Edge extrusion is one of the most versatile ways to create an organic, interesting character. This is because edges can be extruded in any direction, unlike faces that can only be extruded along their normals. Edge extrusion avoids the boxy feel of a face extruded mesh.

Generally, you'll need a good front and side drawing of the character in a relaxed or T pose. Top views of the hands and feet are a rare bonus unless you're drawing them yourself. Darrin Lile has a good tutorial on this process at https://youtu.be/6Klw-vdrAVU, though his method, which starts with the head, is only one of many.

**T-pose v. Relaxed pose**
These two standard poses for modeling contrast ease of extrusion along X and Z axes (the T-pose) with less deformation of the mesh for the arms when they're closer to the figure's side (the Relaxed pose). The T-pose is slightly easier to rig, but it's more old fashioned and not many companies use it for modeling these days because of the problems with shoulder deformation. Six of one; half a dozen of the other.

**Multiple meshes**
The head, body, and feet of your model don't have to be one continuous mesh – and indeed, there are some advantages to making them separate. You can have slightly different topology in each, different levels of detail in each, and replace meshes if and when needed while keeping the same rig.

You will also have to decide which clothes (if any) will modeled as part of the figure and which will be draped around it using cloth simulation.

**The “Rule of Three”**
This refers to the need to create at least three edgeloops around hinged joints such as the elbow, knee, wrist, and ankle to minimize distortion along the rest of the limb when animating.

**Hands**
Hands can have a thumb and four fingers, a traditional cartoon style thumb and three fingers, or be “mitten hands” with a thumb and a single finger object. When filling the end of mitten hands (and six or eight sided finger end loops) remember to use Control_F Grid Fill to minimize rendering artifacts from subdivision. Subdivision surfaces don’t like N-gons.

**A simple method**
I bring in a figure outline drawing using the Import Images as Planes add-on, duplicate it,
and place the front drawing so that the Z axis is aligned with the figure’s center line. Using the Knife tool, I remove the side drawing from the front view, and the front view from the side view. To reduce problems later the drawings are scaled to a realistic size for the figure.

Next, bring in a short, open ended, 12-sided cylinder and roughly match it to the front and side profiles of the stomach. Remove one half and mirror it along the X axis, then add a Subdivision surface. From this point match the subdiv surface to the drawing, not the control cage. Extrude, rotate, and scale top and bottom edgeloops in ortho front and side views.

Remove faces for the top of the legs and the base of the arms, then select the resulting edgeloop. Round this using the Smooth command in the W Specials menu.

Remember that as you extrude edges up and down the normals of the resulting faces may be reversed. It’s worth checking normal directions in the left fly-in every so often.

I make a basic head shape by going back to Object mode, adding a cube and subdividing it to level 2, then applying the modifier. Remove half the quadsphere so that it is completed by the Mirror modifier in the main figure mesh before using Control_J to join the two. The figure should be the Active object (the last one selected). I use the same technique for the shoes, though here as there are two shoes the meshes can be added complete.

**Useful key shortcuts when edge extruding**

G – G move selected verts, edges, or faces along the existing edges (ie: there is no distortion of the rest of the model)

Period in the alphanumeric keys, period changes the pivot point to the 3D cursor

Comma in the alphanumeric keys, comma changes the pivot point to the selection’s bounding box center

W brings up the Specials menu; Smooth is useful for arm edgeloops. Note that you can change the number of Smooth iterations in the left fly-in

Control_E brings in the Edges menu; Bridge Edges (provided both loops have the same number of edges) is useful for connecting a head to a neck

Control_R add an edgeloop

F connect two verts with an edge; note this will not divide a face with a new edge but will place a new edge over the existing single face. To divide the face into two, use Control_V and Connect Vertices

Alt_RMB select a loop (vertex, edge, or face level)

Delete-Dissolve remove a loop while keeping surrounding mesh (vertex, edge, or face)

Chris Yonge – 20170912