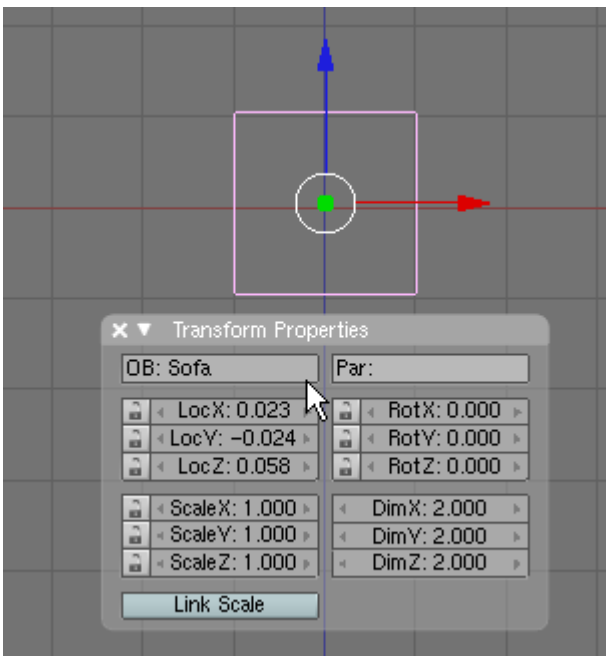
Mesh Modeling – Sofa



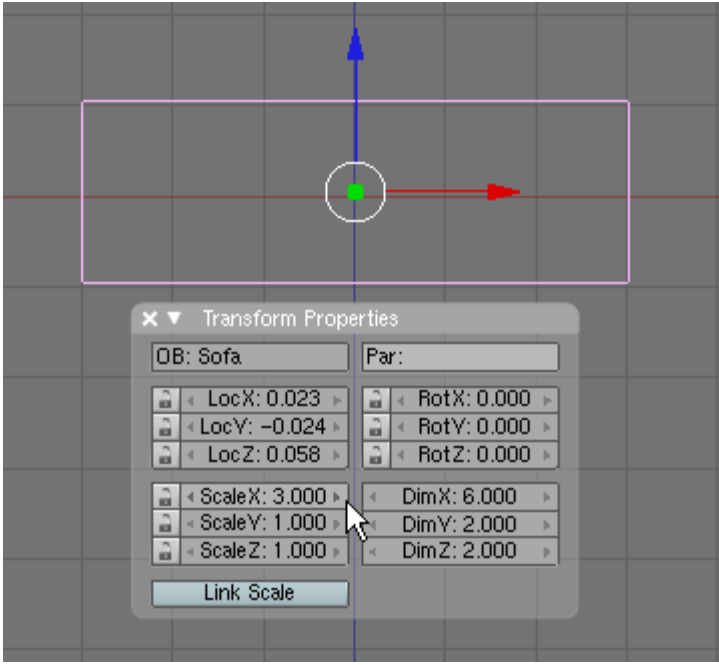
Open a new Blender file. We will be using the default cube as a base for the sofa model.
(If your default Blender file does not include a cube, place your 3D cursor in the center of the top view and press / space / add / mesh / cube and TAB to object mode.)



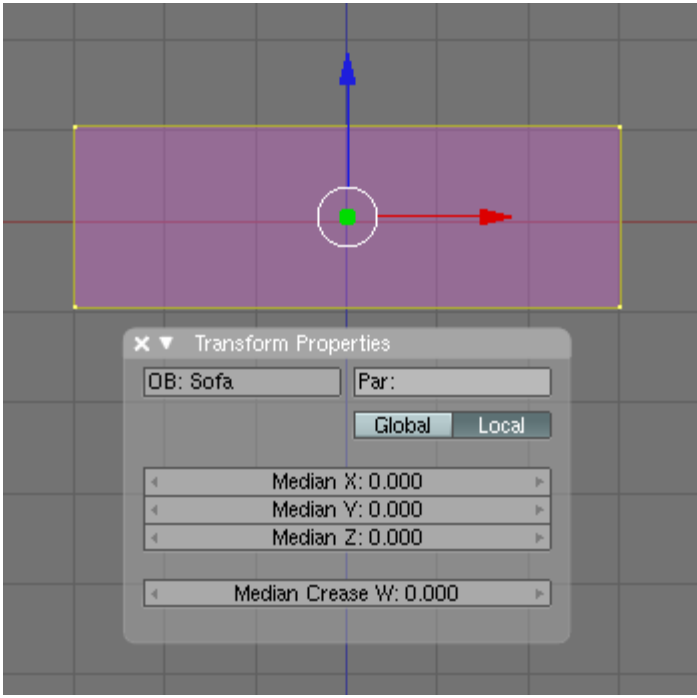
With the cube object selected (and in Object Mode) press the NKEY. This displays the Transform Properties Panel which contains the location, rotation and scale information about the selected object. Change the name of this object to Sofa



Switch to Front View (NUM1). In the Transform Properties Panel set the ScaleX to 3. This has the same effect of scaling the cube in the X direction.



Press TAB to enter Edit Mode. Make sure you are in wireframe view. Press the ZKEY if you are in shaded view. Your front view should look like below.



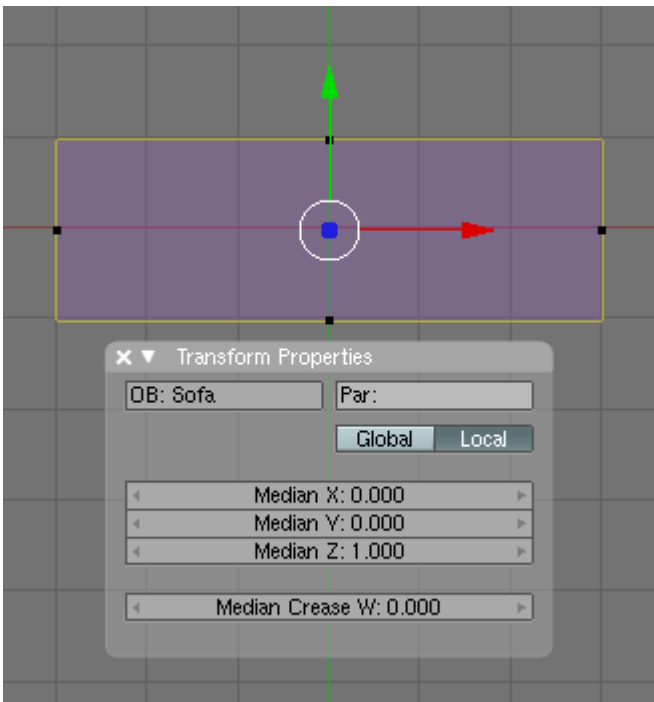
Next we will need to select the top face of the cube and subdivide it. Switch to top View (NUM7). Turn on the Face Select Mode Button.



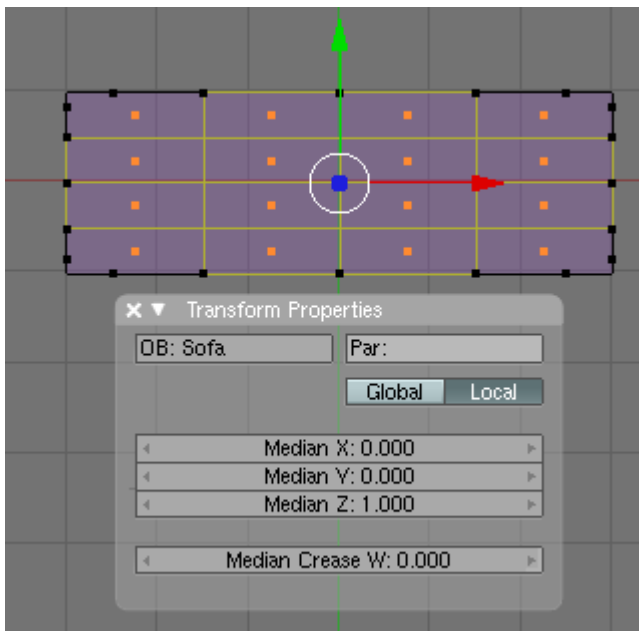
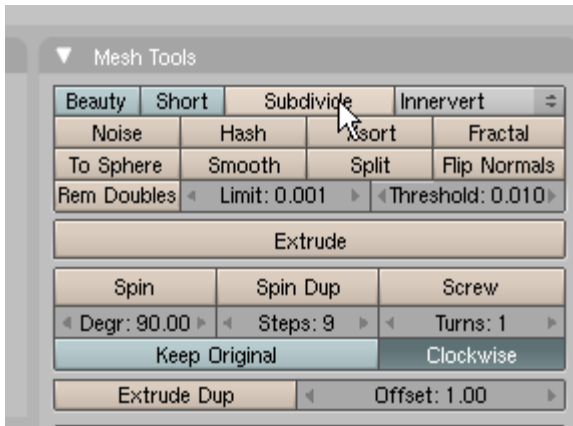
Make sure the Transform widget is also turned on.



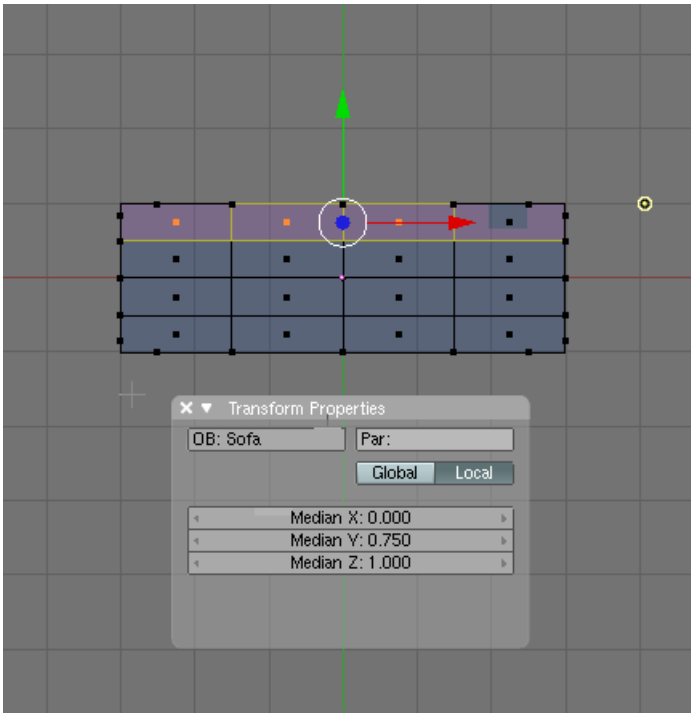
Select (RMB) the top face of the cube.



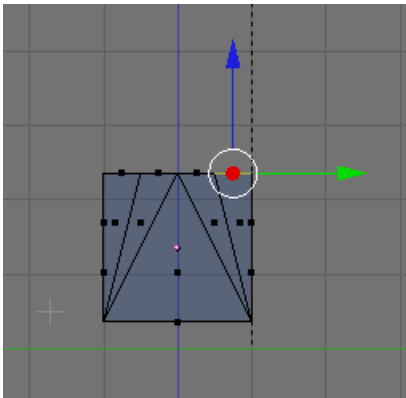
Note the transform widget appears in the center of the top face. Press F9 (Editing) if not already selected. In the Mesh Tools Panel press the “subdivide” button TWICE.



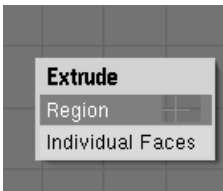
The top face of the cube now is divided into 16 faces. Press the AKEY so that no faces are selected. Now select just the top row of faces as shown below. (You can do this by holding down the SHIFT key while RMB clicking each face adding to the selection.)



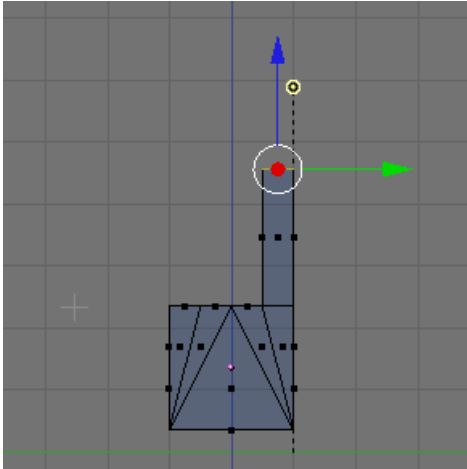
Switch to side view (NUM3)



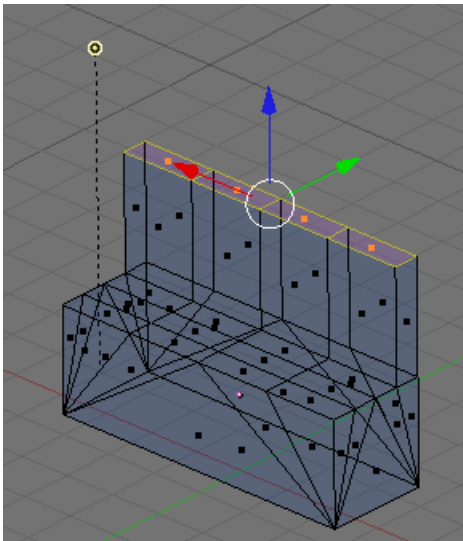
Press the EKEY (Extrude). Choose to extrude the region.



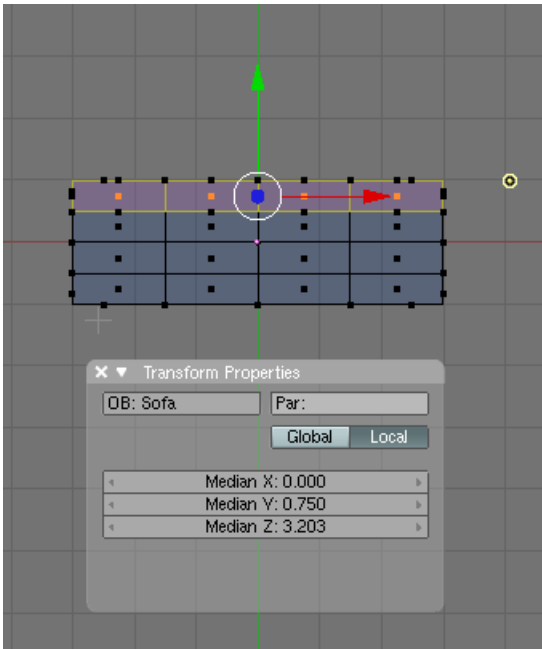
Extrude the faces up about 2 and a half squares as shown below.



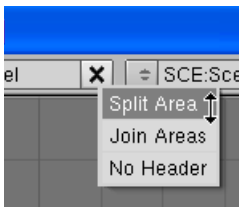
MMB Drag to rotate the sofa view to see that we have now extruded a back for the sofa.



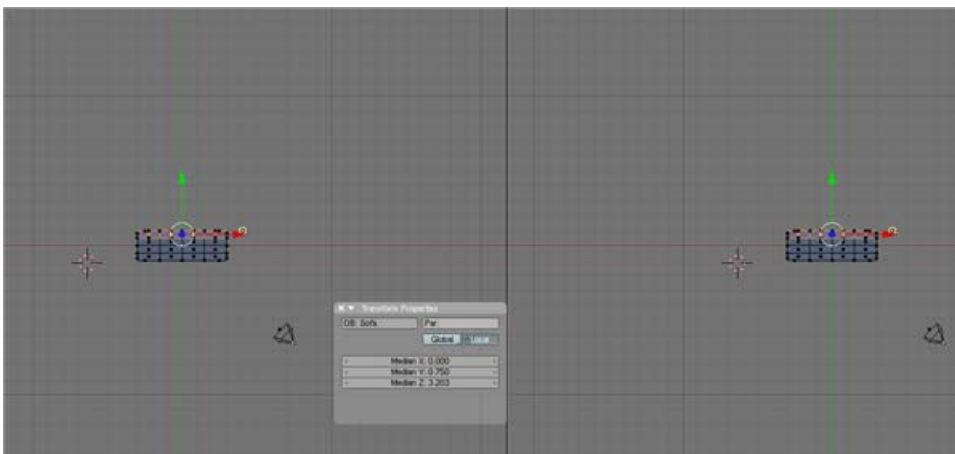
Switch to Top View (NUM7)



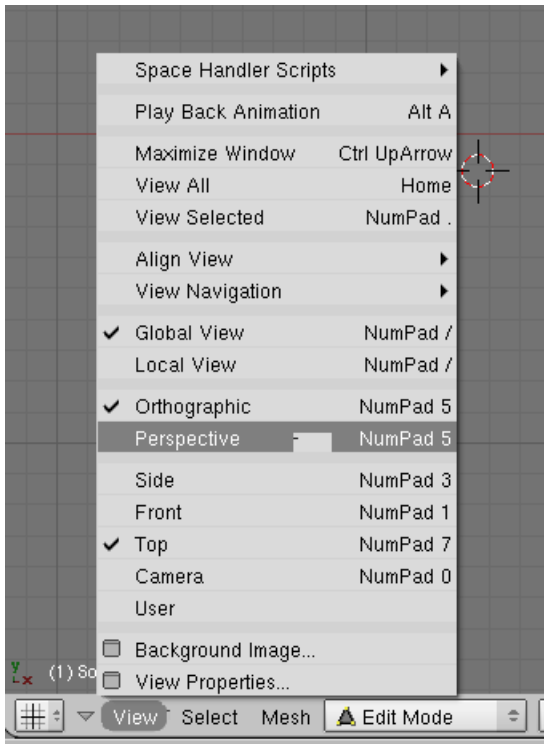
Split the 3D Viewport vertically into two viewports (if it is not already split). You can do this by clicking in the view port then move your cursor to the very top of the screen until your cursor becomes a double arrow. At that point RMB click and choose “Split”.



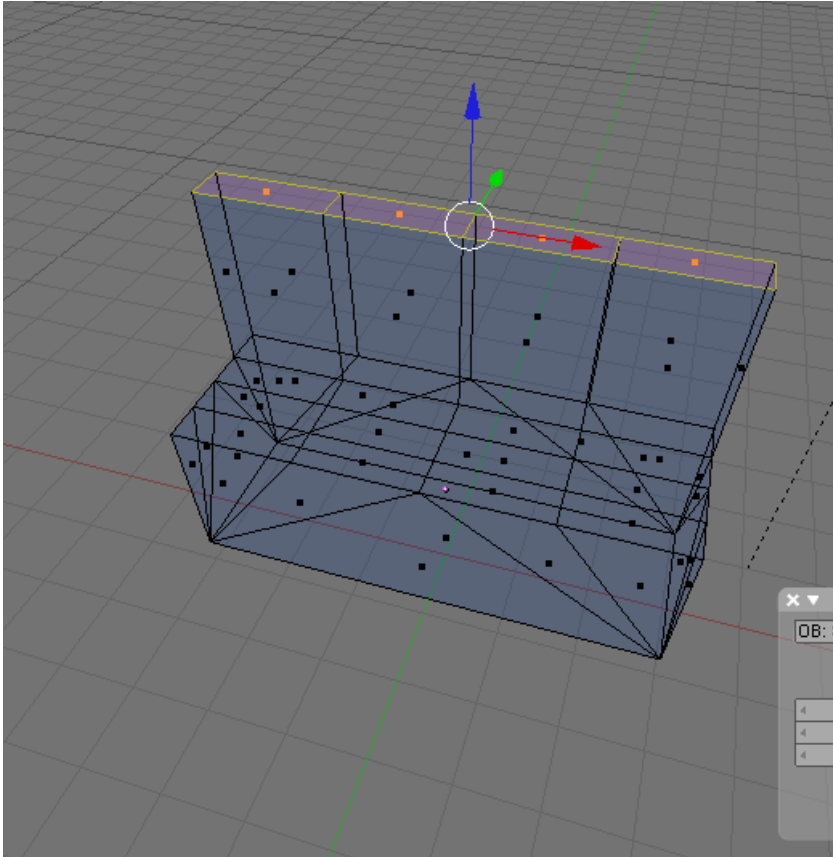
Drag the vertical line to the center to split the screen into 2 viewports.



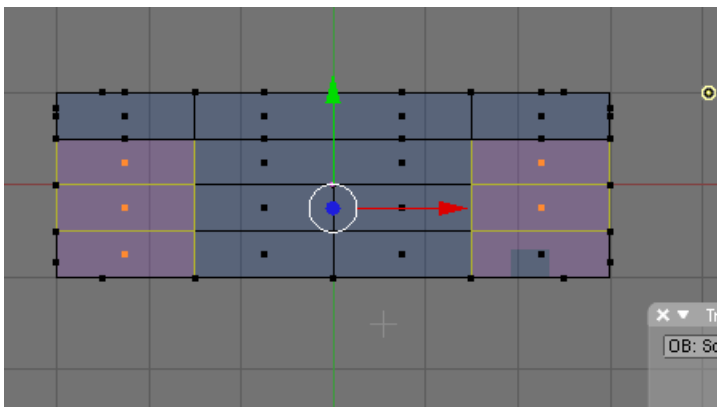
Change the viewport on the right to Perspective View by pressing View / Perspective or NUM5



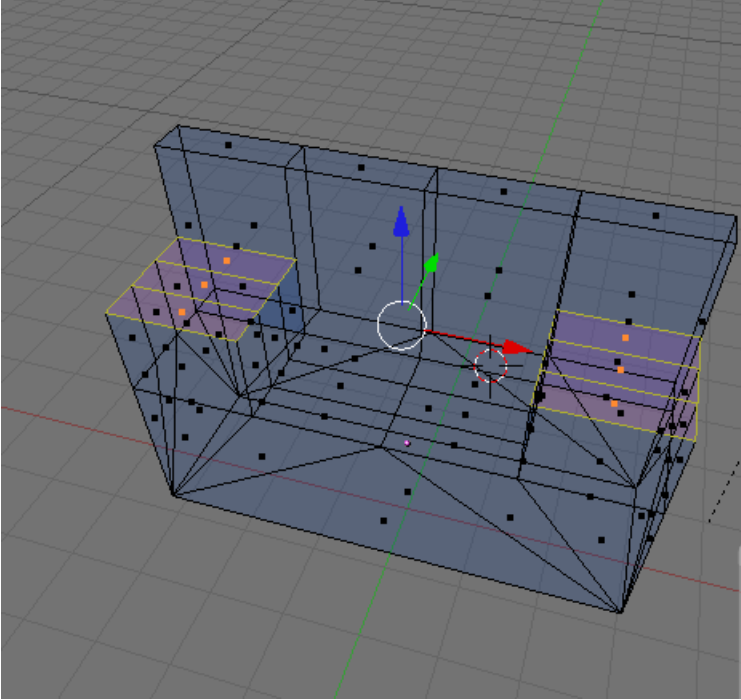
Zoom in on this Perspective view and rotate the view with your MMB to get a good perspective view of the sofa. It is a good practice to split the screen like this when modeling to see how actions taken in one view affect the object in a different view.



We now want to extrude the arms of the sofa. Press the AKEY to de-select all faces. In the top view select the 3 lower left and the 3 lower right faces of the faces that make up the seat area as shown below.

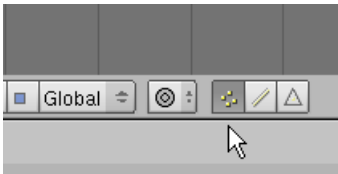


Press the EKEY (Extrude). Choose Regions. In the Perspective view raise the arm faces about halfway up the back as shown below.

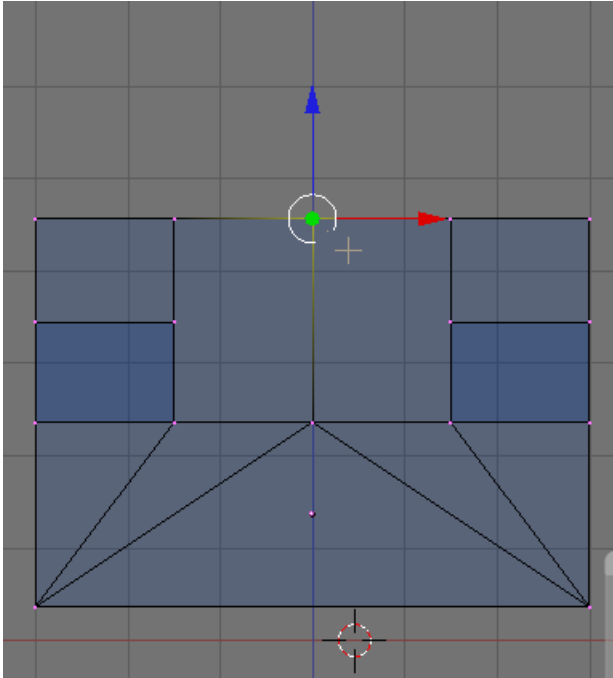


Save your file F2.

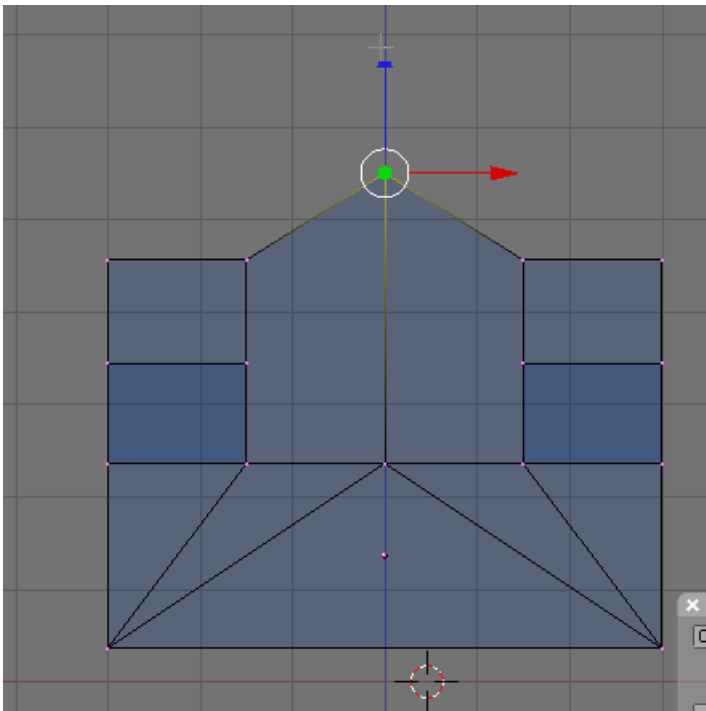
Switch the left viewport to Front View (NUM1). Switch to Vertex Select Mode.



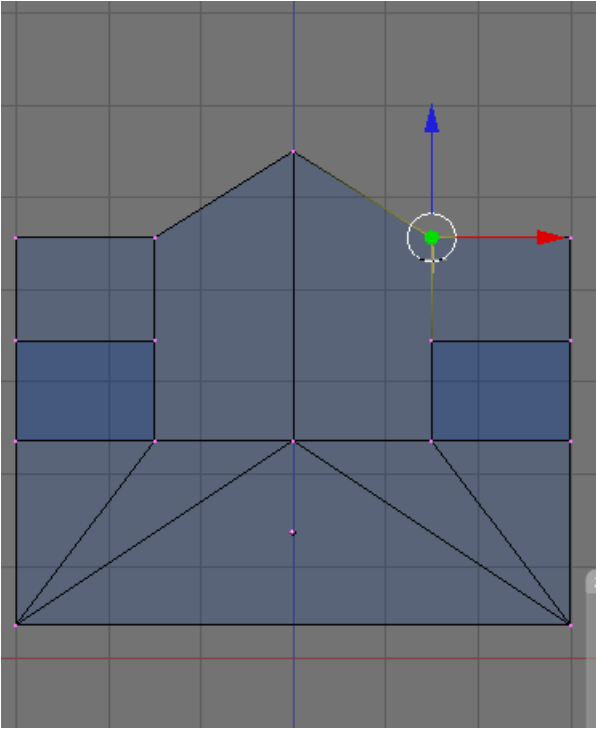
While in the front view press the **AKEY** to deselect the vertices. Then press the **BKEY** and drag a box selection around the middle vertices on the top of the sofa back selecting them.



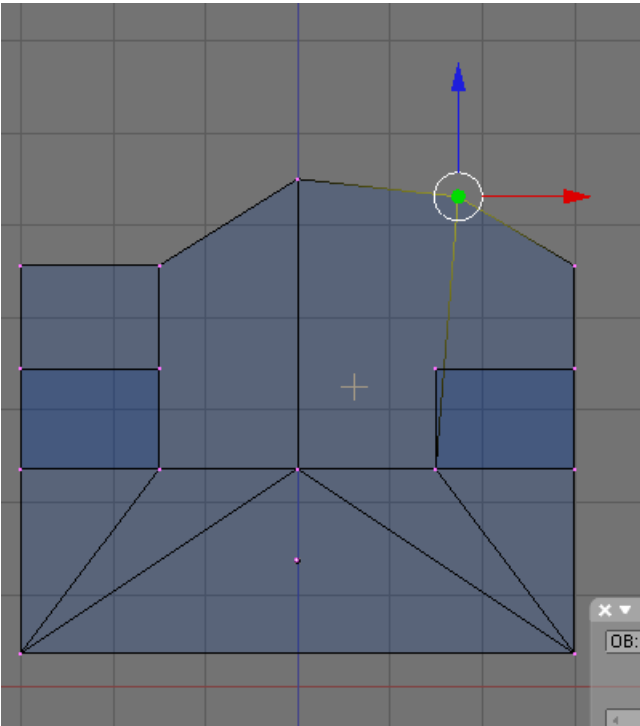
Note that using the box select we have selected the front and back vertices. You can see this in the perspective view. LMB click the blue widget arrow and drag the vertices up as shown.



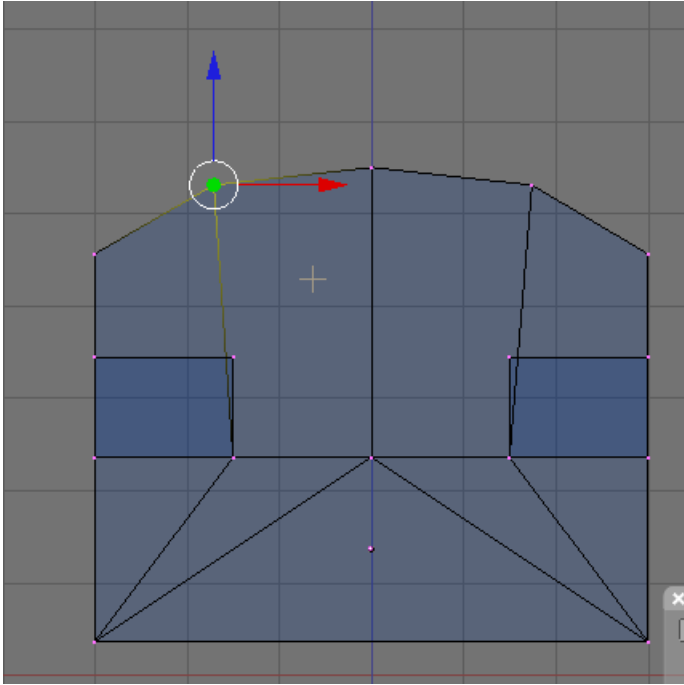
Press the AKEY to deselect the vertices. Now, box select (BKEY) the vertices to the right of the ones just selected.



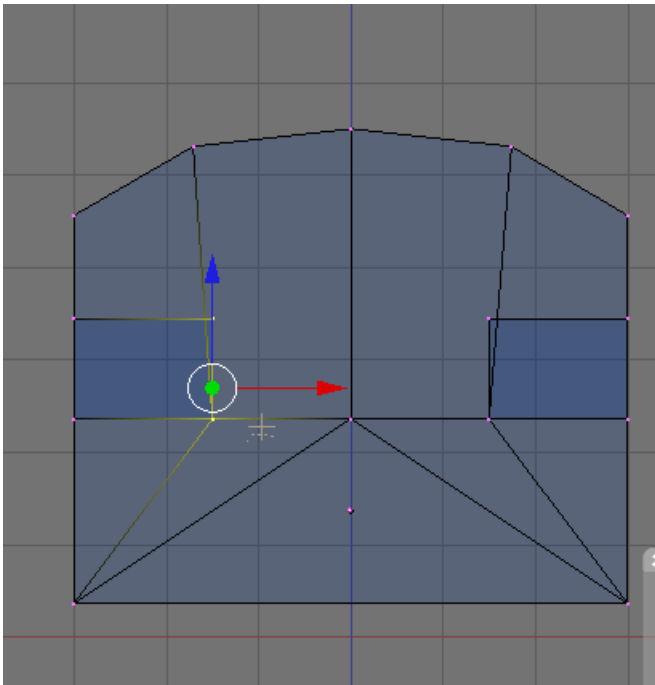
We want to move these vertices up and to the right a bit so we cannot use the widget (which constrains the movement to either the X or Y axis). Press the GKEY (Grab) and move the vertices up and out to the side a bit as shown.

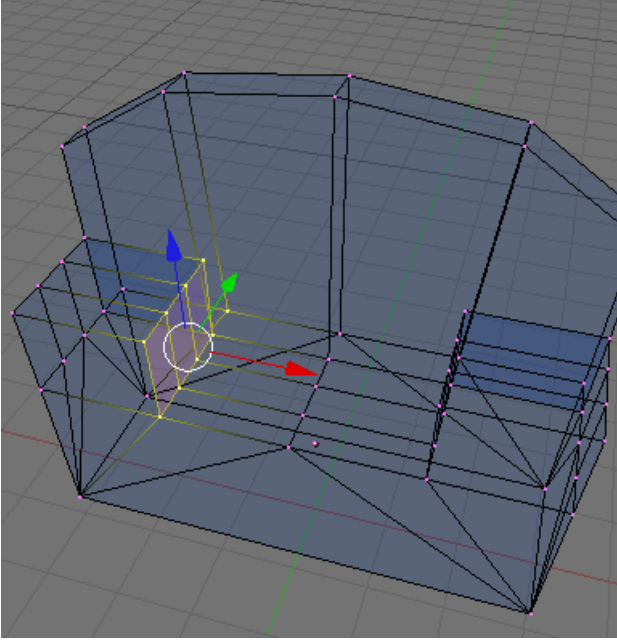


Press the AKEY to deselect the vertices. Use the box select to select the vertices to the left of the center on the top of the sofa and GKEY grab them and move as shown.

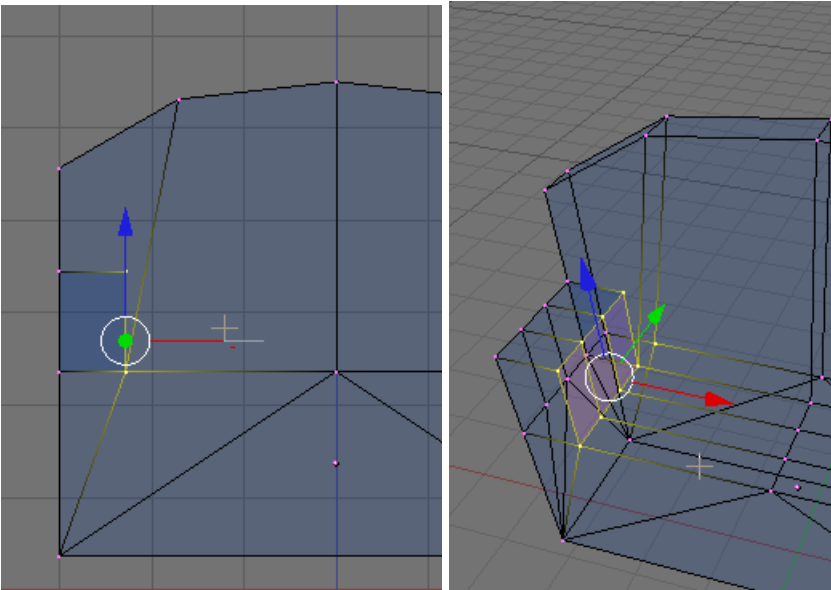


Press the AKEY to deselect the vertices. Now, box select the inside vertices that form the inside edges of the arm rest on the left side of the sofa as shown in the images below.

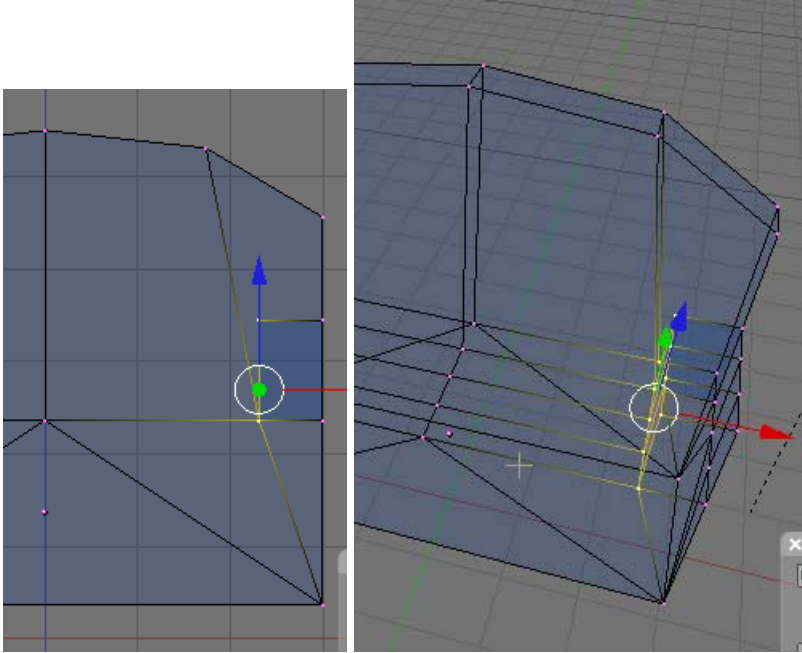




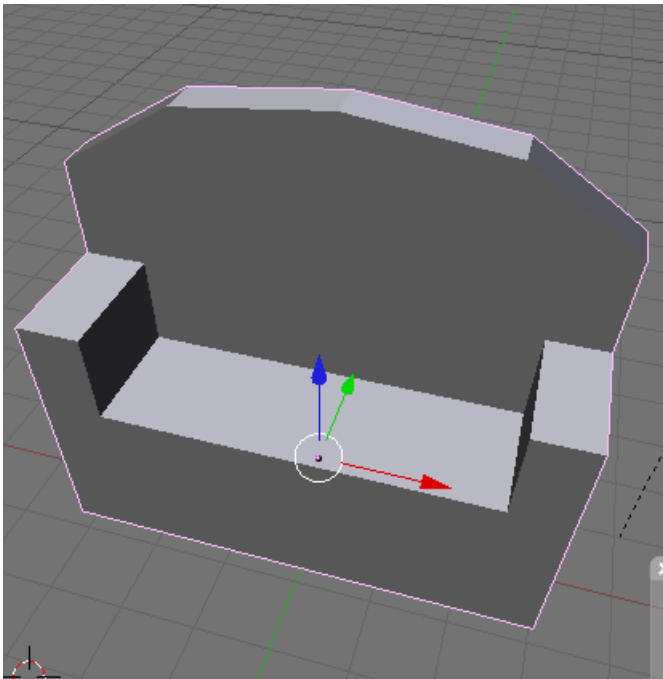
LMB the red widget arrow and move the vertices to the left shortening the width of the arm rest.



Press the AKEY to deselect the vertices. Box select the inside armrest vertices on the right side of the sofa and do the same.



TAB out of Edit Mode. Switch to shaded Mode in the Perspective viewport by clicking in the viewport and pressing the ZKEY

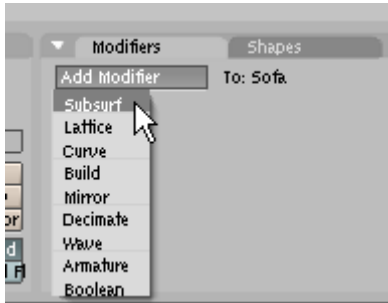


We have now rough shaped the sofa object. Save your file CTRL-W

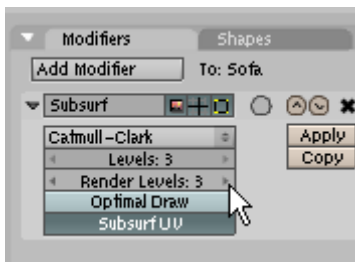
We will now soften the edges of the sofa with Blender's Sub Surf tool.

In the Front View and in Object Mode select the sofa (if not already selected). Press F9 (Editing) if not already selected.

In the Modifiers Panel press the Add modifier button. Use the dropdown box to select the SubSurf modifier.

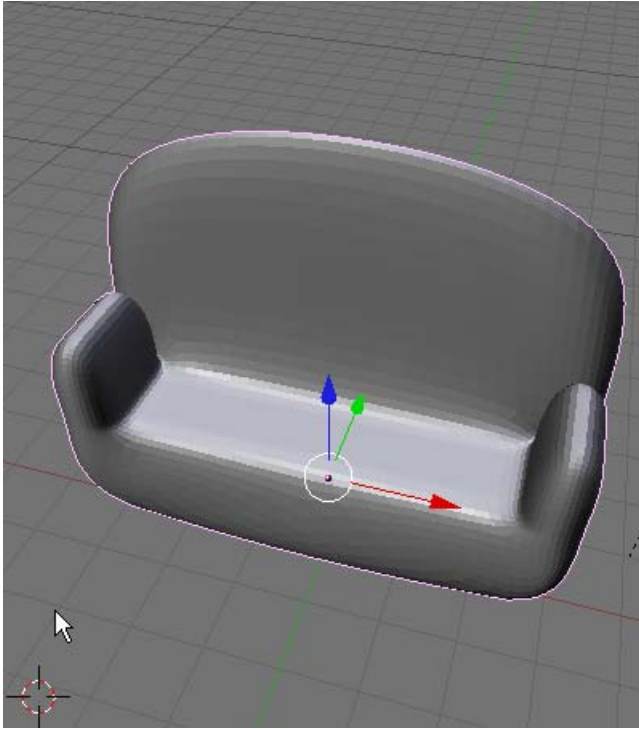


In the SubSurf controls set the Levels to 3 and the Render Levels to 3

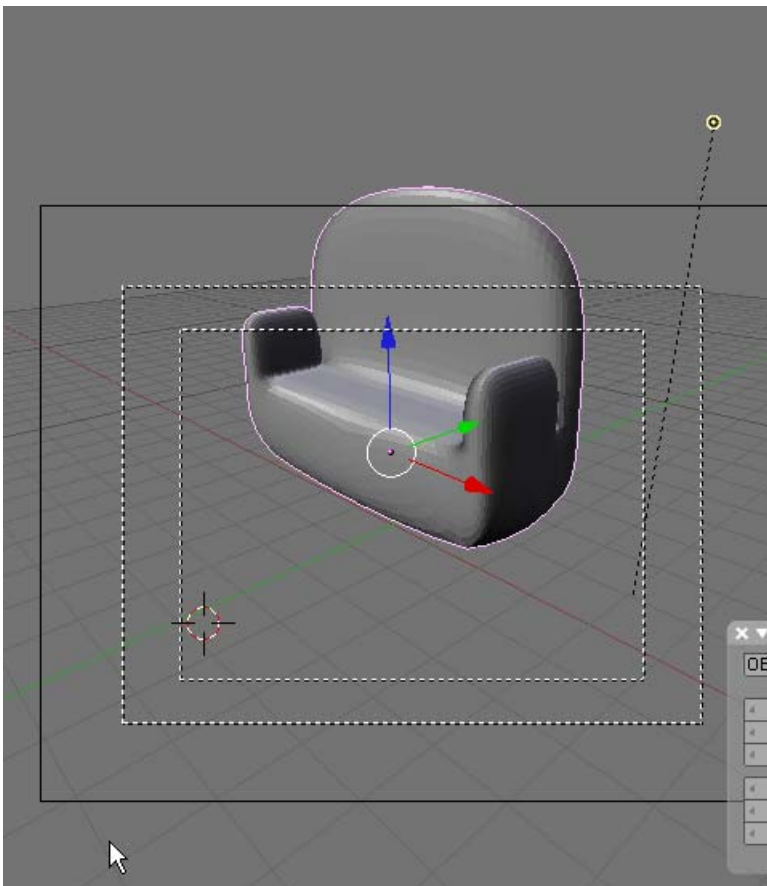


The first subdivide setting is for the display and the second is for the rendering.

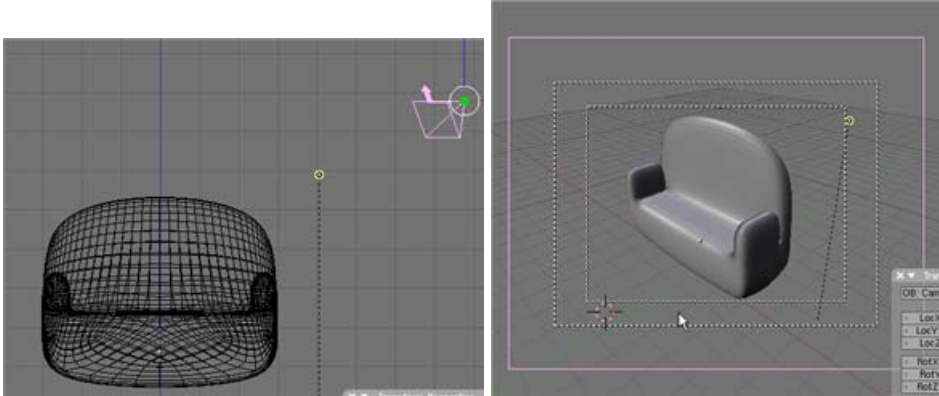
We now have a nice soft edged sofa.



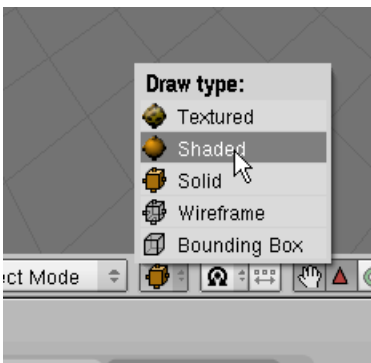
Switch the Perspective Viewport to Camera View NUB0



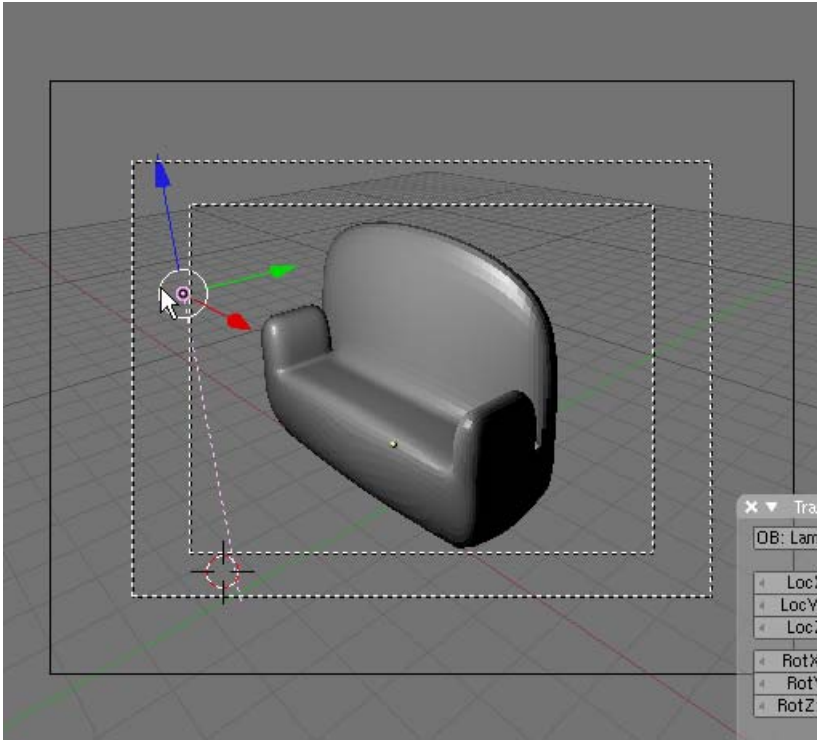
Note the sofa is not directly in the camera view. Zoom out a bit in the left Front Viewport. Select the camera and Press the GKEY (Grab) and move the camera so that the sofa is in the center of the camera viewport.



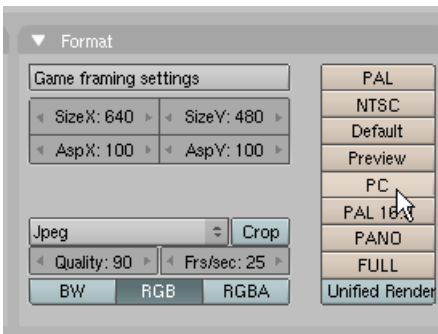
Change the Draw Type in the Camera viewport to Shaded.



Note the sofa is quite dark. In the Camera Viewport select the Lamp and move it to the other side of the sofa which will brighten as you move it into position.



Press F10 (Scene). In the Format Panel press the PC preset (size 640 x 480)

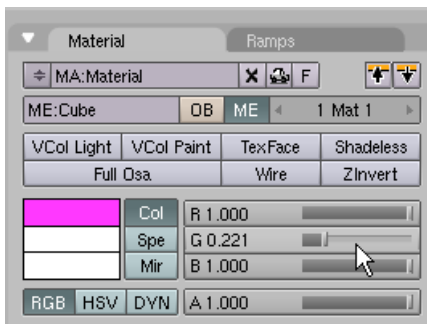


In the Format Panel use the filetype dropdown box to ensure that Jpeg is the chosen file type.

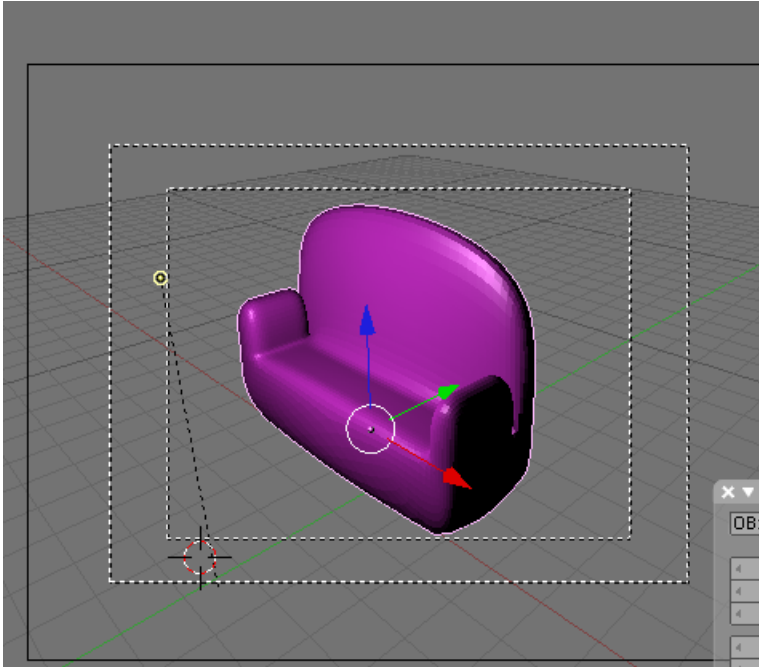


Select the Sofa object and press F5 (Shading). (Note if you get a Panel with a “add new material” button press it.)

In the Materials Panel adjust the color sliders for RED, BLUE and GREEN to create a purple colored material.



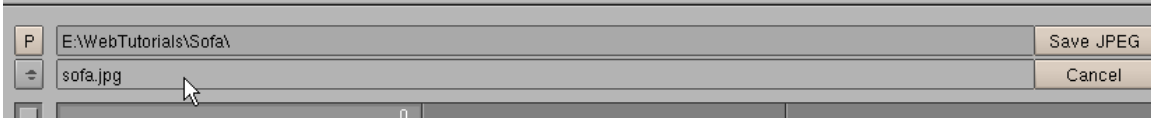
Note that the color is automatically applied to the sofa.



Render the camera view by pressing F12. A render panel will appear and render the sofa.

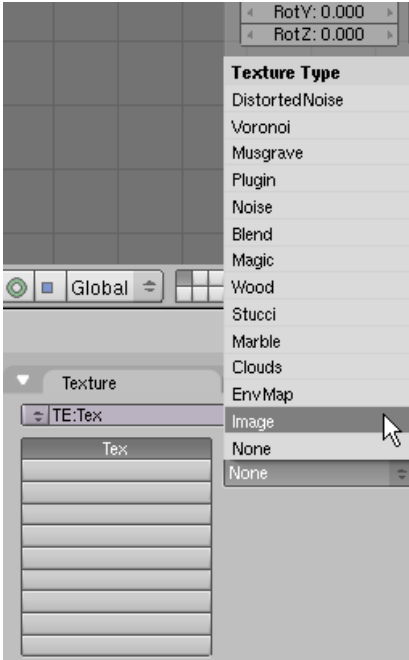


If you want to save this rendering Press F3. A file locator will open. Name the file Sofa.jpg (note you must add the extension .jpg) navigate to the directory you want the file saved then press Save JPEG

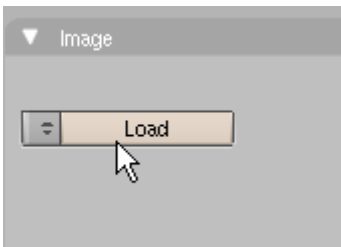


The image will be saved in the directory you have selected.

Now we will place a texture on the sofa instead of the purple material. Press F6 (Texture). (Note if you get a Panel with a “add new texture” button press it.) In the Texture Panel click on the Texture Type dropdown box and choose Image.



In the Image Panel press the Load button.



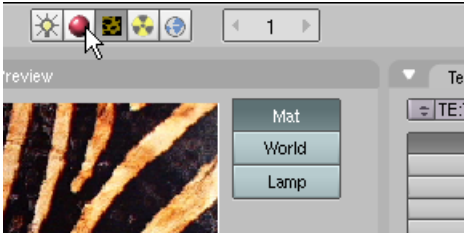
Select the zebra.jpg image. This file is located in the Sofa.zip file.



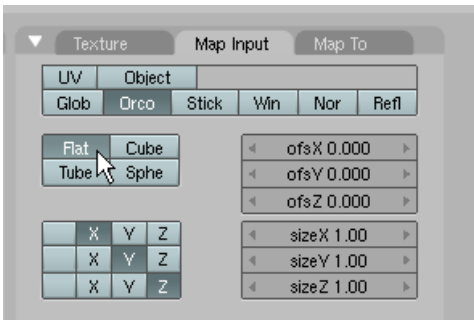
After selecting the image press the “Select Image button on the right.



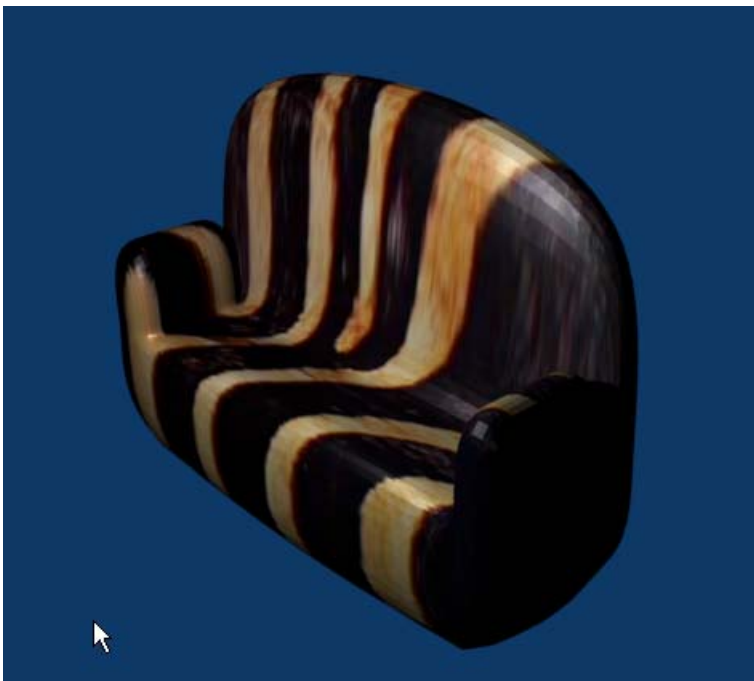
Press the materials sub-context button.



Click on the MAP INPUT Panel tab on the far right. In the Map To panel make sure that the mapping is set to Flat.



Render F12.



If you want to save this rendering, press F3. A file locator will open. Name the file SofaZebra.jpg (note you must add the extension .jpg) navigate to the directory you want the file saved then press Save JPEG



The image will be saved in the directory you have selected.

A completed Blender file of this tutorial named SofaComplete.blend is located in the Sofa.zip file.