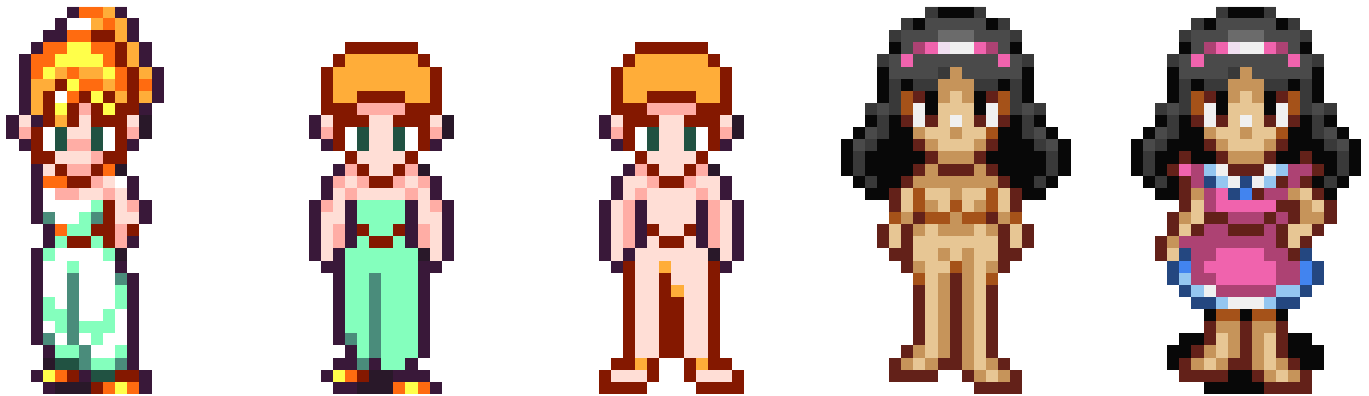
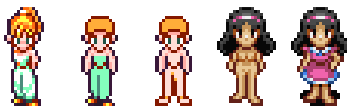


Creating Sprites

This tutorial provides tips on creating sprites in Photoshop. Updated to add tips about manual anti-aliasing.



Easy Start



I almost never make **sprites** completely from scratch. Usually, I start with another game character, remove their hair & outfit, then build from there. That makes things much easier since you don't have to figure out the new character's proportions, you'll simply re-use proportions that you already

know will work.

Reduce, Reuse, Rebuild!



You can re-use character bodies by swapping heads & changing outfits. Some sprite artists go even farther, but this has always been enough for me.

Process



If I need a completely new pose, I figure out the approximate size of the head and then draw each limb in a single color. I add an outline, adjusting the body's shape as I go. I add the character's head. I might add an outfit. And finally, I'll manually add anti-aliasing to the outline to clarify the details.

Proportions

Paying attention to proportions is helpful even with small sprites like these. But the smaller the sprite, the more you need to compromise on realistic proportions. The eyes should still be centered on the head, unless it's tilted up or down. But the size of the head compared to the body will generally be either 1/3 to 1/2 the size of the entire sprite. This is because you need to be able to



eyebrows start
1/2 down head
Head = 2/3 of upper half

clearly see the character's eyes, which convey the most expression.

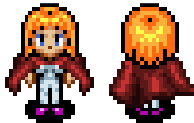
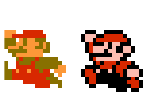
Why 3D Doesn't Work Well



This is also why creating small sprites in 3D doesn't work too well. It's because the expression gets lost in the blurred pixels. And at that size, you cannot afford the blurry or

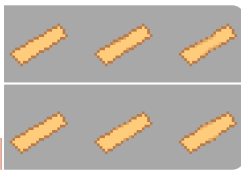
misplaced pixels you get from 3D. At small sizes, every pixel counts.

Outlines & Shading



The purpose of the outline is to provide contrast. It guarantees that the sprite will be visible against any background. Unlike traditional art, a sprite is a moving image, so its background will be changing constantly. The outline's color will generally be a much darker version of the color you're outlining. Be careful with dark shading, unless you're shading flowing cloth, because it tends to hide details. I usually keep the colors pretty bright.

Anti-aliasing



The goal of anti-aliasing is to describe the various shapes in the sprite down to a subtle level of detail. (It's possible to describe changes in shape that are even smaller than a pixel)

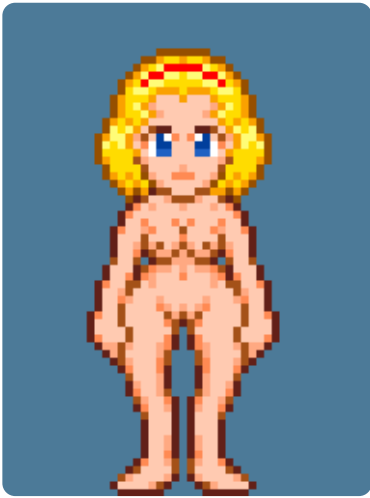
Anti-aliasing is one of the most important skills you can have because it's the only way to suggest subtle details and subtle changes in shape in an already very tiny image. Use it to clarify how much a shape curves, especially when using a whole pixel would be too much. It can also adjust the apparent thickness of limbs. If you want to show a slight outward bulge, lighten some of the pixels in the outline. If you want to show a slight crease or inward curve, slightly darken the pixels along the inside of the outline. Focus on clarifying the shapes first. Then add shading if there's enough room. I recommend limiting the shades to 4 levels of brightness. This includes the outline. Using fewer than this makes it difficult to adequately describe details. Using more makes the process more cumbersome and involved than it needs to be. Do not add anti-aliasing to the outside of the outline unless you're working with an image format that supports translucent pixels. (Alpha channels)



It's interesting to note that small sprites naturally have a cartoony look because they have limited shading, selectively exaggerated features, and use outlines to distinguish them from the background.

Compression & Anti-aliasing

The image's compression format will affect how you can anti-alias it. I recommend using the PNG file format, which supports multiple types of compression and transparency and is very widely supported. A PNG file can be either lossless with a huge filesize (24-bit,) or palette-based with a tiny filesize (8-bit.) Additionally, PNG files can use either boolean transparency (pixels are either fully opaque or



fully invisible,) or they can use alpha channels (which allows pixels to be translucent.)

A GIF or an 8-bit PNG created in Photoshop cannot display translucent pixels, so you would only be able to place anti-aliasing on the inside of the outline. But if you're using a PNG format with alpha channels, then translucent pixels can be used and you will be able to display full anti-aliasing both inside and outside of the character's outline. I recommend using an 8-bit PNG with an alpha channel for maximum compression. Photoshop cannot directly create these, but a program called **PNGquant** can convert a 24-bit PNG with an alpha channel into an 8-bit PNG with an alpha channel. (But don't throw away your source files. Photoshop can't open 8-bit alpha PNG files either.)

So unless you're using PNGquant, do not use anti-aliasing on the outside of the character's outline. However you can still imitate anti-aliasing on the inside of the outlines by placing somewhat darker pixels at the corners of the outline when it tries to curve. That way, the inner parts of the outline look a little smoother. You can see what I mean if you look at some of my characters.

Convenient Preview in Photoshop



When you're creating anti-aliasing manually, it's very important for you to see how it actually looks at the intended size, because it's all about *implying* and *suggesting* the changes in shape. But these impressions are only apparent when you view the sprite at a small size.

In Photoshop, you can view the an image at many different zoom-levels simultaneously. To do this, go to the top menu, and select:

Window -> Arrange -> New window for ????

The choice (or choices) at the bottom will duplicate the image's window. These duplicates update in real-time. They're all treated as the same file, so Photoshop won't remind you to save until you try to close the last one for a given file.