LOOSE FITTING CLOTHES

Begin by opening the basic box modeled figure 0-BasicFigure.blend. He’s at [http://users.soe.ucsc.edu/~yonge/blend-files/](http://users.soe.ucsc.edu/~yonge/blend-files/). This exercise uses some retopology techniques along with cloth simulation. We’ll build a loud, loose fitting check T-shirt for our default figure and drape it over him.

Render our character with F12 and confirm he looks as below:

Then use Shift-A to add a Mesh/Cylinder to the scene. This is a Primitive object (ie: built into Blender) and you can edit the default properties immediately after creation by hitting T to pull in the Object Tools flyin from the left and going to the lower panel, Add Cylinder. You can also use F6 on Windows.

Reduce the Vertices (ie: sides) to 24 and uncheck the Cap Ends box. This turns the cylinder into a tube.
Move and rescale the tube until it resembles a wide belt around the middle of the figure. Make sure none of the vertices are inside the figure.

With the soon-to-be T-shirt selected Tab into Edit/Edge selection mode. Alt-right click one of the lower edges to select the entire loop and hit E to extrude. The extruded edges will wave around as you move the mouse; constrain them to the Z axis. Then using S and G constrained to the X and Y axes move the new loop of vertices around until they too fall just outside the figure.

Add one or two more loops to the top.
Extrude some of the front and back edges up past what will be the armholes. Use Keypad-/ to isolate the T-shirt if the figure gets in the way and toggle back when you’re done. Select lines of edges and flatten them with Scale-Y-0 to fit the figure better:

At this point you may want to make the figure non-selectable so that your work is not interrupted by accidentally selecting the wrong object. Do this by clicking on the arrow shaped icon next to the 0-Figure in the Outliner so that it’s grayed out.

We’re now going to work on the neckline, but we have more edges in the front than at the back, so we need to merge lines of polys. This is a common topology problem.

In this case the solution is fairly easy. In Vertex select mode, shift-click pairs of points and use F to join them with an edge. I have hidden the figure by unchecking its eye icon in the Outliner.
This new polygon (it’s not a face yet, just a collection of edges) has six sides. We can connect two of its vertices to create two quads:

In Edge Select mode, select opposite edges of the quads and click F to create a face between them. Deselect all, then use Control-R to add edgeloops for detail. Scroll your mouse wheel to add loops.

So here is our T-shirt so far in Edit mode:

Click on the eye icon in the Outliner for the figure to be visible. Now we need to move the top of the shirt up past the shoulders.
In Edit/Vertex select mode, choose the middle edges for the shoulders (this is more easily done with the figure hidden, or with the shirt in isolation mode).

Enable Proportional Editing, but instead of the default choose Connected.

This will only move vertices within the influence range that are directly connected to the selection. In this case the top of the armholes will move up evenly but the bottom of the armholes will stay in place. You may need to make the figure visible to help with this.
Adjust the mesh to avoid the figure.

Select all and hit W to bring up the Specials menu (you should still be in Edit/Vertex mode). Choose Smooth and repeat a couple of times by increasing the number in the left fly-in panel. Blender will even out the range of face areas and in doing so smooth the mesh.
Subdivide the mesh, then in Edge mode select edges up the side and top, hit Control-E for the Edge menu, and select Make Seam. Ortho Top view is good for this. Think about how you want the pattern of the material divided.

Make a Material for the shirt, and add the default checkerboard pattern as a Texture (or any other pattern you want). Make a UV map and apply the default checkerboard pattern.
Adjust the UV map to suit; remember to disable Proportional Editing. Preview the pattern in the 3D View window with Alt-Z.

Return to Object Mode, smooth the shirt, remember to check the Texture is sourced from the UV map, not Generated, and render. You should have something like this.

Resize the shirt, making sure none of the face are inside the figure. Define it as a Cloth simulation and the figure as a Collision, then drape the shirt over the figure.

Chris Yonge - 20150418