5.0 Creating a simple Armature (Skeleton)

1. Open/Create the Model

You'll want to carefully consider the desired location of the "origin" for your model. For example, a handy spot for the origin of a humanoid character might be on the ground between the two feet. To change a model's origin:

a. RMB to select the model

b. LMB to position the 3D cursor to the desired origin

c. set the origin to the cursor: **Object → Transform → Origin to 3D Cursor**

2. Add an initial armature base bone

When adding an armature to a model, it is important that the origin of the armature be the same as the origin of the model. To ensure this, we add a "master" or "base bone" as the starting point of the armature, at the origin of the model.

a. select the mesh in object mode and observe where its origin is

b. move the cursor to the origin: **Object → Snap → Cursor To Selected**.

c. make sure you are in **Object Mode**

d. add the first armature bone at the cursor (i.e., at the origin):
   Add → Armature → SingleBone

e. if you can't see the added bone, select the armature, then go into its Object Properties by clicking the little cube in the Properties menu on the right, then turn on X-Ray mode.

3. Confirm that the armature's rotation and scale transforms are correctly initialized (necessary for some Armature tools to work)

a. select base bone (if Edit mode, lower left says "Armature:bone")

b. make sure you are in OBJECT mode. The lower left corner of the 3D window should now simply say "Armature"

c. use the N key to display the *Properties Sidebar*

d. under *Transforms*, clear all rotations to 0.0, and all scales to 1.0

4. Add more bones to the Armature

There are many ways to add bones and construct an armature in Blender. One way is to extrude bones from existing bones:

a. select the tip of the armature base bone

b. go into EDIT mode

c. use the E key and move the mouse to extrude a new bone from the tip of the base bone.

d. repeat to add additional bones and joints. If you can't see the bones, note step 2e (earlier).

e. for a series of bones, such as along a leg, one option is to build a single long bone, and then "subdivide" it (in the armature menu)
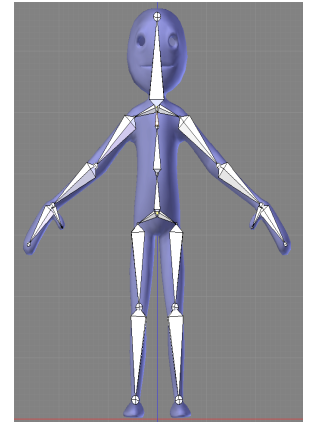
5. Rename the bones

Naming is critical for future steps (such as Rigging). Left/Right Bones must have "symmetrical" names, ending with _L or _R (or .L / .R)

a. insure a *Properties Window* is visible (N key), and select the *Bone Panel* (the little "bone shape" icon)

b. select each bone; its description should appear in the Bone panel

c. type a new name for each bone (text box next to the bone icon)

d. Go to the Armature Panel in the Properties Window (click the little "man" icon"). Check NAMES in the Display section of the *Armature* panel to display bone names

6. Different bone display modes

a. select the armature (in Object mode).

b. open the Armature Panel in the Properies Window (the little "man" icon)

c. Under "Display", click the various buttons, e.g. *Stick, B-Bone, Envelope,* and *Wire*. Use whichever display form you prefer.