

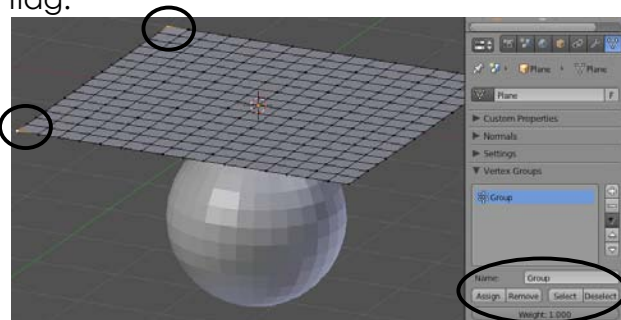
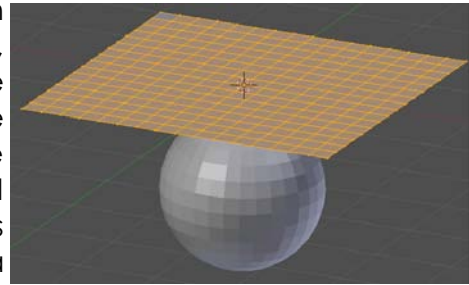
## Chapter 18- Object Physics

Trying to animate water flowing or cloth blowing in the breeze can be a difficult feature to pull off using animation techniques covered previously. Just trying to make objects fall or bounce can be difficult enough. In chapter 21 we will discuss the falling and bouncing topic. For this chapter, we will be discussing some of the other physics factors of Blender.

Blender using the *Bullet* physics engine to handle simulations. Bullet has recently been used in Hollywood blockbuster movies to simulate buildings and debris falling and I expect to see it used more often, along with Blender, with recent improvements.

### Using Soft Bodies

*Soft Bodies* was one of Blender's first simulation features after Particles. Soft Bodies are used to simulate fabric, "jello", and water. A mesh can deform a soft body mesh (clothing on a model or a boat in the waves). Even with newer features such as cloth and fluids in Blender, *Soft Bodies* still has a place here. In order to look at the basic settings of Soft Bodies, we'll start with a simple scene of a plane placed above a UV Sphere. Scale the plane up about twice the original size and subdivide it 4 times. We will "pin" 2 corners of this plane and have it drop down over the sphere like a flag.



Our next step is to create a *Vertex Group* (like we did in the *Particles* chapter) in the *Object Data* panel. With all vertices selected, "Assign" a weight of Zero. Then, select only the 2 corner vertices and "Assign" a weight of 1.00 to them. These will be the 2 pinned corners we will use shortly. Return to *Object Mode*.

It's now time to go over the the Physics panel and enable "Soft Body". If you press "Alt-A" at this time, the plane will just bounce up and down, but if you tell it to use your vertex group in the "*Soft Body Goal*" panel and press "Alt-A", it should fall like a flag like shown to the right. It will fall through the sphere, but should fall. If it doesn't move, try checking to make sure you are on frame 1 when hitting "Alt-A".

