# Using The PhotoShop© Image Scatter Script

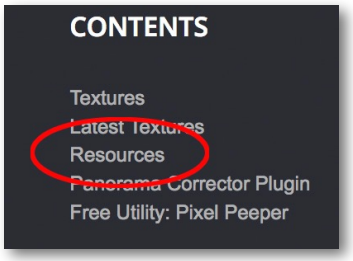
One of the free resources you can download from textures.com is a script that works with PhotoShop C6 and later. Check your PhotoShop version because it really won't run with earlier versions. The script generates beautiful seamless textures you can use both on- and off-computer. Want to make your own wrapping paper or fabric? For either, you need a faultlessly repeating motif, and this script makes one automatically. Need a background for an image, a title, a web page, or report cover? How about designing custom wallpaper for your computer desktop? This script does the trick really quick.

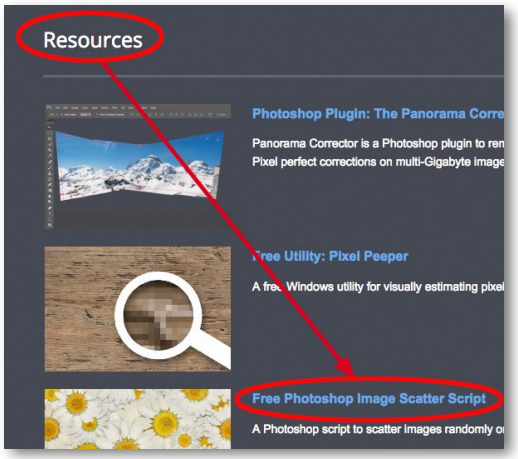
The author of the **Image Scatter Script**, Marcel Vijfwinkel, has prepared an illustrated online tutorial to guide you, but here I will share tips from my own image scattering experiments. I hadn't used scripts in PhotoShop, and was a bit intimidated because it sounded very technical. However, using the script turned out to be easy and worth the effort of learning how. I generated the beautiful seamless pattern shown here on my first try!

In this tutorial, I'll review the steps in downloading and using the **Image Scattering Script**. Then I'll show you how to save the pattern you make as a PhotoShop pattern preset. The first step is to go to textures.com and download the scatter script, so let's do that now.

## Downloading The Image Scatter Script

On the home page of textures.com, scroll to the bottom of the page and click the link for **Resources**. You'll want to return later and try out the other freebies on this page, but for now, click the link on the third item, **Free PhotoShop Image Scatter Script**.

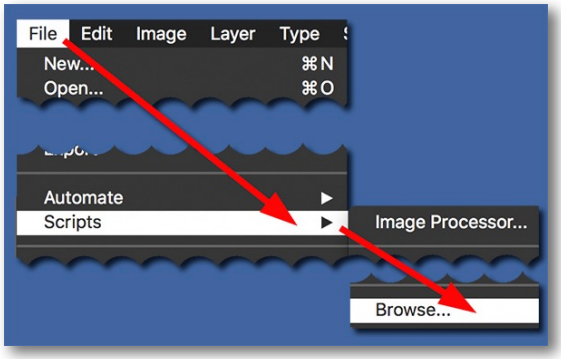



The window that opens is the online tutorial as well as the download page. Click the **Download** button, and be sure you make a note of where you save the file, **random_pattern_fill.jsxbin**. If you know where your version of PhotoShop stores its **Presets**, you could save the script there, in the **Scripts** subfolder. In the PhotoShop version I use, on Mac, **Presets** is a folder in the main application folder, but the location is different in other versions and platforms. That's okay; you can run the script from any location, just so you remember where it is.

## Where Are Scripts In PhotoShop?

Learning to use the **Image Scatter Script** opened up a whole new area of PhotoShop for me. One of the many hidden features of PhotoShop, **Scripts** are found under the **File** menu. The **Scripts** menu lists scripts that come installed in PhotoShop.




You will not see the **Image Scatter Script** in the list unless you copied it into the **Presets-->Scripts**

folder. Instead, to run the script, go under the **File** menu, scroll down to **Scripts** and open its submenu, and choose the **Browse** option at the very bottom. Then navigate to where you saved the script and open it.

## The Easy Way To Seamless Patterns

Take plenty of time to read through the online tutorial. As you see, the overall strategy is to lay out a grid of small, individual images, then run the script to automatically scatter them into an overall pattern that is **seamless on all edges**. That means that if you place copies of the pattern edge to edge, the pattern will continue so that you don't see an obvious line where two pattern blocks join.


The most time consuming part of the operation is creating the grid of images. The script does the difficult part for you! If you have ever attempted to make a repeating motif, you'll appreciate the power of this little script.

## Planning The Design Grid

Before attempting to create a grid, let's do a bit of pre-planning. The script includes an option to automatically generate guides to define the grid, so first you need to decide how many grid boxes across and down it will be and choose the overall size of the grid. The default overall size is 3,000 pixels square, but you can change that, and it need not be

**Quick Tip:** How to decide on the size? It depends on what you plan to do with the repeating pattern. For example, for wallpaper or fabric, you probably need a larger repeating block size than if you were designing a background for a web page, since the design will be viewed in a much larger size for the fabric or wallpaper. A design block for wrapping paper should be midway between the size for fabric or for a web page background.

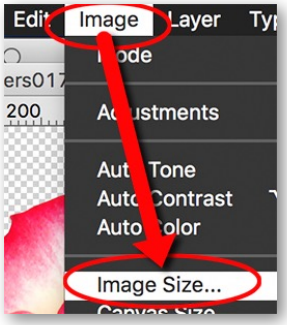
a square, as you see by the online example. The size and proportions of the grid control the size of your pattern repeating block or motif.

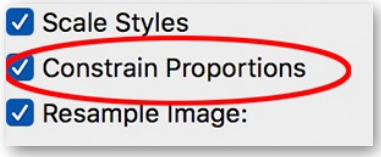
The total size of the grid also determines the best maximum size for the small images you will put into it. I've found it easier to calculate the maximum size for the small images and re-size each one before adding them to the grid. That way you can simply drag in each one and concentrate on positioning it completely inside its grid space.

Here is the formula: **The overall width divided by the number of grid boxes across = the best maximum width for each small image.** If your grid will be square (width and height equal), then that's also the maximum height for each small image. If the height and width of your grid spaces are not the same (that is, the grid is not square), also divide the grid's total height by the number of grid boxes high to calculate the maximum height to allow for each small image.

## Re-Sizing The Small Images

To re-size each small image, open it in PhotoShop, go under the **Image** menu and choose **Image Size**. Be sure **Constrain Proportions** is active, and type the new dimension in either the width or height. You should **change whichever of these dimensions is larger** to the maximum dimension you calculated. With **Constrain Proportions** active, the other dimension will automatically change proportionately.



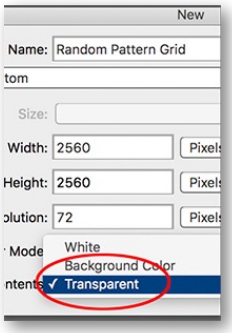




Then **Save** each small image in its new, smaller size. If a small image you plan to use is already smaller in both dimensions than the calculated maximum, you don't have to resize it. Do avoid using an image that is many times smaller than the grid box. If you encounter that situation, choose a smaller overall grid size and recalculate.

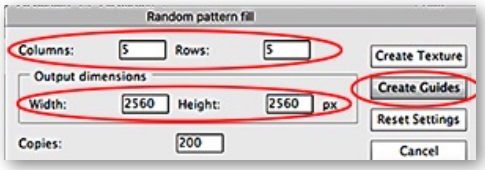
Prepare and re-save all the small images you intend to use before creating and filling the empty grid.

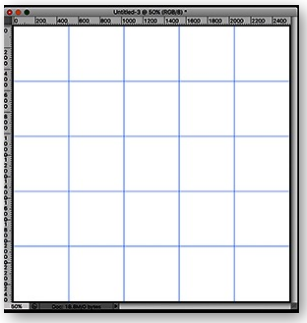
## Creating The Empty Grid

When you have decided on a pattern size and the number of spaces in the grid, you're ready to use the script for the first time, to generate the grid guidelines. **Create a new PhotoShop document** in the size you have chosen, making sure that it has a **transparent background**. The images need to float with empty space around them. Otherwise, when they are scattered you would see the edges of a background rectangle around each of them.




With the new document open, open the **Scripts** submenu under **File** and scroll down to **Browse**. Navigate to your script and run it. When the **Random pattern fill** window opens, type in the dimensions of your grid and the number of **Columns** and **Rows** the grid will have. Then click the **Create Guides** button. Instantly the grid will be marked off in your document, ready for you to drag in the images. You can click **Cancel** to close the script and **Save** the document at this point, preserving the positions of guides for the grid.



## Sources Of Images

Technically, the main requirement for the images to scatter is that they must float on a transparent background. Aesthetically, you should give some thought to how the colors of the scattered items will blend and to the complexity of the items. I got very good results with flowers and leaves, simple shapes without much detail. The pattern was less pleasing when I tried scattering small clip art pictures, because the clip art I chose was a bit too complex. When the items were scattered so they overlapped, I felt that it looked messy.

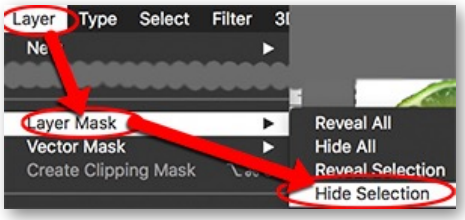
A rich source of free images to scatter is textures.com, the site where you downloaded the script. Some categories in the sidebar lead to images already on transparent backgrounds. Under **Nature**, check out the subcategories **Branches**, **Leaves**, and **Flowers**. The **Flowers** category includes both fresh and dried flowers that make excellent patterns. Under **Leaves** there is an extensive collection, some in fall colors, with transparent backgrounds. Some of the single plants, desert plants, and tropical leaves are also ready to use. Look what is hiding under the **Animals-->Insects** category: A collection of colorful butterflies! For scattering, download the **smallest** size of each image.

## What If There Is A Background?

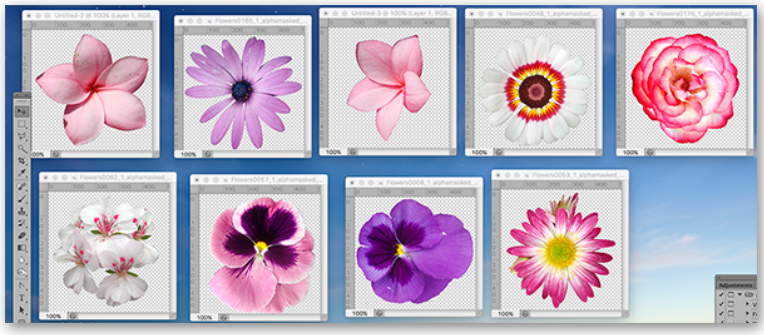
Besides the images that have no background, there are many other photos on textures.com that potentially could make good scatter patterns. In the **Categories** sidebar, click **Various-->Food-->Fruit**. The sliced kiwi, strawberry, lime and orange photos might look good in a scattered pattern, and so might the whole fruits like the various different apples. How about vegetables? Under **Various-->Food-->Vegetables** is a single mushroom, a head of lettuce, a carrot, a tomato, even an okra pod. We would just need to get rid of that background. Fortunately there are several ways to do that.

Let's remove the background from one of the fruit slice photos. We'll assume you have signed up for a free membership on textures.com, which gives you 15 free credits each day. You can download the smallest **lime slice** photo for one credit, and it is large enough that you will need to downsize it before using it in a pattern. Open the downloaded photo in PhotoShop and select the background.

This photo's background was very easy to select since it is mostly one color and I could use **Magic Wand** for this selection. For a busier background, plan to use a combination of tools such as **Select Color**




**Range**, **Quick Selection** tool, or various lassos. When you have a good selection, go under the **Layer** menu and add a mask that will **Hide Selection**. Re-size the lime photo to the maximum dimension you have calculated that will fit into the grid you have set up and save the image. You can prepare clip art as well as photos in this way to use with the **Image Scatter** script.



**Drag Images Into The Grid**

When you have all the images prepared, you have completed the hardest part of creating a repeating pattern. Open all of them and arrange them in the order you plan to use them. Be sure you have the **Layers** window open to do the next part. To add an image to the grid, **drag the layer** containing the image from its **Layers** window into the document with the grid marked.

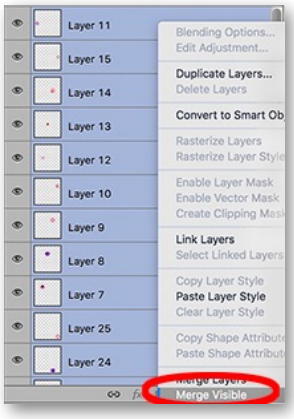

Position each small image so that it is **entirely inside its grid space**. If there are more spaces on the grid than you have different images to add, repeat some. You can flip or rotate the repeated images for variety. Notice when you drag in a masked image, its background stays hidden. Each time you drag, the new image is **added as a new layer** in your grid document.

**Quick Tip:** Why repeat images? Well, a 5 x 5 grid has 25 spaces in it, and it's easier to repeat images than to find 25 different ones. In fact, 25 different images might make the design look too busy! The example in the online tutorial utilizes an array of a few similar images, some of them flipped, rotated, or slightly re-sized, to make a lovely tone-on-tone pattern. My example pattern employs a variety of shapes and harmonizing colors, but only nine unique images. Each is repeated twice and most appear in the grid three times.

## Create A Merged Layer

When the grid is filled, inspect it once more to make certain there is no background showing, and that each small image is inside its grid space. **Save** the document at this point, with all its layers. Having this backup will save time if you later decide to replace one or more of the small pictures to make a different pattern.

This example is the filled grid for my second effort, a mixture of flower images in harmonizing colors. I had nine unique images, repeated to fill the grid and some of them flipped or rotated. Notice the two similar pink flowers. Those were originally in a single photo, but I separated them so that they would scatter independently.



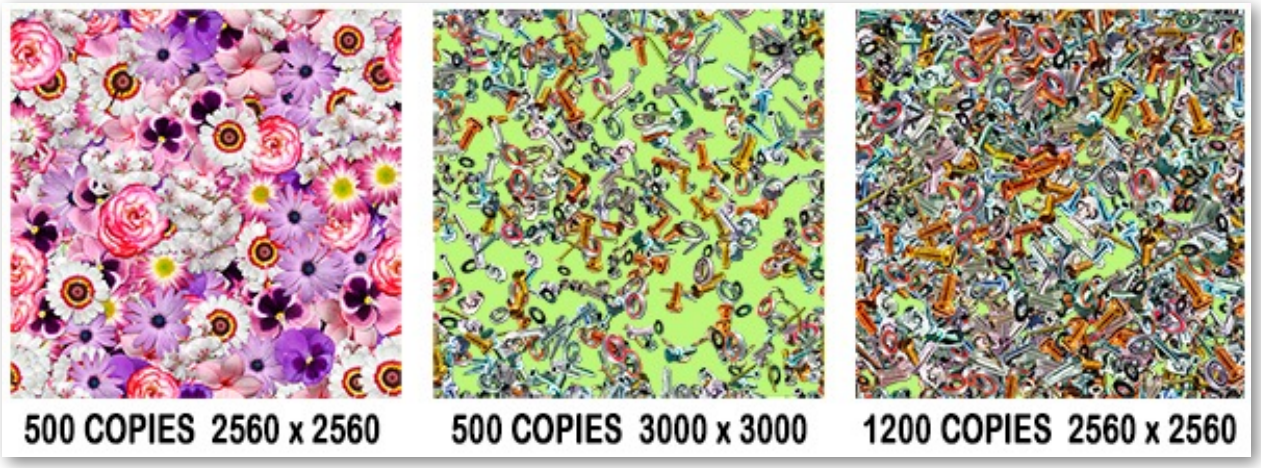

The next step is very important, because the script won't work on a multi-layer document. **Right-click** on any layer and choose **Merge Visible**. You also can access this option from the **Layer** menu. All the layers created as you dragged in images will **condense into a single layer**. Be sure to **save** the single layer version of the grid, because you can use it multiple times. Each time you run the script, you get a slightly different seamless pattern from the same grid.

## Running The Script

Go under the **File** menu, choose **Scripts--> Browse**, navigate to the **random_pattern_fill.jsxbin** file, and open the **Image Scatter Script** window. Fill in the **number of columns** followed by the **number of rows** in your grid. Enter an **output document size** in pixels. The output document can be a different size and shape from the grid. Enter the **number of copies**. Double check that all the specifications are entered correctly, then click **Create Texture**. Don't disturb the script in any way, because the (flashing) document it creates must be the topmost document. Good timing: You deserve a break at this point!


## Deciding How Many Copies

You'll need to experiment to decide what value for number of copies works best for a particular grid. The coverage in the pattern depends on many interacting factors: the size of the output document, the number and size of the grid images, the shape of the small images, the number of copies, and the variations available with the optional settings. Let's compare three examples.

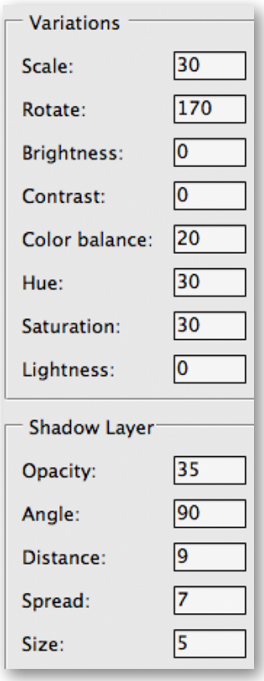


In the first example, 500 copies of images from my flower grid completely cover the surface of a 2560 x 2560 pixel document. The 25 flower images were 512 pixels wide. Each roughly circular image mostly filled its grid space. In the second experiment, with art from ***pixabay.com***, I set up a grid with 15 images of small hardware items such as screws, bolts, and washers. These smaller images were only 300 pixels wide. Many had a linear shape that filled less than half of its grid space. 500 copies (middle image above) left quite a bit of open space in a 3000 pixel square output document. Even 1200 copies of hardware items (third example) didn't cover a 2560 x 2560 pixel output document as completely as 500 copies of the larger flowers.

In these three examples, I added the green background to make open spaces stand out. I saved those open patterns, because there are ways to use scatter patterns with open spaces. More about that later!

## Optional Settings

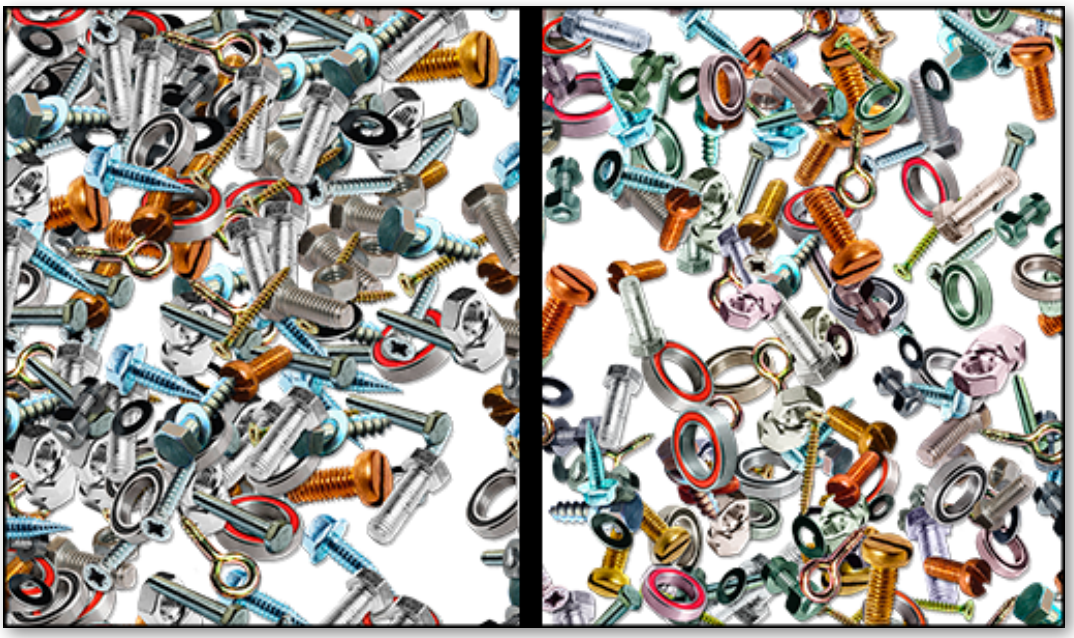
I haven't said anything about the many variations you can set in the script to generate slightly different effects with the same grid. Open the script window again and let's take a look at the options. There are two sections, the top settings affecting the images and the bottom section affecting their drop shadows. The **Shadow Layer** variations are fairly standard for shadows, so I won't cover them in detail.




The image **Variations** introduce a random factor into each parameter. For example, setting a **Scale** variation of 30 means the script will not only copy the images, but may vary the copies in size by up to 30%. Similarly, setting **Rotate** means the copies will randomly be rotated by up to the number of degrees you specify. If you put in 180, some of the images will be flipped completely over!

Assuming you are experienced with PhotoShop, you can probably guess what element each of the variations affect, but trying them out is the best way to really see what that change does to the pattern.

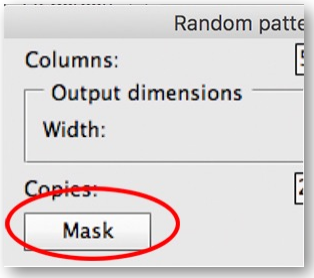
In the two examples that follow, the left sample is from a pattern run with default settings, while the example on the right was set up for variation in rotation of 170, scale 30, and slight variations in hue, color balance and saturation. It's a subtle difference, but notice that having different rotations disguises the repetition of images. You can easily see the color variations, but the results of the slight size variation setting are more difficult to spot. Overall, the optional settings fine tune the design and make it more random.



**Quick Tip:** This scatter pattern is not solid, but that is not necessarily a flaw. I could add a solid layer below all the scatter group layers and fill it with a color to create multiple versions of this pattern. It might be perfect for custom wrapping paper!

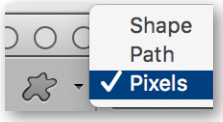
## Mask Option To Scatter Into A Shape

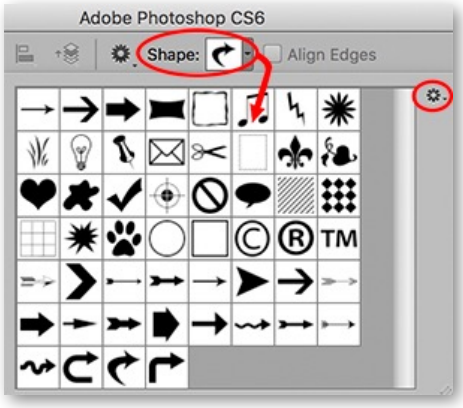
You may have noticed a button on the **Image Scatter** dialog labeled **Mask**, and wondered what it's for. It activates a fun and powerful option that lets you scatter images into a specific shape. Using **Mask** requires one extra step: making a separate mask document that serves as a stencil. You can download a folder of masks to try it out from my blog post about textures.com, but making a mask from scratch is quite easy. Best of all, you can re-use each mask with any grid of images you have saved. The **Mask** option is another reason you should save all image grids you prepare for later possible re-use.




## Constructing A Mask

Make a new PhotoShop document (I made mine 800 pixels square) with a black background. In a new layer, create a solid white shape. One method is to use **Custom Shape** tool, but be sure you have it set for **Pixels**. Quite a few likely shapes are loaded as presets, but you can load in more by clicking the smaller gear at the right of the **Shapes** dialog. You also can make a mask by typing large very thick bold text, draw a shape freehand and fill it, or lasso clip art and fill it. Avoid an intricate shape. The key is that any part of the mask that is **white will be part of the pattern**, while black areas are left empty. When you like the look of your mask, **Merge** the layers and save it.




## Using The Mask

To use the mask, set up a grid of images (or open a saved one) as usual, then run the **Image Scatter** script. Fill in the usual information (number of rows and columns, output size, number of copies) but this time also click the **Mask** button. When the script asks you to specify a

mask, navigate to folder of masks and choose one of them. From that point, the procedure is the same as without a mask. Click **Create Texture** and watch the pattern form! This may take up to ten minutes, and you will see lots of flashing and movement of layers. Be sure not to disturb the process until the shape is complete.


**Be Sure Output Is Square**

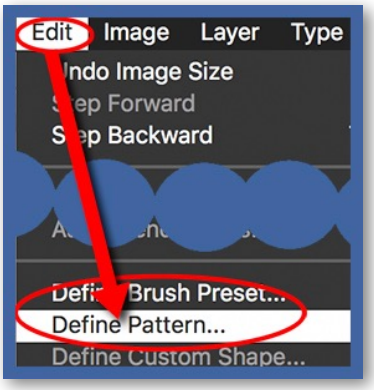
I have only found one quirk in using a mask: Be sure your **output document is square**. I had strange results if I used a mask when the **output** document was rectangular. In practice, this means you should set the output width and height to whichever is the maximum dimension you need. The mask can be rectangular, as was the mask for the **THANK YOU!** graphic. Run the script and create the textured shape in the square. If needed, crop off any excess surrounding space. That's how I finished the **THANK YOU!** graphic, cropping off a wide space above and below the text in the square output document.

Here are a few more examples of scattered image shapes I made using masks. Can't you just imagine that flower heart as part of a valentine?

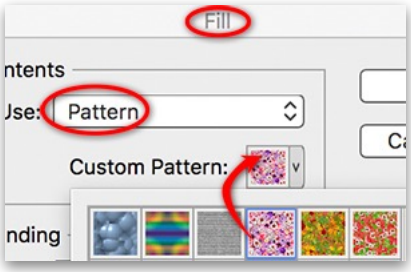
The leaf arrow might be on a poster pointing the way to a fall book sale. The wreath could decorate a holiday greeting card. Being able to fill shapes with three dimensional images adds a whole new set of things you can create using the **Image Scatter Script**.

> **Quick Tip:** The **Image Scatter** script fills the output document with the mask, scattering images to the very edge. Some may hang out of the picture. For a margin like you see on the wreath and heart examples, choose **Canvas Size** under the **Image** menu, and increase the width and height.

## Custom PhotoShop Fill Pattern




Because any pattern you make with the **Image Scatter Script** is seamless, you can it as a pattern fill in PhotoShop. In case you have never made a custom pattern fill, it's easy: **Select** the repeating area, in this case the entire scatter pattern, then choose **Define Pattern...** under **Edit**. Give your pattern a name and you're done! Your custom pattern will be listed as one of the pattern choices when you choose **Fill** with a pattern from the **Edit** menu, use the **Paint Bucket** set to fill with a pattern, set the **Pattern Overlay** layer effect, and for any other function using patterns.




One caution: when you select the scatter pattern, be careful to do so from a **merged layer**. The **Define Pattern...** option only looks at the layer where you made your selection. I'm not sure what the maximum size selection you can define as a PhotoShop fill pattern. Practically, it would depend on your computer's system speed and amount of memory. If you have trouble defining a very large selection, or if it slows things down when you try to use it as a fill pattern, re-

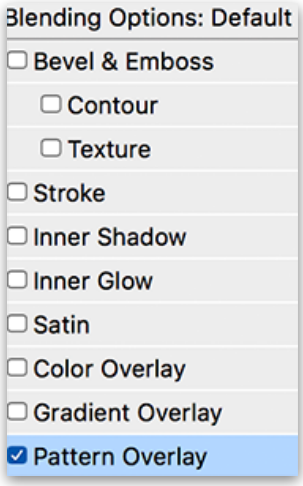
size your scatter pattern and try again with a smaller size. I have defined a 3,000 pixel square selection as a fill pattern on my system without any problem.

### Fill Commands Use The Pattern At Full Size

When you use your custom pattern with **Fill, Brush,** or the **Paint Bucket**, you are limited to the original scale of the pattern. For that reason, you may want to downsize and define several versions of your seamless design as separate custom patterns. For example, I scattered leaf photos in a 3000 pixel square document, so that's the original size of the fill pattern I could define. If I poured that into a 1000 pixel square document, I wouldn't even see all of one motif!

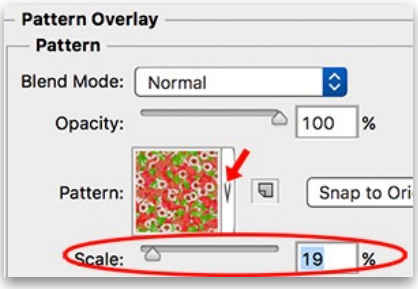
If I filled a 6000 pixel square, the leaf pattern still would repeat only twice across and two times top to bottom. For more repeats, I would have to downsize my scattered leaf document, perhaps to 1000 x 1000 pixels, and define a second pattern from that size. Filling with this smaller scale pattern, I would see six repeats across and six repeats down in the 6000 pixel square. Of course I could also define a 500 pixel wide pattern, which would give me 12 repeats across. If I continued to reduce the size, though, at some point I would lose detail and the pattern wouldn't look good.

### Pattern Overlay Can Be Scaled

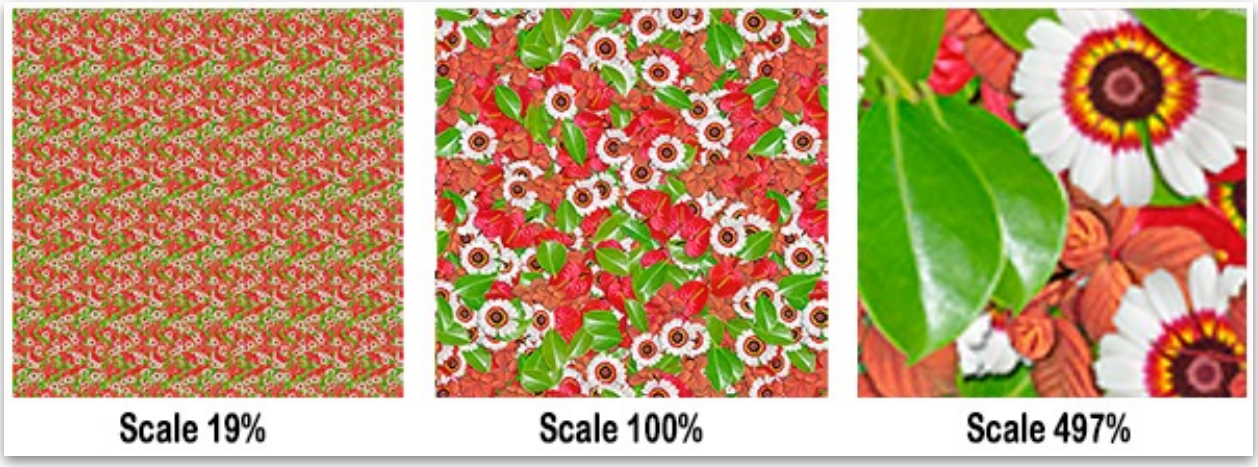



Another option for using a fill pattern, **Pattern Overlay**, lets you scale the pattern. It is applied to an entire layer. Of course, in PhotoShop that layer could have any shape on it, but let's begin by using **Pattern Overlay** on an entire layer. Make a new document and double-click the default **Background** layer to convert it to a normal layer. Fill the blank layer with any solid color, then **double-click the layer**, or **right-click** it to open its menu and choose **Blending Options**. You also can open **Blending**

**Options** by clicking **fx** at the bottom of the **Layers** palette. Choose **Pattern Overlay** from the **Blending Options** list and open its dialog window by clicking the words **Pattern Overlay**. Initially the default pattern will be chosen, but you can open the **Patterns Presets** by clicking the small **V** to the right of the sample window. Choose your custom pattern, then close the **Pattern Presets** samples.The entire layer will be covered with your pattern at its default scale. It doesn't matter what color you used to fill the layer. Any area that is not transparent will be covered with the pattern overlay.



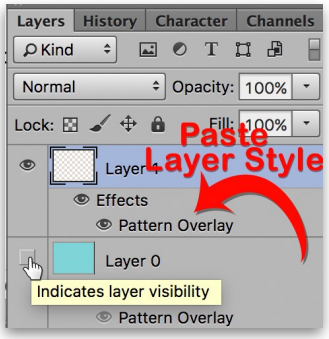

With the **Pattern Overlay** dialog still open, experiment with moving the **Scale** slider located just below the sample window. You can vary the size of the pattern repeating unit from a tiny size up to a size that is larger than the layer.



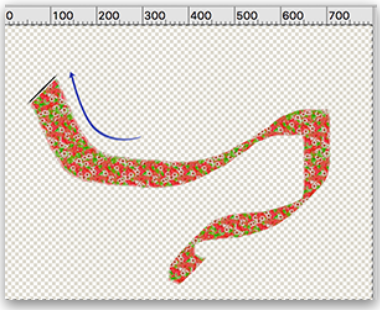

## Paint A Scaled Pattern

Let's continue experimenting by making a new blank layer. Then select the layer with the pattern overlay, right-click it in the **Layers** palette, and this time choose **Copy Layer Style** from the menu. Return to the new blank layer, **right-click** it to open its menu, and choose **Paste**

**Layer Style**. You won't see any change at first, except that a new label appears in the blank layer saying that it now has a **Pattern Overlay** effect. **Hide** the layer that has the pattern overlay by clicking the **eye icon** to its left, then choose the blank layer again.




Get a painting tool such as the **brush**, and paint in the blank layer. Regardless of the current foreground color, you seem to be painting with your custom pattern, because any opaque area in the layer will display the pattern overlay. Of course, you could also use the **Pattern Stamp** tool to paint a pattern, but that only allows you to paint the pattern at its default scale. The **Pattern Overlay** trick gives you a way to paint patterns, including your custom patterns, at any scale.




## A Few Final Thoughts

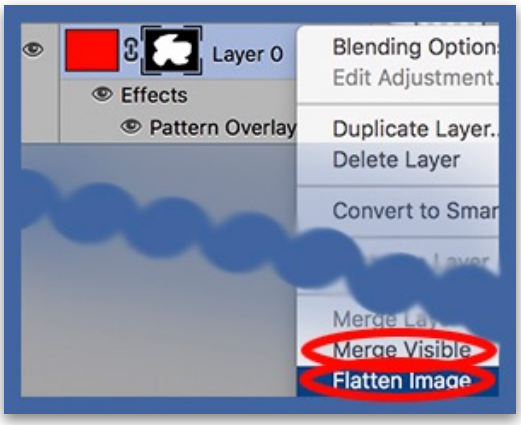
Besides the ability to paint a scaled pattern freehand on a blank layer if it has a **Pattern Overlay** effect, you can create patterned shapes. Regardless of the original colors, if you create a filled shape or paste a piece of clip art into a layer with a **Pattern Overlay**, it will appear filled with the pattern, at whatever scale you have set.

You can use a **mask** on a filled layer that has a **Pattern Overlay**. Only areas affected by the visible part of the mask will show, and those areas will have the pattern.

Did you notice that the wreath has a lot more spruce twigs than the accent items such as berries and cones? I planned it to come out that way by repeating the spruce twigs many more times in the grid I used to generate the pattern. The exact placement of images in the scatter pattern changes

each time you run the **Image Scatter** script, but you can control the overall effect somewhat by adjusting the proportions of specific images.

Besides using the seamless patterns created with the **Image Scatter Script** for projects like web page, desktop, and other backgrounds, you can make off-computer projects. While not free, there are many websites that let you upload a seamless motif and have it printed as wrapping paper, wallpaper, or fabric. Of course, you can easily make small sheets of wrapping paper with any printer.




If you want to simplify a layer so that you aren't dealing with layer effects, masks, and such, create a merged layer. **Right-click** a layer, making sure you are clicking above the **Effects** details, and choose **Merge Visible** from the layer menu. If you hold the **alt/option** key as you do this, PhotoShop makes a new layer incorporating all the visual effects in one simple layer, but leaves all other layers unchanged.

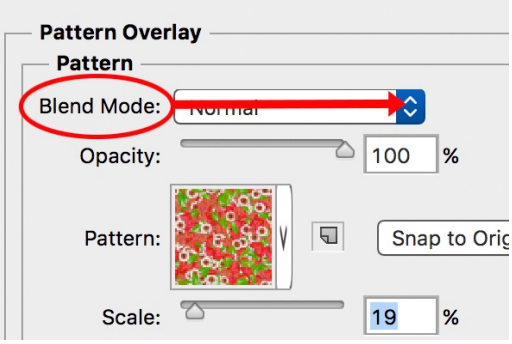
If you choose **Merge Visible** without the modifier key, PhotoShop actually merges all layers, leaving you with one simple layer. Alternately, if your document has only one layer, or you are certain you won't need the other layers, you could choose **Flatten Image** from the same menu.

### Crazy Fun Using Pattern Overlay With Blend Modes

I've said that **Pattern Overlay** completely obscures whatever color you use to fill a layer, but there is one exception. You can **set the overlay to blend** with the color in the layer it covers. You have the same choices of different blend modes as are available to blend one layer

with another, but in this case blend mode only affects how the pattern overlay interacts with the layer's fill color.

To try out this option, start a new blank document, convert **Background** to simple layer, and fill the layer with a solid color. **Right-click** the layer and choose **Blending Options-->Pattern Overlay**. Choose your custom pattern. Before closing the dialog, choose one of the **Blend Modes** other than the default **Normal** for the overlay. You can see the full list by clicking the double arrow to the right of the words **Blend Mode:**. As soon as you choose a **Blend Mode** other than **Normal**, you will see the effect.




With **Blend Modes** active, because the seamless pattern blends with the color you used to fill the layer, the color you use for the fill ***does*** change the appearance of the pattern overlay. Experiment! I can't predict what effects you will come up with, but I know you'll be surprised and delighted.

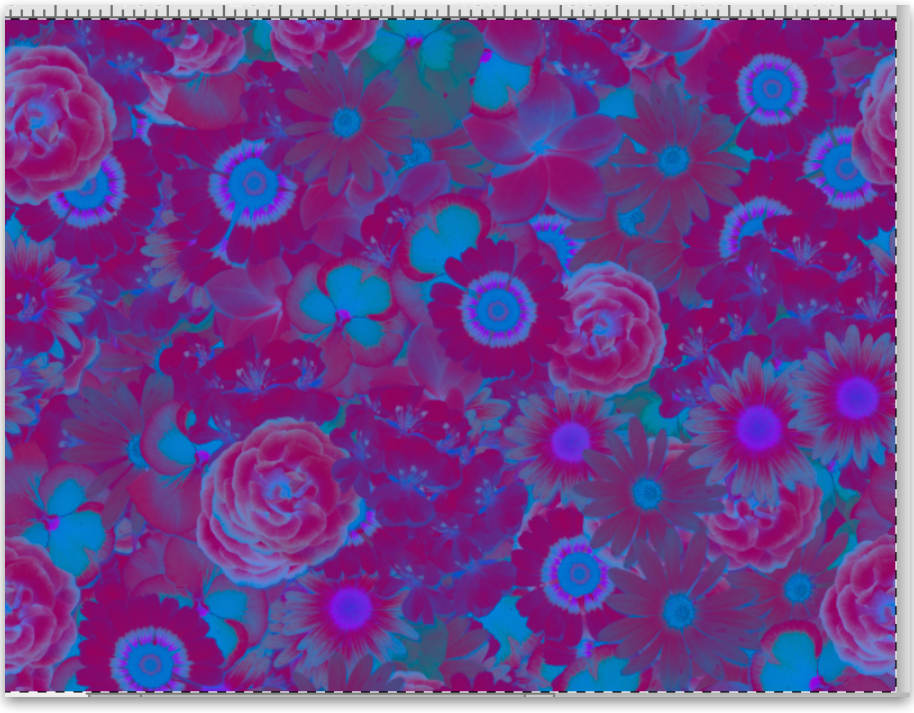
Try out all the **Blend Modes**, then see what happens if you set the blend to less than 100% opacity. Try out different fill colors for the layer. Try setting various patterns for the overlay at various scales. See what happens when you fill the layer with a gradient, and then blend in a **Pattern Overlay**. One interesting effect: If you enlarge your document, the pattern keeps the same scale and does not lose detail.

The following examples are a few of my experiments, all with the pink to purple flowers pattern. First I used a blue fill on the layer and tried various blend modes. Then I tried filling the layer with a rainbow gradient and blending the flowers pattern, again using several different modes.

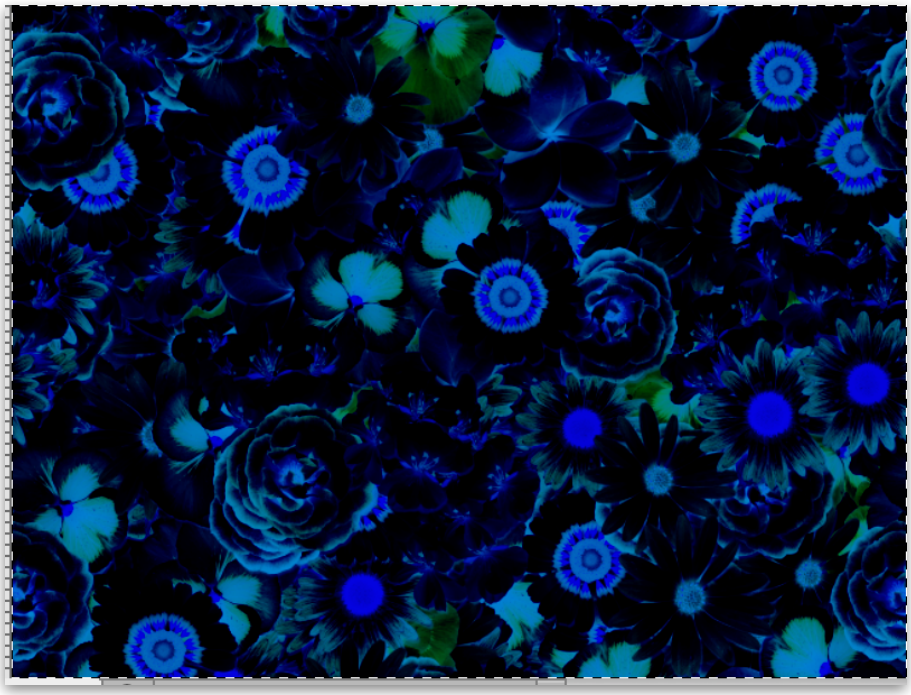
Original Fill Pattern Scale 31% Blue Layer Fill

Pattern Overlay Blend Mode Hard Light

Pattern Blend Mode Difference 100% Opacity

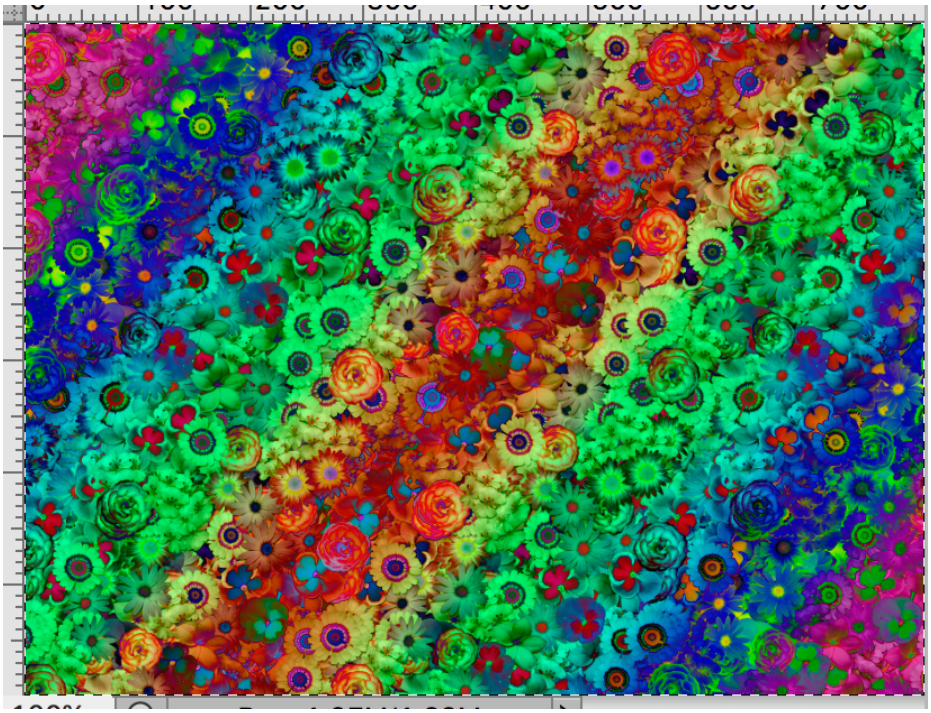


Pattern Blend Mode Difference 50% Opacity

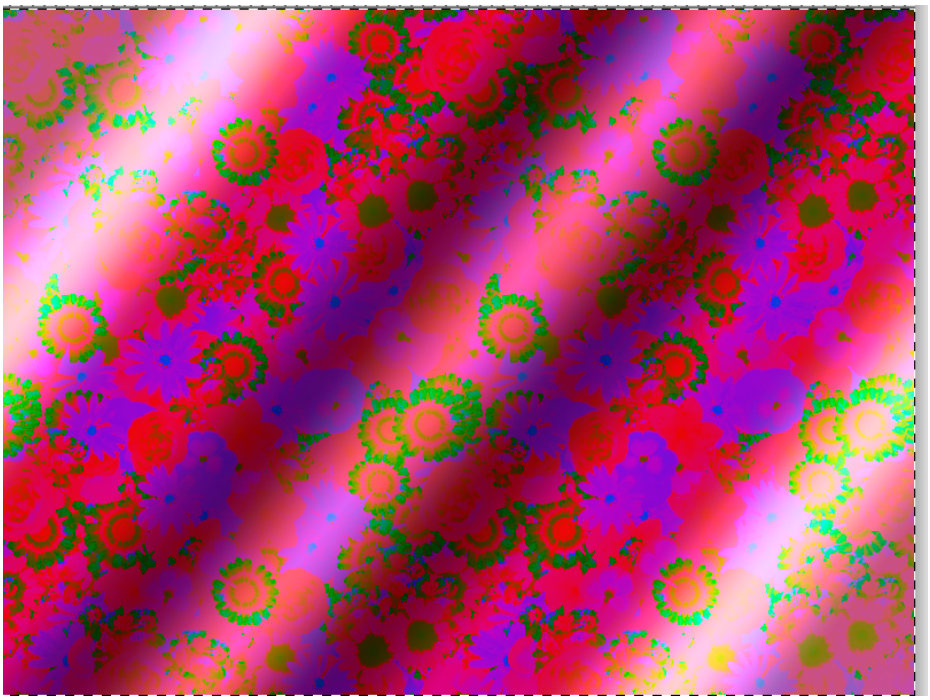


Pattern Overlay Blend Mode Subtract

Pattern Overlay Blend Mode Luminosity



Rainbow Fill, Scale 19%, Pattern Blend Mode Difference



Rainbow Fill, Scale 19%, Pattern Blend Mode Hue

# Guide To Topics