I think the most difficult aspect of learning 3D modeling is figuring out exactly where to begin. When I first began modeling, I spent most of my time looking at a polygon primitive, such as a cube as shown below.

All 3D modeling applications utilize the same basic modeling tools. Once you learn one program other modeling programs are easy to learn. So it really doesn't matter which 3D program that you use, only that you learn the basics of 3D modeling. Believe it or not 3D modeling is much simpler than you think.

If you have begun dabbling with 3D modeling, I imagine you have done the same on more than one occasion (staring at a basic shape on the screen).

1. The first real “trick” of learning to model is using reference images, so that you can decide what to tackle first. I find my reference photo(s) and put them into my modeling program as a background (back viewport image). Most 3D programs has the feature to add background or reference images in the viewport workspace. Below is a reference photo of a shotgun I recently made in the Cinema 4D modeling...
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The image below shows the reference photo (top) and the finished 3D model (below).

The shotgun model is actually several simple polygons and spline objects. I began with the barrel section and worked my way back until I had the barrel, stock and action area. I then added the small details such as the breech release and trigger to the model. I then UV mapped them and textured the model.
As I mentioned earlier, reference photos are the best way to decide on where to start a as well as help you make an accurate and properly scaled model. I can make models without reference images, however they never look as good as models that I do use reference photos with.

A simple bottle and cap model
2. The bottle is a simple cylinder that I size to fit the general dimensions of the reference photo bottle and the top is a simple spline that I applied a lath modifier (or NURBS) too. I only used the “points” tool and the scale tool to make the bottle. I grabbed rows of points and moved and/or scaled them to match the bottles sides. I did drag a couple of points lines up to make the bottle neck. Once I had the front (left to right - X plane) of the bottle set up properly I grabbed the main bottle point lines (except for the neck area) and used the scale tool to “squeeze” the bottle on the front to back plane (Z plane) to make it more oval like the bottle would look like if it were real. Once I had the shape the way I wanted it I selected the entire bottle with the polygon tool (not the points tool) and extruded the bottle a bit to give it a bit of thickness.

3. For the bottle top I use a simple Bezier spline and copied the outline of the cap (left to right - X plane) as shown below and then applied a lathe modifier (NURBS) to get the cap shape. I could have used a cylinder instead of a spline, however, for simplicity sake I opted for a spline and lathe to quickly create the top.
4. 3D modeling requires forethought in regards to which primitive object that can be modified to achieve the proper shape. The same also applies to whether a primitive object or a spline will work better for a model or portion of a model. I often think about what basic shapes an object is made of so that I can break down the model and I understand what basic shapes make up the object. Once you figure that out the modeling will be much easier and will less work to create.

On complicated shapes I many times use a spline and either sweep the object, lathe or extrude it and work from there. However, object primitives can be used rather than spline objects if you feel more comfortable with them.

5. I found that by creating a model every day or every chance I have helps me to build my 3D modeling skills. The more you model the better you get. I would suggest starting with basic objects and work you way up to more complicated or intricate models. By building many less complicated models you will build your modeling skills and then will be able to create more complicated models. You will also be less frustrated if you begin with simpler items rather than complicated models. The less
All 3D modeling applications utilize the same basic modeling tools. Once you learn one program other modeling programs are easy to learn. So it really does frustrate you are the more you will learn over time and less likely to give up before you get a handle on 3D modeling.

6. Experiment, experiment, experiment. Play with tools in your 3D modeling program. figure out what they can and cannot do. I have learned so many shortcuts and tricks by just trying something to find out what will happen. Many or my “screw-ups” ended up teaching me more about the programs abilites.

Below is a zip file that contains an OBJ, a 3DS and a Cinema 4D format file so that you can look at and modify to see how the primitive object and spline polygons work.

Click here to download the bottle model files

Here at Designer Today we have many 3D modeling tutorials in our tutorial section and I will be soon publishing a series of 3D modeling tutorials that will cover nearly every aspect of using modeling tools and modifiers to build simple and more complicated models.

ABOUT THE AUTHOR

Allen Harkleroad is the publisher of Designer Today Magazine and creates 3D models for Poser & DAZ Studio software at Poser World and creates 3DS and OBJ format models for 3D Model World. He is passionate about all things creative and enjoys sharing his knowledge with others.

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