

THE GROUND FLOOR

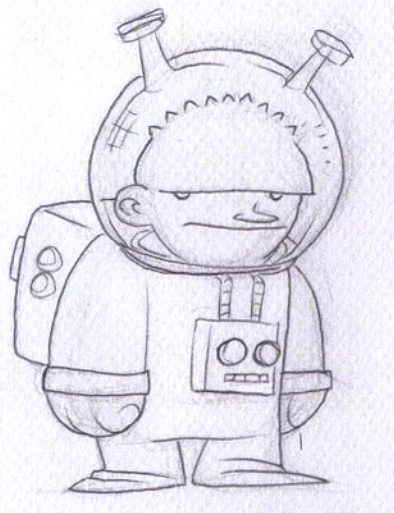
I'm assuming you have the following absolute basics:

- A computer
- Adobe Photoshop
- Line art you want to colour
- A digital drawing tablet (optional)

It's pretty safe to assume most art students or people who have Photoshop know their way around a computer on a general level. Look at the size of this booklet. I don't have space to waste. This is just about Photoshop techniques to enhance your colouring/digital painting. Having a digital drawing tablet (Wacom or any other kind really) will allow you to access some more advanced techniques with brushes and blending.

The great thing is that programs like Photoshop are relatively easy to understand. If you hover your mouse over a particular tool, a prompt will pop up telling you exactly what the tool is called. Those names are usually self-explanatory. Poke around and try tools out.

As far as your line art goes, it can be your own or someone else's. All my examples will be done with a quick sketch I zapped out last month while hanging out with friends. I wanted to use something simple and straight forward so that the techniques are at the forefront and the line art didn't get in the way. If you look through this booklet and go "Hey, I could do that", then I'm on the right track.



SCANNING

This little sketch was scanned in at 400 dpi (dots per inch).

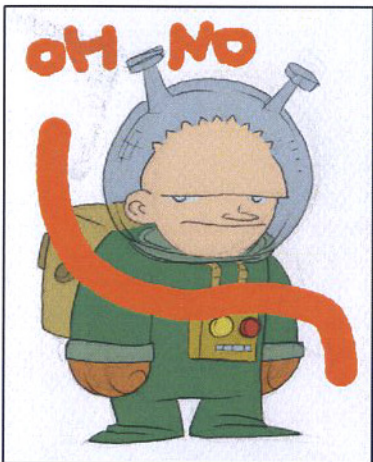
As a rule of thumb, it's always better to scan a piece large in case things go well and you decide you want to print it later. Your computer monitor and websites are only 72 dpi, while print is generally 300+. You can always shrink the size later, but you can't upsize it and expect it to look good.

Incredibly sharp high end material can be 1200 dpi, but this isn't usually necessary. 300-600 dpi will probably serve you just fine.

PHOTOSHOP LAYERS

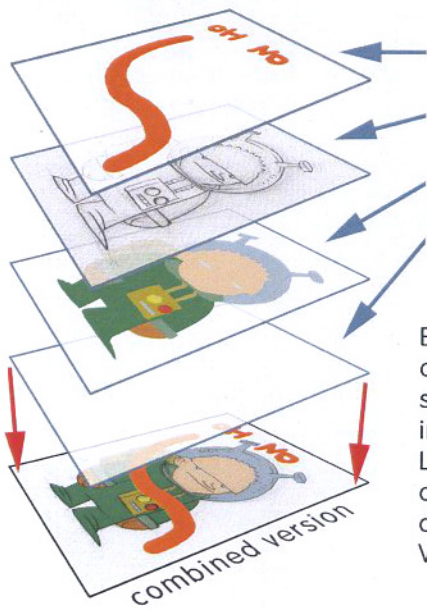
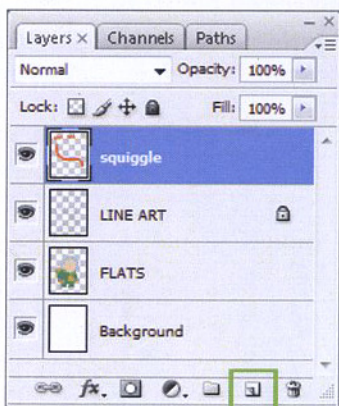
One of the greatest advantages to working digitally on artwork is the ability to use and adjust layers. If you've never used them before you may find the concept a bit weird, but I'll elaborate.

Imagine that Photoshop layers are like panes of glass being placed over top of each other. We can digitally pile these up, altering the way each one interacts with the layers below it in our 'stack'. Once we're done with them, we can combine some or all of them and create a 'flattened' final version which we send to the client, print or post online.



On the left here I have our little space guy with some really basic colours and a giant orange squiggle across his body. If this was a traditional piece of art I would've ruined my piece and felt pretty stupid.

Here's how the layers work in Photoshop and the reason why my art is still safe:



Each layer stacks together to create the image, but they're still separate and can be manipulated individually. I hit the 'Create New Layer' button each time I want to add a layer and then left click and drag it to reorder the stack. Very, very useful!

PREPPING YOUR LINE ART

Prepping line art may not sound like very much fun but it is a crucial part of the process. The more careful you are at the start, the more flexibility you'll have later on as you work away and the better your final output will be.

What we want to end up with is our line art ready as a floating transparency on its own layer. This gives us the most options later on, even if we decide not to use the line art at all in the final painted version.

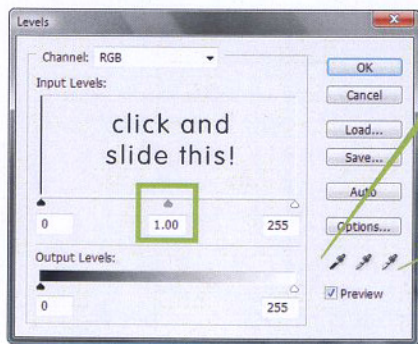
If you digitally ink the piece then it's easy to work on a new layer and get the lines crisp and clean on transparency. However, if you've hand drawn artwork there's a fast way to get it prepped and end up with a similar result.

Here are my steps:

Step 1: I scan in my line art as a 300+ dpi greyscale file and then use Image> Adjustments> Levels to set the white and black levels by selecting what I want as the darkest or lightest parts of the line art with the white and black dropper icons. I can also adjust it by sliding the middle pointer back and forth.

Then I'll use a small white Brush, the Eraser tool or the Clone Stamp to remove specks or touch up line art mistakes.

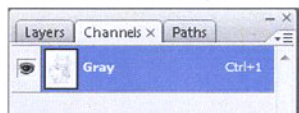
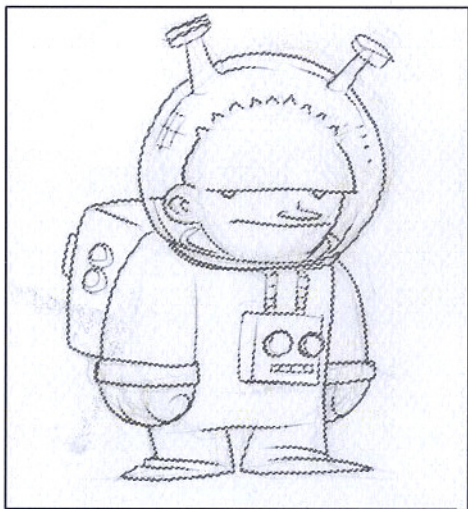
Image> Adjustments> Levels



Black Level

White Level

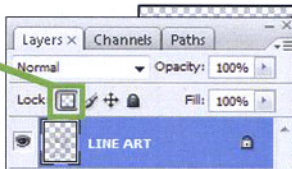
Step 2: Click on the Channels pane and, while holding the Ctrl key, click on the Grey layer. Doing that will select everything that's not line art on the page.



Step 2- Hold Ctrl and left click this Grey channel layer.

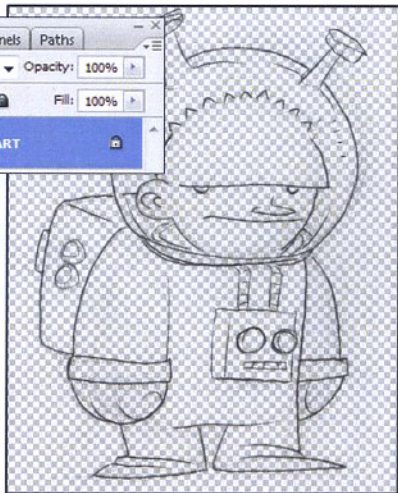
Step 3: Now go over to Select> Inverse and you'll now have all the line art selected by itself. The lighter your line art is, the more transparent the selection will be, retaining that softer look. Since I usually do my line art in pencil, this jives really well with how I work.

Step 5- You can Lock Transparency on your new Line Art layer.



Step 4: While your line art selection area is still active, create a new Layer above the original line art one and use the Bucket Fill to fill it all in solid black.

If this is for print, you can switch your file mode to CMYK and make this a 100% K black layer so the printer heads will only hit it once - making it nice and sharp.



Step 5: Delete the original base layer and what you're left with is your line art floating on transparency and all ready to go.

Use the Lock Transparency option on this layer and you can now easily use all sorts of coloured brushes for softer line art colours that blend it all together or help create cool effects like smoke or fire.

COLOUR FLATS

More prep! Geez Jimbo, what's with all this pre-colouring stuff?

It's important, seriously. Colour Flattening is setting up selection areas on your illustration. This gives you maximum control of each area and can save you a ton of time if you want to adjust elements later on in the colouring/painting process.

On personal pieces I sometimes skip colour flattening (and then usually wish I'd done them later on) but for professional pieces I always Flat them out properly in case the client wants colours adjusted, mood changed or other digital muckery. Well built Flats can save your sanity when revisions are needed.

Step 1: We want our selection areas to be absolutely crisp, so it's very important that we set up our tools to do this properly.

To the right is an example of an aliased line and an anti-aliased line. The fuzzy anti-aliased one

blends really nicely but won't select cleanly if we use the Magic Wand selection tool. For our flats we want to make sure all our colour areas are crisp and aliased. With that in mind, you'll want to check off the anti-aliasing options on your Lasso/Polygonal Lasso and use the Pencil instead of the Brush.



uncheck this option



Use this



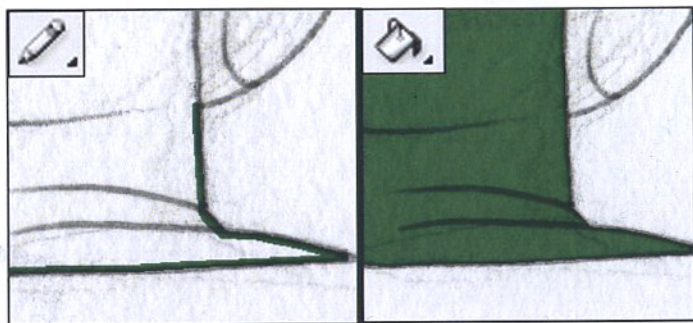
Not this

Step 2: Create a new layer for your Flats underneath your Line Art layer. Zoom in 200-300% on your line art and then carefully outline a section of the artwork with the Lasso (you can also use the Poly Lasso or draw the outline with the Pencil tool if you prefer).

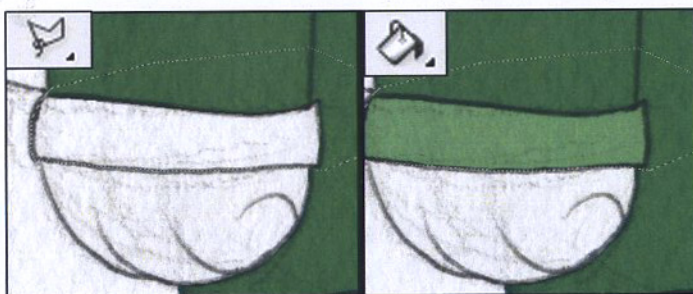
It can be quite tedious if you have a complex piece of artwork, so put on your favourite music and zen out a bit. If you have someone else who can do your Flats, even better :)



Step 3: Outline each portion and then use the Fill Bucket (with anti-aliasing checked OFF) to fill in each area. Once you have an area finished you can then use the Lasso to overlap that area, speeding up the process and also making sure the selection areas don't have any gaps.



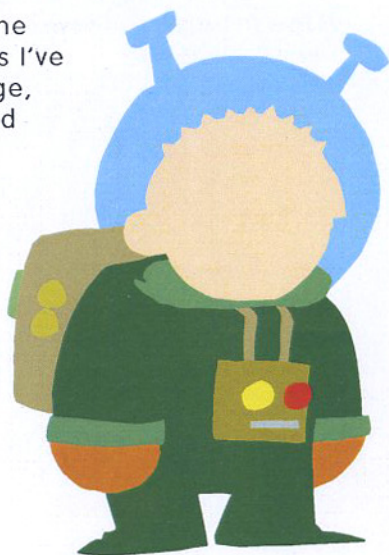
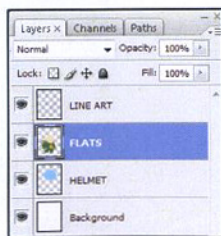
Outline with the Lasso or Pencil, then Fill.



Overlap completed sections and Fill

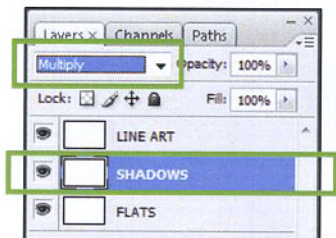
Here are the completed flats with the line art layer turned off. The colours I've chosen aren't important at this stage, just that I have each area separated and filled in without any gaps.

These crisp Flats allow me to easily select each major area (spacesuit, gloves, head, etc.) individually. I can adjust colours, add texture or work on any part without disturbing the rest, which will be very, very handy later on.



BASIC CARTOON COLOURING

Okay, so with all of that prep stuff out of the way lets head into some basic cartoon colouring. Before we get all fancy I'm going to step through a simple way to build colouring based on "cuts", much like what you'd see with most cartoons. This type of colouring is clean, fast and works great with comics because it shows volumes clearly and is easy to create focal points with.

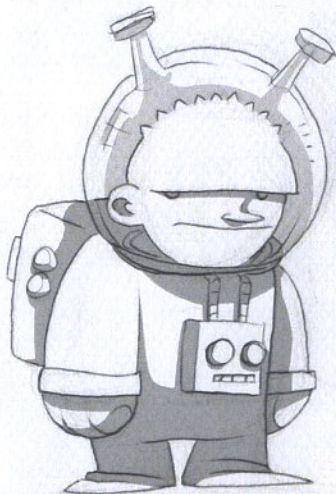


Step 1: Pulling up my layered Flats PSD file (you did save that, didn't you?) I use the bucket Fill tool to choose some slightly different colours for the Space Kid. Since I have those Flats I can change any part later on if I feel like it, which is always nice.

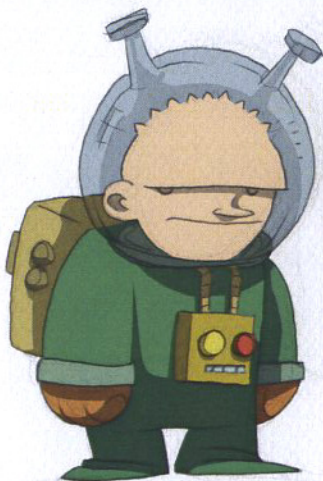
Step 2: I create a new layer above the flats layer (but below the Line Art layer) and switch the layer mode to 'Multiply'. This will become my Shadow layer. Everything is separated in to its own layer, giving me maximum flexibility.

I choose a flat grey from the colour palette and start colouring in shadows on the new layer. The greys mix (ahem, multiply) with the flats and turn into darker versions of the flat colours. Spiffy, but this is just the beginning. These shadows look okay, but they're a bit drab and lifeless. We can take it much further.

Line Art and Shadow layer

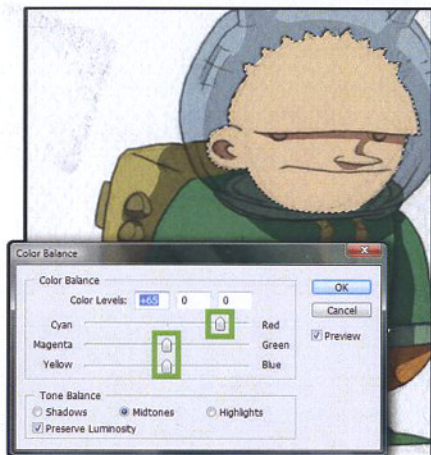


Line Art, Shadows and Flats



Shadows should help describe the forms. Even though the shadows on our little Space Kid are quite simple, they're all placed to show where light is coming from. His head and control box cast shadows down on the suit. His lower body is covered in shadow because the upper part of his body and suit looms over it and light is coming from above. This kind of stuff is where practice and keen observation really pays off. Shadows should work with the line art, not muddy it. Think carefully about where you're placing them and why.

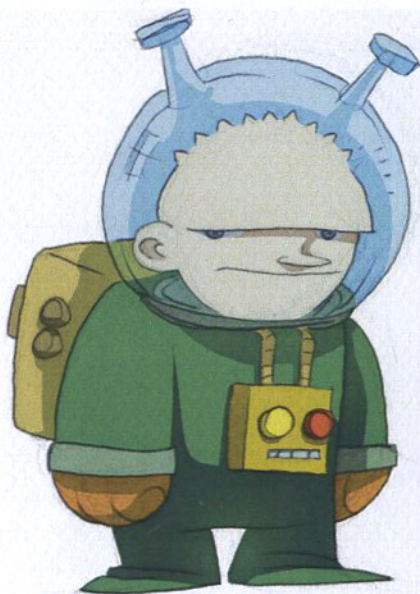
Step 3: To make the shadows richer and more interesting, we'll now adjust their Multiply colour. Using the Magic Wand tool, I'm going to select the head. Then, with that selection still active, I switch to the Shadows layer and go to Image> Adjustments> Colour Balance.



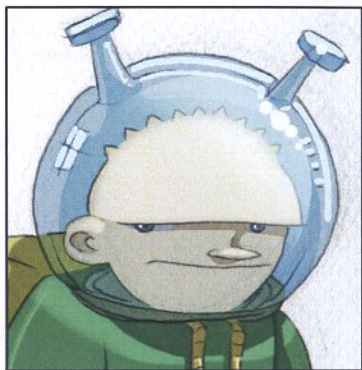
By sliding each of the 3 colour options to the left or right I can change the colour mixing with the Flats, giving me an infinite number of colour mixing options. For caucasian flesh tone shadows I'll generally pick a redder colour for mixing, adding some warmth and interest to the skin.

I then go through each part of the image, adjusting shadow colours and/or brightness until I'm satisfied.

Step 4: I add a new layer above everything and change its layer mode to 'Overlay'. I select the helmet area and fill it in blue. The overlay mode washes everything underneath it in that blue tone, giving the impression that our Space Kid is wearing a blue glass helmet.



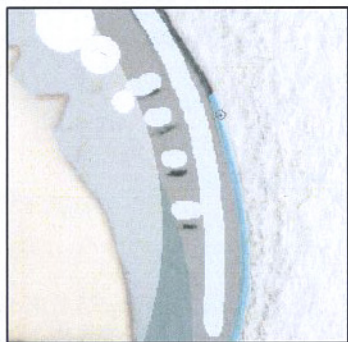
Step 6: Now for some little extras to really make the piece come alive.



Another new layer, this time set on 'Screen' mode (yup, I love those layers and layer modes).

I use the base colours and a soft edged brush on this layer to create some blended highlights. I don't want to go overboard with this since the piece is meant to be simple and cartoony, but it does help round out the helmet and reinforce that light is coming from above.

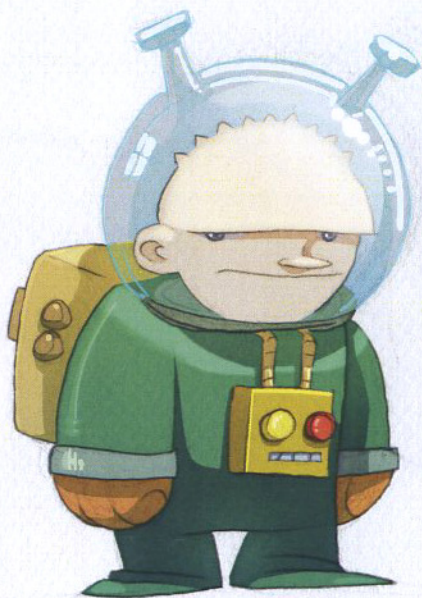
Going back to my Line Art layer (and making sure that 'Lock Transparency' option is clicked on) I take a blue brush and carefully colour the line art of the glass helmet, softening the pencil line and giving an even greater impression of transparent glass.



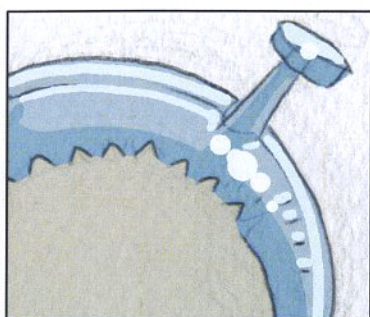
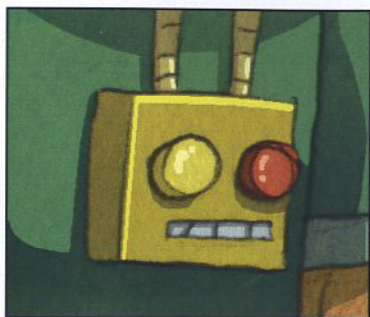
I could colour every line in the image lighter tones if I wanted it to look like an animated cartoon.

My last step is colour correction and minor touch-ups, going back and making minor changes, adjusting colours or the overall Brightness or Contrast of the piece.

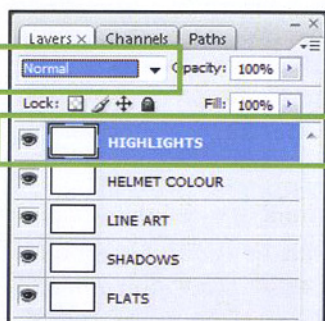
Here's how it turned out:



Step 5: Now for some fun stuff. Highlights add a much-needed sense of life and volume to the colours. This is where things start to really 'pop'.



Starting on a brand new layer (left on 'Normal' layer mode) over top of everything else, I start adding highlights to the piece

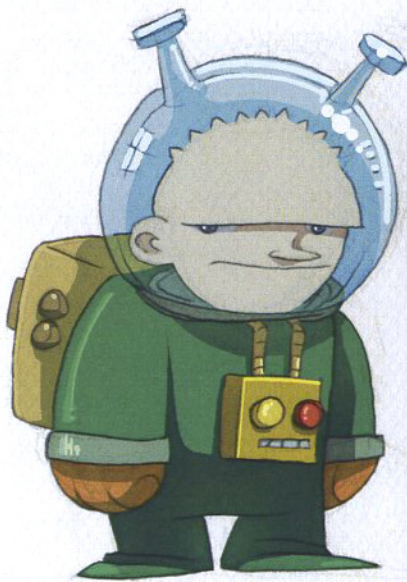


For a simple cartoony colouring approach like this I also keep the highlights pretty simple. It's surprising how much a few light dabs here and there can help describe the forms.

As with the shadows, you want to work with the line art, not muddy it. Draw the viewer's eyes to important details or add a sense of volume.

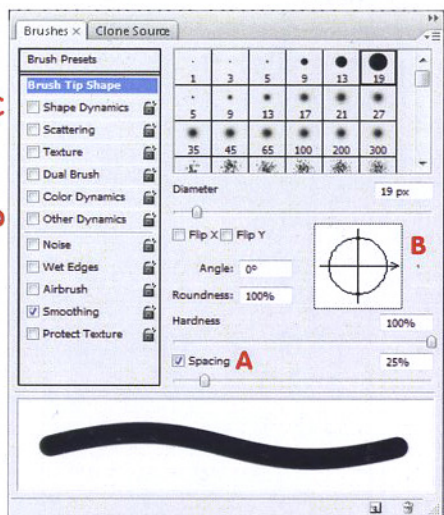
Having all of these layers means that you can go back and adjust any part of the piece as you're working away. Although this tutorial shows shadows and then highlights as distinct steps, I usually toggle back and forth, tweaking them both as I go. Nothing is set in stone.

Between layers, saving your file from time to time as you progress and Photoshop's Undo function, it's pretty much impossible to screw up your artwork in a way that's unfixable.



BRUSH PALETTE GOODNESS

Before we get into some more advanced digital painting stuff, I want to show you the power and flexibility of Photoshop's Brush palette area. Like many other areas of the software, there's tons of room for experimentation, especially if you have a digital drawing tablet.



When you open up a basic hard edged brush, this is what it looks like.

There's a lot of different properties you can change and, if you're not used to it, it can look a bit intimidating.

Each area (tip shape, shape dynamics, scattering, texture, etc.) is a separate aspect of the brush which can be changed and combined to make more complex brushes.

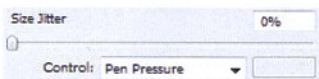
A) If I adjust the spacing bar to the right, I can get spaced out dots instead of a solid line:



B) If I instead left click on the shape diagram, I can rotate and compress the brush tip to this slanted style:



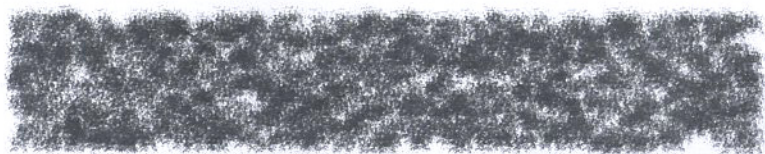
C) Adjusting Shape Dynamics > Size Jitter option to 'Pen Pressure' creates a tapering brush like this:



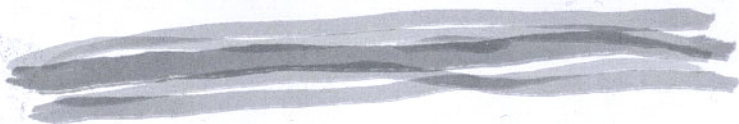
D) Adjusting Other Dynamics > Opacity Jitter to 'Pen Pressure' creates a soft blending brush like this:



Each and every one of these brush properties can be adjusted individually, combined and then saved to make an infinite number of brushes. Look online for cool new brushes and make your own to expand your toolkit with all kinds of great texture and rendering options.



A spatter brush with scattering and texture enabled.

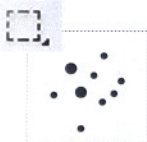


A textured dual brush with opacity pen pressure.



The exact same dual brush in orange with scatter enabled.

When you click around the Brushes palette and change things you soon realize that all those intimidating looking options are actually liberating. They're completely customizable ways of working.



Taking it one step further, you can even create your own brushes. If you blob a few different sized dots on a layer, then select it with the Rectangular marquee and go to Edit> Define Brush Preset you'll see that you now have that pattern as a brush base.

By default it looks like this dot pattern:



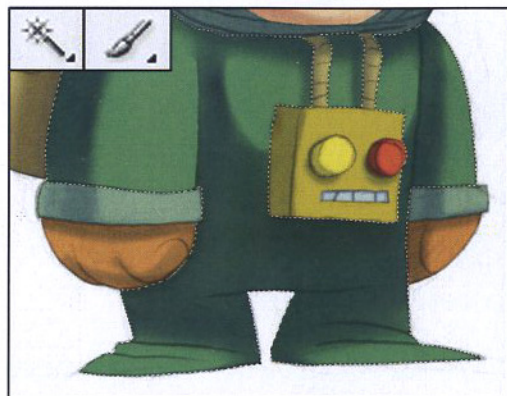
But I can adjust a few settings to get tons of variations, including this:



Build and collect all kinds of unique brushes.

MORE ELABORATE COLOURING

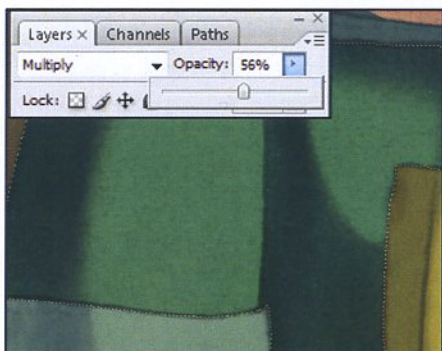
Okay, we've covered a bunch of different aspects of Photoshop so now it's time to bring all those aspects together into a more detailed version of our Space Kid.



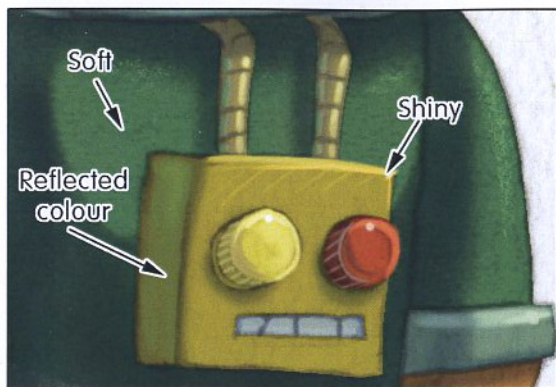
Step 1: Starting with my Flatted line art file again, I use the Magic Wand to select each area and then start my Shadows on a new Multiple layer. This time, however, I'm using a soft pressure controlled brush to sweep in areas of darkness with more subtlety and variation. The effect is softer and more rounded.

Selecting each area on the Flats first means that I can make sweeping brushstrokes on my digital tablet but the tone is only appearing in the areas I want them to. If I want the brushstrokes to be 'messier' and outside the lines I can easily turn off the Flats selection and just go to it freehand.

Step 2: On another Multiply layer I use a scattering brush to add fuzzy texture to the space-suit, so that it looks like winter pajama material. I want to have a fun balance of spacesuit metal/plastic and kid's clothes. Since the texture is on its own layer I can adjust its opacity to make it more or less noticeable.



Step 3: The face gets more detail as well, with a darker shadow placed right on the edge before the light breaks, creating a clear sense of where light is coming from and the effect it has on his head. I add some redness to the nose and under his eyes to give the face a bit more colour variation.



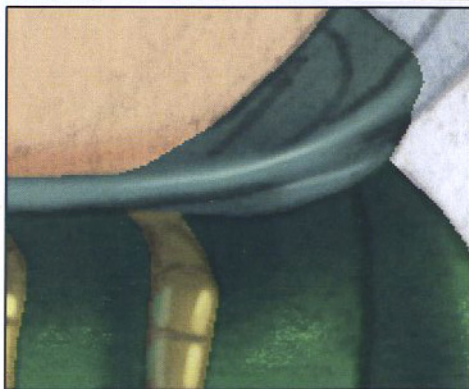
Step 4: Starting on some highlights, I try to carefully imagine the texture and construction of these objects.

As a quick rule, the quicker the transition from midtone to highlight, the shinier the material looks. So, the metal and plastic parts need

brighter highlights that are sharper and more pronounced.

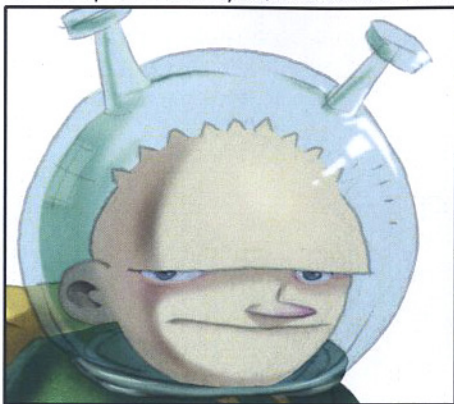
The control box and tubing coming out of the top are reflective enough that they're actually showing some of the green within their shadows as reflected light. This kind of effect can really help 'sell' the material you're trying to show. The brighter and more saturated the colour being reflected, the more pronounced the effect will be. If you have the time, keep pushing your rendering and see how convincing you can make an object, even one that's obviously not real.

Step 5: The face gets more attention with some highlights in the eye and a quick sprinkling of freckles with a circular brush. Since his eyes are tucked away in shadow I don't want them to be too shiny, but still give them a bit of a glossy look.



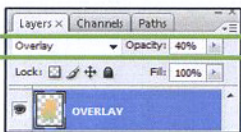
The rim of the space helmet ring gets emphasized with a simple highlight facing the light. Little details like this aren't complex when you're zoomed in close, but they look good at regular size. The more consistent those highlights and shadows are in terms of direction, the more solid that character and costume will look.

Step 6: Just like with the simple coloured version, I now focus on making the helmet look like coloured glass. I combine an Overlay mode layer, a Colour mode layer and add in a Multiply and Normal layer to create Shadows and Highlights. This time I'm taking more care to show the shape of the rounded surface.



While working away on this part I think about ways I can play with light on the astro suit and come up with a neat plan which leads right into Step 7...


Step 7: Getting fancy with the lighting! I decided to add a light illuminating from inside the suit so that it cast a funky green glow up on to his face. This was accomplished with a saturated green Screen mode layer for the main glow and then another Screen layer for the rim light on his head, ear and nose. I also added a green Colour layer outside the helmet for added glow.



Step 8: The colours are looking a bit muddy and I want to make the final look richer and more vibrant. This is where colour correction and Overlay layers can add some serious zing to your piece.

If I use the Magic Wand tool and hold the Ctrl key while left clicking on the thumbnail picture of my Flats layer, I'll select everything on that layer. With that selection still active, I create a new Overlay mode layer above everything and try out some warm colours or gradients, adjusting the opacity until I like the mix.





Step 9: After saving my Space Kid as a PSD file, I start up a whole new file and use a gradient fill (which is a sub selection under the Bucket Fill) as my base sky that will eventually become the background. It's bland right now, but we'll spruce it up.

I search online for good planet and starry sky reference pics. I'm not going to copy them exactly, I'm just using them for inspiration.

Step 10: Starting with a hard brush to make the brown planet surface, I go in with softer brushes and scatter brushes to muck up the surface a bit. After that, I use the Filter> Blur> Gaussian Blur effect to diffuse the textures. Photoshop filters

are one of those things that you don't want to overdo in your digital work. They're helpful, but also overused by a lot of amateurs and tend to stand out like a sore thumb. Use them sparingly for maximum effect and they can be a helpful tool.



Step 11: For the stars I use a small round brush with a lot of scattering as my base and then dab a few larger ones in with a bigger round brush.

I use the Filter> Blur to diffuse those a bit and give a feeling of distance.

To get the larger stars to really glow, I create a new Screen layer overtop of them and dab each of the larger blue stars with a soft blue brush. On that Screen mode layer, the extra blue glows, giving them a nice shining resonance.

I've never done a star field before, but after looking up some reference I felt confident I could emulate it using the digital tools at my disposal. All of these things I'm showing you with layers and brushes are just tools for you to use when you're problem solving with your art.



Step 12: Another Overlay mode layer and I get a nice rim of pink light on the edge of the planet. Another Multiply layer of soft paint brushstrokes and I have some darker shadowy spots on the planet surface. Bit by bit, it's coming together.



Step 13: I use Select > All and then Edit > Copy Merged (on older versions of Photoshop you'll have to Layer > Merge Layers instead) to grab the new space background I've created. Heading back to my file of the Space Kid, I use Edit > Paste to drop the new star field background underneath all the character layers I've created.

From there, it's an organic process, adjusting colours to match the two together, adding some pink rim light to the character so he's properly lit by the environment and touching up bits and pieces until I feel that it's coming together well.

This is also a good time to walk away from the painting for a bit, do other things and then take a fresh look at it later on. When you're in the midst of working on a piece you can rush too quickly ahead, missing areas where it could be improved. If you have time in your schedule and you can take a step back, it's pretty ideal.



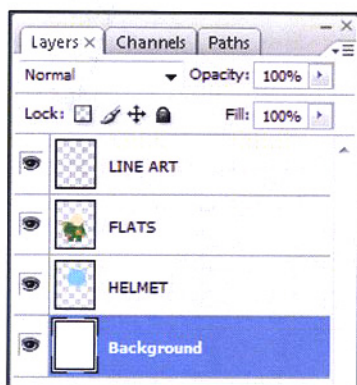
Our little grumpy space explorer traverses another strange alien world. He looks pretty thrilled about it.

All in all, this pic took 2-3 hours to paint up. Some times I end up mucking around with layers a lot, other times things come together pretty fast.

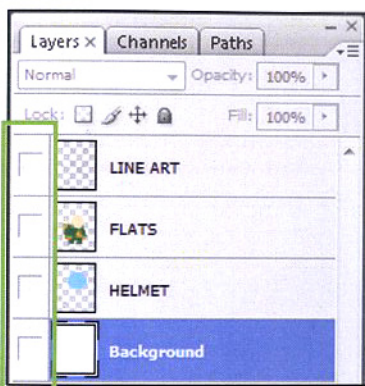
STRANGE PHOTOSHOP FILE SECRET!

Here's a strange Photoshop-ism that very few people know about and can save you some hard drive space or FTP time. Pretty much every person I've shown this to since never knew about it and is equally amazed by it. So, here we go...

Photoshop uses a LOT of memory to pre-build the visualization on each layer. I have no idea why, but the layer visualization is a big part of the data. So, if you turn off the visibility on those layers, magically, Photoshop doesn't waste that space.



Here's what the layers look like normally.



Just left click and drag your pointer over the eye icons to turn off the visibility, then re-save the file.

All the information is still there, nothing is lost. You just have to click and enable the visibility on those layers when you open it up again. Here's the file size difference on my original Flats and line art PSD file:

 SpaceKid.psd	Before	7,877 KB
 SpaceKid.psd	After	2,500 KB

From 7.87 megs down to 2.5 megs! More than half the file size vanished.

On larger files with a lot of layers the results aren't quite as dramatic but there's always some space saved, so it's worth doing. Faster uploads, less wasted space. Now you know the secret too. Crazy stuff, eh?