

Mosaizer Pro Tutorial

A puzzle in a nutshell



Here you learn how to apply a puzzle mask and remake an existing picture into a puzzle mosaic. We will also show how a 3D puzzle effect can be created.

Finally, we will demonstrate how the alpha masks can be used to alternately rotate and create completely different pattern.

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About puzzle masks

Puzzle masks are just ordinary alpha masks in the shape of a puzzle. In general a puzzle mask is shaped as a (puzzle) pattern that can be used seamlessly as if the adjacent tiles were connected. Like a real life jig-saw puzzle.

The concept of alpha masks is explained in the tutorial “Working with brush masks”. In short: a puzzle mask is usually square and only contains black or white pixels. When this mask is used on a tile, the corresponding white pixels are transparent (tile is seen), and the black pixels are opaque (source or background picture is visible). Typical puzzle masks are shown below.



Requirements

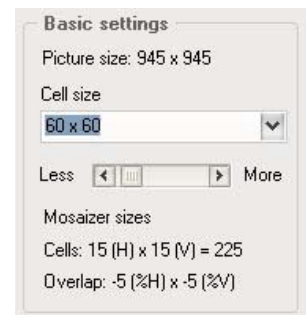
A source picture and a puzzle mask. The choice of puzzle mask is personal, but need careful attention. When a real puzzle effect wants to be created, the puzzle mask should be shaped in such a way that north and south and east and west should seamlessly match. The puzzle masks provided by Mosaizer Pro are a good starting point.

The steps to make a puzzle

Step 1: load the mosaizer and source pictures

To first load the mosaizer picture seems to be a strange first step compared with other tutorials. The reason is obvious enough: we will first need to make smaller (puzzle) pieces from the source picture. We use the Mosaizer tool for this.

The mosaizer picture can be loaded via *'File / Open mosaizer picture'* or in case a new picture is used: *'File / New mosaizer picture'*. Also load the source picture with the same picture as the mosaizer picture. The selected picture is seen in the tab 'Mosaizer' on the top-right. Then we set the value of the sub-cells. We select a cell size of 60 x 60 px (via tab 'Mosaizer' on the left). A detailed explanation is given in the tutorial “Make a mosaized picture”.



Step 2: mosaize the source picture

Press the *Mosaize!* Button. We have selected a size of 60x60 because the source picture is pretty large (our source picture of the Big Ben is 945 x 945 px in size), so now we have 225 different pieces of the puzzle available for our next steps.

Step 3: prepare the mask

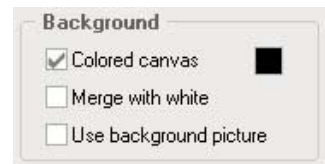
Load the puzzle mask. This is done via the tab *Masker / Alpha masks*. We use the *b_Puzzle 4.jpg* mask. If the mask is not yet available in Mosaizer, you need to add the mask to the dropdown list first. Open the mask managing window via *Tools / Settings Manager / Masks* and then press the button *Add alpha mask*.



Navigate to the folder in which the mask is located, select the mask and press the Enter button. Use the default values for the F-factors (usually F1 is 1, the others are 0).

To make sure the mask is loaded permanently, also press the buttons *Save changes* and *Reload/restore all data*. The first button makes sure the settings are stored in the program, the second updates all drop-down boxes to make the mask available right away.

Next, change the background color to black and tick the checkbox *Colored canvas*. This will hide the source picture and colors the canvas fully black before any tile is put. This color effectively creates a black border-line between the puzzle pieces. In fact, it fills the gap between adjacent masked tiles because the background then becomes visible.



Step 4: make your first puzzle and tune the mask parameter F1

Press the *Create* button. The result is disappointing! The puzzle mask is clearly outlined, but no match between adjacent puzzle pieces is created. It demonstrates the importance of the F1 value of the mask (i.e. the size factor). To explain this, we will show the effect of the F1 factor on the result. The left picture shows the result for $F1 = 1$. The picture on the right shows what happens is the value is too high (in this case $F1 = 1.25$). The middle picture shows the final result of the F1-parameter tuning (so $F1 = 1.18$).



Left: $F1 = 1$

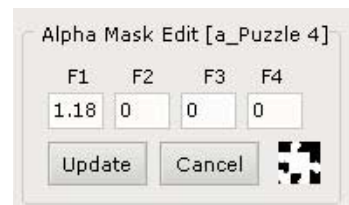


Middle: $F1 = 1.18$



Right: $F1 = 1.25$

The mask parameters F1, F3 and F4 must now be tuned. This is not so straightforward to do: each mask is unique in size and coverage. For example: our chosen puzzle mask appears to require approximately 18% percent overlap to make sure that the adjacent cells are put next to the previous ones. This value is found by trial and error. For this mask the F1 value is

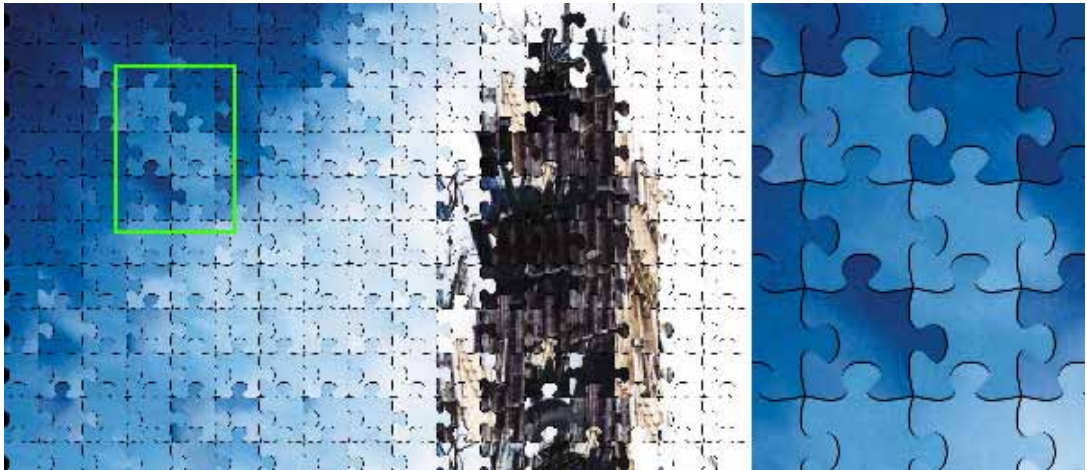


therefore 1.18. The F3 factor indicates if a mask should be rotated every other tile (no = 0), and the F4 parameter indicates if we always want to start with a colored background (or: the source picture is not visible). We also set the F4 value to 0.

Information 1: *there is a quicker way to directly go to the mask managing window: via Masker / Shortcut to mask manager. The correct tab is then already selected. The other option of the menu entry Masker is to quickly Reset all masks (in fact empty all masks).*

Information 2: *When pressing the button Show mask info the value for the F1-4 parameters is explained. Press again and the explanation disappears.*

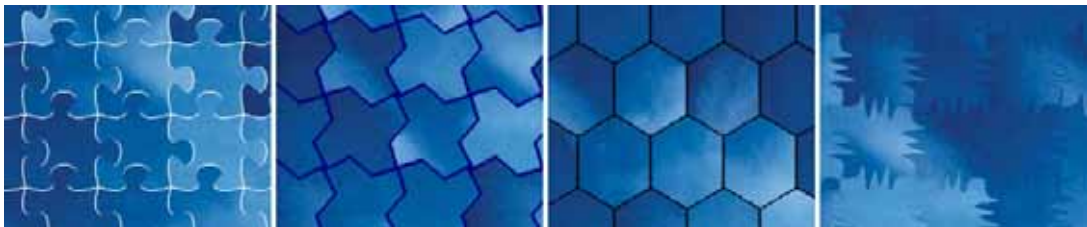
When all values are correctly set, the result looks much better.



Now with the correct F1 value (1.18). The detail in the green rectangle is shown on the right

Step 5: playtime !

The final result looks impressive enough but we can now play with the controls a bit. We will change the color of the background, the shape of the puzzle and have the background image intact (no colored background). The results are as follows:



White background

Blue background

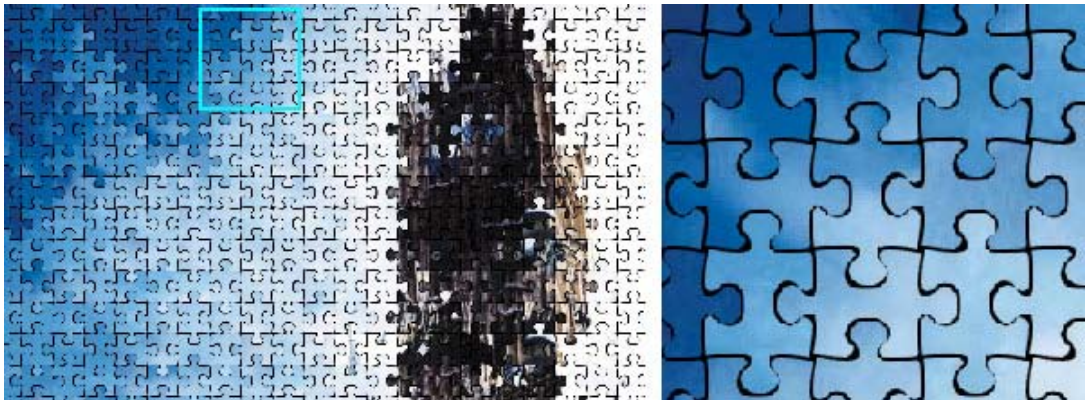
Black background

No background color

This last variation ('no background color') is shown on the front page of this tutorial. Each of the different masks can have a different value for F1. From left to right: Puzzle 4 (F1 = 1.18), Escher 3 (F1 = 1.14), Hexagon (F1 = 1.14) and Puzzle 3 (F1 = 1.15).

Step 7: a rotating puzzle mask

Most masks are just repeated endlessly, but a mask can also be rotated (90 degrees only). This way more variation is generated. However, only one mask can be used. So, only one type of puzzle piece can be simulated. We use a specially prepared mask (*m_Puzzle 2.jpg*) that comes with Mosaizer Pro. The F1 value of this mask is 1.36, F3 is 1 and F4 is also 1. This means that every other cell the mask is rotated (F3 = 1) and that the background is always hidden (F4 = 1). Use the settings as we have explained until step 5, and simply change the mask (so: the background color is still black). This is the result.



The detail in the little blue square is shown on the right

Some tips to tune the F1 factor:

- use the shortcut to the mask manager (*Masker / Shortcut to mask manager*)
- only change the F1 parameter and then press *Update*
- keep this window open (just move aside)
- use the *preview* option to quickly assess the impact of the changes (press *Preview* instead of *Create*)
- start with F1 = 1 and work your way up in steps of 0.1, and then further refine in steps of 0.05 or even 0.01 if you're getting closer to the best value
- finally save all the results by pressing *Save changes* and *Restore/reload all data*.

Step 8: an almost realistic 3D puzzle

We will now combine the 3D shadow effect with the puzzle mask. The expected result will be a 'true' 3D effect of a puzzle of randomly placed pieces. These are the settings to prepare:

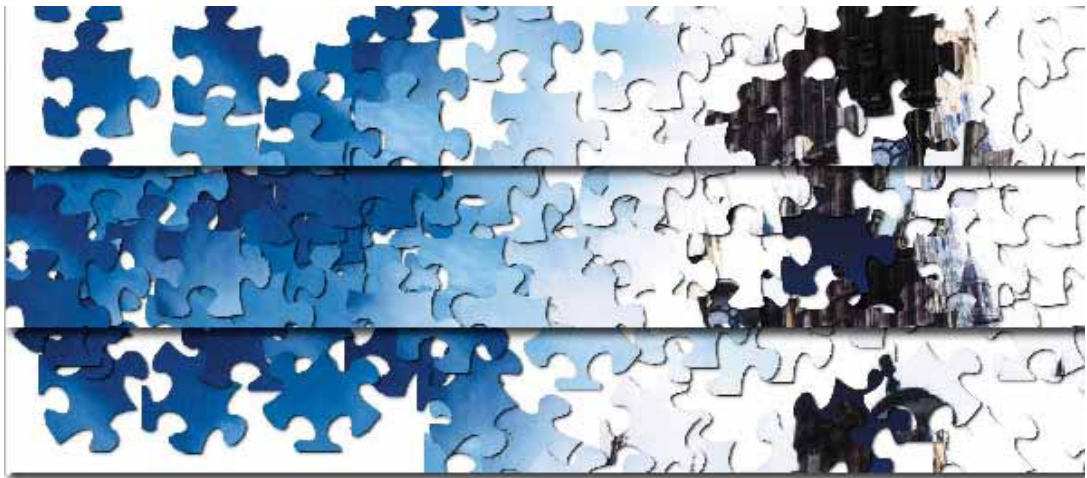
- mosaizer cell size 96 x 96 px (tab *Mosaizer*) to have large pieces available
- background *Colored canvas* is set to white (tab *Special*)
- random *Pattern* and *Build* are checked ('on')

- random *Amount* is set to minimum value (slider fully to the left)
- 3D effect *Shadow Depth* to 10%, *Intensity* to 70% and *size* 2px south and east
- Size of the cell also set to 96px (tab *Size and shape*)



Then recreate the mosaizer library (because the cell size has been changed), by pressing the *Mosaize!* button again. Wait until the library is ready and then press the *Create* button and see the effects. The reason to set the shadow this way is to create a 'thickness' effect of each puzzle piece. The shadow is rather black, short and intense.

Finally try these variations (from top to bottom): increase the random *Amount* of pieces; increase once more; and use mask rotation between -90 and 90 degrees (via tab *Quick settings / Other settings*).



As can be seen from the rotated pieces, some pieces are cut. This is because rotating a mask will cut off the part that lies beyond the circle of rotation of the *original* size. To successfully rotate a puzzle mask, simply add an extra rim of black to the mask. When the mask is rotated the extra space will now allow for showing the full content of the mask. You need to tune the F1 parameter once more of course.