PART 2

Painting textures

It's time to texture the dinosaur. We'll take advantage of ZBrush's Polypaint feature to paint directly on the model, sidestepping the need to set up UVs

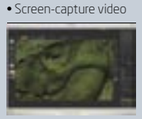
FACTFILE

FOR
ZBrush

DIFFICULTY
Intermediate

TIME TAKEN
10 hours

ON THE DVD
- Model ready for painting
- Screen-capture video



ALSO REQUIRED
Photoshop

Texturing is an organic process. While there are certain technical tricks that can aid you, the majority of work is relatively simple, but time-consuming. I rarely, if ever, use anything but the Standard brush with a few alphas here and there to do this type of work.

To UV or not to UV? At Weta Workshop, it is fairly rare that anything would need to go past the texturing stage. Therefore, we usually have no need for UVs at any other stage of production (fur layout, for example). As such, spending time laying out UVs – even aided by a plug-in such as *Pelting Tools* (www.hydralab.com/pelting), which I recommend – is time spent unnecessarily. Polypainting in *ZBrush* is a fantastic way to avoid the process of UVing, and has many other inherent advantages.

Polypaint allows you to paint directly onto your model, and gives you the ability to paint based on surface detail (for example, dry brushing and washing). Working this way begins to feel like you have the real sculpture in front of you and takes the guesswork out of painting textures.

Polypaint also has uniform resolution: every point in your mesh can be given the same amount of colour information. If you combine this with UV tiling, there is no wasted space on your texture map. The downside to this is that your resolution is dependant on your poly subdivisions – but I have found in most cases that if you have a subdivision level sufficient enough for your surface detail, it will be sufficient for your colour texturing.

One downside of painting this way means you end up with an 'unreadable' texture map, so drawing directly into your texture file isn't really possible. However, there is still a lot you can do using *Photoshop* to enhance and modify your textures. Here, I'll explain how to create my dino texture using Polypaint in *ZBrush*, while using *Photoshop* to apply procedural changes. The printed walkthrough gives an overview of the workflow, but you can refer to the videos on the DVD to see the entire process in detail.

Texturing other elements, such as the teeth and tongue, follows much the same process described here. We won't need a huge texture size for these parts: 1,024x1,024. We'll use a different shader for them when we render in *mental ray* later on.

STAGE ONE | Setting up the model

01 In *ZBrush*, use Tool > Load Tool to bring in either your own sculpt or 03_Atrocitasaurus_finSculpt.ztl from the DVD. Press [T] to enter Edit Mode, and position the model. Select Tool > Texture > Colorize to enable the vertex colouring. Since we won't be worrying about the UVs at this stage, they can be left off – as they are by default. On the shelf, turn off Zadd and Zsub and make sure Rgb is enabled, with Rgb Intensity set to 100.

02 We need to apply a more texture-friendly shader than the default Clay MatCap. It's best to use one that has the most resemblance to the material you'll be using for the final rendering, so you should choose a fairly matte shader. Click on the coloured material ball on the left of the screen and select MatCap White Cavity: the model now turns white.

03 You can customise the workspace to make choosing colours more straightforward. Select Preferences > Custom UI > Enable Customize. Open the Color menu, then hold [Ctrl] and drag the SysPalette button onto the sidebar, under SwitchColor. This is a slight improvement over *ZBrush's* default layout and allows us to store swatches for later. To save this layout, select Preferences > Config > Store Config. You can do this with any button you want.

STAGE TWO | Pre-shading the model

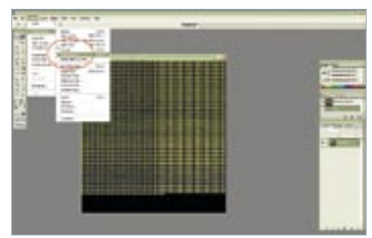
04 A blank canvas is daunting, and is not useful for getting tones right. Select a mid-tone green/yellow (around RGB 202, 210, 136), then choose Color > FillObject. You're now going to pre-shade the model to define a 'colour temperature' for your base coat, establishing where the skin is thinner and more translucent, and where elements such as internal organs are close under the flesh. Step down one subdivision level: select Tool > Geometry and drag SDiv to 4. Select a violet blue and get painting. (See the video for help.) Be quite bold: you'll tone this all back later.

05 Change the colour to red. The red painting is more or less a repeat of the violet blue, but this time you're defining areas of warmth and thickness. It's not quite a heat map that you might see in a thermal image: more an artistic impression of one. The red indicates areas where circulation is high and the capillaries are close to the surface. Adjust Rgb Intensity, Draw Size and Focal Shift to increase control while painting.

06 Once the pre-shade is complete, blend it back down using the original base colour mixed with a slightly darker shade. Mist this over the whole body using a standard brush with a low Rgb Intensity. Click the left toolbar's Alpha swatch and choose Alpha08 to break up the stroke a little. The result of all this is a great base to build on, making a real difference to the final product. Much of the detail will become more subtle as we go on.

07 To adjust the overall hue, you need to do a colour correction by baking out the texture. Drop SDiv to 1 via Tool > Geometry. Select Tool > Texture > EnableUV and then AUVTiles. From the toolbar select Texture; set Width and Height to 4096 then press New. Don't worry if your model goes blank or disappears...

08 Increase SDiv to 5 then select Tool > Texture > Col>Txr. Your model should regain your texture – but this time, it's an image map rather than Polypaint. The texture should appear on the left toolbar's Texture swatch. Click the texture swatch, then Export in the dialog that appears. Save the file as a .psd and load it into *Photoshop* or another image editor.



09 In *Photoshop*, your texture will look pretty wacky – a bunch of randomly coloured squares. Select Image > Adjustments > Color balance... Shift the blue slightly to yellow and the magenta to green. If you zoom way out on your texture, it gives you a better impression of the colour cast. Save this file and swap back to *ZBrush*.