1. Attendance
2. Light-Saber Export Help Offered After class
3. The Basics of C4D Workflow
   1. Modeling
      1. Can use **PRIMATIVES**
      2. Can use **HYPER NURB** object for creation of smooth surfaces
   2. Lighting
      1. Use **LIGHT** objects to simulate real world light sources
   3. Texturing
      1. Add **color and surface texture** to objects
      2. Is your object shiny/bumpy/matte etc.?
   4. Animation
      1. Giving movement to objects, using **KEYFRAMES**
      2. Similar to AE
   5. Rendering
      1. **Final output**
      2. C4D projects are NEVER the end of the line.
   6. Compositing
      1. Most of the time C4D rendered assets end up in PS or AE
4. 3D Animation vs. Stereoscopic 3D
   1. We are not talking about “3D” as you might see in a 3D release of a movie. (Stereoscopic)
   2. We are looking at rendering 3D shapes and objects in a virtual environment i.e. *Toy Story*
   3. 2d vs. 3D
      1. We saw a bit of this in AE, but most of what we’ve looked at so far was 2D X/Y based animation and GFX.
      2. Now we look at what happens when you add a Z axis to not just the space, but to the objects themselves.
5. 3D Render Engine
   1. Think of **RAYs** as photons from a light-source. Simulating light bouncing off of “objects” in the 3D engine and allowing the renderer to “see” them.
   2. Of course this is a super simplified version of what is going on.
6. **CORE CONCEPT: C4D View Port**
   1. World Center; Where the Axis’ meet.
   2. Each axis represented by a color:
      1. Red – X
      2. Green – Y
      3. Blue – Z
         1. Xyz? RGB
      4. Arrows = Positive V. Neagtive
   3. **MOVEMENT ICONS**
      1. Move Viewport
      2. Zoom Viewport
      3. Rotate Viewport
   4. **Perspective View**
      1. These views allow you to see each angle from an **ORTHOGRAPHIC** view
      2. Orthographic: Drawing a 3D object as a 2D plane
      3. This will help with aligning objects and animating your views.
      4. Remember: No Orbiting
7. **CORE CONCEPT: INTERFACE**
   1. Note: All menus within program shell. NOT in the typical Mac OS X Bar
   2. **ITEM 1: Menu Bar**
   3. **ITEM 2: Icon Bar**
      1. Objects, rendering tools, view tools, etc.
   4. **ITEM 3: Objects Manager**
      1. Whatever you have in your scene listed here.
      2. **CORE: 3 columns**
         1. **Object**
            1. Change Name
         2. **Status**
            1. Attached to object? Visible to Renderer?
            2. Some variables available in **ATTRIBUTES MANAGER**
         3. **Tag**
   5. **ITEM 4: Attributes Manager**
      1. Will change based on the object/option you have selected
   6. **ITEM 5: Coordinates Manager**
      1. Shows location of axis points for objects or groups.
   7. **ITEM 6: Materials Manager**
      1. Where you will create textures and materials for placement on objects.
   8. **ITEM 7: Time Controls** 
      1. Where you will create frames and animation using time
      2. Preview Range: Right below the time line
      3. Typical playback controls
   9. **ITEM 8: Modes Icons**
      1. Will change the way our tools behave.
      2. Layout Icon: Changes Layout
      3. Make Object Editable Icon: Transforms primitives into editable objects
8. **CORE CONCEPTS: DOCUMENT SETTINGS**
   1. When nothing is selected, you are able to access them in the “Attributes” manager.
   2. Change length of scene
   3. Change FPS
   4. Change level of detail
   5. NOTE: INFO pane will let you put information onto your file.
9. Preferences Screen
   1. Customize the program to your specifications
   2. Change color of interface
   3. Auto-Save options
   4. Change units of time
   5. IMPORT EXPORT PREFRENCES (list of programs)
10. **CORE CONCEPT: PARENTING**
    1. Before we get into actual shape generation and animation, we must discuss parenting.
    2. **CORE: STATES**
       1. **Parent**
          1. Controls the actions of other objects linked to it at lower levels
       2. **Peer**
          1. 2 or more objects at same level in the object manager
       3. **Child**
          1. An object that is 1 level down from another is said to be “parented” to the other object
          2. We saw SOME of this in AE
       4. SOLAR SYSTEM EXAMPLE Sun > Planets > Moon
11. **CORE CONCEPT: Creation of Primitives**
    1. In the ADD OBJECTS Section, we can add primitives, hypernurbs objects, lights, floors etc.
    2. You can select an object though the viewer or the objects viewer. Err on the side of the objects viewer to limit confusion.
    3. Move with axis bands
    4. MOVE TOOL can move an object freely in views.
    5. SCALE TOOL to grow an object
12. **CORE CONCEPT: Creation of Extrusions and Text**
    1. Text generator in “object creation”
    2. Extrusion in nurbs menu
    3. Multiple extrusions with varying textures and colors can create a cool effect
    4. **CORE CONCEPT: Parent MULTIPLE LAYERS TO A NULL to MOVE ALL**
13. **CORE CONCEPT: CONVERT PARAMETRIC OBJECT TO A POLYGONAL ONE**
14. **For WEDNESDAY:**
    1. **Make something cool. We’re going to playa round with this, and get comfortable.**
    2. **THINK ABOUT FINAL PROJECT**
       1. **Could be stills.**
       2. **Could be video.**