“Cartoon Raptor” Production Process

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Andy Rader
Creating the “Cartoon Raptor”

This presentation will walk you through the process that created a cartoon raptor. This is just another way to create the model with different goals and details in mind. We will look at the modeling, texturing, and lighting phases of the project.
If you have been following the tutorial, you will recognize the basic shape of the raptor. This image shows a point where I have started detailing the feet.

As we move through this presentation, I will be adding more to the model than the tutorial called for. You may want to add some of these things, but remember to stick to the tutorial and finish the basic form first. Little add-ons are icing on the cake. You need to turn in a basic working model first.
One of my big changes was the addition of a mouth. As you added edge loops to the head in the tutorial, you set the stage to build a nice open mouth.

In the front of the head, I split apart the basic polygon structures. Even though I broke them apart, they all still stayed in quad format. This image shows the empty space inside the head after the first break.

I used the ‘bridge’ command to create polygons to bridge the floor and roof of the mouth.

** Notice of the colors of polygons. These will be discussed later.
Modeling the Mouth

The change in this image shows the use of the bridge command to cross the mouth and then splitting the polygons a few times to help build some features of the mouth. Since this was going to be very simple, I needed gums and a tongue (not seen here).

Notice how the exterior of the head has not changed, I have only been adding edges inside of the mouth to existing edge loops.
After I finished the mouth and the tongue, I did some more work on the rest of the body. There is now more form because of the additional edge loops. However, for simplicity, the interior of the mouth remained quite simple.

In the last slide I mentioned gums. Now I am creating the teeth to fill in that mouth. The teeth are just little cylinders with a center point in the flat part. The center point was pulled up to ‘sharpen the tooth’.

All of the teeth were created individually and then merged to create one object in Silo.
Modeling the Mouth

Here is the final mouth with subpatching on. You can work in whatever format is good for you. I work without subpatching for the basic work and then refine with it on.

This is a cartoon raptor, so I pulled the corners of the mouth up and kept the teeth rounded. He’s more like a panting dog than a vicious dinosaur.

Think about the mood and attitude of your final character as you work. The face, more than any other part, reveals the character’s personality.
I wanted to add some spines along the head and back of my cartoon raptor. It should add a little variety of form to an otherwise solid red color for the dino.

I started by adding two edge loops along the center line. These new loops would be the max width of the spines. Use the ‘slide’ command to adjust them easily without affecting the geometry.

Then it’s a matter of a lot of extrusions. This image shows the first stage of the extrusion and then after I clean up the blockiness.
My feet/claws were also a bit different from the tutorial. You can see I broke up the toes for the model. I was trying to think about future animation, so I knew I would want those toes to move separately.

Instead of just separating the model when you get to the claws, start earlier up the foot area.

You can also see a fourth toe on the back of the heel. That was created by selecting a polygon and extruding until I got a shape I wanted. Variety and details make a character more interesting.
Modeling the Feet

Here's the subpatched version of the feet. Take a look at the claws. Even though they are small compared to the final model, they have detailed forms. Go out and do research about claws. Dino claws are more like birds than dogs, so it’s in your best interest to look online for close-ups of bird claws for reference.

Look at two last things. The indentation at the base of the claws was created by having three edge loops very close together to create a fold. Notice how I have applied different materials to different body parts. I applied them along the edge loops and geometry.
This is my basic model in it’s final stages. Let’s talk about the materials. I have created nine materials and applied them to polygons across the model. This raptor is different because I have no intention of creating any color maps for him.

As he was being built, I created edge loops in the exact locations where I wanted different colors. I then applied materials to those polys. For example, I selected the polys for each spine and then applied the color of the ‘spine’ material. Now, no matter how I rig or deform, those faces will always hold the correct color.
Here’s a closer look to see how the colors follow the edges of the model. Think of it as a skin for a moment. Even if you pinch your skin, the colors that cover that area of skin remain the same, even though stretched. By applying materials to polygons as block colors, I don’t have to worry about matching or aligning textures.

Another advantage for my animation is that I will only use procedurals or presets for my textures. I won’t be loading any maps and render time should decrease. The drawback is that I can’t have any detailed skin details.
Here I go with the UV work. Do I need to? No. Do you need to do good UVs? Yes. It’s required for the class.

I’m skipping a lot of the UV headache because I have no intention of ever using them.

Here’s a look at the UV work for the eyeball in Silo 2.1. You can see the basic model, the 3D UV version of the model, and the 2D map. Notice that the eye only needs one UV seam. When you recreate the UVs using XYZ Coords, you can separate the circles for the final map.
Since I was not focusing on cutting this model up like a traditional UV, I am using more seams than usual for the raptor body. More seams makes a more tedious effort when you clean up UVs, but you don’t have to worry about fixing deformations of the maps. There’s a tradeoff. Always do what your boss or teacher requests. ASK if you don’t know what they want.

I seamed all of the small parts separately so there was as little work as possible for things like the spines.
This was the layout after choosing XYZ Coords in the UV menu. Like I mentioned before, there are a lot of little pieces, but they don’t require much effort for cleanup.

Another drawback to the fast way of doing this is that you can’t see any organization of pieces. At the least, reorganize the map pieces to show the basic form of your model. It will help if you need to return to the piece.

Again, your work for 331 should look like the maps from my other document that talks about texturing in Photoshop. This is just another way to do it.
I have been saying don’t UV your body in the same way I am. However, when it comes to things like teeth you want to do it this way. Unless your model is the interior of the mouth, teeth are small enough to do quickly. There are too many and they are too tedious to play with for long periods of time.

The time intensive part of UVing the teeth is setting up the UV Seams. Do each tooth individually and make sure they will unwrap without any overlapping. Think of the image of an unwrapped cube or cylinder. The teeth are very similar.
After I created the UV seams, I applied the XYZ Coords function and that’s it. You can also try the ‘Scale UVs Proportionally’ command to see what you get, but I was happy with this first generation of the map.

Notice how each of the teeth unwrapped along a seam of the cone and then around the edge of the base. Fast and useful for these simple models.
Now I’m done with Silo. Here’s one last look. I can’t emphasize enough how important it is to label your parts and materials. It makes life so much easier.

The whole model has four objects
- Right and Left Eyes
- Body
- Merged Teeth

The UV’s and textures will follow the model into Lightwave3D or Maya. I can adjust the shaders and materials in the next application I use.

Be careful if you go to another program like ZBrush and then into Maya, you will lose that material information (but not the UVs).
I’m not going to talk about doing things in Maya. Here’s a screencap of the model after it was imported. I wanted to show you how all of the materials were intact and the conversion of the shaders. You can now customize those shaders without going to another program.
Here’s your LightWave file after import. The surface editor is ready to go for cleaning up the colors and specularity. Remember how I mentioned labels. This is a good example of why the labels are so useful. I get a nice list so I know exactly what to click and change. The Maya shaders displayed similar labels.
I know my final render really isn’t that amazing. I just wanted to show you how it would look when the lighting was set up.

Looking at it now, I may want to go back and adjust the polygons on the spines and their applied colors. There are some problems with the hip that I didn’t notice before, but that is a fast fix in Silo and then re-import into LightWave.

With a little less velvety material, it is what I wanted. I could easily duplicate this model and create a cartoon family with little effort.

** I’m far from done, there’s still a lot of rigging to do!
Conclusion

So that’s it. A quick cartoon raptor. If I were truly going to use this model in an animation, I would have added several hours cleaning up that model and the UV maps before export to LW or Maya.

I hope this quick walk through the production process helped you plan out your project a little better.

-Andy