

Ghoul tutorial



A step by step guide for designing a paper fold-up ghoulish miniature. By Jim Hartman

This tutorial will cover the basic steps I follow to design a paper ghoulish miniature. This miniature shows all of the techniques I have learned so far to make what I feel are nice looking miniatures. I will not be explaining in great depth which tools and software I use to make the design. This tutorial will just show you the design process, so you can see how I get the results I do. The way I design miniatures is just one of many different techniques. I hope showing you how I do it will encourage you to try, or give you new ideas for improving your own designs.

Why vector art? The style of art I do is called vector art. Converting my art this way gives me great control of the design. By the creative use of fills and outlines I give my miniatures a unique look simulating the look of painted miniatures.

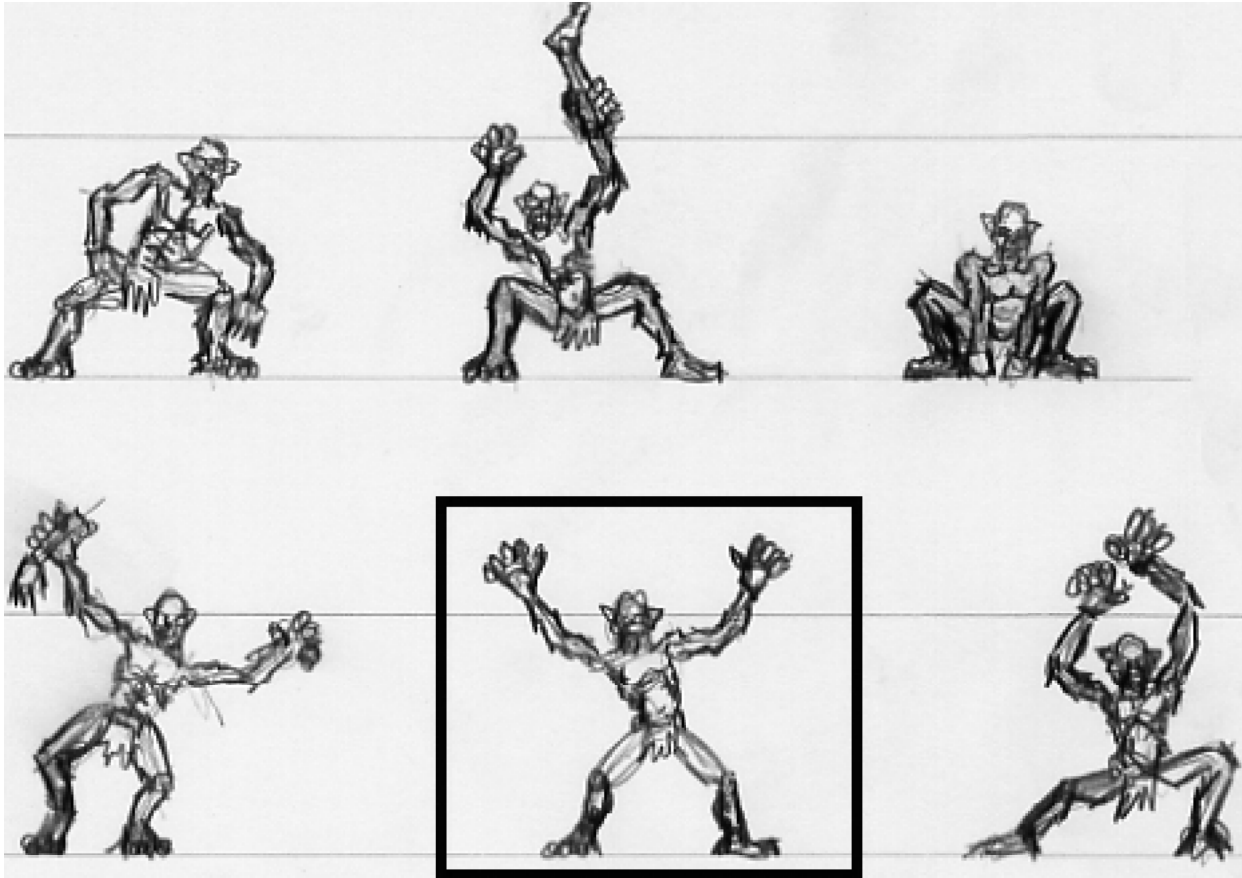
My design philosophy. I feel that paper fold-up miniatures can look every bit as good as painted metal and plastic miniatures, even better if the miniatures are painted poorly. But with paper miniatures, you never have to worry about painting. For the same amount of work it takes to prepare a metal or plastic figure for painting, you can cut and base a paper miniature. For the same amount of work and effort to paint one miniature, you can assemble an entire regiment of paper miniatures. So, with this in mind I decided to design paper miniatures that have the same look and style as painted wargaming miniatures.

I used to paint miniatures for games, but soon had amassed so many figures I could never hope to paint. The other demoralizing thought occurred to me when I considered that if I wanted a large unit of some particular troop type, I would have to paint each and every one of them. I thought there had to be another way, were I could design one miniature and make multiple copies of it for a large unit. I could also have this design saved, so if a friend wanted an army too, I could just give him the files for him to make an army.

So, I began experimenting with designing my own paper miniatures. I think the first figures I made were skeletons. they turned out decent enough, but with no back sides, or bases, just glued to washers, and colored in with markers. Then I started searching the web for designs, and that's when I discovered there were lots of others doing the same thing. But still, none of the designs people were making looked like painted metal miniatures, they were just paper stand-ups. I wanted real miniatures, only printed on paper and based like real miniatures, so this is what I make. For the same amount of effort I put into painting one metal miniature I can design and color a paper miniature. Now I just need to focus myself on designing all those miniatures I want, because now I can make anything I want, and so can you. Now on to the tutorial...



STEP 1

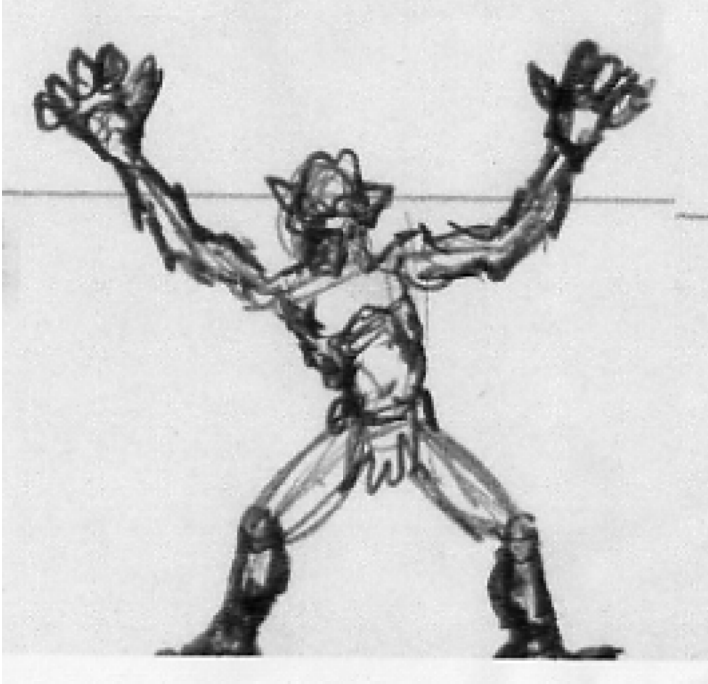


STEP 01, The sketch.

All of my designs originate from the rough sketches a I make. I sketch and draw constantly, always doodling something. I always try to sketch at the actual size the miniature. This allows me to work out the basic pose, proportions, and details. This picture is from a sketch I did for the ghouls in an undead model set. As you can see the sketches are pretty rough at this stage. It's not important to me to have everything perfect in the sketch, it is just a guide. I have highlighted the individual ghoul that will be the subject of this tutorial. Now that I have chosen the design I want to work on I am ready for the next step...



STEP 2



STEP 02, Scan, scale, and print the sketch.

I want to ready the sketch for tracing. I take my original sketch and scan it at 200% scale, then print this out. This doubling will make it easier for me to make clean art while still keeping the proportions of the original sketch. With my double sized sketch printed out I am now ready for the next step...

STEP 3



STEP 03, Tracing.

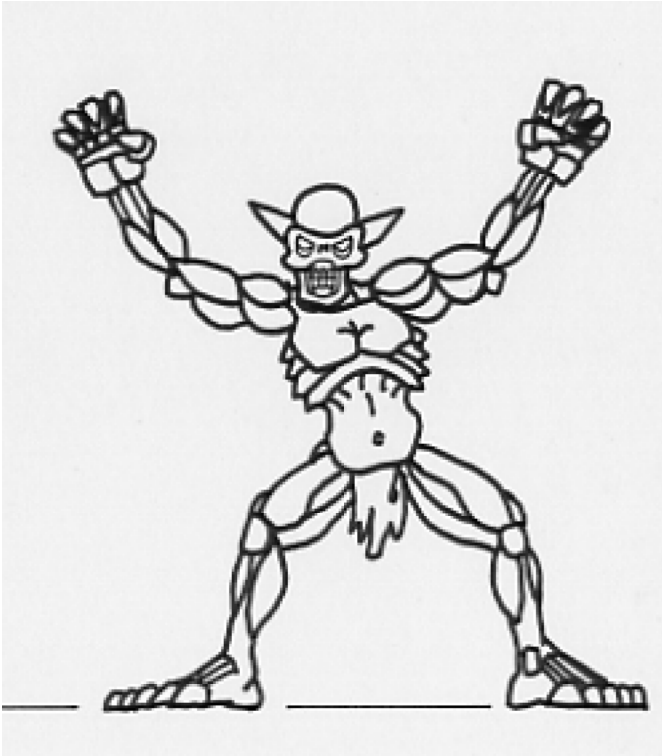
I'll take my double sized printout and tape a fresh sheet of paper over it and head for the light box. Using my light box I'll trace the design establishing the anatomy and details. As you can see in this picture the design is still rough, but now I have all of the shapes defined the way I want them. Satisfied with this tracing I'll remove the double sized print out, and am now ready for the next step...

STEP 4



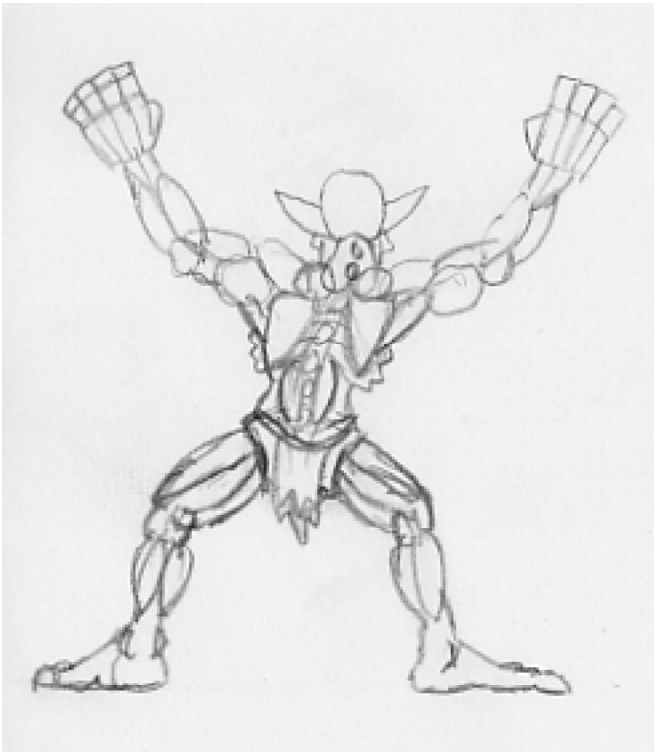
STEP 04, Final pencils. With my new traced sketch I'll tape a fresh sheet of paper over it and put it on the light box. This step I'll focus on finalizing all of the shapes and details. As you can see in the picture, I'll make notes and changes as I go along. I try to make the lines sharp and clean as possible. Once I have the final pencil art done I'll remove the original tracing, and am ready for the next step...

STEP 5



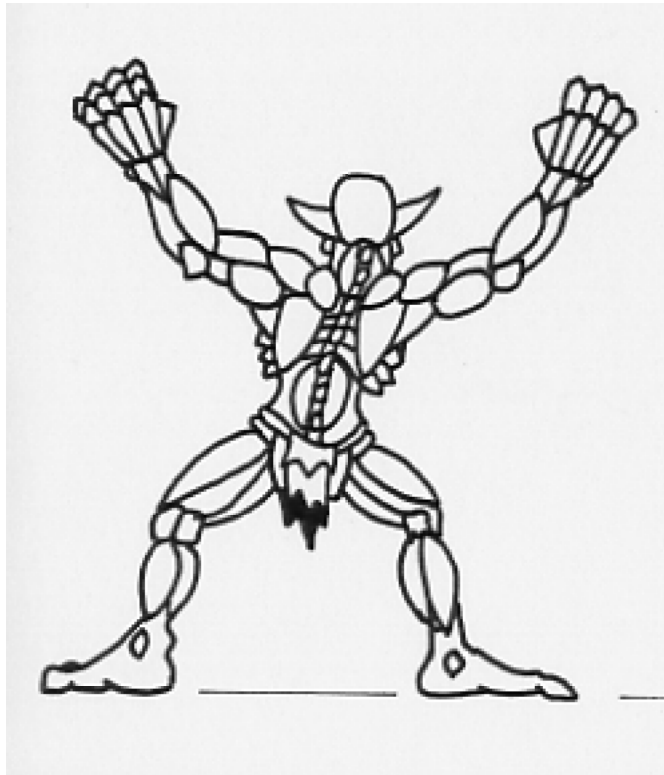
STEP 05, Ink art. I'll take my final pencil art and tape a fresh sheet of paper over it and place it on the light box. I'll trace the design with my technical pens, starting with the small detail lines, then doing the rest of the figure in thick lines. I want to make sure I have all of the parts of the figure defined with closed spaces. I do not do any shading in the ink art, this is done with the coloring. I want to define all of the individual features of the miniature design so that each may be colored separately later. I make sure to make a horizontal reference line at the bottom of the design. Once the design has been completely traced in ink, I'll remove the final pencil art, and am now ready for the next step...

STEP 6



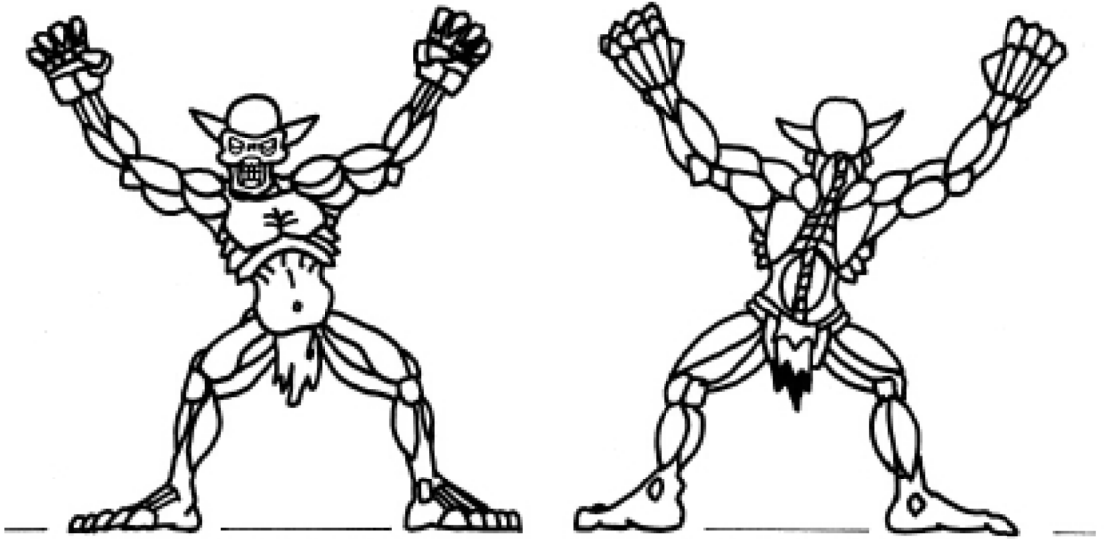
STEP 06, backside tracing. I now have to design the back view of the miniature. I take my finished ink art for the front view, flip it over and tape a fresh sheet of paper over it, and head for the light box. I'll begin by carefully drawing in all of the features of the back view of the anatomy. I always start with the head, then do the body, hands, feet, then finally the arms and legs. I'll turn off the light box at times to check and make sure that the features look right as I go along. I take special care to make sure all the overlapping features are right, and opposite of the front. Once I am happy with the features I'll darken all the lines and finalize the design. I remove the front view ink art and set it on the scanner, I am now ready for the next step...

STEP 7



STEP 07, Ink Backside art. I'll repeat the steps for the backside art as I did with the front ink art. I'll tape a fresh sheet of paper over the final backside pencil art and place it on the light box. I still take special care to make sure the features are right and the overlaps in the right place as I go along. I ink the small details first, then go over the rest of the design with my heavy ink pen. I make sure I place a horizontal reference line on the bottom of the design. Once finished, I'll remove the backside pencil art, and am ready for the next step...

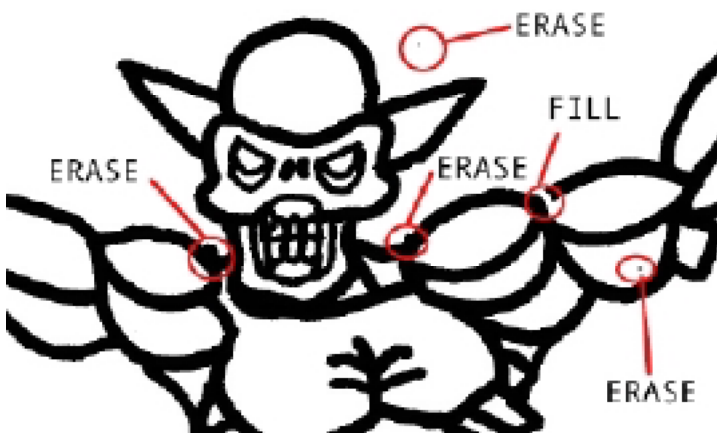
STEP 8



STEP 08, Scanning.

Now that I have my final ink art for both the front and back views, I am ready to scan them. The scanned images will need to be black and white with a very high resolution to maintain a clean edge for the vector conversion. I set my scan setting to 1 bit text/line art at 600 dpi. These settings give me the best results when converting the images. I scan each design and save the file as a TIFF image to a new folder for the miniature. With both views scanned and saved I am ready for the next step...

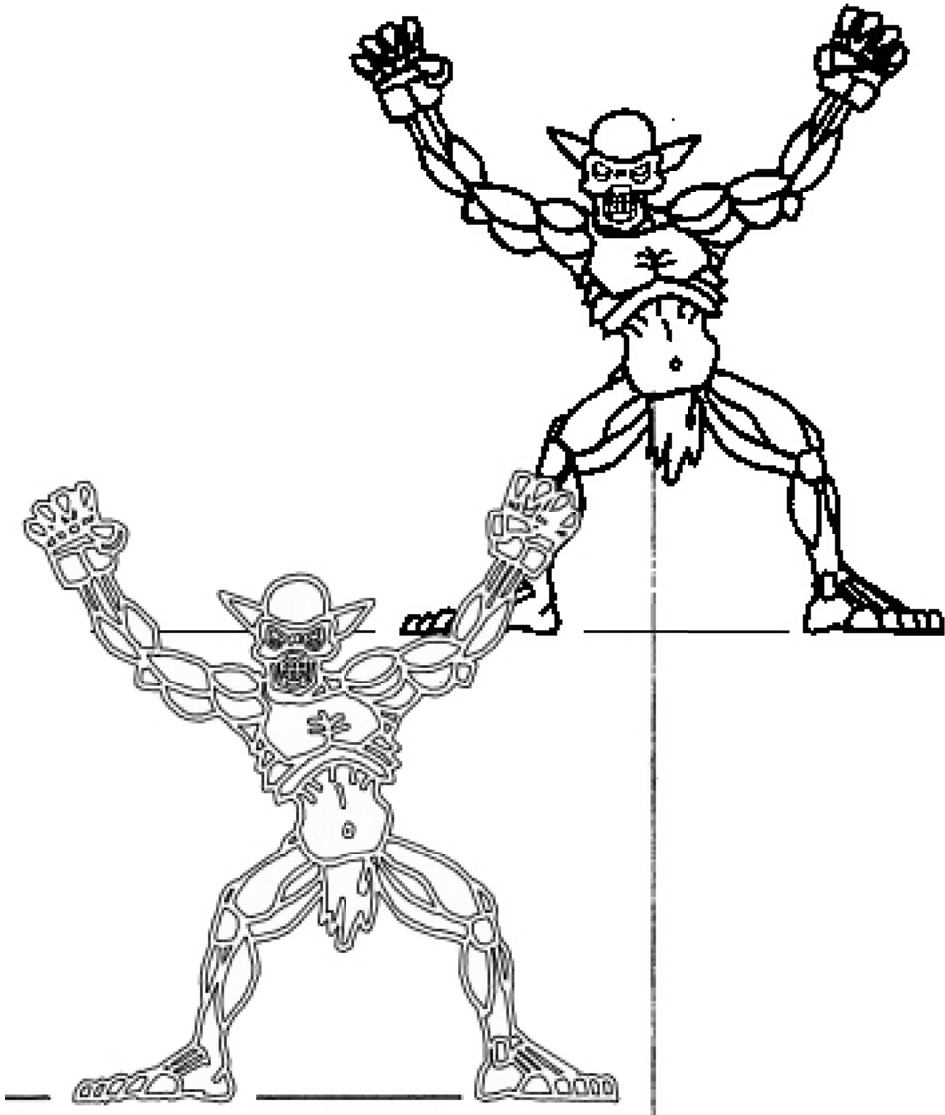
STEP 9



STEP 09, Edit scans.

The scanned images I have will need to be checked for random marks, rough edges, and open lines that need to be closed up. You can see in this picture that there are minor flaws in the scans. I use a photo editing software to touch up the scans. I erase the jagged edges, random marks, and the pen tool to fill in open lines and rough fills. once the image has been gone over completely I'll save and do the back view. Now that both images have been checked and cleaned up I am ready for the next step...

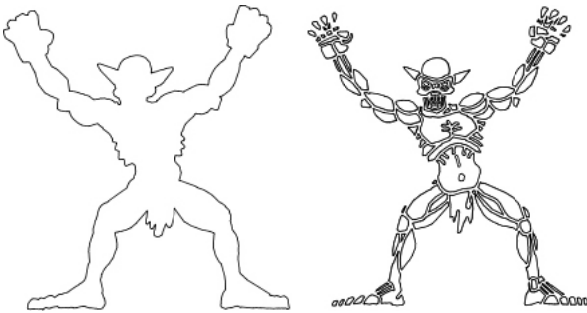
STEP 10



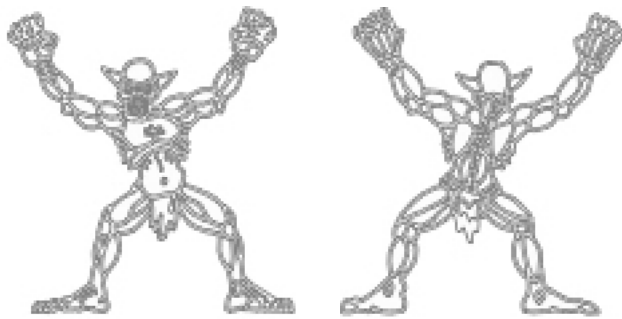
STEP 10, Convert to vector.

The design scans are what's called bitmap images, which are made of pixels. I need to convert the images to vector lines and shapes. I use a vector drawing application that has a built in tracing capability. I import the front view image, and select auto trace. The design is then traced in vector line art. I do the same for the back view. Once both images have been converted I'll delete the original TIFF images. Now I am left with the converted designs. I'll save this new document, and am ready for the next step...

background and foreground objects.



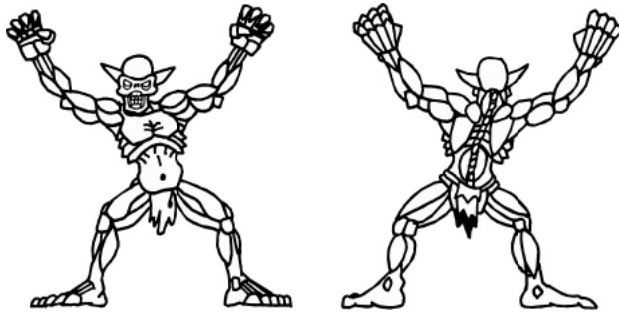
STEP 11



STEP 11, Rotate, scale and edit.

I now have the two designs from the conversion. Neither of them will be aligned properly and will need to be rotated so that the feet are perfectly horizontal. This is what my horizontal reference line is for. Once I have each of the designs rotated into position, I am ready to scale them. Each design is still at double size and needs to be reduced to actual size. I always work on the final designs at actual size to ensure that the fills and outlines on the designs will be exactly what will be on the finished printout. Each design is a group of objects that makeup the design. I select both design groups and scale 50% to get them back to actual size. I will double check the size with the applications rulers. Once scaled, I need to check the designs for stray objects and open paths. I select the front design and ungroup the objects. I zoom in so I can see all of the very fine details of the design. I will delete any small objects that will be too small to show up in the finished design and fix any open paths. I will also delete the horizontal reference lines I made, since it is no longer needed. Once the front is done, I will do the same with the back view design. Now that both of the designs have been edited I am ready for the next step...

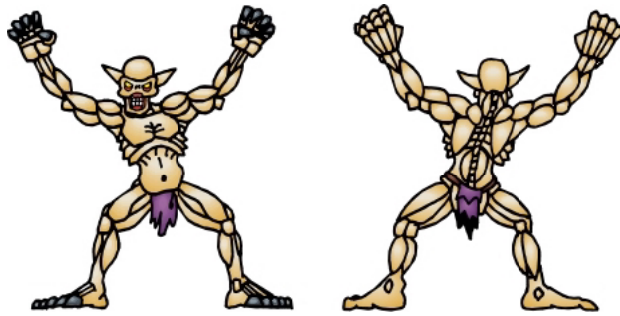
STEP 12



STEP 12, Prepare for coloring.

Right now the two designs are nothing but lines with no fills. I want to prepare the design for coloring by filling the background shape with black, and all of the designs objects filled white. I select all of the objects and fill with white and set the outline to hairline thickness. I will then select only the the outline object of the design and fill with black. In most cases there will be some parts of the design that will also need to be filled with black. The purpose of this is to get the design back to looking like the ink art. Once all of the black areas are filled properly I'll select the whole design and remove the outlines. I now have a design that looks identical to the ink art, and is ready for coloring. I will now do the same for the back view. Once both designs have been prepared I am ready for the next step...

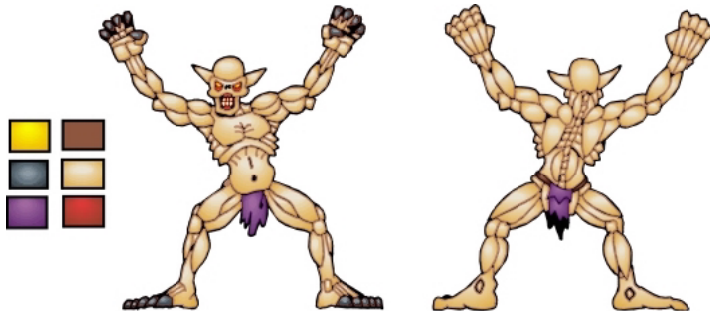
STEP 13



STEP 13, Gradient fills.

When I color a miniature, I use gradient fills. A gradient is simply two or more colors, with one defined as the outside color and the other the inside color. The two colors are blended to give the shape shadow, highlight, or some other special look. It is this type of coloring that gives my miniatures the semi 3D look. Now that the designs are ready for coloring I'll start applying the fills. Once all the different objects are colored with fills, I will edit the fill by adjust the size and direction of the highlights for maximum effect. I'll do this with the back view as well. Now I have both designs colored with fills, I am ready for the next step...

STEP 14



STEP 14, Outlining.

This step is what really lifts the design from the page and gives it a glowing quality. The goal here is to give the shapes an outline of a darker complementary color to soften the edge of the object while still maintaining good contrast between the colors. I was inspired to color this way by a miniature painting technique called layering. Layering is simply the building up of successive shades of color to create a highlight for each area on the model. All of the major areas of detail are separated with a black line, called black-lining. It is this combination of black-lining and layering that makes the miniatures colorful, clean, with good contrast at arms length. I simulate this look with my gradient fills and dark outlines. To outline an object I will select each individual object and make a copy. I then apply an outline to the objects while they are still selected, setting the line width and color which look the best. I then paste copies of all the original objects and reline them over the originals with the outlines. I do this so the objects are clearly visible and the outlines don't obscure them. I do this for all of the objects in the design. Every once in a while I will zoom out to see what it looks like at 100%, and check to see if anything is overpowering the design and adjust as necessary. I will also do some test prints as I go along to be sure that the design looks good printed as well. When I am happy with all of the outlines, I am ready for the next step...

STEP 15

STEP 15, Trim line, reposition, add base tab.

Finally the design is ready to finish. The first thing the figures need is an outside trim line. This is simply a heavy outline applied to the background object of the design. I will select the background object and apply a 2-3 millimeter outline. This makes it easier to cut the miniature out. Once the trim lines have been applied to both the front and back views I select all of the objects of each view and group them. This will keep them together for repositioning. Now I add a base tab to the bottom of the front view. The base tab I made is designed for use with modern plastic slotted bases, as well as my own foam core basing technique. With the base tab in place I will select the back view and flip it vertically and horizontally. This put the back view upside down and directly mirroring the front view. The backside view is then positioned under the lower part of the base tab. Once lined up I will select both views and the base tab, and align them vertically. Once aligned I'll group all three of the design elements. The miniature is now done and ready to be repositioned on a page with other designs, or saved by itself. In this case I will save it by itself by selecting it and saving it as a 144 dpi JPEG file, being sure that only the design itself is being saved. And here you have the final ghoulish miniature design, ready to print, fold and play with.



It may seem like a lot of work, but this is just the best way I have found for my own style. I usually work on 5-10 miniature designs at a time, and I usually work on similar designs at the same time, so this helps the design process go a little faster. I hope this tutorial has helped inspire you to try to create some of your own miniature designs. Even if your design style is different, I think that seeing how other people work can give you ideas of your own. I hope to see more and more paper miniature designers making designs, even if you want to make them look just like mine, that would be great. Enjoy! JIM

There is also a print friendly PDF in the files section, for those of you who would like to print out a copy. [Ghoul tutorial.pdf](#)