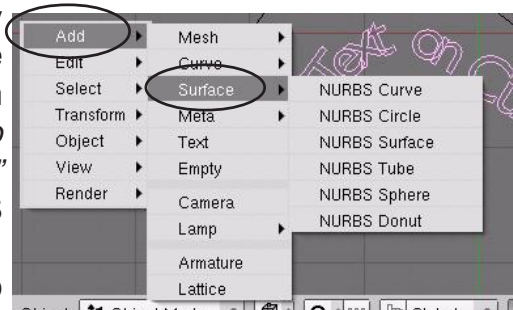


Chapter 11- NURBS and Meta Shape Basics

When you press the “**Space Bar**” and select “**Add**”, you will notice other object types beside meshes, cameras and lights that can be created. Two types of objects that can be created are **Surfaces** (NURBS) and **Meta Objects**. A lot can be said about surfaces, but for this tutorial, I want you just to become aware that they are there and describe some basics about them. Meta objects have been expanded to a variety of shapes and can be used to give you a “liquid metal” effect where the objects “pull” together as they become close to each other.

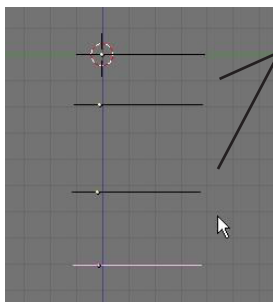
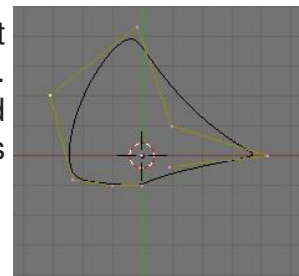
Using NURBS to Create Lofted Shapes (surfaces)

If you look at the **Surface** menu, you will see a variety of shapes that can be created. These shapes can be used as they are or converted to meshes so you can work with traditional vertices. *To convert a surface into a mesh, select the object and press the “Alt” and “C” keys. Click on “Mesh”.* You can do a lot with NURBS and there are several tutorials on-line describing them, but for now, we will just work with a **NURBS Circle** to create an interesting looking tunnel.

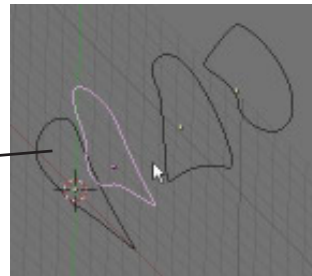


Creating a Lofted Tunnel

This process will take several profiles of a NURBS Circle and connect them together. First thing you need to do is create a **NURBS Circle**. To do this, press the “**Space Bar**”, select “**Add**”, then “**Surface**” and “**NURBS Circle**”. The circle comes in in edit mode. Select the points and shape the circle a bit. After shaping, exit edit mode.



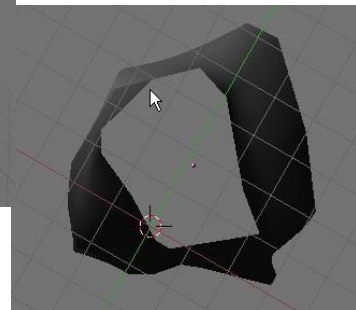
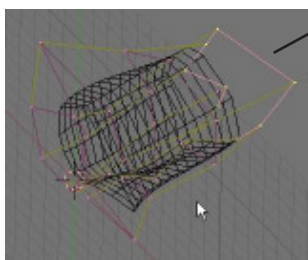
Change your view so you are looking down on the circle. Use the “**Shift-D**” keys to duplicate the circle several times. Then rotate your view so you can select each circle and edit the shapes in **edit mode** (Tab key). After shaping the circles, exit edit mode and select them all by RMB



clicking on them while holding the “**Shift**” key. To join them together, press “**Ctrl**” and “**J**”. For the final step, press “**Tab**” for edit mode,



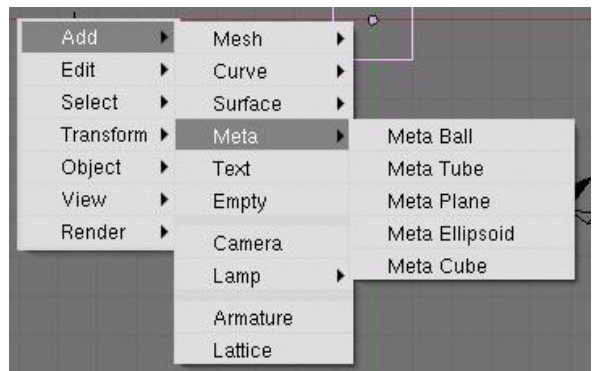
“**A**” for all vertices, then “**F**” for face. Your result should be a lofted object. If you need it to be a mesh, press “**Alt**” and “**C**”.



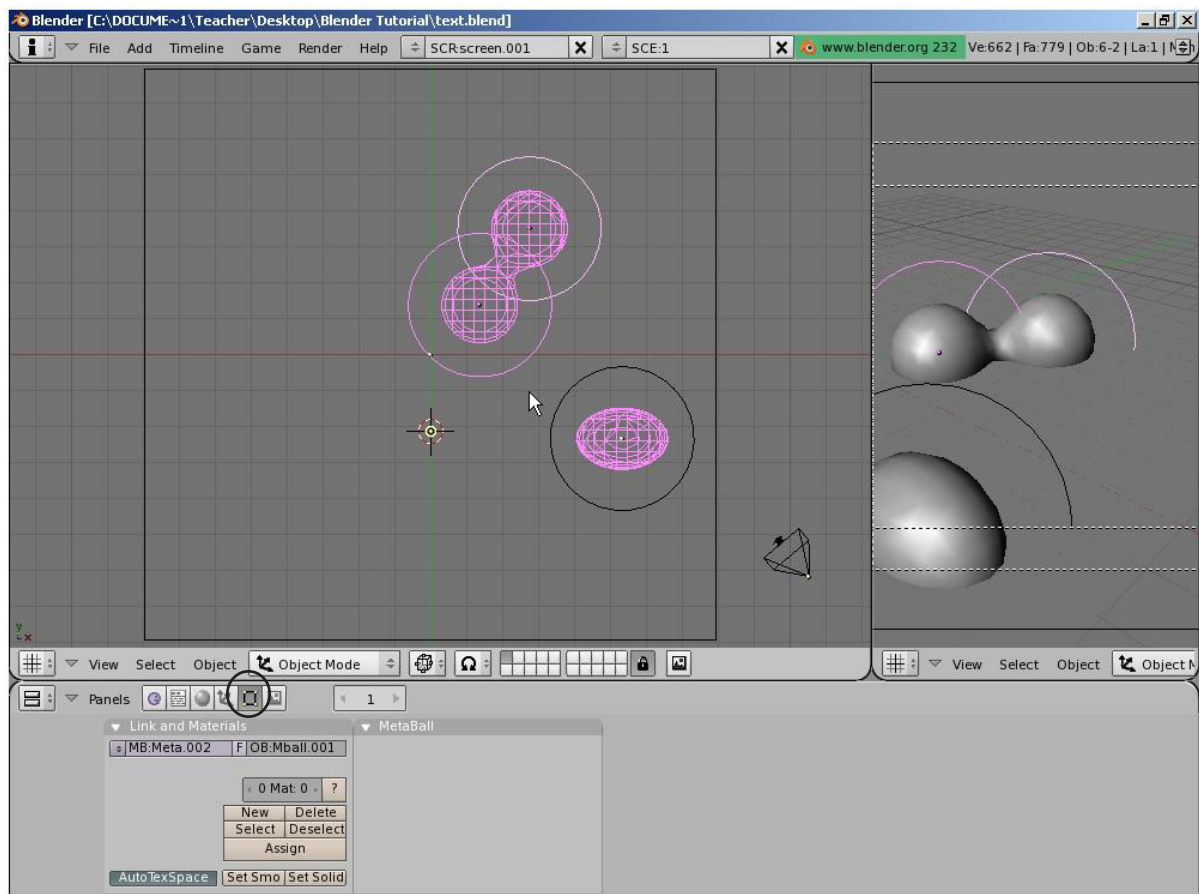
Chapter 11- NURBS and Meta Shape Basics

Liquid and Droplet Effects Using Meta Shapes

Up until a few releases ago, Blender only had the capability to make one Meta shape- a ball. Interest grew, programmers added other shapes and cleaned-up the code. You can now make several different meta shapes in Blender. They all work with the same principle. As the shapes get close to one another, they begin to “pull” and flow together. Meta shapes can be animated like other objects and can be textured. Raytracing settings like reflection and transparency can also create some stunning effects. Meta shapes are created like other objects, *except that the first shape acts like a parent to the other shapes*. As that shape is moved, the others display a rotation.



RoboDude Asks: *Why are all my Meta Shapes joined together? Remember to exit edit mode after the creation of each meta shape (Tab key). Otherwise, all shapes will be joined together.*

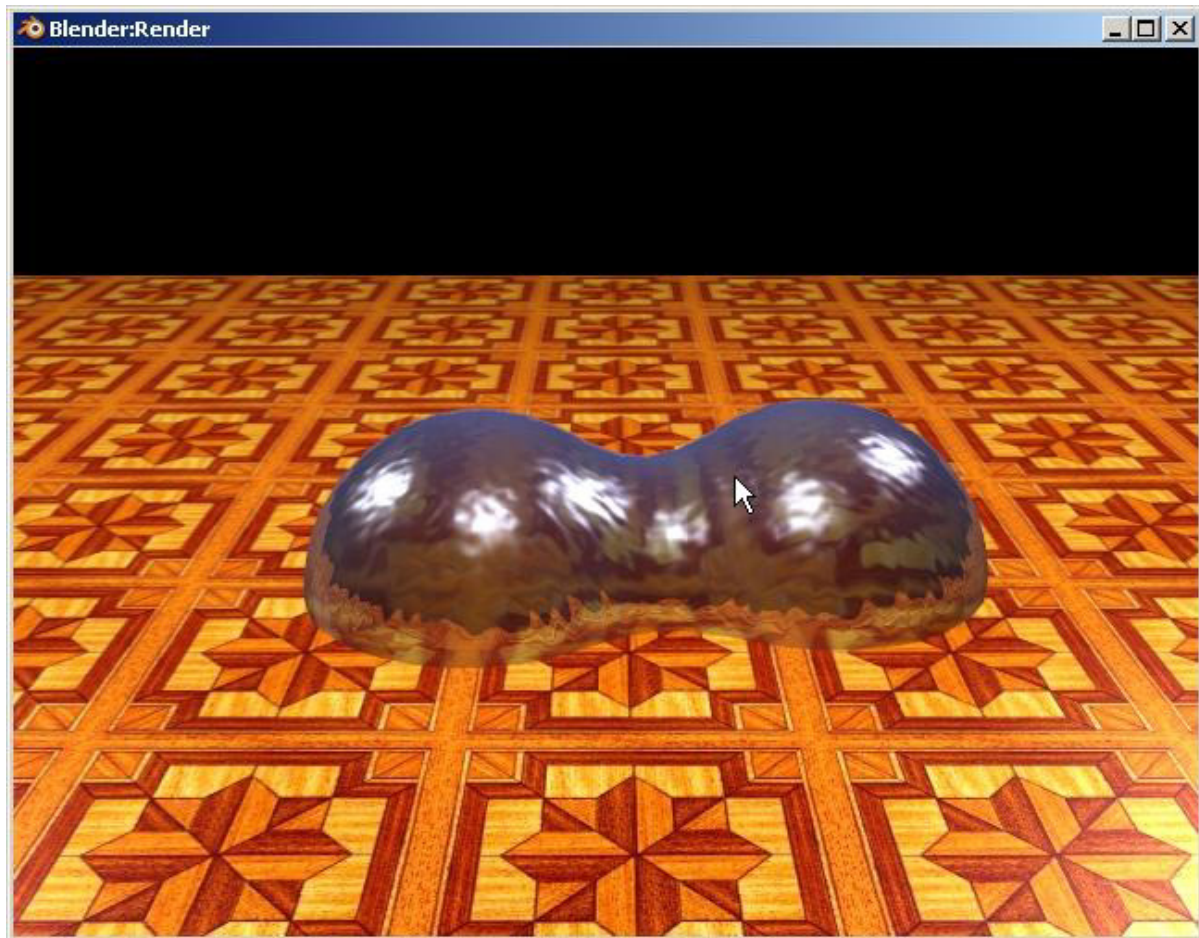


There are a few options for Meta shapes that can be controlled in the edit buttons. Experiment with them and try to make some renderings and animations.

Meta Shapes Practice Exercise

Create a new Blender scene and set up the views any way you wish. Create a plane and some Meta Shapes. Place materials and textures on the plane and Meta Shapes. Experiment with the raytracing features and apply a mirror and transparency effect.

When you finish setting up your scene, render a JPEG image and save it to your directory. Feel free to create an animation also.



***** Call the instructor when finished*****

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