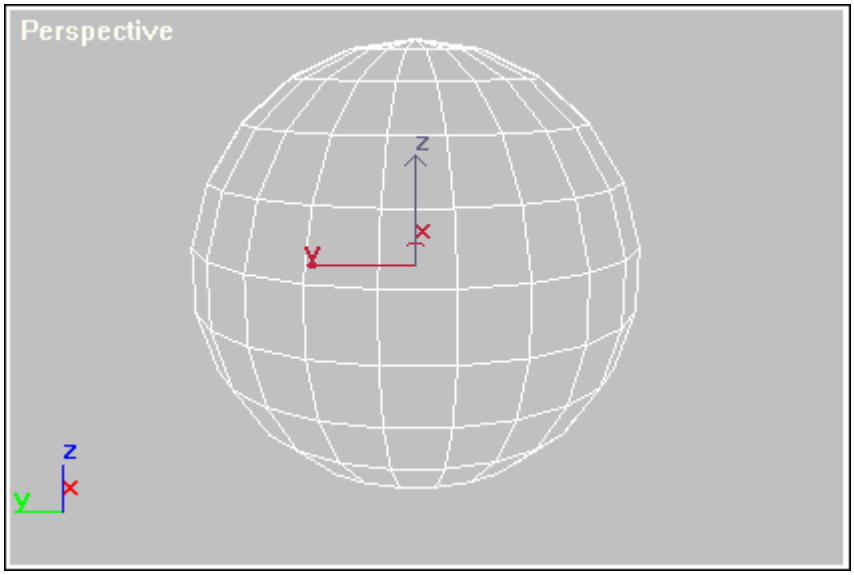
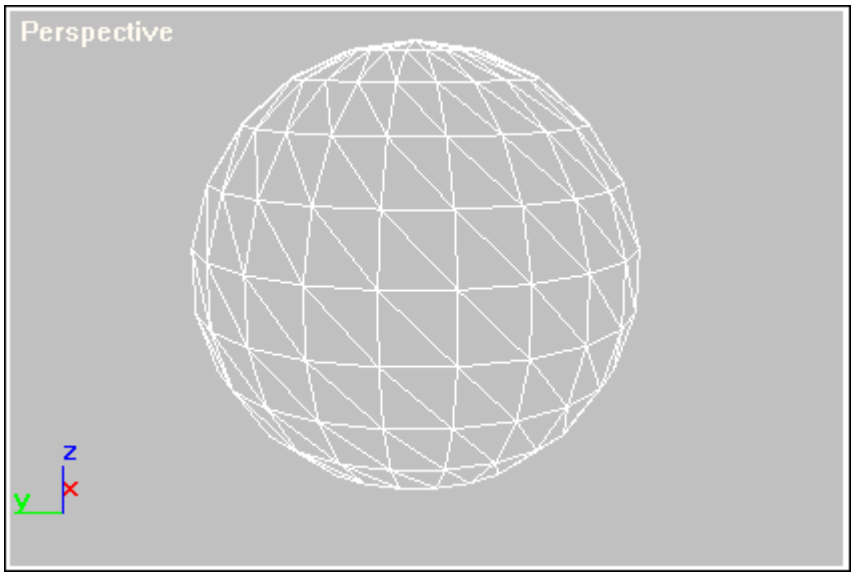
Tips: Using MAX-defined

The MAX-defined line type will display any edge that 3ds Max defines as being a “Visible” edge. In general, this means the edges that you usually see an object showing when a 3ds Max viewport is set to “wireframe” mode.

The picture below shows a 3ds Max viewport set to “wireframe” mode. Here we can see the Visible edges of the sphere.



Note that since the mesh polygons are actually triangular, there are many more edges that make up this sphere, but the additional edges are not normally defined as Visible. If we define all edges as Visible, the sphere would look like this:



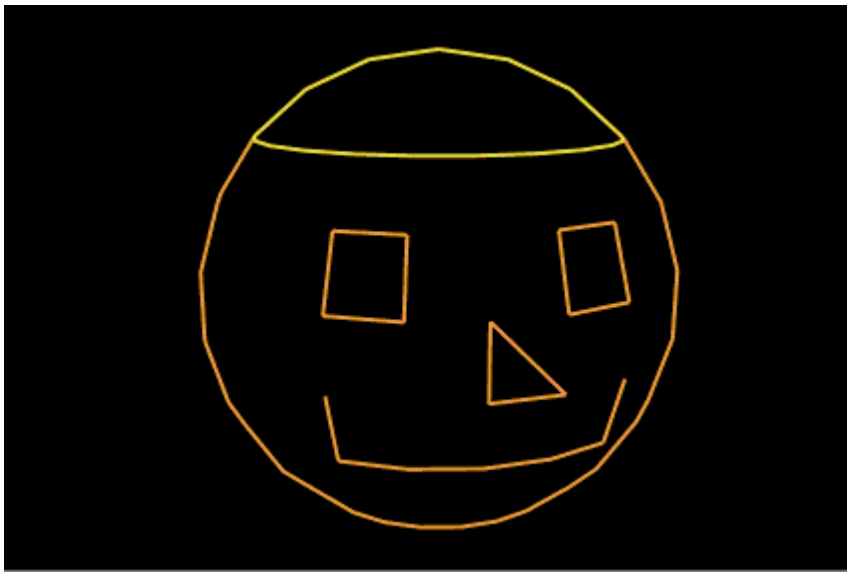
Normally, you would use the MAX-defined line type to easily and quickly create a geometric, or high-tech look of the object. But in addition to simple geometric looks, you can use 3ds Max's ability to designate

certain edges as Visible, in conjunction with Lasershow Converter MAX's **MAX-defined** line type to get some interesting results.

Using MAX-defined to illustrate mesh features

For example, suppose you always wanted to show certain lines on the object in order to illustrate a particular feature that didn't show up with the common line types such as Folds, Creases, etc. One way to illustrate this feature would be to overlay a renderable spline [1)] on top of the object. This would certainly work, and it has the advantage of allowing you to control the color of the line. The disadvantages are that the splines would be more objects to keep track of, and there could be some difficulty with precisely overlaying the spline on top of the object. And finally, if you wanted to morph or deform the object, you would also have to morph or deform the spline as well.

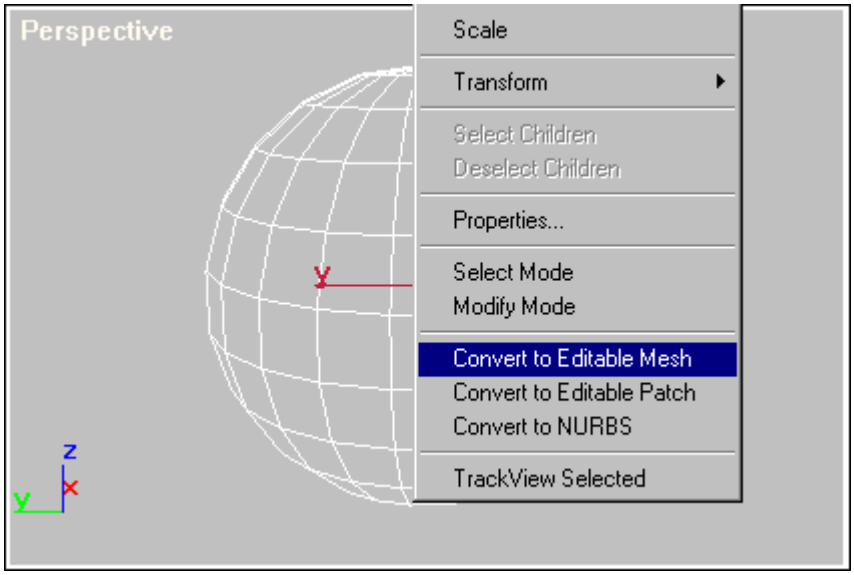
Another perhaps easier way to create the effect would be to only define certain edges of the mesh to be Visible, and to define all of the other edges to be Invisible. The Jack-o-lantern below shows an example of this technique:



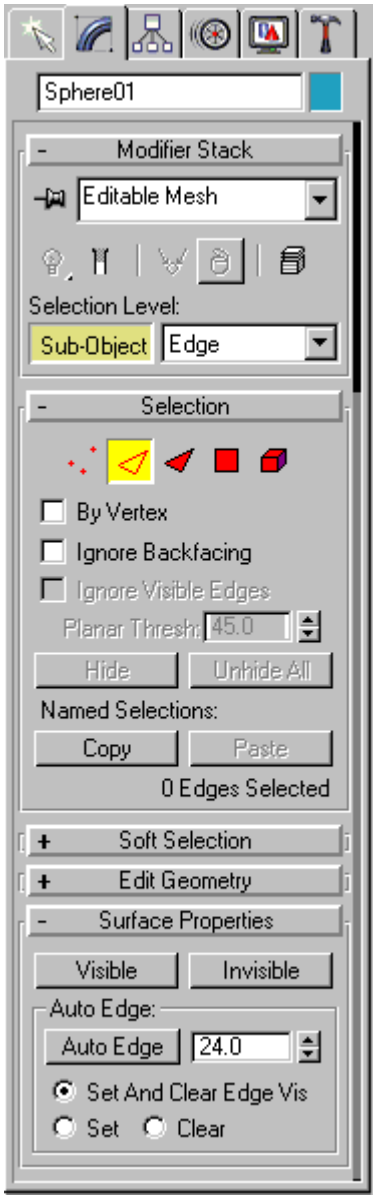
For the Jack-o-lantern shown above, only the edges of the mesh that make up the Jack-o-lantern's face were made Visible. The rest of the edges were made Invisible. The outline of the Jack-o-lantern is created by the Silhouette line type and the yellow cap is made up of the Material change line type combined with the top section of polygons being assigned to a different material. You can duplicate this concept on other objects by doing the following:

1. Draw a sphere (or any other object) in 3ds Max.

2. Click the right mouse button on the sphere and in the context menu, select **Convert to editable mesh**.

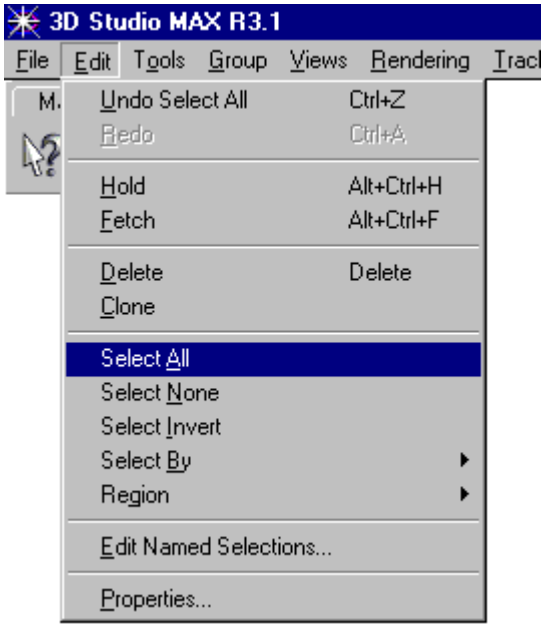


3. Go to the Modifier panel and select the **Edge** Selection Level.



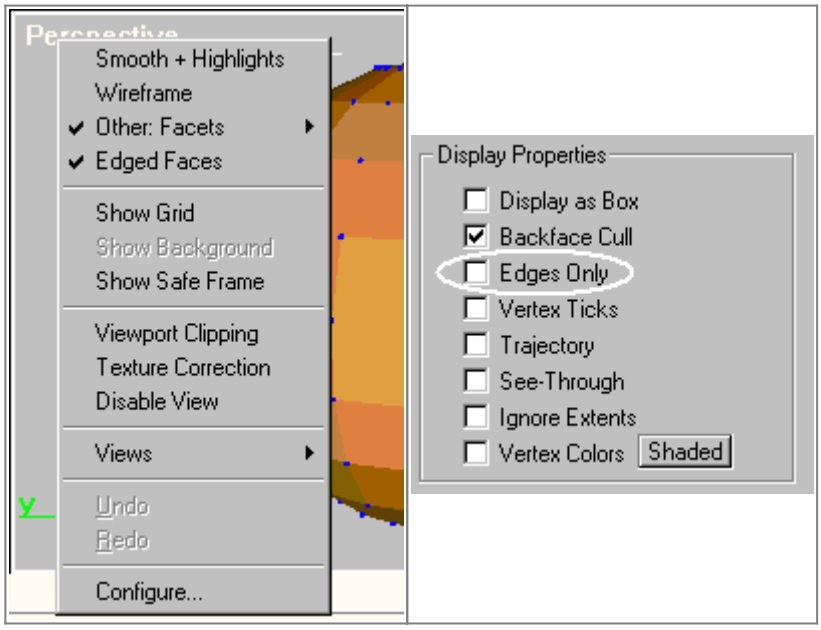
Within the Surface Properties section of the Modifier panel, you will see buttons labeled **Visible** and **Invisible**. These are the buttons that you use to control the visibility of individual polygon edges.

4. On the main 3ds Max **Edit** menu, click the **Select All** menu item. This will select all of the edges.

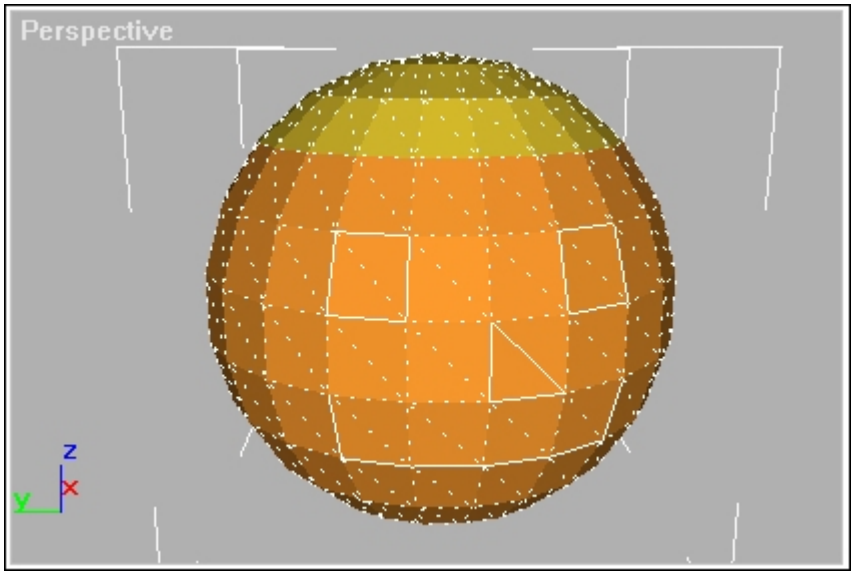


5. On the Modifier panel, click on the **Invisible** button and this will designate all edges as being invisible.

6. With all of the edges made Invisible, it may be hard to discern the actual shape and edges of the object. To aid in selecting edges and making them Visible, select the **Facets** and **Edged Faces** viewport modes from the viewport context menu. In addition, if you uncheck the Edges Only check box in the object properties window, this will help to see the invisible edges of the object.



7. At this point, you can select the edges of the object that you want to be made **visible**, and click the Visible button in the Surface Properties section of the Modifier panel. For the Jack-o-lantern, the result looks like this:



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1)

A **spline** is defined as: “A mathematical interpolation routine for describing curves or surfaces. More precisely, a sequence of curves, usually cubic polynomials, joined to ensure C(2) continuity. This term is sometimes loosely applied to any set of cubic curves.”

A **spline model** is defined as: “Representing 3-D objects as surfaces made up of mathematically derived curves (splines).”

In 3ds Max, splines can be used to control camera paths and to control object manipulations. In addition, splines can be made renderable and therefore can produce a visible outline.

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