

Pick up the shirt file in Dropbox under the class folder name. Put your finish in the folder using your last name as the file name. DUE MAY 14, Thursday

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**Displacement mapping requires two players: The image you wish to warp (in this case a logo), and the image to be used as a map (the displacement map). Displacement maps are grayscale images or achieved as totally desaturated RGB images.**

In this example, we create a logo on a sweatshirt so that it falls realistically down in the folds of the cloth. You will use the T-shirt psd file you will find in the folder with this class name on it in Dropbox.

1. To create the map, duplicate the shirt <Image > Duplicate.  
(When using your own photo you would first apply a Gaussian Blur of 1 pixel selected under the **Filter menu** Blur - Gaussian Blur).
2. If necessary increase the Contrast so the folds look more exaggerated but not so much that they become black and white only.
3. In the **Image** Menu bar select Adjustments, select Hue & Saturation. Bring the saturation down to -180. Copy this layer and paste it in a new file with 150 dpi resolution (the same as the original T-shirt file). Close these files.  
**Save the desaturated file as *Displacement Map.psd*.**
4. Reopen the original shirt file.
5. If there's a lot of little textural detail, the mapped artwork will go into every little nook and cranny. You just want the artwork to follow the general shape of the cloth, not every little tiny nub. So blur the image slightly to smooth out texture, but keep the "bends." Choose Filter > Blur > Gaussian Blur. Probably 1 or 2 pixels will do.

*Figure 1: Blurring the desaturated map slightly enables the artwork to follow the large folds of the fabric smoothly, without being roughened by the texture of the fabric itself.*



6. You may **make your logo** in either Illustrator or Photoshop. If you open an Illustrator file in Photoshop, you should then both Rasterize the image and save it as a Smart Object. The Photoshop file should be saved as a Smart Object also. Remember to keep the file resolution the same as the photo of the shirt - here 150 dpi. Try to keep the measured size so it will fit on the shirt!

7. Open the original shirt file. (Make sure you have more than one copy saved just in case of errors!) Open the Logo file and paste it on the shirt file. Position it and make it the right size before completing step #8.

Figure 2: Artwork positioned, and ready to be distorted by the Displacement Map.

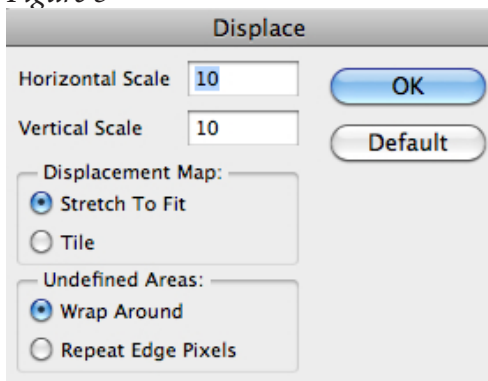


NOTE: [If you use File > Place for vector artwork, the artwork will automatically be converted to a Smart Object. While vector Smart Objects offer the advantage of being endlessly scalable with no loss of detail, they won't allow themselves to play with Displacement Maps. You must Rasterize it. (Note that raster Smart Objects are subject to loss of detail when scaling, since they are pixel-based.)

To convert the Smart Object to pixels so you can distort the logo, make sure you are satisfied with the size and angle of the artwork, and **then** choose Layer > Rasterize > Smart Object.

8. Go to Filter - Distort, and select Displace. Select the displacement file you have saved wherever you have placed it ; on the desktop is good. Double click on it. You will get a window with a setting of 10 for Horizontal and Vertical scale. [Figure 3: ] Also select Wrap Around so the image will fall in the folds. If you have sized your logo before doing this, it will be OK so click OK.

Figure 3



9. In the layers palette you should change the mode to Multiply and modify the opacity. [see Figure 4]

Figure 4

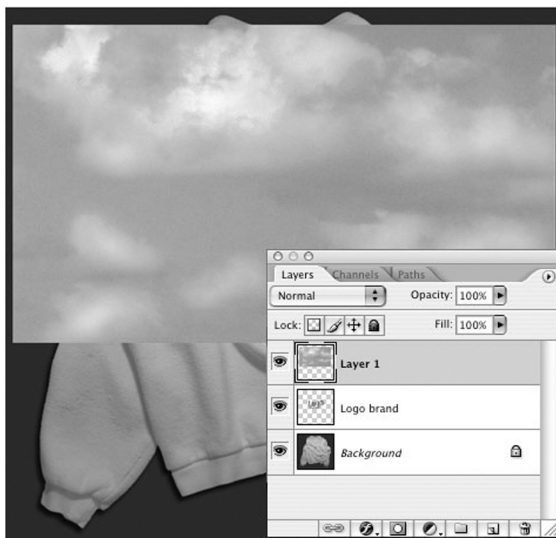


*You may do another effect as well - using masks.*

10. For even more fun, you can make the logo artwork act as a mask for layers above, by creating a Clipping Group. Even though we tend to think of masks as needing to be above the content they mask, Clipping Groups work from underneath.

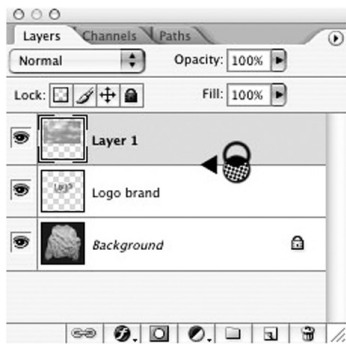
Above the logo art layer, create another layer containing artwork. You can copy and paste, or use File > Place to bring in raster or vector art (Figure 5). You won't need to rasterize a Smart Object for this trick to work, though.

Figure 5: In a layer above the distorted logo, place artwork to be masked by the shape of the logo art.



Once the top layer is in place, **hover over the dividing line between the logo art layer and the new layer above it.** Hold down Alt (Windows) or Option (Macintosh), and when you see the strange little icon made of two interlocking circles and an arrow, click on the dividing line.

Figure 6: Creating a Clipping Group. Hover between the layers, hold down the Alt (PC) or Option (Mac) key, and then click (immediately below). The thumbnail for the top layer is indented, and now sports a downward-pointing arrow indicating that it's masked by the contents of the next layer down. The masked layer also inherits the blending



Displaced map sample  
without mask

TRY ONE WITH A MASK. IT'S FUN!