MAKING TREES WITH THE SKIN MODIFIER

Introduction
You can make trees with the Sapling add-on, by using the Sculpt mode, and (for very low resolution distant versions) from flat planes with an alpha channel image of a tree. However using the Skin modifier has the advantage of creating a tree that is not only all quads but has an armature as well.

Making the trunk, branches, and roots
Start with the default cube (or indeed any primitive object), select all the vertices in Edit mode, and collapse them to the center with the Alt_M command. Now we have a single vertex.

Use the E - Z command to pull that vertex upwards along the Z axis. At this point you might want to split the 3D window in quad mode to be able to see the form of your tree better. Use Control_Alt_Q for this.

Continue to extrude the trunk of the tree upwards; you might want to use a photo reference to help with this if you want it to resemble an actual species.

When you have six or seven segments completed go to the Modifiers tab and add a Skin modifier.
You'll get a blocky looking trunk like the one on the left.

Next add a Subdivision Surface modifier to get a kind of faceted worm shape. Smoothing it in Object mode won’t do any good, however - you have to check the Smooth Shading box in the Skin control panel.

Now you can start to shape the trunk by adjusting the influence of each vertex on the skin. Do this with Control_A, and it helps to use proportional editing (toggle this with the O key) to adjust all of them at the same time. At the same time, in wireframe mode, pull out a few branches from part way up the trunk. Adjust them in the various views so that they look irregular. Sometimes the place where the branch emerges from the trunk gets messed up; just move vertices around and adjust weighting so that the mesh is good.

If you want to subdivide a segment select the vertices at each end and hit W for the Specials menu. The Subdivide command is at the top.

With a little work you should end up with something like the tree at the right. Now we want to define the root - in other words, the vertex that will act as the root bone in the armature. That’s going to be the one at the foot of the trunk; in fact, where the roots would start in a real tree. Select the lowest vertex on the trunk and left click on the Mark Root box.
Now, with the root vertex set, start to extrude some roots out from it. You may have to subdivide the lowest trunk segment to get them to look right.

These roots will make the tree look like it is growing out of the ground. A useful command at this point is G - G, which moves selected vertices along the existing edges they’re attached to.

So here’s our tree after a bit more work on the roots, and adding a sculpted ground.

And if we look at the geometry on the left we can see it’s all quads. Now let’s add an armature.
Making an armature

The tree is going to wave in the breeze, so we need to make the armature for animation.

Click Create Armature in the Skin modifier panel.

This will create an armature as seen right. When selected, this armature can be animated in Pose mode to create a swaying tree. The Skin and Subdivision surface modifiers can be applied and the armature’s weight painting will still work.

This technique can also be used to create animated stick figures.

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