

PIXEL PERFECT PRINCIPLES

Primary consideration should always be your **users**, for example - their age.

One should always consider the **environment**, for example - TVs have a completely different set of variables to mobile phones.

To prevent **worst-case scenarios**, design can't only be the focus (how good something works), the thing must be useful and also work (how functional something is).

Design must have **affordance** for the user to understand more easily how something works, for example - buttons are given depth to emulate the real world, and text which flows off the page to show that it scrolls.

Visual hierarchy affects how easily something is consumable and what the viewer sees first.

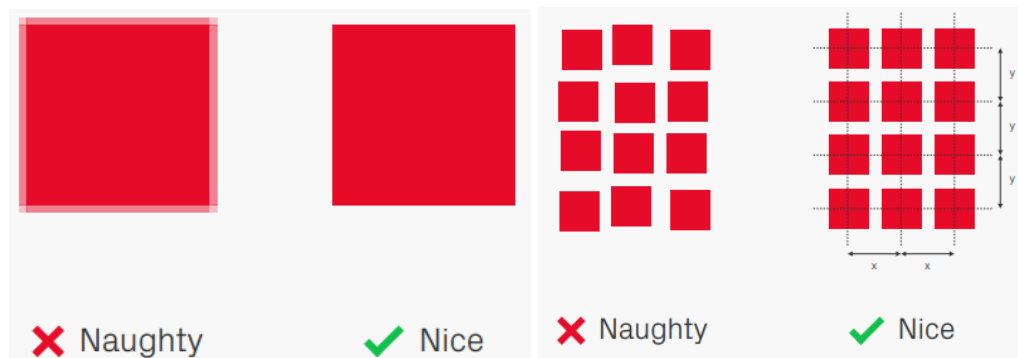
Typography is just as important in design as any other thing.

Testing is very important as devices have different resolutions, capability and so on.

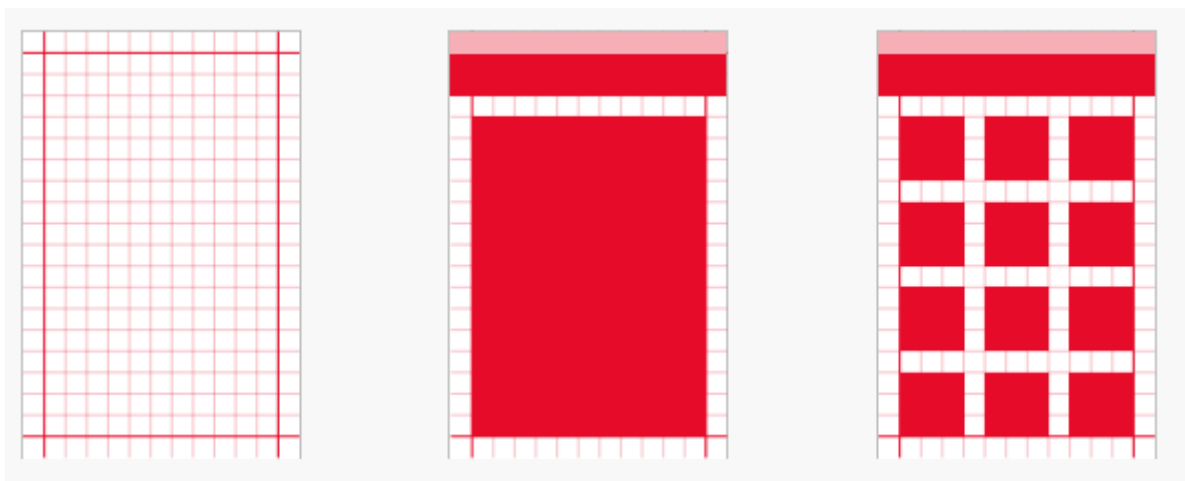
Organisation is important for a fast and smooth workflow as nothing gets done alone.

PIXEL PERFECT DETAILS

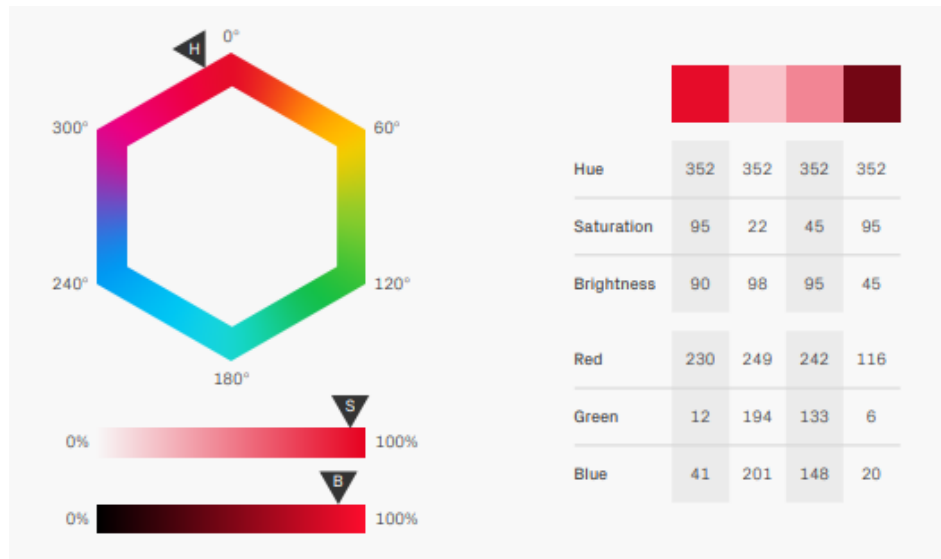
No blurred **edges**. All the elements should be **aligned** and **spaced** right.



Everything must be **consistent** through a grid, which defines a structure.



!COLORS!



Colour Profile	Yes	No
Code		

!TEXT!

Buttons

Align Text	Align Text	Align Text
Align Text	Align Text	Align Text
ABC123	ABC123	ABC123
Cap Height and Descender	x-height	Cap Height and x-height

Aligning, borders and corners

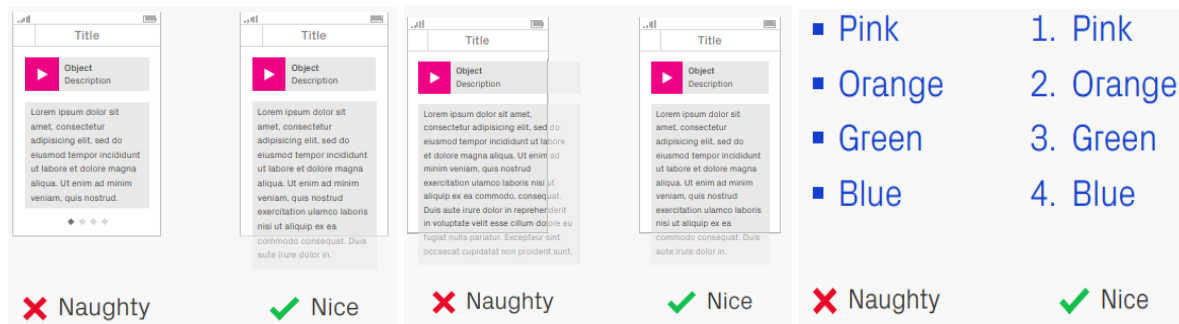
<div> <div>Align Text</div> <div>Align Text</div> </div> <div> <div>Align Text</div> <div>Align Text</div> </div> <div> <div>✗ Naughty</div> <div>✓ Nice</div> </div>	<div>Button</div> <div></div> <div></div> <div>Outer = Inner + Border Width</div>
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ACCESSIBILITY

Design must be **clear** and consistent, for example - not too much content, small image sizes (more suitable for mobile).

Everything, including style, navigation, typography, use of language, must be **consistent**. It makes it more predictable for the users.

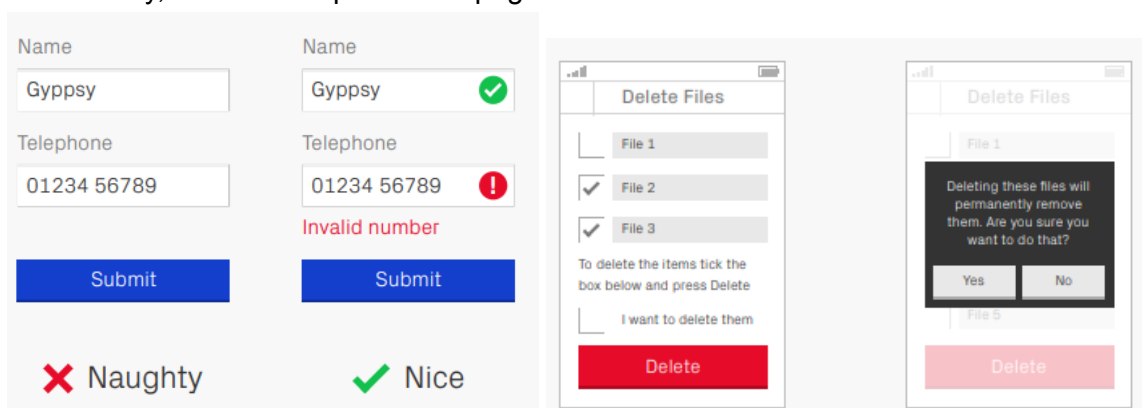
BUT - don't make too much unnecessary noise. **Minimize** things, keep it simple and compact. No long pages, multiple directions scrolling, long un-numbered lists.



Touch target must be minimum of 7mm x 7mm.

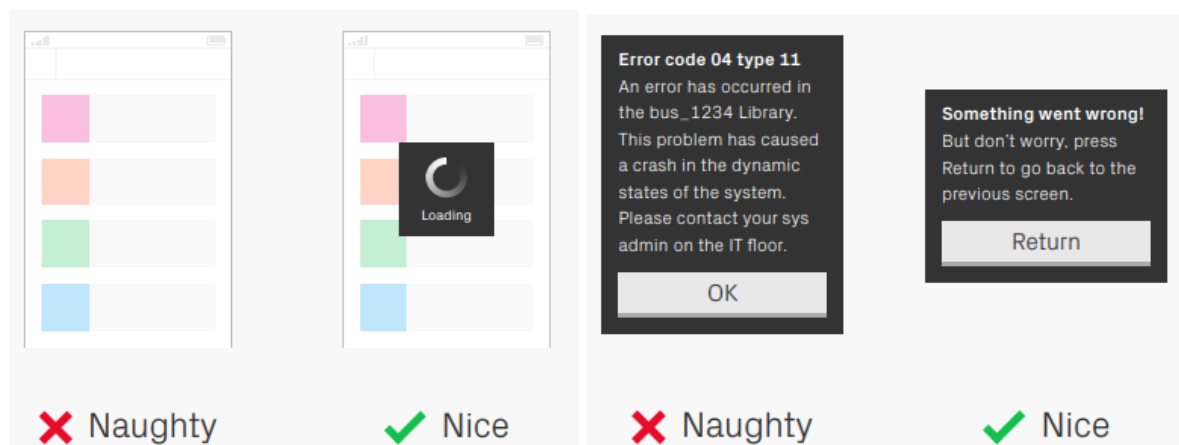
For **hyperlinks** don't use text that isn't linked, it must always be underlined.

To make sure the user is doing what they want, **error prevention** windows and messages are necessary, as well as input review pages.



If possible make long text into lists or diagrams. If not, break up the **large blocks of text**.

To reassure users giving **feedback** on performance is important. Feedback must be clear in text and sound.



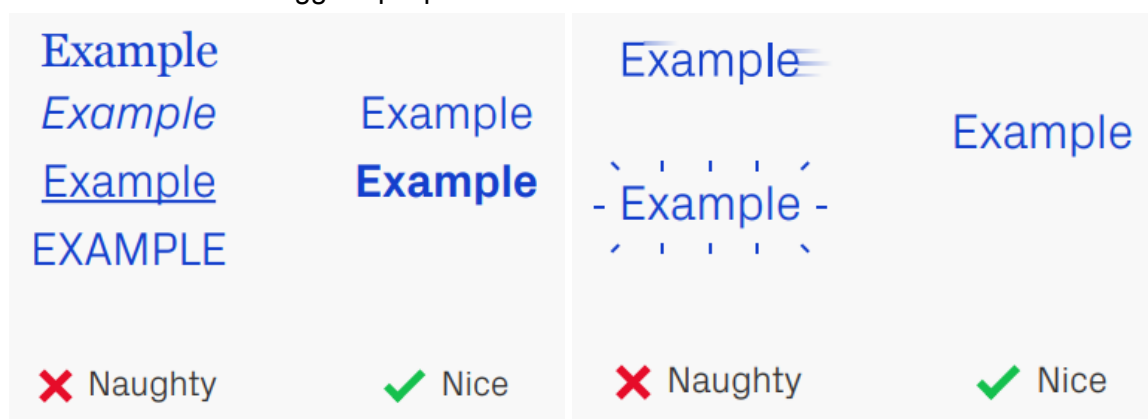
The minimum **font size** you should be using is 12pt, with a good reading size around 16pt (1em)

Keep **line lengths** below 80 characters wide. A good range to aim for is 45–75 characters, with the optimum length being 66 including spaces.

The recommended line **spacing** (otherwise known as leading) is 1.5 times the type size — similarly, by then making the paragraph spacing 1.5 times the line spacing, the break between paragraphs is also made obvious.

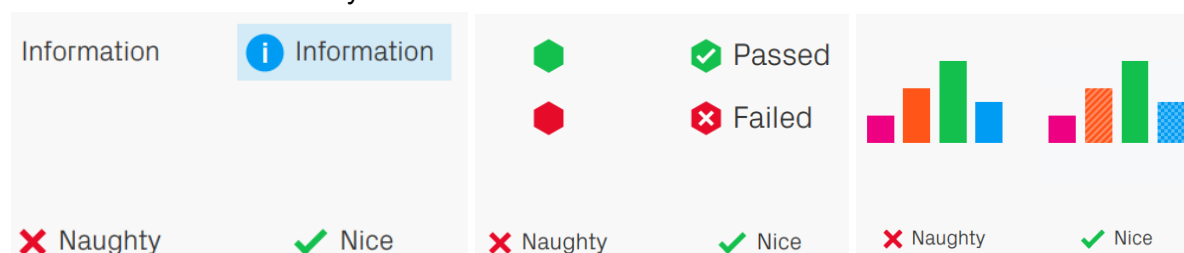
Multiple lines of text should always be left **aligned**.

Keep text **formatting** as simple as possible, for example - italics and underlines add visual noise and capitalisation makes it feel like you are shouting. Also avoid moving or blinking text, as visually impaired and dyslexic users can find this very distracting. Also worth noting that these effects can trigger epileptic seizures.



Wherever possible, try **not to merge text with graphics** and instead implement at a code level. This separation means words can be recognized by text-to-speech functions and read out loud, or have their size and color changed according to the user's preference — both of which aren't possible when embedded into a graphic.

Visual aid helps to identify important content on a page. Colors can be a good help, but they mustn't be used as the only means to deliver information.



There are numerous tools out there for testing color contrast. A couple of great options are [Colour Contrast Analyser](#) and [Jonathan Snook's web-based checker](#) — in either case just pop in the two colors and away you go!

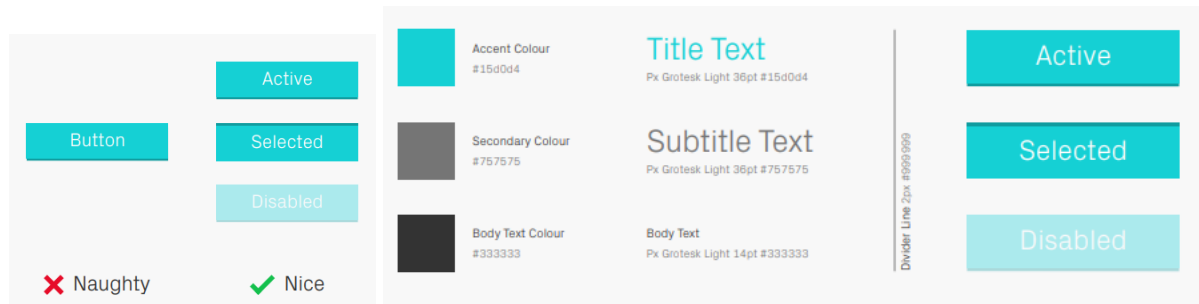
[ColorADD](#) is a simple system that represents colors using symbols. By combining these symbols, which stand for the three primary colors in subtractive light, you can create the whole spectrum — just as you would with paint or ink.

[Sim Daltonism](#) is a more advanced application for checking colour blindness accessibility, featuring previews for most forms of the condition.

DESIGN AND DEVELOPMENT

Before starting design work, find out the app's intended platform - for example mobile or phone, what screen resolution and so on. Also make sure in what format needed files need to be. This is all necessary **preparations** that the following workflow would be good.

Remember to design and deliver the **different states for objects** and export them all at the same size, so they're aligned and pixel perfect. **Style Guides** are a must have.



The **naming system** you use plays a large part in setting up a good organisational structure. At the start of the project speak to the developer about the best way to name files, as they often have a preferred method and then adapt it over time if needed. A good approach is to base your naming on a hierarchical system, which starts off with a broad identification of the component and then progressively adds more information. So you might end up with a structure like this:

type_location_identifier_state

The type refers to the category the component belongs to, such as:

bg (background)

btn (button)

icn (icon)

img (image)

The next step is to add the screen or location where this component appears (global means it's used across multiple sections):

bg_hel

btn_home

icn_global

Then add the unique identifier, as an example, buttons on the home screen which create and delete documents would be called:

btn_home_new

btn_home_delete

Finally, if the component has multiple states then add them to the end:

btn_home_new_default

btn_home_new_highlighted

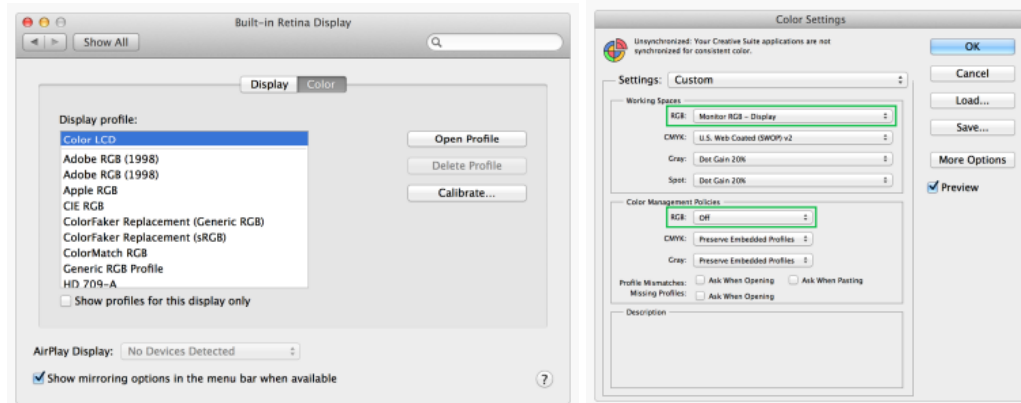
As an aside, the system shown here uses lowercase letters and underscores instead of spaces in the names, which is our usual choice. Another method is CamelCase, which uses no spaces and instead capital letters to define each part of the structure:

BtnHomeNewDefault

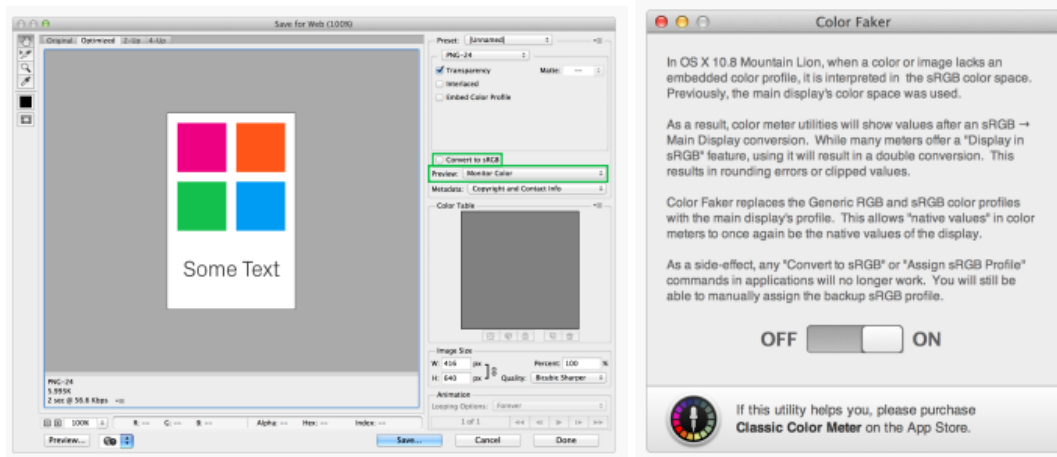
BtnHomeNewSelected

COLOUR PROFILES in Photoshop

The first thing to do is make sure System Preferences > Displays > Color is set to the device you are currently using — in this case Color LCD. Next, in Photoshop, go to Edit > Color Settings... and change Working Spaces > RGB to Monitor RGB – Display. Also change Color Management Policies > RGB to Off.

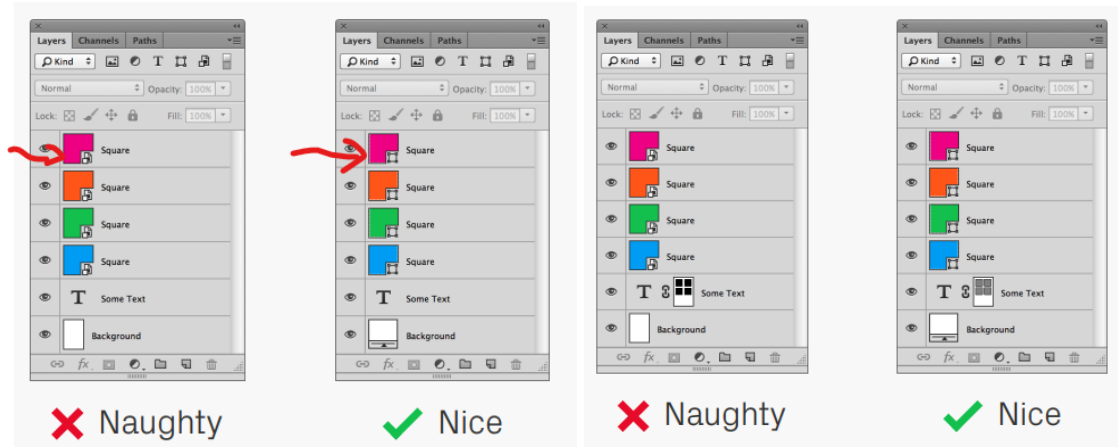


Additionally, in Save for Web the Convert to sRGB option needs to be deselected, and Preview should be set to Monitor Color. Your colours should now be consistent. Although following the previous advice will give you the correct set up for day-to-day tasks in Adobe products, you may need to take an additional step if you're having trouble with colour values in Apple software like Xcode or Keynote. This is down to the way that OS X handles profiles.

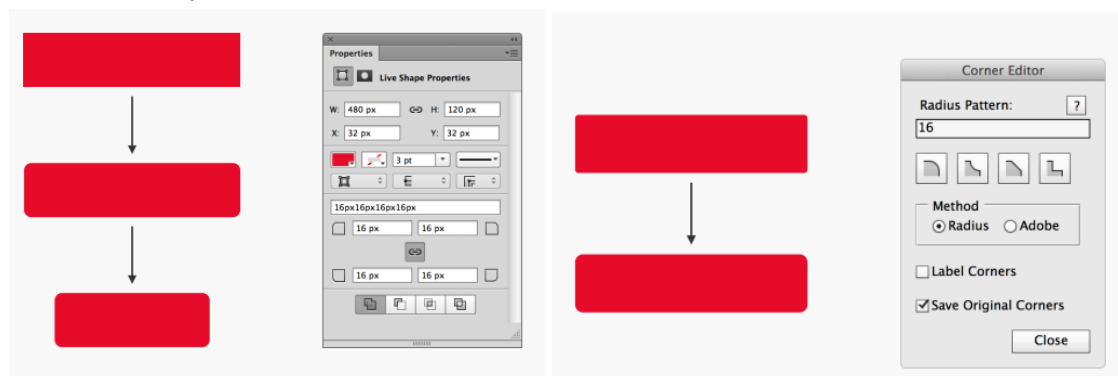


PIXEL PRECISION in Photoshop

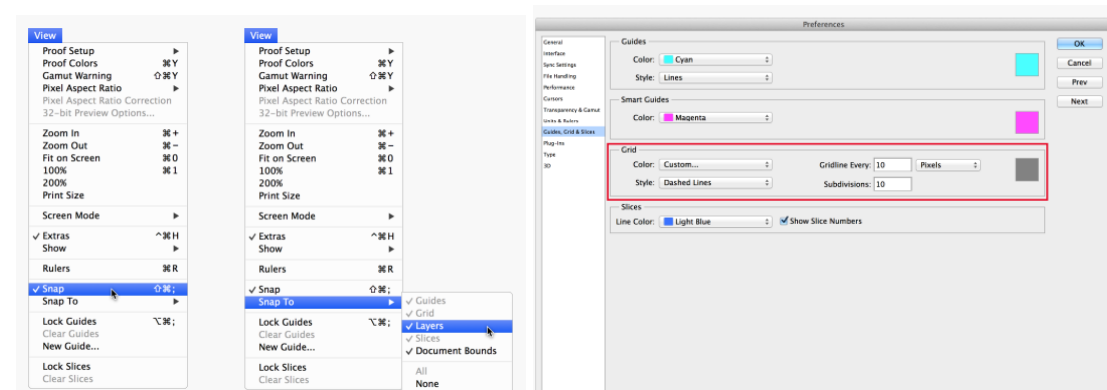
Shape layers are the key to good editing. Being vectors, they're completely editable, allow scaling and transformation of the shape with no loss in quality. Vectors should also be used for layer masks, as this will further increase the versatility and speed of the file.



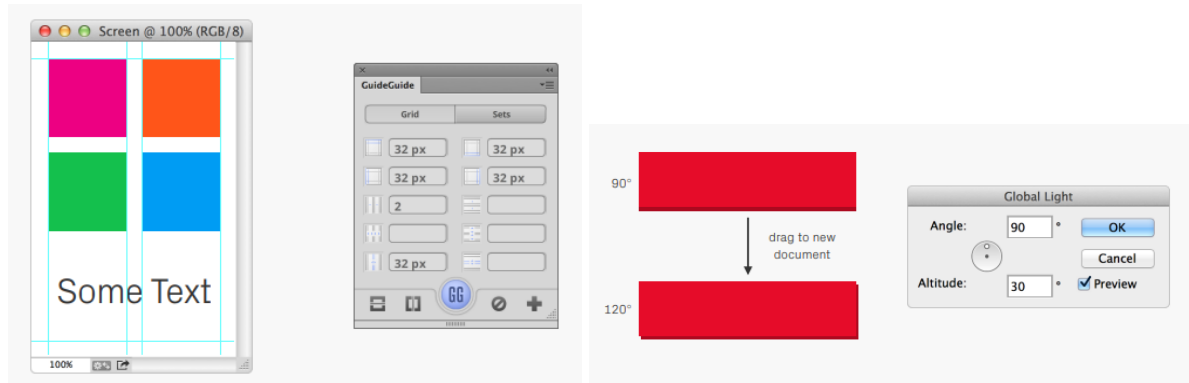
Live Shape Properties - Any new Shape Layer now has a set of measurements that can be adjusted after it's been created, which is great for getting pixel perfect dimensions and positions. If you're using a version of Photoshop prior to CC, then there is still a way to edit corner radii after you've drawn a shape: Corner Editor.



You should try **snapping** — go to View > Snap and make sure it's active. Then objects will snap to other items and guides on the canvas (helps with alignment). Sometimes it's useful to have a **grid** on screen when laying out a design. The example above is using 10px gridlines with 10 subdivisions. Go to Photoshop > Preferences > Guides, Grid, & Slices... to set yours up.

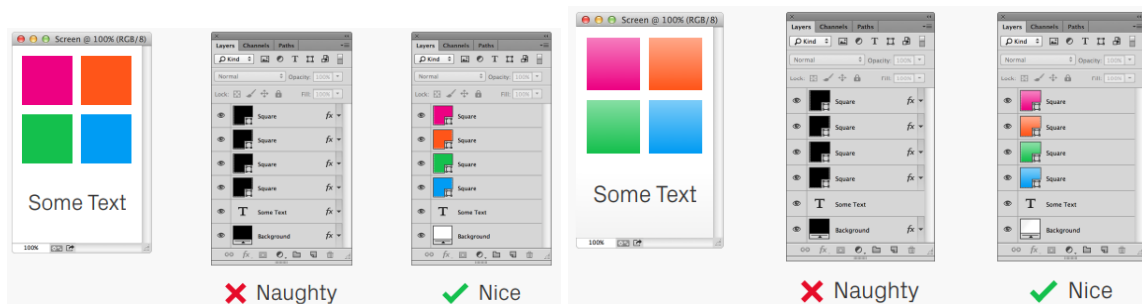


To help automate **guide** creation, there's a free Photoshop Extension available called GuideGuide. Once installed it can be found in the Window > Extensions menu. Copying you should look out for custom global light. To help prevent bad things from happening close all your open files and go to Layer > Layer Style > Global Light... to alter the default angle to something more commonly used — 90° works well for us.

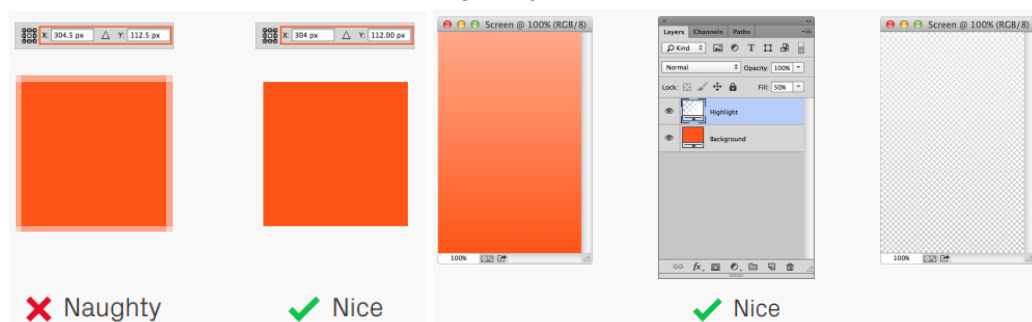


TECHNIQUES in Photoshop

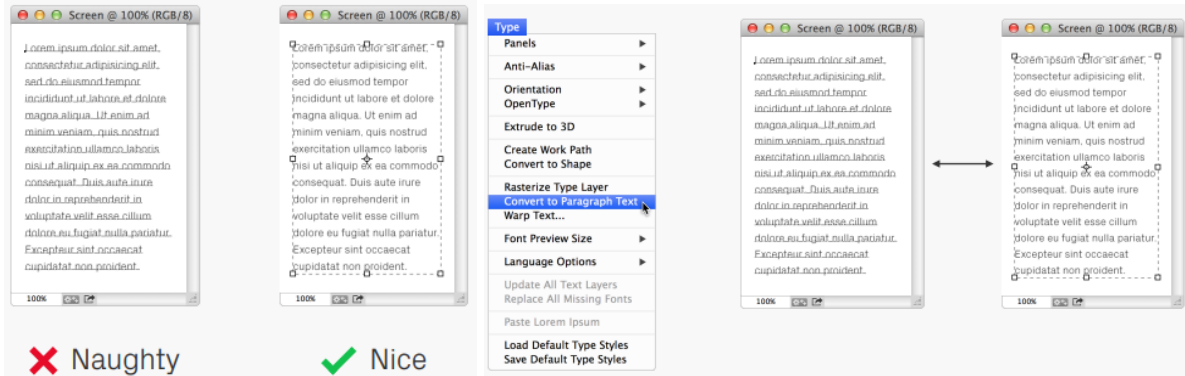
With Shape Layers, **object gradients** and text it's a good idea to change the **colour** using the object's own setting, instead of the Color Overlay Layer Effect.



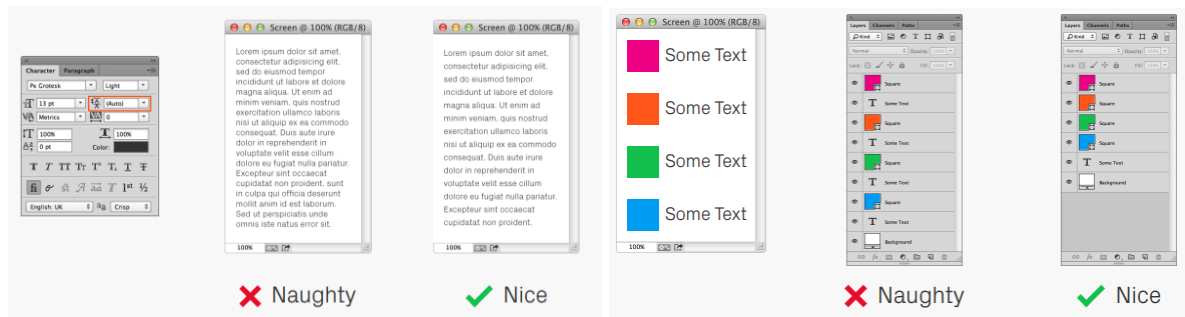
One quirk of **pasting** Shape Layers **from Illustrator** is that it can sometimes shift the object off-centre by half a pixel in either or both axes, resulting in blurred edges. With **blending** the best solution is to recreate the effect using a layer that's independent of what's underneath it.



If you've got a **paragraph of text**, then place it in a container (Paragraph Text) rather than manually adding line breaks (Point Text). Fortunately, Photoshop allows you to convert Point Text to Paragraph Text, and vice versa, by selecting Type > Convert to Paragraph Text / Convert to Point Text, or right-clicking the layer and choosing the same option.

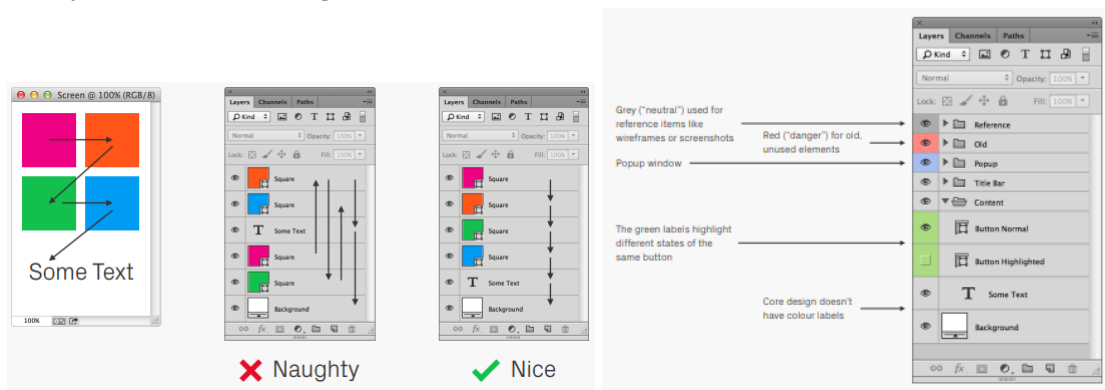


Photoshop auto **leading** is uncomfortable, so it's a good idea to change it, for example, to 20pt. When creating a **list** (especially with graphics), it's easier to place all the descriptions in a single text block and set the leading to the spacing you're after, rather than have each line as a separate layer.



ORGANISATION in Photoshop

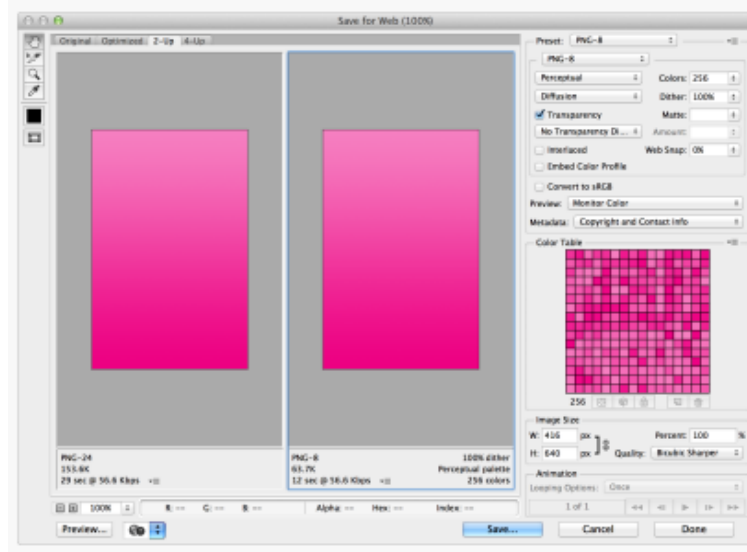
Name layers, keep them **organised** and **colour coded**!



EXPORT in Photoshop

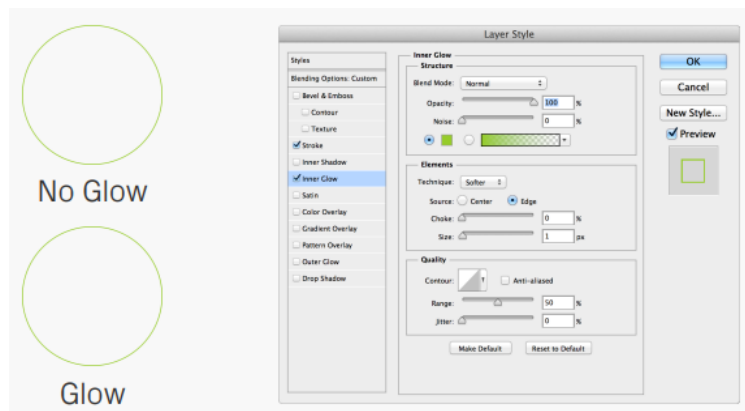
Save for Web creates **smaller files** than Save As!

If you're **exporting** an asset that doesn't need transparency, try converting it to an 8bit PNG.

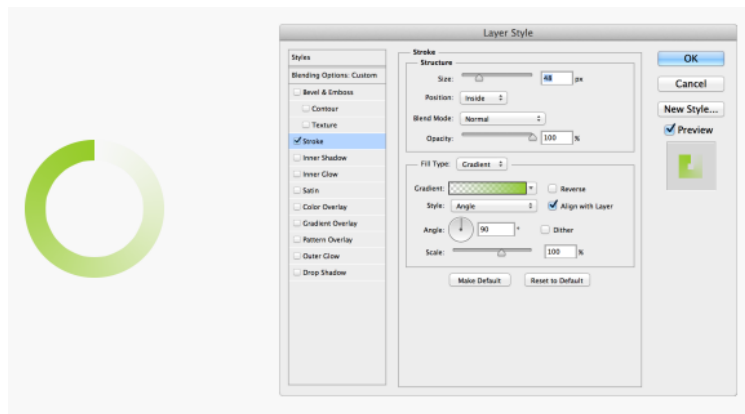


TIPS in Photoshop

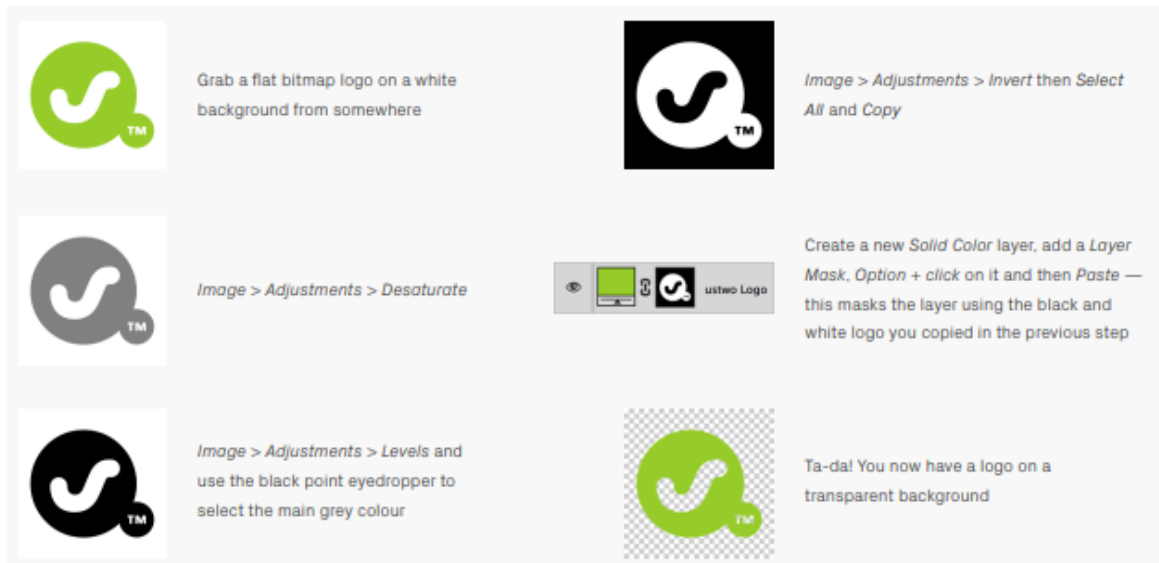
If 1px **stroke** looks too thin, add **Glow** to great more thickness to it.



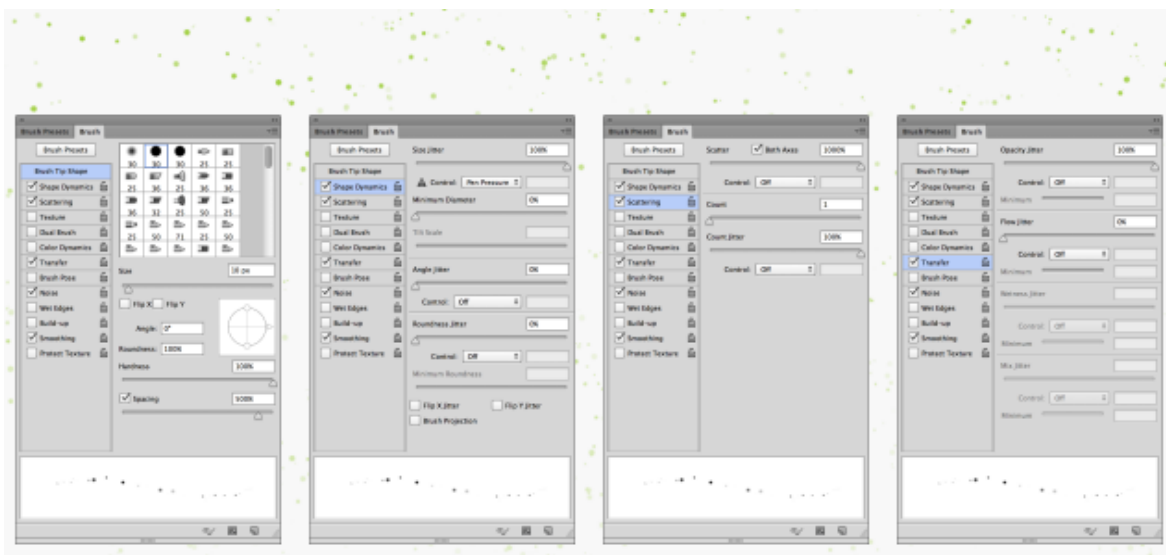
Circular fades are really easy to make with the Stroke Effect if you use Fill Type: Gradient and Style: Angle.



When **extracting logos** it's good to work with them in Illustrator (pdf) beforehand.



Easy way to make **Star Field** is by increasing the Size Jitter and Opacity Jitter the brushes become more random.



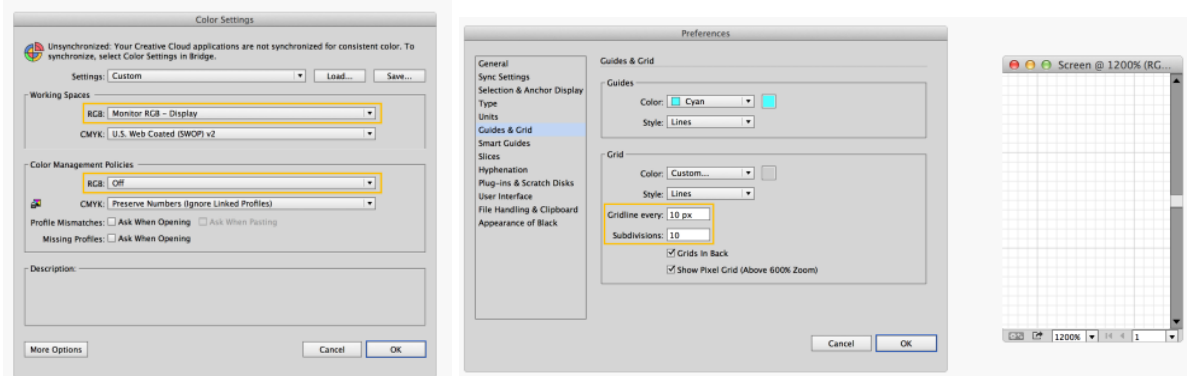
!SHORTCUTS!

<p>Cycle screen modes (F) Switch between normal, fullscreen with task bar, and full screen with black background.</p> <p>Hand tool (Space) Temporarily selects the hand tool while held down, use to pan around an image.</p> <p>Cycle open documents (Command + `) Acts like <i>Command + Tab</i> in the OS, navigating between open documents.</p> <p>Canvas background (Space + F) Cycles through canvas colours.</p> <p>Switch colours (X) Flips the foreground and background colours.</p> <p>Default colours (D) Resets foreground and background colours to black and white.</p> <p>Move selection outline (Arrow keys) Moves selection outline by 1px.</p>	<p>Move selection outline (Shift + Arrow keys) Moves selection outline by 10px.</p> <p>Move selection (Command + Arrow keys) Moves selected layer or area by 1px.</p> <p>Move selection (Command + Shift + Arrow keys) Moves selected layer or area by 10px.</p> <p>Select all layers (Command + Option + A) Selects all layers in the Layers panel.</p> <p>Load layer as selection (Command + click layer thumbnail) Load layer transparency as a selection.</p> <p>Enable/disable layer mask (Shift + click layer mask) Switch layer mask on and off.</p> <p>View mask (Option + click layer mask) Show the layer mask as a separate image, which can be edited like a channel.</p>	<p>Load mask as selection (Command + click mask) Loads up the mask as a selection.</p> <p>Invert selection (Command + Shift + I) Inverts the selection, so previously selected areas become deselected and vice versa.</p> <p>Deselect (Command + D) Removes current selection.</p> <p>Reselect (Command + Shift + D) Reloads the last selection.</p> <p>Copy layer (Command + J) Duplicate the currently selected layer.</p> <p>Change layer opacity (1-0 keys) Adjust the layer's opacity in 10% increments.</p> <p>Cycle blending modes (Shift + + (plus) or - (minus)) Cycle through layer blending modes.</p>
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ILLUSTRATOR

To match the **colour settings** with Photoshop go to Edit > Colour Settings..., make sure Working Spaces > RGB is set to Monitor RGB – Display and Colour Management Policies > RGB is Off.

Grid can also be used in Illustrator - settings can be found in Preferences > Guides & Grid.



Make sure **Align New Objects to Pixel Grid** is switched off in the Transform panel menu, and for any existing shapes Align to Pixel Grid is unchecked when they're selected (choose Show Options in the panel menu to display these settings).

Even though naming every layer is not necessary, things should still be **organised** groups.

