

Origami Bar Envelope Master Documentation

* Origami Bar Envelope Customizations *
* and Mathematical Calculations by *
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*
* Latest Update: September 13, 2021 *

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* Overview *

This document will show you how to create the Origami Bar Envelope and how to custom design them for a variety of purposes. A few examples of things that you can create perfect-fit envelopes for:

- Thumb drives
- 2.5" laptop Hard Drives
- Gift cards
- Loan payment coupon books
- Checks
- Pill pocket to hold a supply of medication when travelling
- Cash envelope

In addition, you will be able to determine the exact position of the print-able areas for the front of the envelope as well as the bar across the back. This will let you print the page with text and graphics before you fold it.

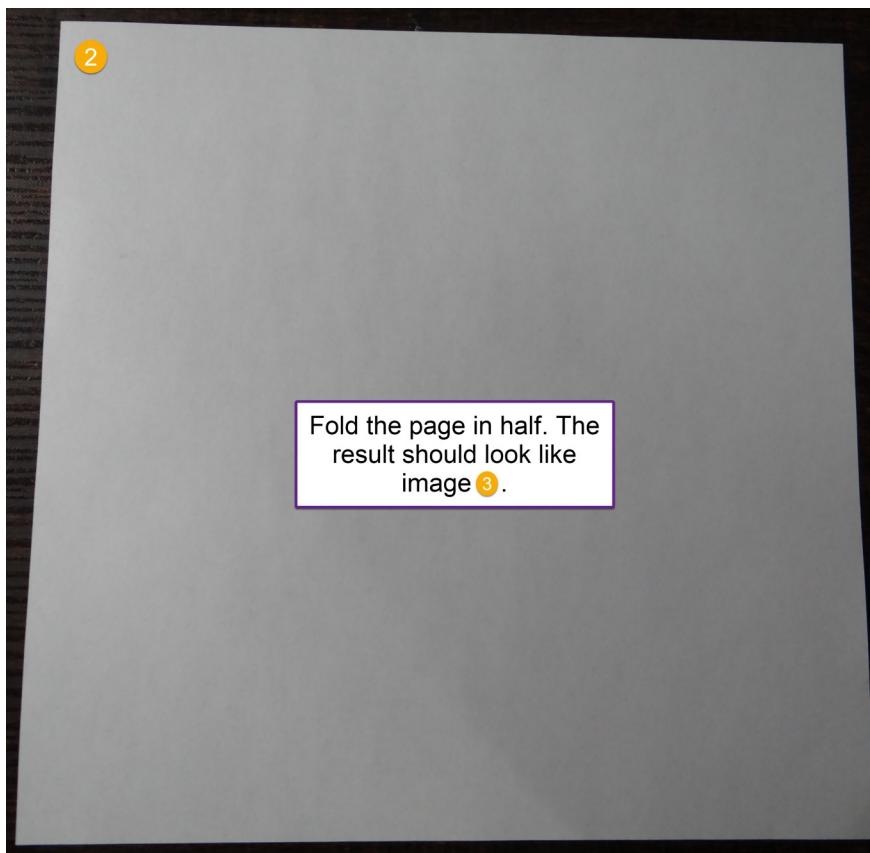
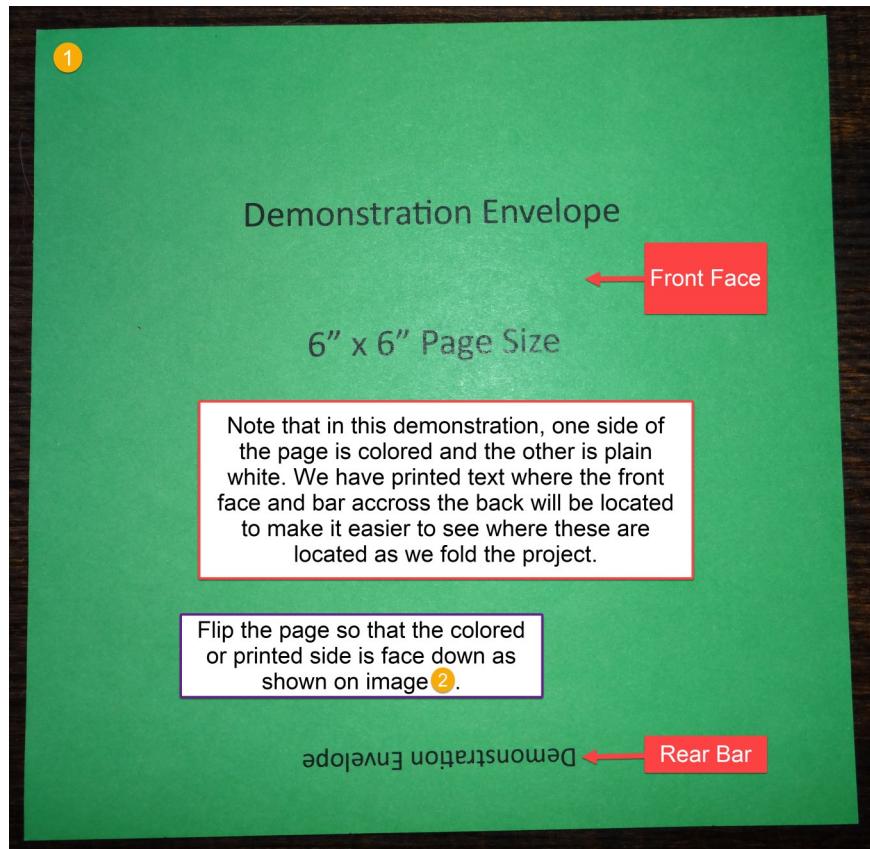
* About This Document *

When printing, this document is designed to be printed double-sided. Some pages are left blank specifically so that certain pages will print on the back side of other pages. This is particularly true of the 4" x 6" summary sheets. Those summary sheets are configured to print without a border on the backside pages so that you don't end up with a visible border if your printer alignment is just slightly off.

* Paper Recommendations *

If you are making envelopes to hold thin, flat objects like checks, gift cards, etc. 20 lb. paper may be sufficient. However, if you are making envelopes to hold bulkier objects such as thumb drives, or if you simply need a more durable envelope, consider using at least 24 lb. paper or even 32 lb. In my experience, 20 lb. paper tends to be too flimsy for bulkier objects. I've found 32 lb. paper to work very well.

* Creating the Origami Bar Envelope *



3

A

Demonstration Envelope

Make sure that the front face of the envelope is face down and the bar is face up as you see here, then fold upper flap in half (folding A to B). Result in image 4.

B

4

B

Fold this flap in half again, folding A to B. See image 5 for the result.

A

5

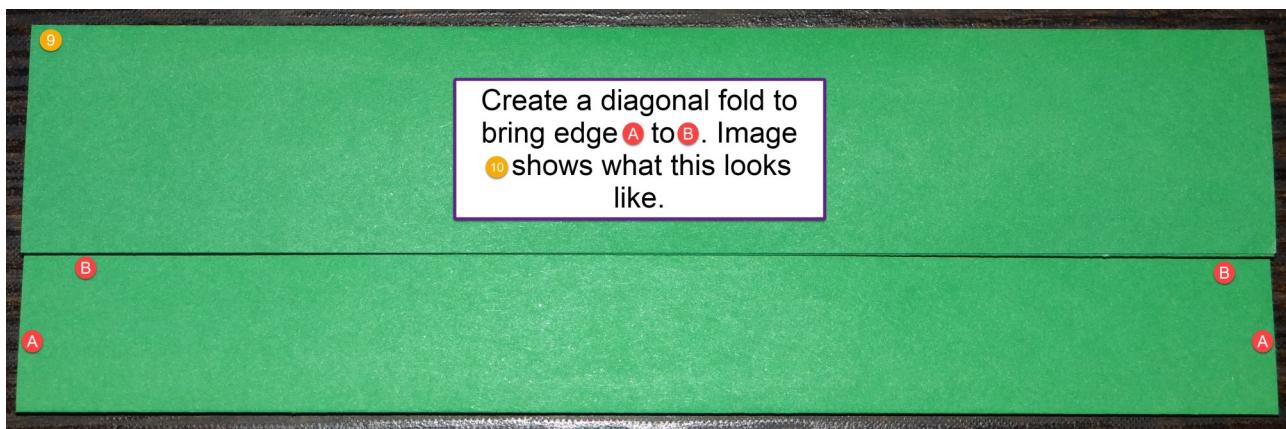
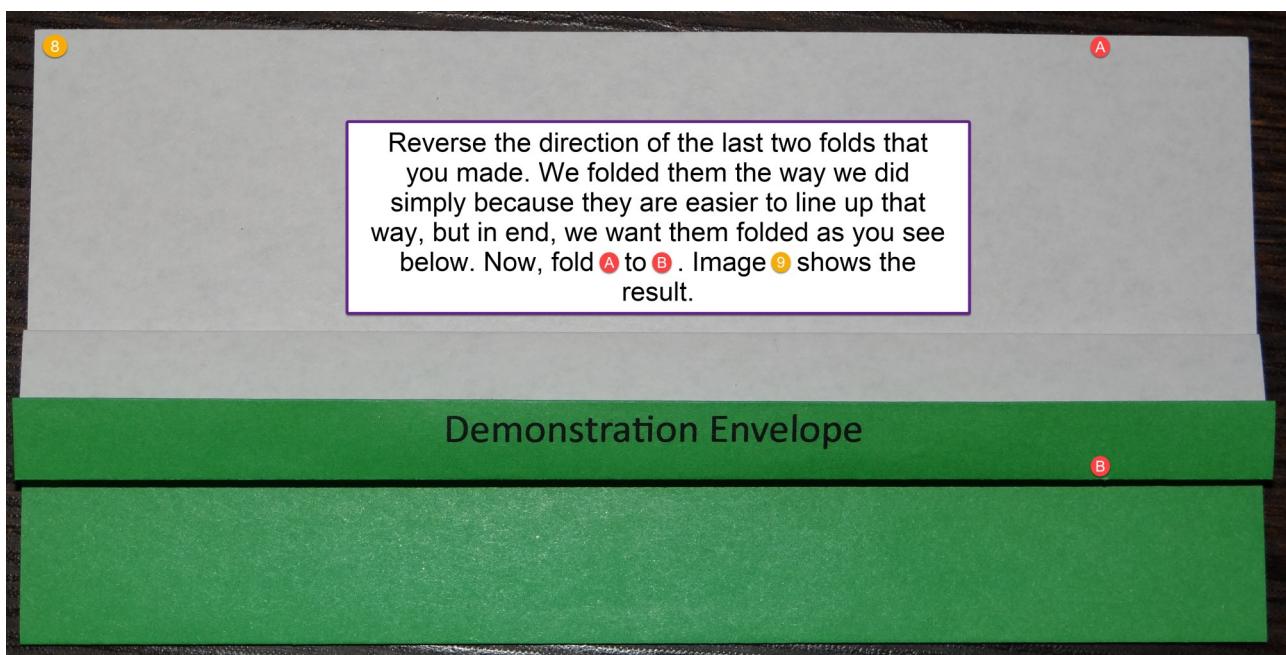
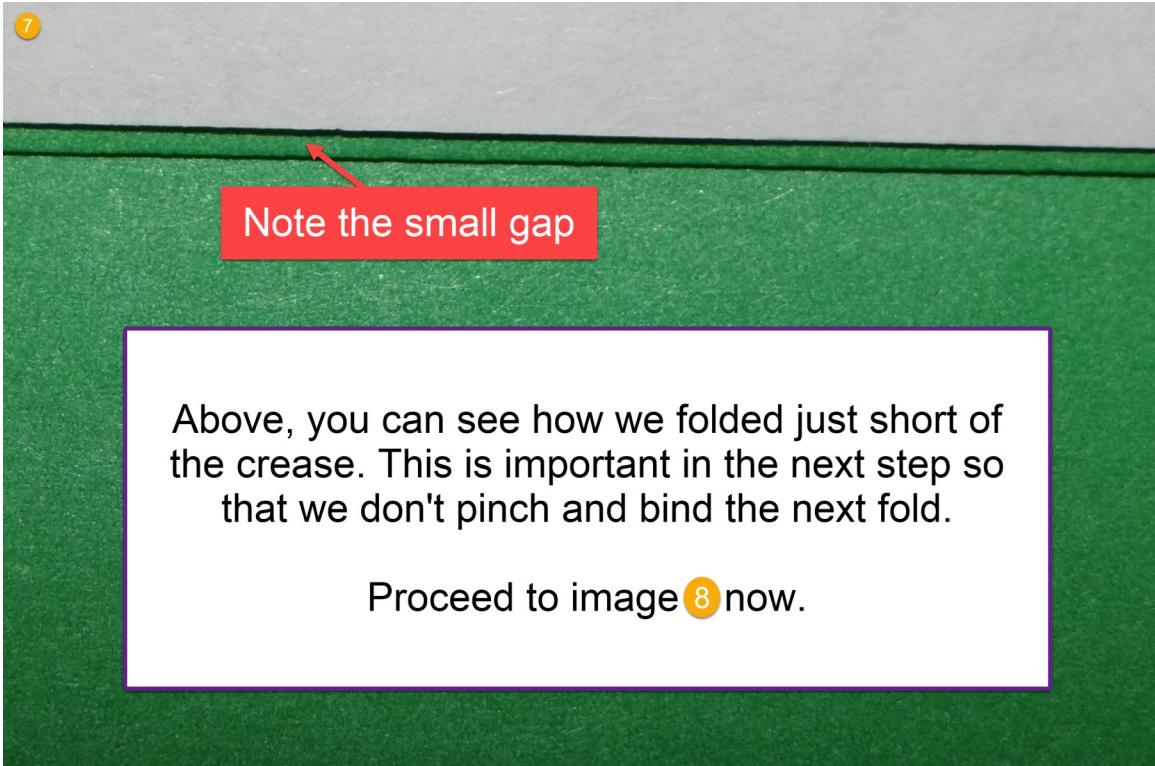
One more time, fold the flap in half, folding point A to B. However, this time fold just slightly short of the crease. Image 6 shows what this looks like and image 7 shows a closeup showing how we folded just a little short of the crease.

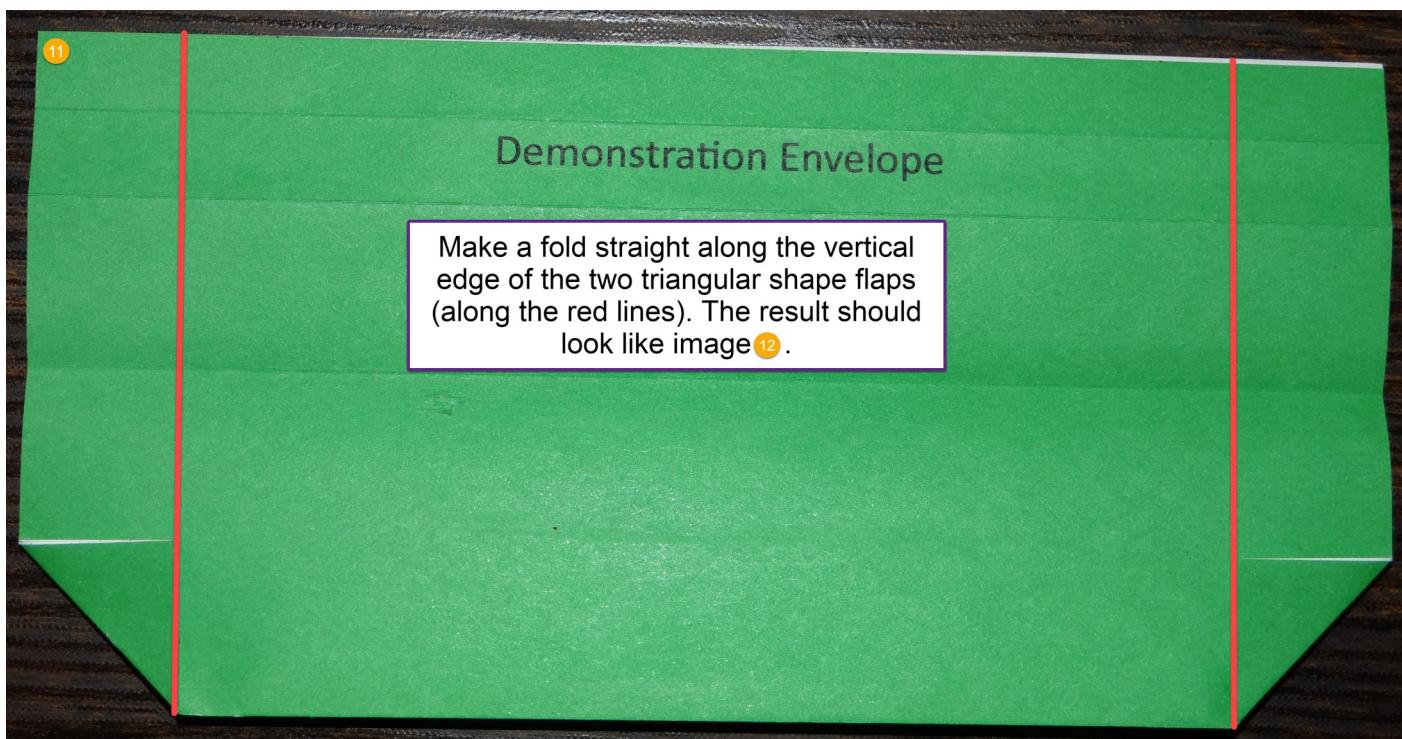
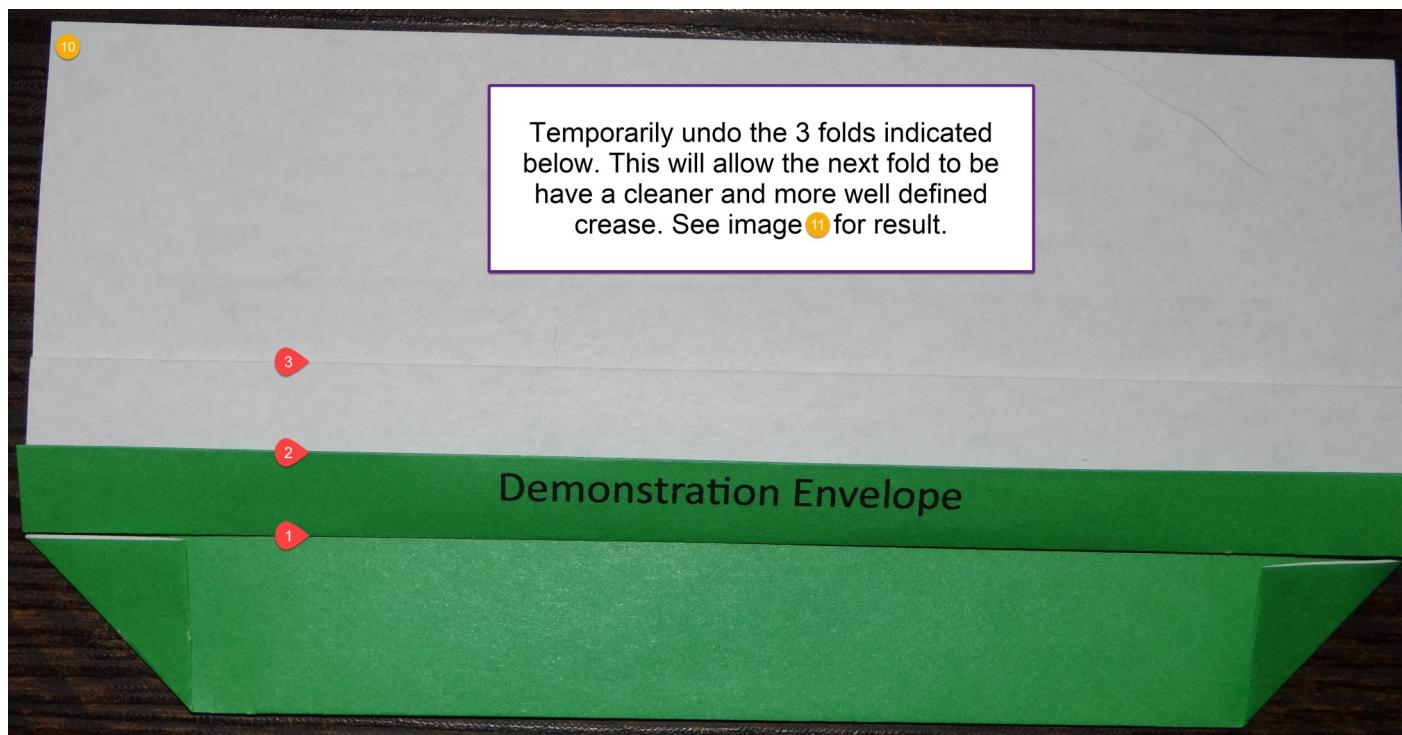
A

Demonstration Envelope

B

6





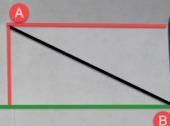
12

Demonstration Envelope

Unfold the folds that you just made and then redo the three folds you were asked to undo in image 10.
Proceed to image 13.

13

Notice the creases shown by the red lines to the right. We want to make a diagonal crease (the black line) that meets these and goes from point A to point B. Note that point B meets a fold that is highlighted by the green line. On the left side you can see this fold being made. Crease only to the point where all three creases meet. Image 14 shows a closeup with the horizontal and vertical creases marked to make them easy to see.



Demonstration Envelope

Note that you are only making a crease here, so after you make the crease unfold it back to the condition you see on the right side in this image. Repeat for both the left and right side.

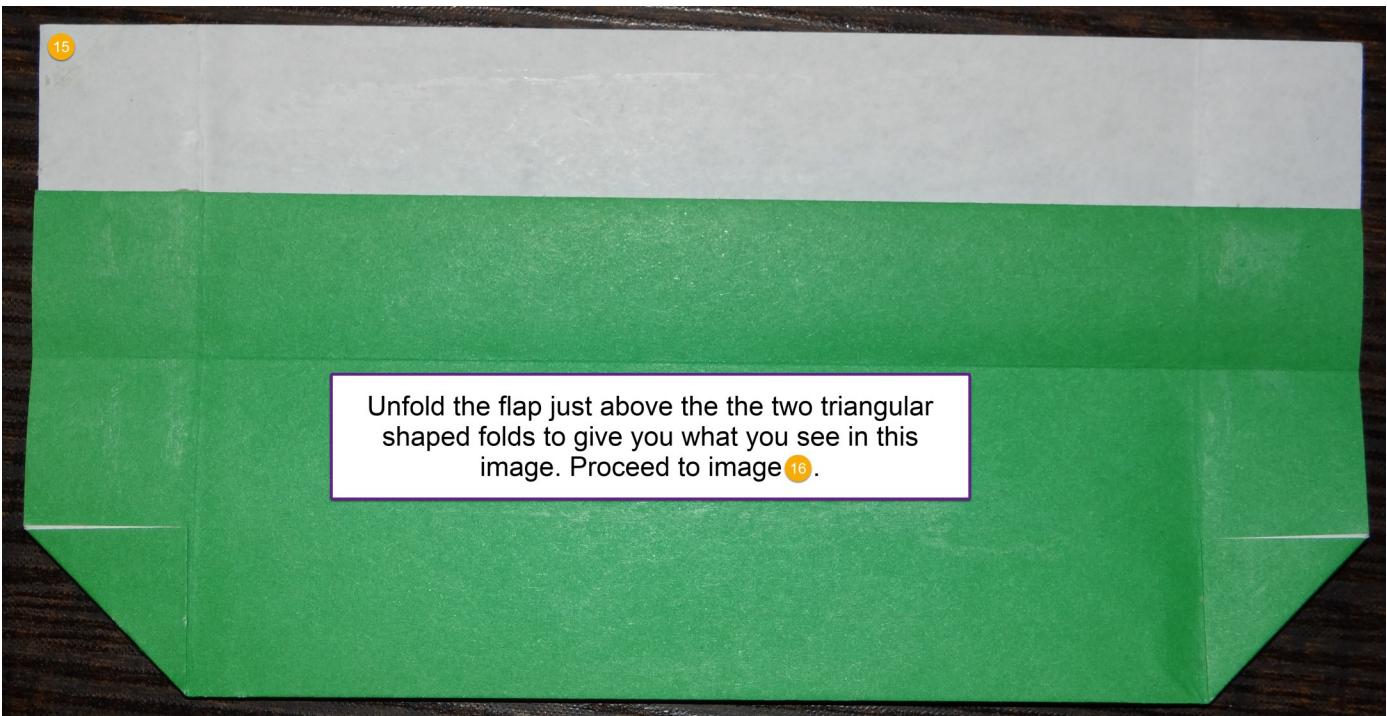
14

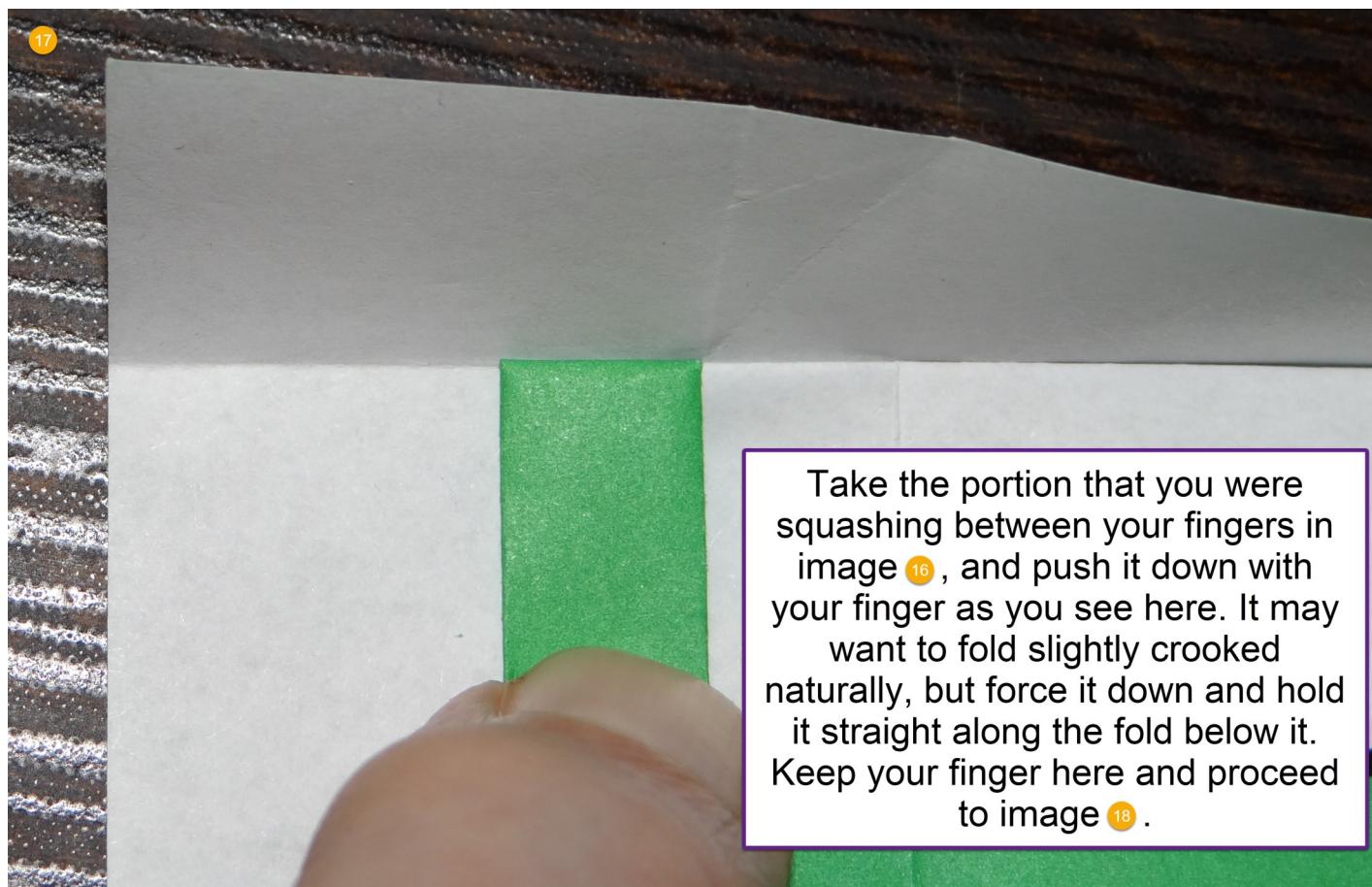
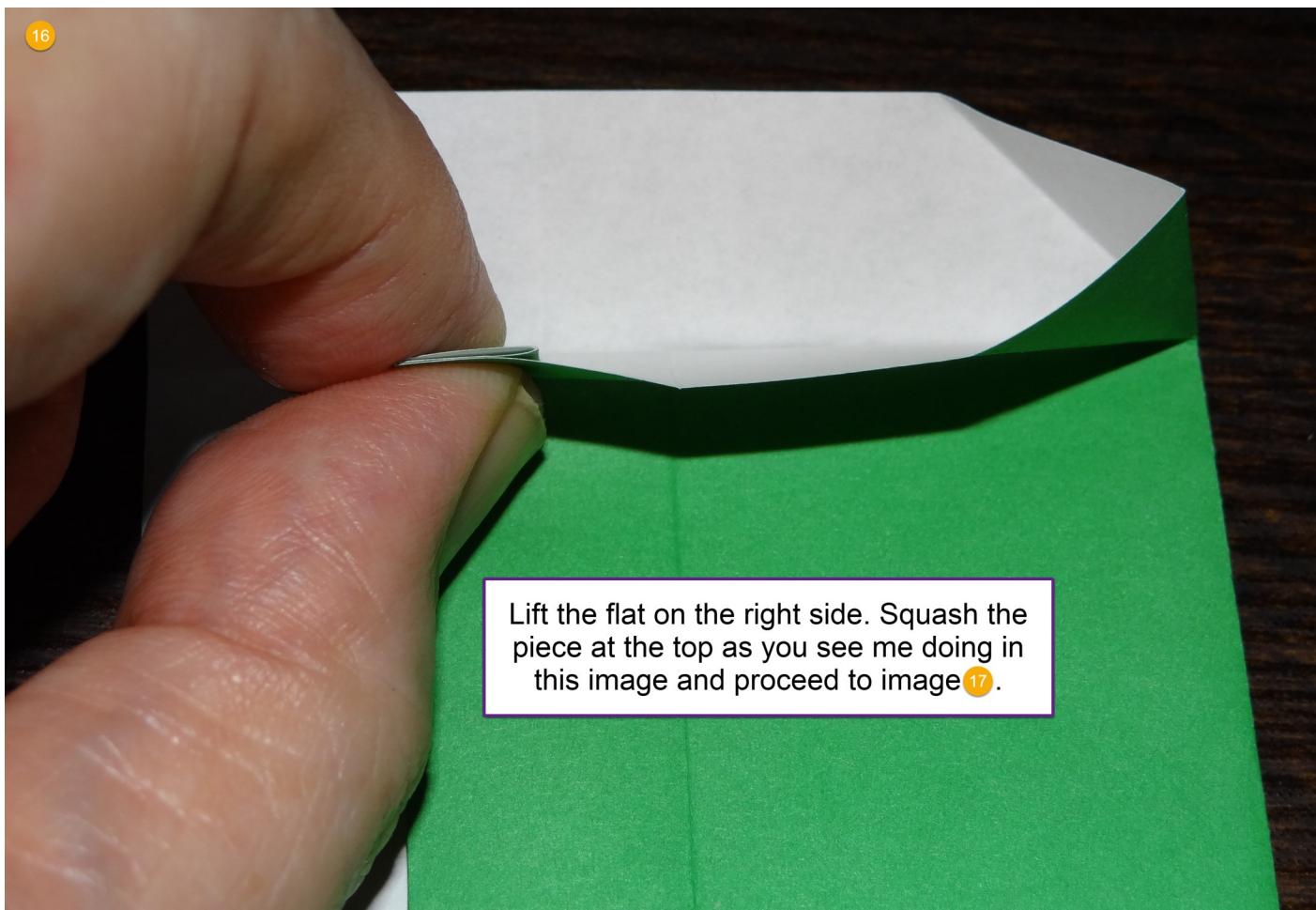
Closeup of the creases (highlighted and on left side). Note how the new crease (black line) meets the already existing creases (the red lines). Proceed to image 15.



15

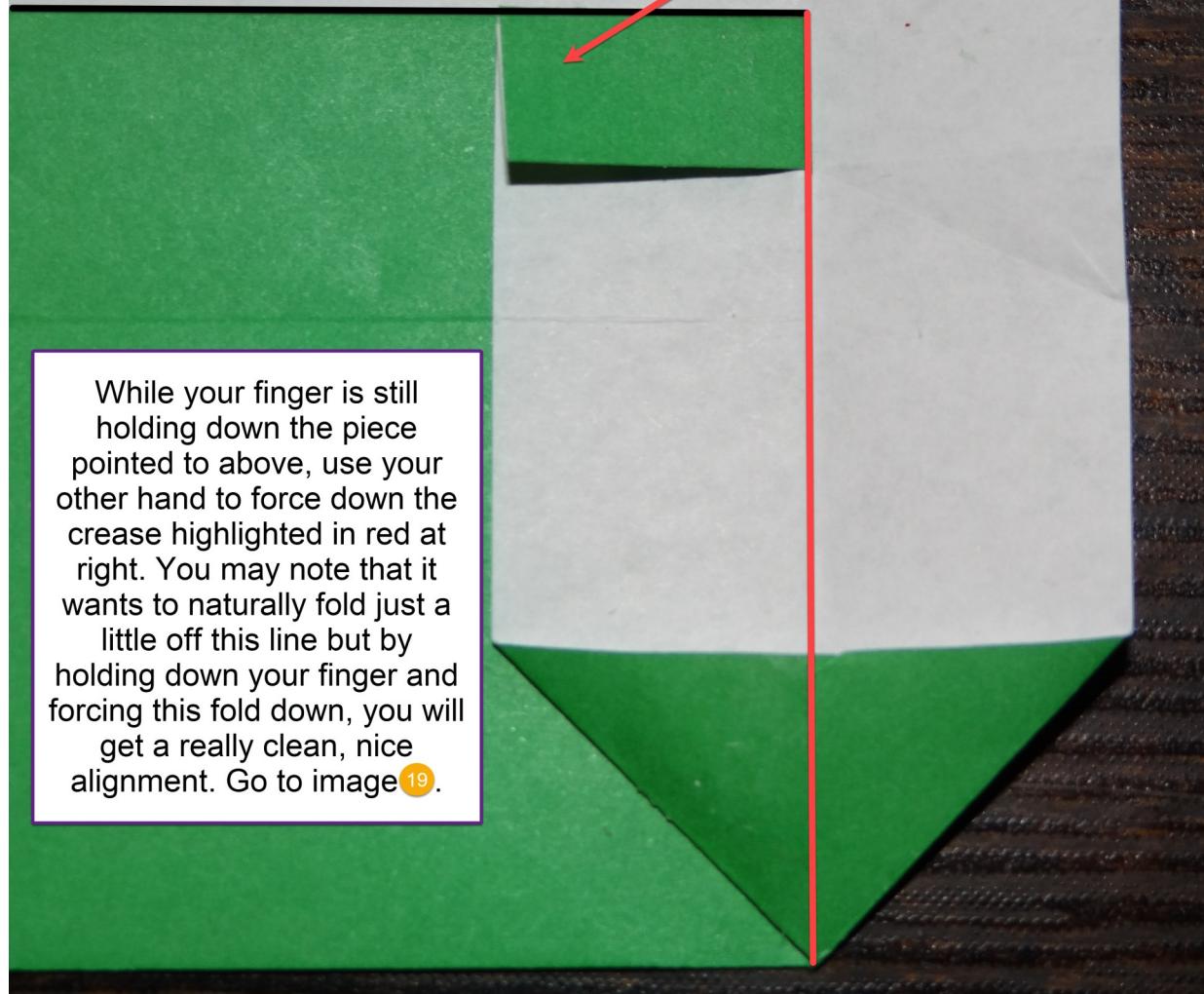
Unfold the flap just above the the two triangular shaped folds to give you what you see in this image. Proceed to image 16.





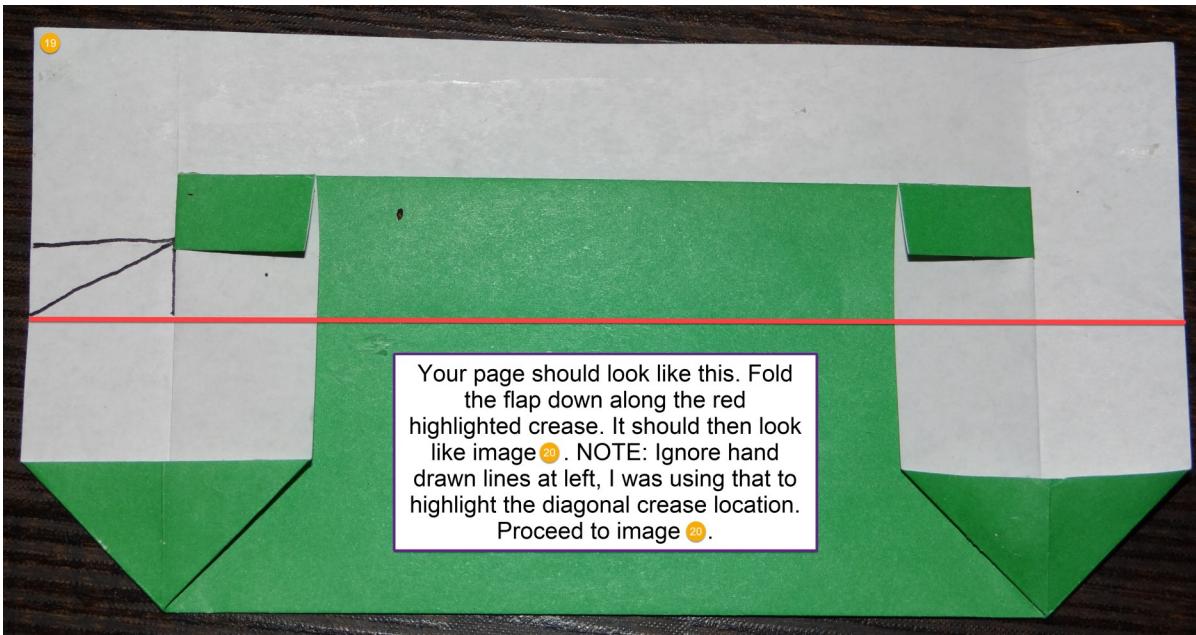
18

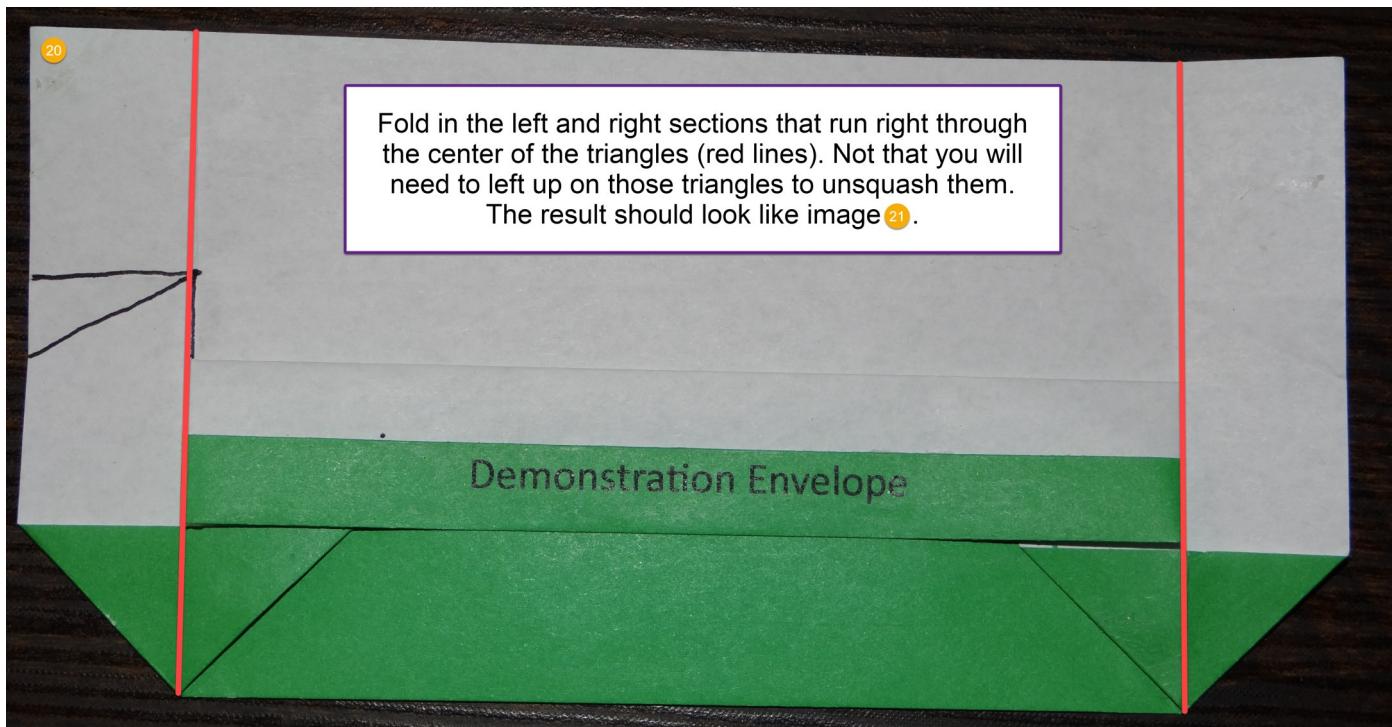
This is the piece that you were squashing and holding down. You want it aligned straight with the edge highlighted in black.



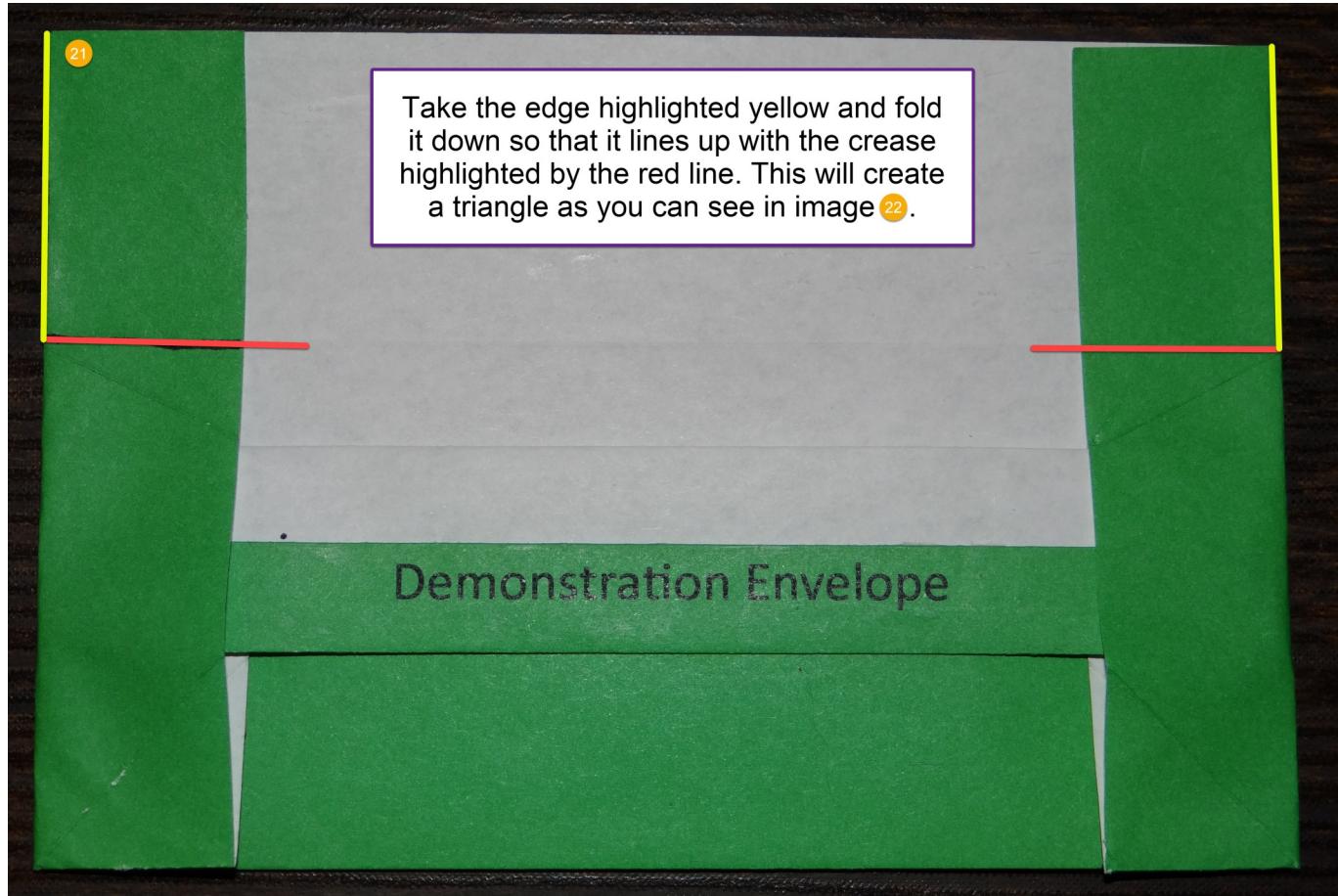
19

Your page should look like this. Fold the flap down along the red highlighted crease. It should then look like image 20. NOTE: Ignore hand drawn lines at left, I was using that to highlight the diagonal crease location. Proceed to image 20.





Demonstration Envelope



Demonstration Envelope

22

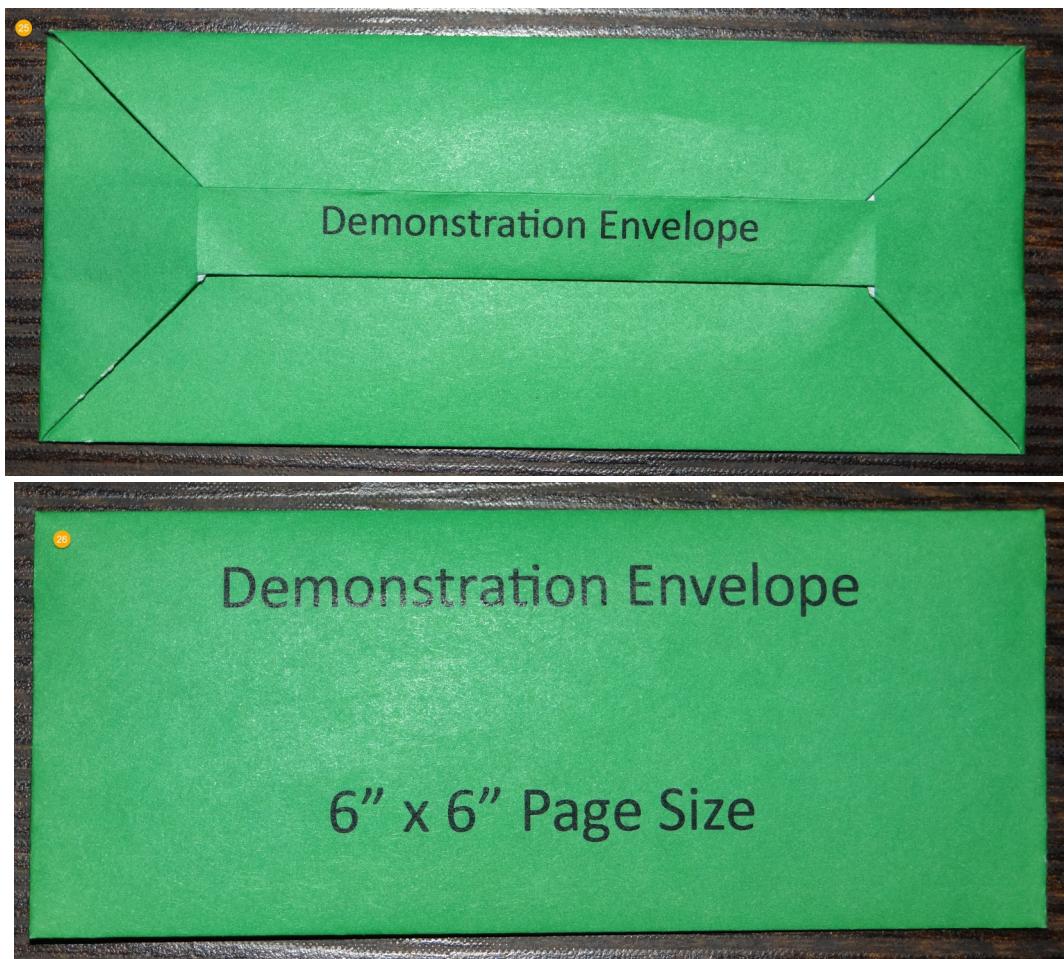
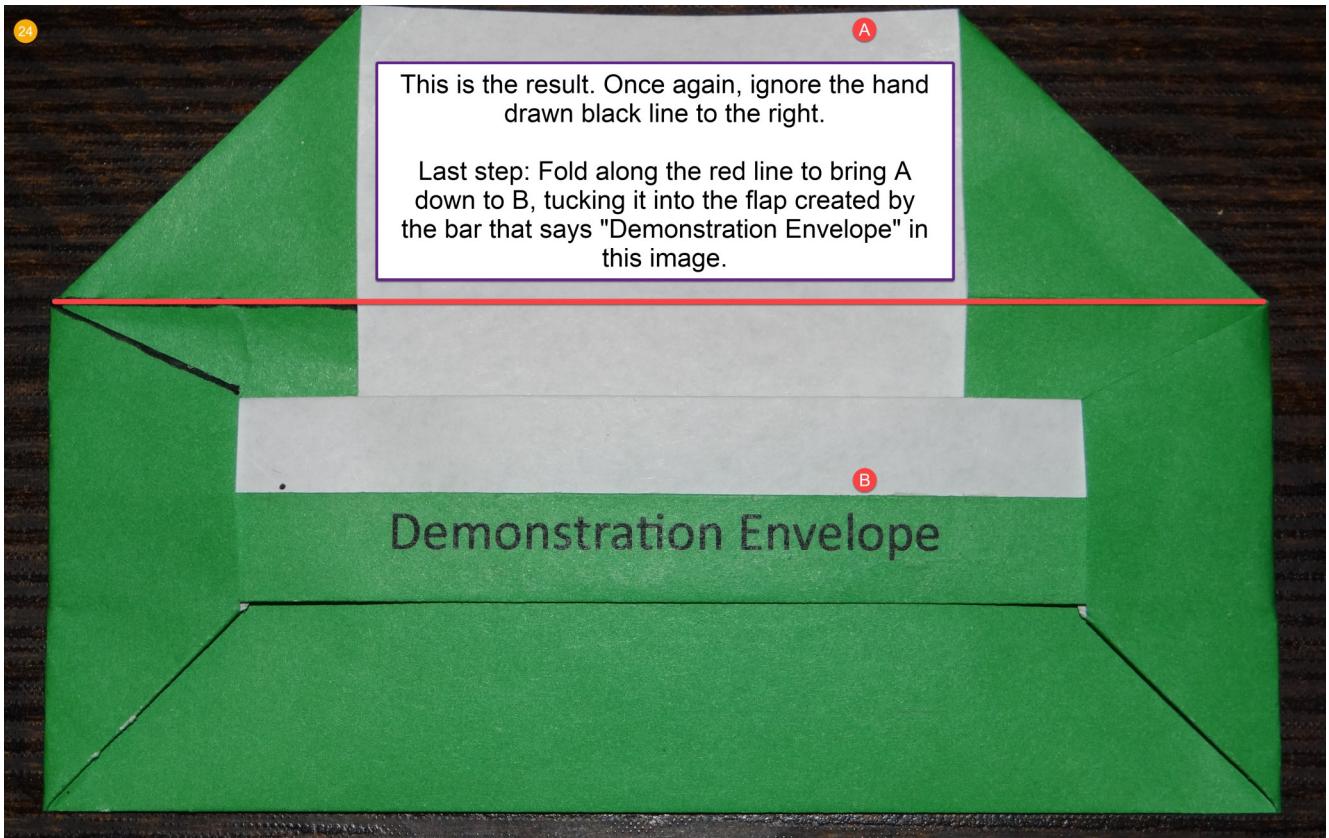
Open the two triangles that you just created.
You will be back to where you were in
image 22, but you will have 2 additional
diagonal folds. Proceed to image 23.

Demonstration Envelope

23

This one is tricky until you have done it a couple times. Pull edge A toward the right and down in an arc so that it lines up with B. To do this you will need to fold backwards along line C (mountain fold) and lift up on the flap along line D so that you can tuck A behind D. Note that this will also have the effect of lining up E along F and creating a fold along G. Repeat on both sides.

Demonstration Envelope



* Page Orientation *

If you have a pattern, color, graphics, or text on your paper, place the page with those elements face down. After the first fold, when the page is folded in half, the portion of the page that will become the front face of the envelope should be placed face down. The half of the page that contains the bar across the back of the envelope will be face up.

* Calculating the Page Size Needed to Create *

* a Specific Envelope Size and Calculating *

* the Envelope Size From a Known Page Size *

* Determining the Envelope Size When *

* You Know Original Page Size *

Envelope width = page width - (page length x 0.25)

Envelope height = page length x 0.3125

* Determining the Page Size Needed to *

* Create an Envelope of a Specific Size *

Page length = desired height of envelope / 0.3125

Page width = desired width of envelope + (page length x 0.25)

NOTE: You can easily end up with a page size that is awkward to work with. As an example, if you want to create an envelope that 6" wide x 4" high, the page size will be 9.2" wide x 12.8" long. This can be awkward to measure if you are using a ruler. If you want to make sure that the page size is an exact increment of 1/8, 1/16, 1/32, etc. then please see Appendix A, "Tweaking the Page Size".

* Effect of Changing the Page Size *

Increasing the width of the page increases the width of the envelope by the same amount.

Decreasing the width of the page decreases the width of the envelope by the same amount.

INCREASING the length of the page REDUCES the width of the envelope by ($0.25 \times$ the amount of the page length increase) and INCREASES the height by ($0.3125 \times$ amount of page length increase).

DECREASING the length of the page INCREASES the width of the envelope by ($0.25 \times$ amount of page length increase) and REDUCES the height by ($0.3125 \times$ amount of page length decrease).

* How to Change Envelope Size by a Specific Amount *

If you want to increase the envelope width: Increase the page width by the same amount.

If you want to decrease the envelope width: Decrease the page width by the same amount.

If you want to increase the envelope height:

1) Increase the page length by 3.2 times the amount of the envelope height increase that you want.

2) Increase the page width by 0.8 times the amount of the envelope height increase that you want.

If you want to decrease the envelope height:

1) Decrease the page length by 3.2 times the amount of the envelope height decrease that you want.

2) Decrease the page width by 0.8 times the amount of the envelope height decrease that you want.

* Width to Height Ratio Requirements and Relationship *

Soft Limit:

The left and right side of the flap will fold in from the sides to a point that is equal to 5/16 of the page **length**. The result is that the page width must be at least 5/8 (2 x 5/16) of the page length or those sides will overlap. You can check any of the following to make sure that you are within limits. Note that exceeding these limits is still possible if you are willing to accept the overlap so long as you do not exceed the Hard Limit (see below). If any one of these criteria are met, then the others will also have been met so you only need to verify one of these:

- 1) The page width must be greater than or equal to (page length x 0.625).
- 2) The page length must be less than or equal to (page width x 1.6).
- 3) In terms of the envelope width to height ratio, the minimum width of the envelope should be 1.2 times the envelope height.
- 4) The envelope height must be less than or equal to (width of envelope / 1.2).

Hard Limit:

This is an absolute limit. As you get closer and closer to this limit, the narrower the bar on the back of the envelope will become and the more overlap the left and right side of the flap will experience. At the limit, there will be no bar whatsoever. As a result, the flap will need to be tucked behind the area where the bar would normally be located. Check either of these to see if you have reached or exceeded the hard limit:

- 1) Page length must be less than or equal to (2 x page width).
- 2) Envelope height must be less than or equal to (1.25 x envelope width).

* Finding the Printable Areas *

The following sections describe the location of the printable area on the front of the envelope as well as the bar on the back of the envelope. This will allow you to customize the front and the bar of the envelope before you fold it.

Note that the calculations here assume that you are orienting the envelope right-side up on the page. If you change the orientation, don't forget to change what is considered the top, bottom, left, and right of the page as well. Page 48 shows an example where the envelopes are oriented with their tops facing the left side of the page. So the top of the envelope for those envelopes would be against the left edge of the physical page.

* Front Face of Envelope *

Top of front face: (page length x 0.1875) from the top of the page.

Bottom of front face: (page length x 0.5) from the top of the page.

Left edge of front face: (page length x 0.125) from the left of the page.

Right edge of front face: (page width - (page length x 0.125)) from the left of the page.

* Bar on Back of Envelope *

The bar on the back of the envelope can also be printed on.

IMPORTANT: Note that any text or graphics placed in this area needs to be placed UPSIDE DOWN since the folds will invert the position of the bar.

Top of bar: (0.875 x page length) from the top of the page.

Bottom of bar: (0.9375 x page length) from the top of the page.

Left side of bar: (0.25 x page length) in from the left side of the page.

Right side of bar: EW from the left side of the page.

* Some Useful Envelope Sizes *

<u>Purpose</u>	<u>Envelope Size</u>	<u>Paper Size</u>
	Width x Height	Width x Height
Tall Thumb Drive Holder	3 3/4 x 2 3/16	5 1/2 x 7
Low Profile Thumb Drive Holder	3 3/4 x 1 23/32	5 1/2 x 5 1/8
2.5" Up to 9.5mm Thick Laptop HD	5 x 3 7/16	7 3/4 x 11
2.5" Up to 12.5mm Thick Laptop HD	5 1/4 x 3 7/16	8 x 11
Full US Letter Size Page	5 3/4 x 3 7/16	8 1/2 x 11
Two Envelopes From One Page	3 3/8 x 2 21/32	5 1/2 x 8 1/2
Six Envelopes From One Page	2 3/16 x 1 21/64	3 1/4 x 4 1/4
Gift Card / Wallet Sized	3 9/16 x 2 17/64	5 3/8 x 7 1/4
US Currency	2 13/16 x 6 3/8	8 1/2 x 9

* Tip for Converting Decimal Numbers to Fractions of an Inch *

If you are working with metric units (cm and mm), you have no need for this information since your units of measurement are already in decimal format. For those working with imperial measurements (inches), suppose the following:

You make a calculation and come up with a result of 5.6 inches. In a program such as Microsoft Publisher, that is just fine. It will accept decimal values. But if you are laying out a page manually with a ruler, the ruler doesn't show tenths of an inch. It shows 1/2, 1/4, 1/8, 1/16, 1/32, and possibly as far as 1/64 inch increments. Here is a simple way to convert to the nearest 64th of an inch. Note that this also works for 32nds, 16ths, etc.

Take the 0.6 and multiply it by 64. The result is 38.4. Round this number up or down. In this case, rounded down this would be 38. This means that 0.6 to the nearest 64th of an inch is 38/64ths of an inch which can be reduced down to 19/32nds of an inch.

4" x 6" Customization

Summary Sheets

Print pages 21–28 on 8 1/2" x 11" (Letter Size) Paper

These sheets are a handy summary of everything that you need to create origami bar envelopes. The 4" x 6" size of these sheets are handy for taking with you.

To use these sheets, do the following:

This document is designed to print on both sides of the page so that the back side of the page appears directly behind the first page. When printing a set of these sheets, set your printer to print on both sides of the page. If your printer cannot print on both sides, determine how to feed pages manually so that you can print on both sides.

You will notice that the front side pages have a border. Cut the 4" x 6" page out along this border. The page on the back should be directly behind this page. Note that if the page on the back side is not aligned perfectly, you may have to experiment with repositioning the back side to properly align it for your printer. You can use the "Printer Alignment Test Pages" later in this document to test the alignment of your printer. Print them out, double-sided, and hold the page up to the light. If the horizontal and vertical lines do not line up perfectly you should be able to measure how much of a vertical or horizontal offset there is and adjust the image on the backside accordingly.

This page illustrates the terms used on the following pages. When more than one envelope is printed on a single page, the measurements for the additional envelopes need to be adjusted. For example, if you put a second envelope under the first, then all vertical measurements (the top and bottom of the front face, and top and bottom of the bar) need to have the length of the first envelope page added to them.

If you orient an envelope sideways on a page, then the top and bottom will reference distance from the left edge of the page, not the top. Likewise left and right will reference distances from the top of the page rather than the left side.

Tip: Drawing a rough sketch, even without any accurate measurements, will help you to see the relationship of multiple envelopes on a single page.

Top of page

This illustration is not to scale

LEFT - Distance from left edge of page to LEFT edge of front face or bar

Front Face

RIGHT - Distance from left edge of page to RIGHT edge of front face or bar

BOTTOM - The distance to the top of the page from the BOTTOM of the front face or bar

LEFT - Distance from left edge of page to LEFT edge of front face or bar

TOP - The distance to the top of the page from the TOP of the front face or bar

RIGHT - Distance from left edge of page to RIGHT edge of front face or bar

BOTTOM - The distance to the top of the page from the BOTTOM of the front face or bar

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Bottom of page

Origami Envelope Customization - Pg. 1

Origami Envelope Customization

How to Determine Envelope Size Envelope Width = (page width) - (0.25 x page length)
Envelope Height = 0.3125 x page length

How to Determine Needed Paper Size Page length = envelope height / 0.3125
Page width = envelope width + (0.25 x page length)

Width to Height Requirement Soft Limit: PW >= (PL x 0.625); EW >= (1.2 x EH)
Hard Limit: PL <= (2 x PW); EH <= (1.25 x EW)

Printable Area for Front of Envelope Top: (length of page x 0.1875) from top of page
Bottom: (length of page x 0.5) from top of page
Left: (page length x 0.125) from left edge of page
Right: (page width - (page length x 0.125)) from left edge

Printable Area for Bar on Back of Envelope Top is (0.875 x length of page) from top of page
Bottom is (0.9375 x length of page) from top of page
Left edge is (0.25 x page length) from left edge of page
Right edge is EW from left edge

Effect of Changing the Paper Size Increasing / decreasing paper width increases /decreases envelope width by the same amount.

Increasing the length of the paper **reduces** the width of the envelope by 0.25 x amount of length increase and increases the height by 0.3125 x amount of length increase.

Decreasing the length of the paper **increases** the width of the envelope by 0.25 x amount of length increase and reduces the height by 0.3125 x amount of length decrease.

Changing Envelope Size by Specific Amount

How to Increase Envelope Width Increase page width by same amount that you want to increase the envelope width

How to Decrease Envelope Width Decrease the page width by the same amount that you want to decrease the envelope width

How to Increase Envelope Height 1) Increase page length by 3.2 x desired height increase
2) Increase page width by 0.8 x desired height increase

How to Decrease Envelope Height 1) Decrease page length by 3.2 x desired height decrease
2) Decrease page width by 0.8 x desired height decrease

Origami Envelope Customization - Pg. 2

Decimal to Fraction Conversion

If you are working with metric units (cm and mm), you have no need for this information since your units of measurement are already in decimal format. For those working with imperial measurements (inches), suppose the following:

You make a calculation and come up with a result of 5.6 inches. In a program such as Microsoft Publisher, that is just fine. It will accept decimal values. But if you are laying out a page with a ruler, the ruler doesn't show tenths of an inch. It shows $1/2$, $1/4$, $1/8$, $1/16$, etc. increments. Here is a simple way to convert to the nearest 64 th of an inch. Note that this also works for 32 nds, 16 ths, etc.

Take the 0.6 and multiply it by 64 to get the nearest 64 th of an inch. The result is 38.4 . Round the number up or down. In this case, rounded down this would be 38 . This means that 0.6 to the nearest 64 th of an inch is $38/64$ ths of an inch which can be reduced down to $19/32$ nds of an inch.

Common Envelope Sizes

Purpose	Envelope Size		Paper Size
	Width	x Height	
Tall Thumb Drive Holder	3 3/4	x 2 3/16	5 1/2 x 7
Low Profile Thumb Drive Holder	3 3/4	x 1 23/32	5 1/2 x 5 1/8
2.5" Laptop HD Envelope	4 3/4	x 3 7/16	7 1/2 x 11
Full Page	5 3/4	x 3 7/16	8 1/2 x 11
Two Envelopes From One Page	3 3/8	x 2 21/32	5 1/2 x 8 1/2
Six Envelopes From One Page	2 3/16	x 1 21/64	3 1/4 x 4 1/4
Gift Card / Wallet Sized	3 9/16	x 2 17/64	5 3/8 x 7 1/4
US Currency	2 13/16	x 6 3/8	8 1/2 x 9
Linksys A7000 WiFi Adapter	6 1/8	x 2 31/32	8 1/2 x 9 1/2

Origami Envelope Customization - Pg. 3

Low Profile Thumb Drive Envelope

Envelope Size:	3.75 x 1.71875 (3 3/4 x 1 23/32)
Page Size:	5.50 x 5.12500 (5 1/2 x 5 1/8)
Front of Env. #1	Front of Env. #2
Top:	6 17/32
Bottom:	8 1/4
Left:	11/16
Right:	4 7/16
	Bar of Env. #1
	4 13/16
	5 5/32
	1 3/8
	3 3/4
	Bar of Env. #2
	10 5/16
	10 21/32
	1 3/8
	3 3/4

Note: "Env. #2" and "Bar of Env. #2" applies when a second envelope is placed on same page directly under the first one.

2.5" Laptop Hard Drive Envelope

Envelope Size:	4.75 x 3.4375 (4 3/4 x 3 7/16)
Page Size:	7.50 x 11.000 (7 1/2 x 11)
Front of Envelope	Bar on Back of Envelope
Top:	2 1/16
Bottom:	5 1/2
Left:	1 3/8
Right:	6 1/8
	9 5/8
	10 5/16
	2 3/4
	4 3/4

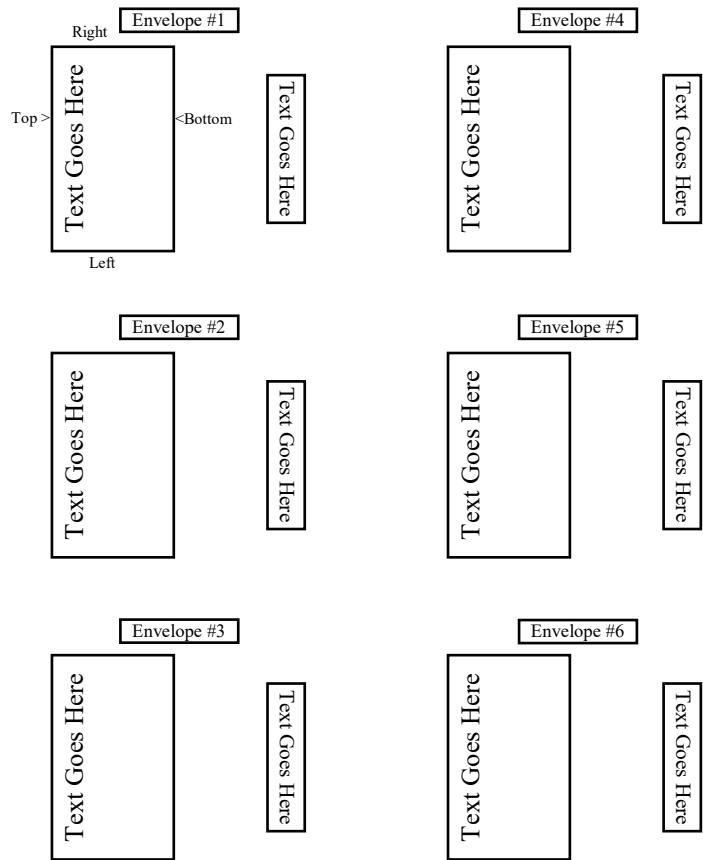
Full Page (Using 8 1/2 x 11 Paper)

Envelope Size: 5.75 x 3.4375 (5 3/4 x 3 7/16)
Page Size: 8.50 x 11.000 (8 1/2 x 11)

Front of Envelope Bar on Back of Envelope

Top:	2 1/16	9 5/8
Bottom:	5 1/2	10 5/16
Left:	1 3/8	2 3/4
Right:	7 1/8	5 3/4

Six Small Envelopes on a Single Page



Due to the rotation of the envelopes, the measurements for Top and Bottom are from the left edge of the page rather than the usual which is from the top of the page. Also, the Left and Right measurements are from the top of the page rather than the usual which is from the left side of the page.

Origami Envelope Customization - Pg. 6

Six Small Envelopes on a Single Page

Envelope Size: 2.1875 x 1.328125 (2 3/16 x 1 21/64)

Page Size: 3.2500 x 4.250000 (3 1/4 x 4 1/4)

Envelope #1 Front Bar

Top: 51/64 3 23/32
Bottom: 2 1/8 3 63/64
Right: 17/32 1 1/16
Left: 2 23/32 2 3/16

Envelope #2 Front Bar

Same as Envelope #1

Envelope #3 Front Bar

3 25/32 4 5/16 7 1/32 7 9/16
5 31/32 5 7/16 9 7/32 8 11/16

Envelope #4 Front Bar

Top: 5 3/54 7 31/32
Bottom: 6 3/8 8 15/64
Right:
Left:

Envelope #5 Front Bar

Same as Envelope #4

Envelope #6 Front Bar

Same as Envelope #1 Same as Envelope #2 Same as Envelope #3

Due to the rotation of the envelopes, the measurements for Top and Bottom are from the left edge of the page rather than the usual which is from the top of the page. Also, the Left and Right measurements are from the top of the page rather than the usual which is from the left side of the page.

The Space Above is Intentionally Blank

Wallet Sized Customization Summary Sheets

The following page has wallet sized cards that you can carry with you. They contain all the information needed to customize your envelopes. Place cards back to back and laminate them to get a double-sided card.

<p>Origami Envelope Customization (5 Pages)</p> <p>How to Determine Envelope Size Envelope Width = (page width) - (0.25 x page length) Envelope Height = 0.3125 x page length</p> <p>How to Determine Needed Paper Size Page length = envelope height / 0.3125 Page width = envelope width + (0.25 x page length)</p> <p>Width to Height Soft Limit: PW >= (PL x 0.625); EW >= (1.2 x EH) Hard Limit: PL <= (2 x PW); EH <= (1.25 x EW)</p> <p>Printable Area for Front of Envelope Top: (length of page x 0.1875) from top of page Bottom: (length of page x 0.5) from top of page Left: (page length x 0.125) from left edge of page Right: (page width - (page length x 0.125)) from left edge</p>	<p>Decimal to Fraction Conversion</p> <p>If you are working with metric units (cm and mm), you have no need for this information since your units of measurement are already in decimal format. For those working with imperial measurements (inches), suppose the following:</p> <p>You make a calculation and come up with a result of 5.6 inches. In a program such as Microsoft Publisher, that is just fine. It will accept decimal values. But if you are laying out a page manually with a ruler, the ruler doesn't show tenths of an inch. It shows 1/2, 1/4, 1/8, 1/16, 1/32, and possibly as far as 1/64 inch increments. Here is a simple way to convert to the nearest 64th of an inch. Note that this also works for 32nds, 16ths, etc.</p> <p>Take the 0.6 (the fractional part of the number) and multiply it by 64. The result is 38.4. Round the number up or down. In this case, rounded down this would be 38. This means that 0.6 to the nearest 64th of an inch is 38/64ths of an inch which can be reduced down to 19/32nds of an inch.</p>																											
Pg. 1	Pg. 5																											
<p>Printable Area for Bar on Back of Envelope Top is (0.875 x length of page) from top of page Bottom is (0.9375 x length of page) from top of page Left edge is (0.25 x page length) from left edge of page Right edge is (page width - (0.25 x page length)) from left edge</p> <p>Effect of Changing the Paper Size Increasing / decreasing paper width increases /decreases envelope width by the same amount.</p> <p>Increasing the length of the paper *reduces* the width of the envelope by 0.25 x amount of length increase and increases the height by 0.3125 x amount of length increase.</p> <p>Decreasing the length of the paper *increases* the width of the envelope by 0.25 x amount of length increase and reduces the height by 0.3125 x amount of length decrease.</p>	<p>Revised September 13, 2021</p>																											
Pg. 2																												
<p>Changing Envelope Size by Specific Amount</p> <p>Increase Envelope Width Increase page width by same amount that you want to increase the envelope width</p> <p>Decrease Envelope Width Decrease the page width by the same amount that you want to decrease the envelope width</p> <p>Increase Envelope Height 1) Increase page length by 3.2 x desired height increase 2) Increase page width by 0.8 x desired height increase</p> <p>Decrease Envelope Height 1) Decrease page length by 3.2 x desired height decrease 2) Decrease page width by 0.8 x desired height decrease</p>																												
Pg. 3																												
<p>Predefined Envelope Sizes</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding-bottom: 5px;">Purpose</th> <th style="text-align: center; padding-bottom: 5px;">Envelope Size Width x Height</th> <th style="text-align: center; padding-bottom: 5px;">Paper Size Width x Height</th> </tr> </thead> <tbody> <tr> <td>Tall Thumb Drive Holder</td> <td style="text-align: center;">3 3/4 x 2 3/16</td> <td style="text-align: center;">5 1/2 x 7</td> </tr> <tr> <td>Low Profile Thumb Drive Holder</td> <td style="text-align: center;">3 3/4 x 1 23/32</td> <td style="text-align: center;">5 1/2 x 5 1/8</td> </tr> <tr> <td>2.5" Laptop HD Envelope</td> <td style="text-align: center;">4 3/4 x 3 7/16</td> <td style="text-align: center;">7 1/2 x 11</td> </tr> <tr> <td>Gift Card / Wallet Sized</td> <td style="text-align: center;">3 9/16 x 2 17/64</td> <td style="text-align: center;">5 3/8 x 7 1/4</td> </tr> <tr> <td>Full Page</td> <td style="text-align: center;">5 3/4 x 3 7/16</td> <td style="text-align: center;">8 1/2 x 11</td> </tr> <tr> <td>Two Envelopes From One Page</td> <td style="text-align: center;">3 3/8 x 2 21/16</td> <td style="text-align: center;">5 1/2 x 8 1/2</td> </tr> <tr> <td>Six Envelopes From One Page</td> <td style="text-align: center;">2 3/16 x 1 21/64</td> <td style="text-align: center;">3 1/4 x 4 1/4</td> </tr> <tr> <td>US Currency</td> <td style="text-align: center;">2 13/16 x 6 3/8</td> <td style="text-align: center;">8 1/2 x 9</td> </tr> </tbody> </table>	Purpose	Envelope Size Width x Height	Paper Size Width x Height	Tall Thumb Drive Holder	3 3/4 x 2 3/16	5 1/2 x 7	Low Profile Thumb Drive Holder	3 3/4 x 1 23/32	5 1/2 x 5 1/8	2.5" Laptop HD Envelope	4 3/4 x 3 7/16	7 1/2 x 11	Gift Card / Wallet Sized	3 9/16 x 2 17/64	5 3/8 x 7 1/4	Full Page	5 3/4 x 3 7/16	8 1/2 x 11	Two Envelopes From One Page	3 3/8 x 2 21/16	5 1/2 x 8 1/2	Six Envelopes From One Page	2 3/16 x 1 21/64	3 1/4 x 4 1/4	US Currency	2 13/16 x 6 3/8	8 1/2 x 9	
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Pg. 4																												

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Printer Alignment Test - FRONT

Use this page to test the alignment of your printer when printing on both sides of a page. Print pages 31 and 32 double-sided on 8 1/2" by 11" paper. Hold it up to the light so that you can see the lines on the back side of the page. If the lines do not align then you should see them through the page.

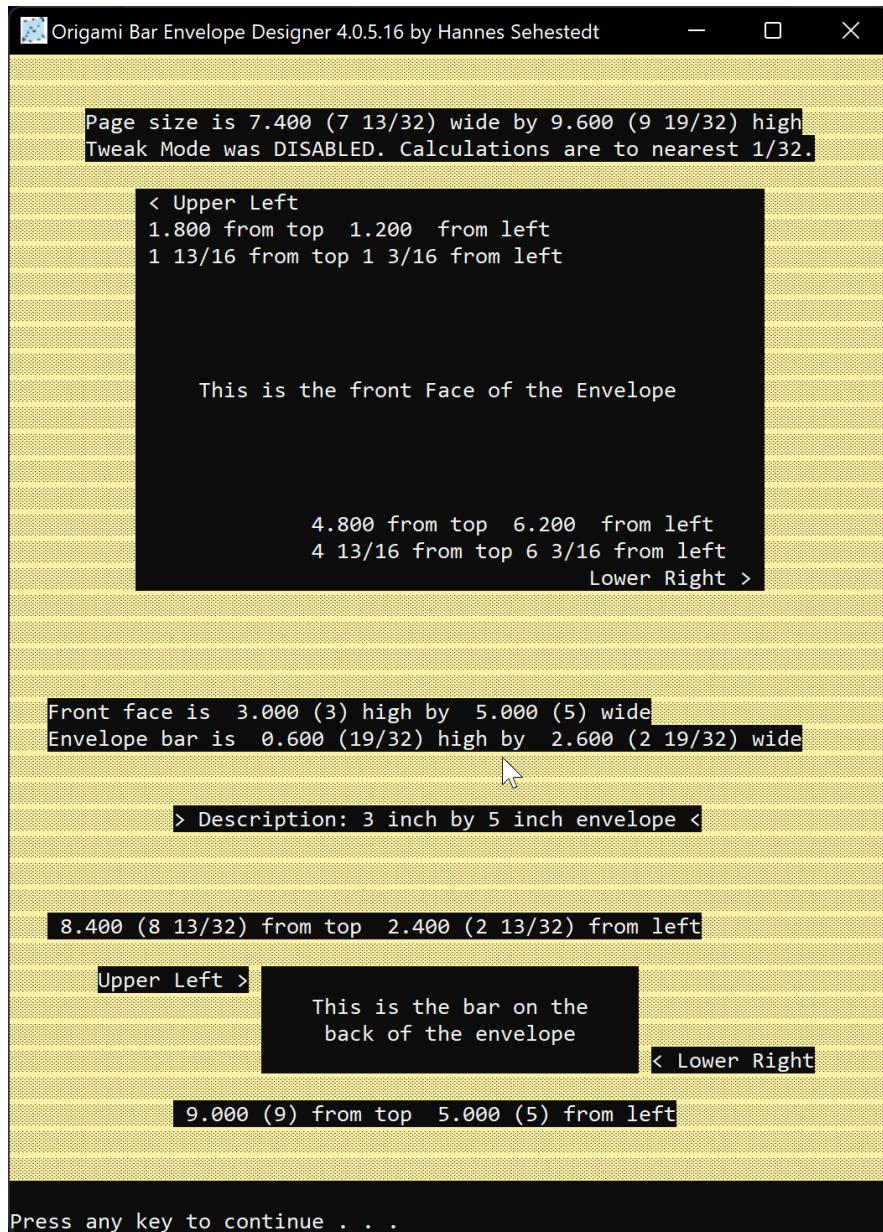
If a line on the backside appears too far to the left or right side, you need to adjust the back side to the opposite direction since you are looking at a mirror image when you hold the page up and view through it.

BACK

The horizontal line below appears only on the back side. It should be visible through the page when the page is held up to light. If your printer is perfectly aligned, then the cross pattern may not be visible through the page, but you should still be able to see the horizontal line below because it is printed on only one side of this page.

How to Create Your Own Custom Envelope Templates

This section will show you how to create your own templates for custom sized envelopes. Instructions here are for Microsoft Publisher, but other programs may also be used.



8.4" down and 2.4" from the left of the page.

5) The width of the bar is 2.6" and the height is 0.6"

That's all we need to know. To create the template, start by opening up publisher and creating a new blank document as shown on the following page:

First, determine the size of the paper needed to make your envelope. For example, let's say that we want to create an envelope that is 5 inches wide by 3 inches high. You can go through the calculations manually as shown earlier in this document, but I have created a program that does the work for me. Here is what it shows me:

Look at the image to the left. Here is a summary of the key elements that we need:

- 1) The paper size needed will be 7.4" wide by 9.6" high.
- 2) The upper left corner of front face of the envelope will be 1.8" down and 1.2" from the left of the page.
- 3) The width of the front face is 5" and the height is 3".
- 4) The upper left corner of the bar on the back of the envelope will be

Pinned

Pin files you want to easily find later. Click the pin icon that appears when you hover over a file.

Today

- Six Very Small Envelopes... Desktop
- Thumb Drive Holder.pub Desktop
- Pen Holder.pub Desktop
- Full Page.pub Desktop
- Origami Bar Envelope Ma... Z: » Data » !Other Stuff » Origami...

Yesterday

- Universal USB Kit.pub v3.... C: » Users » hanness » OneDrive...

This Week

FEATURED BUILT-IN

Search for online template

Suggested searches: Personal Design Sets Labels Event Paper Business Cards

Blank 8.5 x 11" (highlighted with a red box)

Blank 11 x 8.5"

More Blank Page...

the cook book

Thank you card...

Milestone...

Thinking of you...

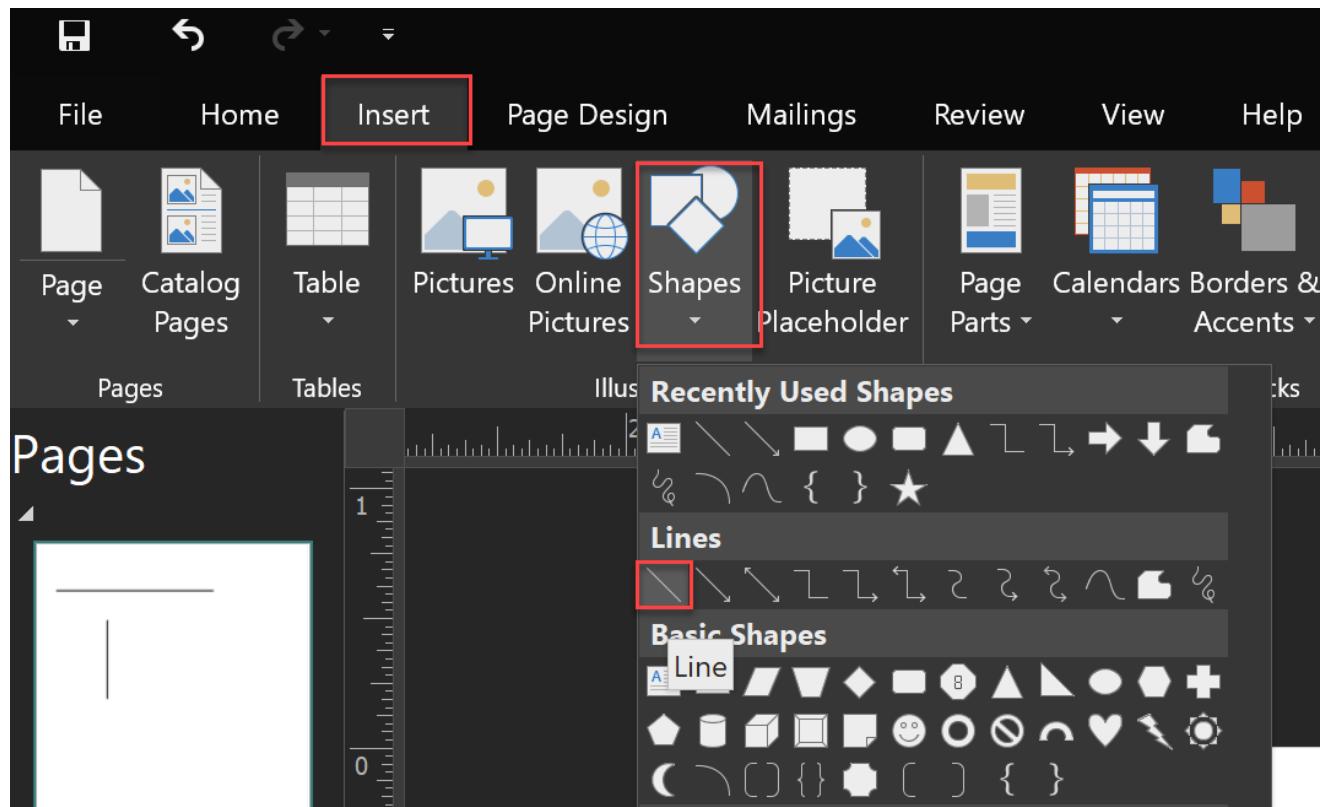
Photo ad...

Tip: As you are working in Publisher, you can zoom in and out to better see what you are working on using the slider in the lower right of publisher that looks like this:



Now, let's draw a couple of lines on the page to show where we are going to cut out the envelope. We know that the page needs to be 7.4" wide and 9.6" high, so we'll place a vertical line 7.4" from the left side and a horizontal line 9.6" from the top.

In Publisher, select Insert > Shapes > Lines and then select the straight line with no arrows (see the illustration on the next page).

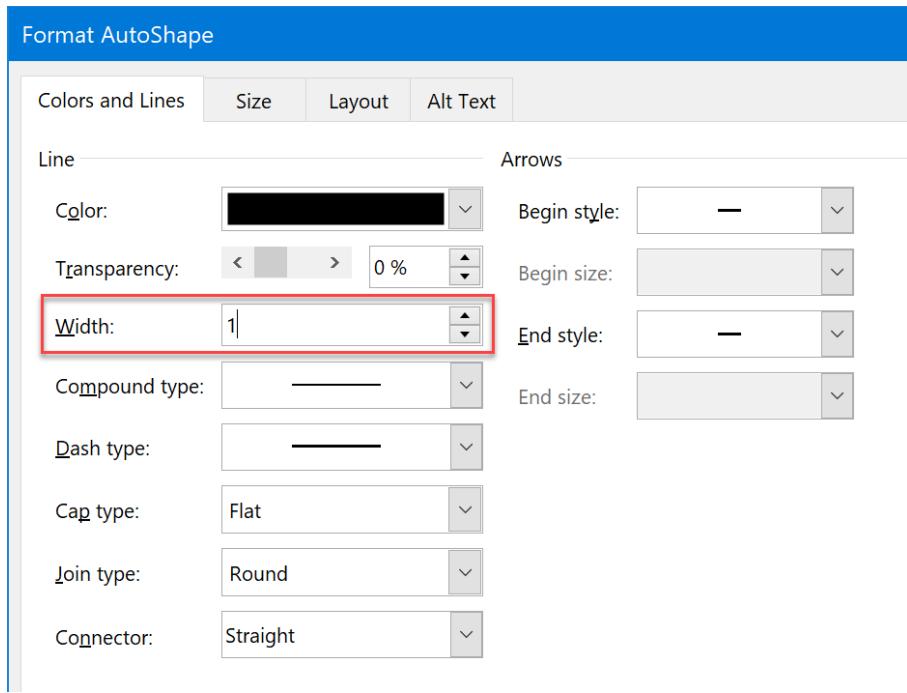


To place the line, just draw it on the page. For now, don't worry about the size of the line, just draw one horizontal line and another vertical line on the page.

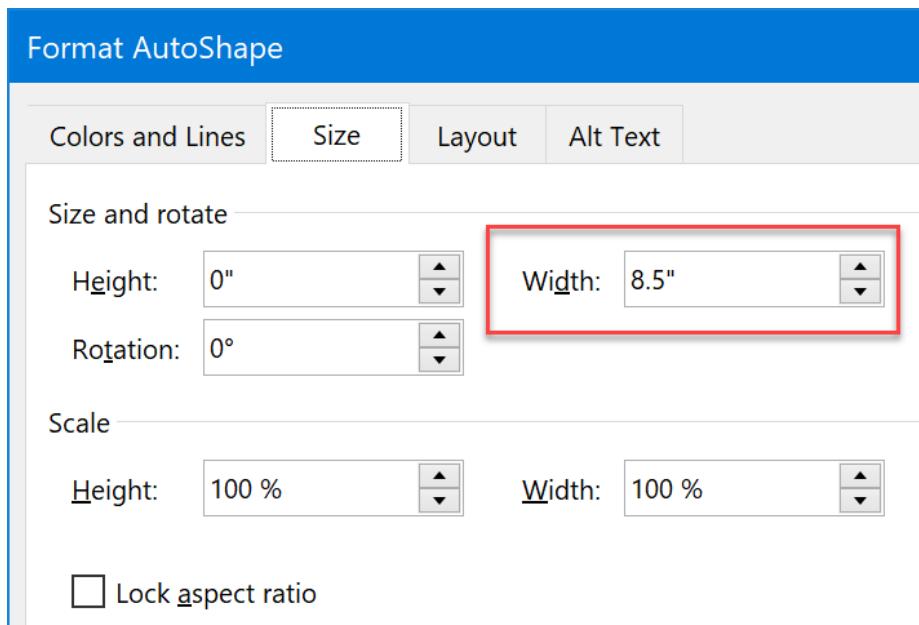
TIP: To make a straight line hold down the shift key on your keyboard while you click and drag on the page with the mouse to create a line.

So now you should have one horizontal and one vertical line on the page. We're going to put them in precisely the right place now.

Right-click on the horizontal line and choose "Format AutoShape...". I like to make the lines nice and thin so on the "Colors and Lines" tab change the width to 1 pt. as shown in the illustration on the next page.



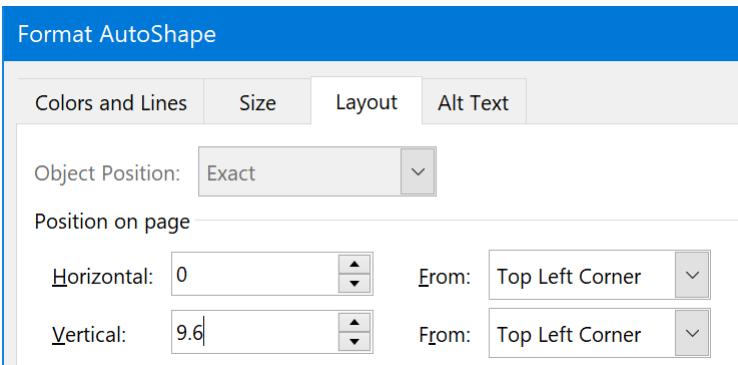
Go to the "Size" tab and change the width to 8.5. This will make the line 8.5" wide. Since the page is 8.5" wide this makes the line as wide as the page. NOTE: If you wanted to do so, you could subtract the width of the left and right margins and set the line between the margins if you wanted to do so.



Now go to the "Layout" tab and make the following changes:

Horizontal: 0 From: Top Left Corner
Vertical: 9.6 From: Top Left Corner

It should look like the illustration on the next page.

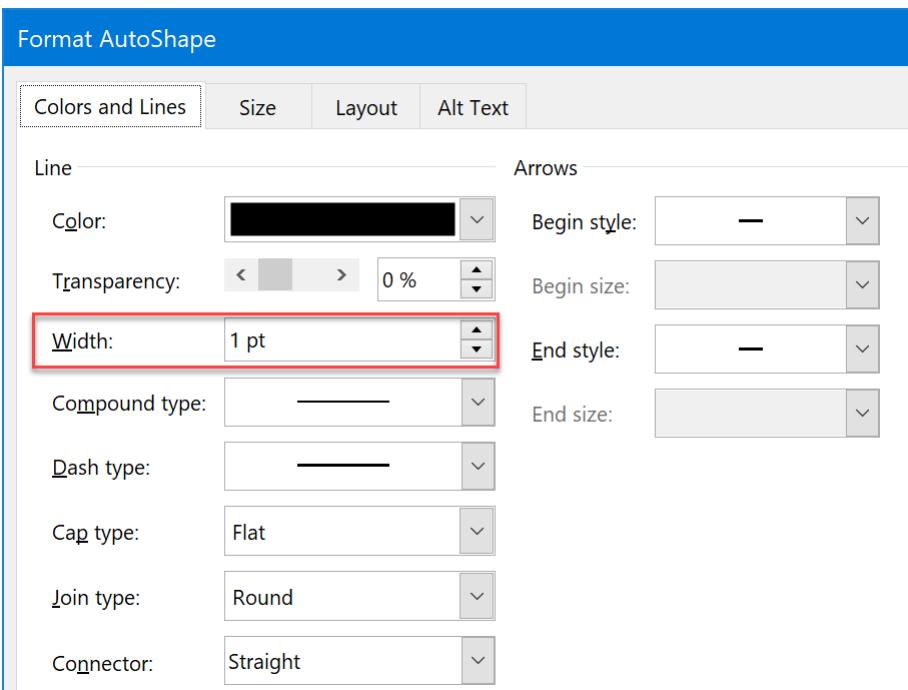


Click "OK".

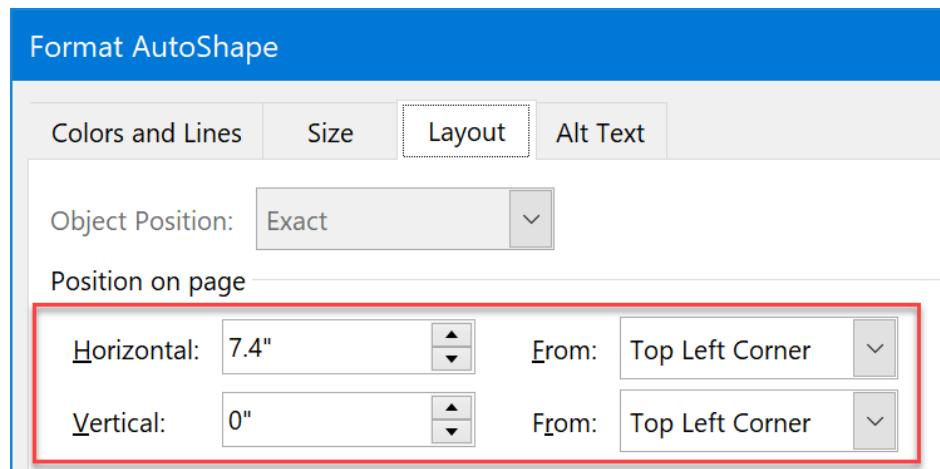
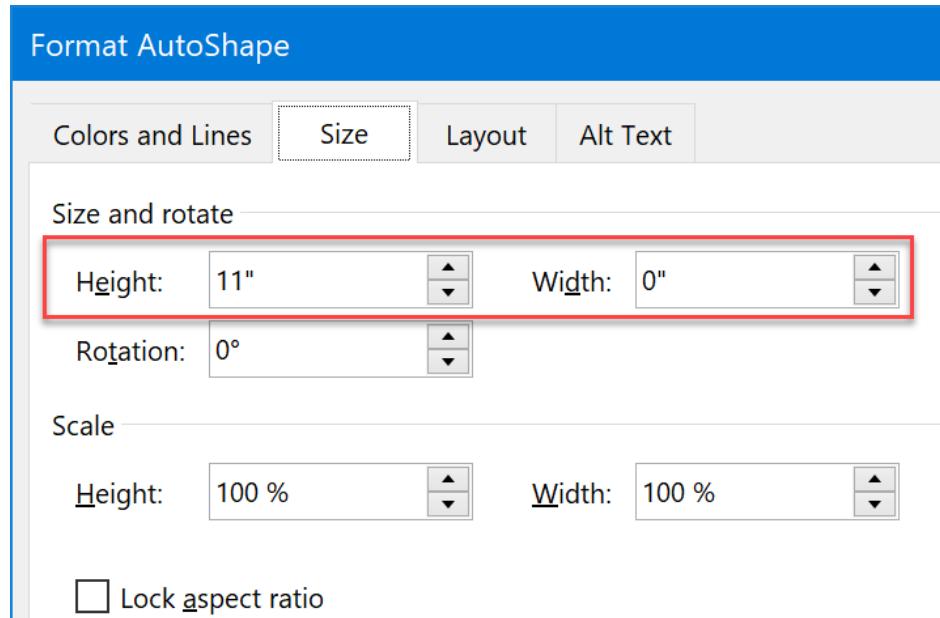
You should now see a horizontal line that goes all the way across the page near the bottom of the page.

By telling Publisher to place the line 0" horizontally from the top left corner, we're placing it right up against the left edge. Since we know that the page needs to be 9.6" in length we are placing the line 9.6" from the top.

Now, right-click on the vertical line and choose "Format AutoShape...". On the "Colors and Lines" tab, make the width 1 pt just as you did for the horizontal line.

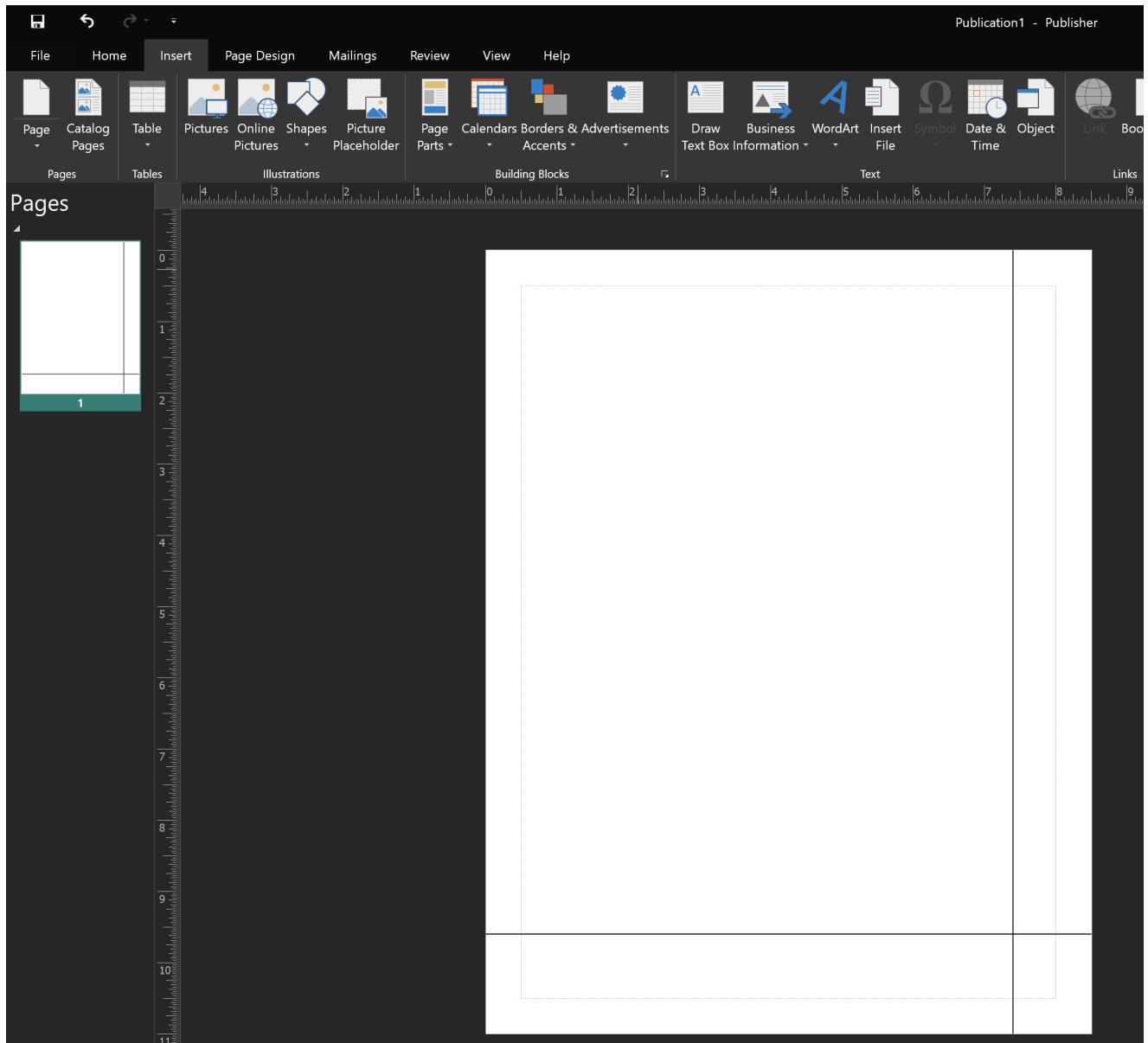


Also make the following changes:



The end result is that we have made the vertical line 11" tall and placed it 7.4" from the left side (remember that we determined that the page needs to be 7.4" wide for this envelope). Once again, you could subtract the size of the upper and lower margins and set the line between the margins if you wanted to do so.

So at this point your page should look like the image on the next page.

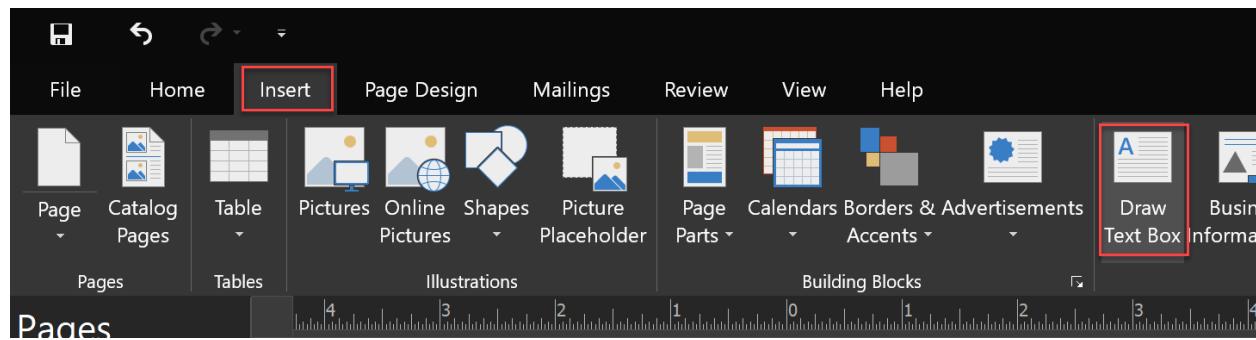


When you later print the page, you will cut along those two lines to get your page properly sized for the envelope. It will be 7.4" wide by 9.6" long.

Next, let's create the front face of the envelope.

As a reminder, we had determined that the upper left corner of the front face will be 1.8" down and 1.2" from the left of the page. We also know that width of the envelope is 5" and the height is 3".

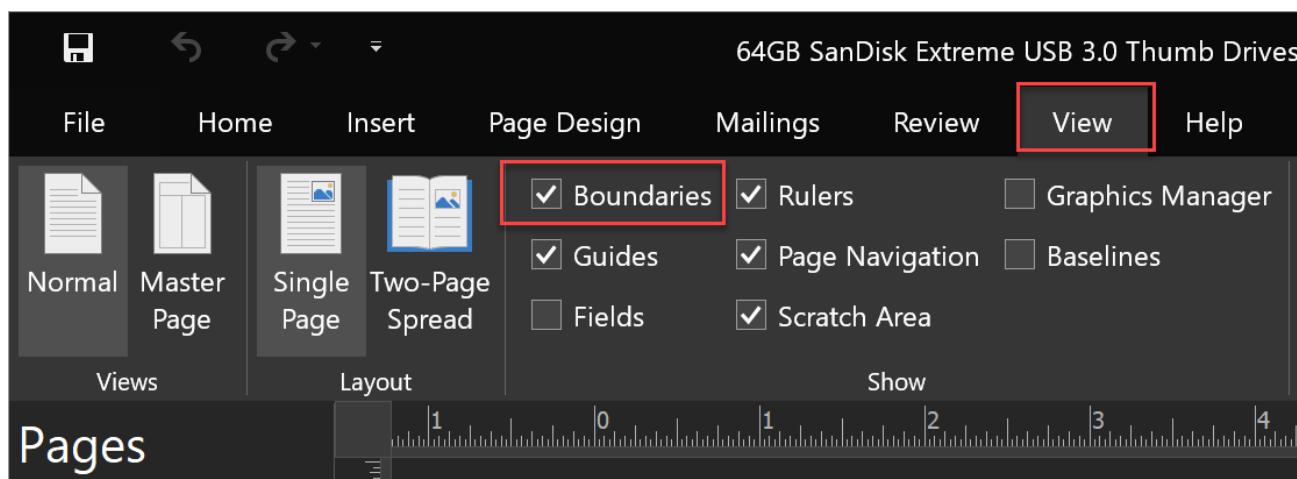
In Publisher select Insert > Draw Text Box



Click anywhere on the page and while still holding down the mouse button, drag down and toward the right. Let go of the mouse button and you will have a text box.

Now we will size and place the text box.

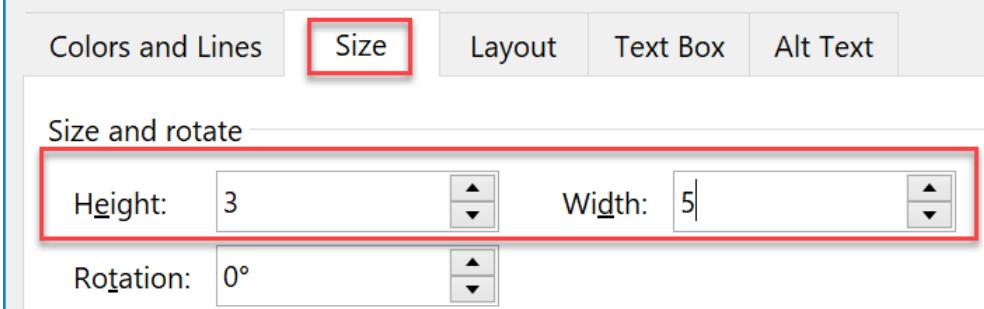
First, select "View" and check the box called "Boundaries". This will make it easier to see the elements on the page by showing a boundary around the objects.



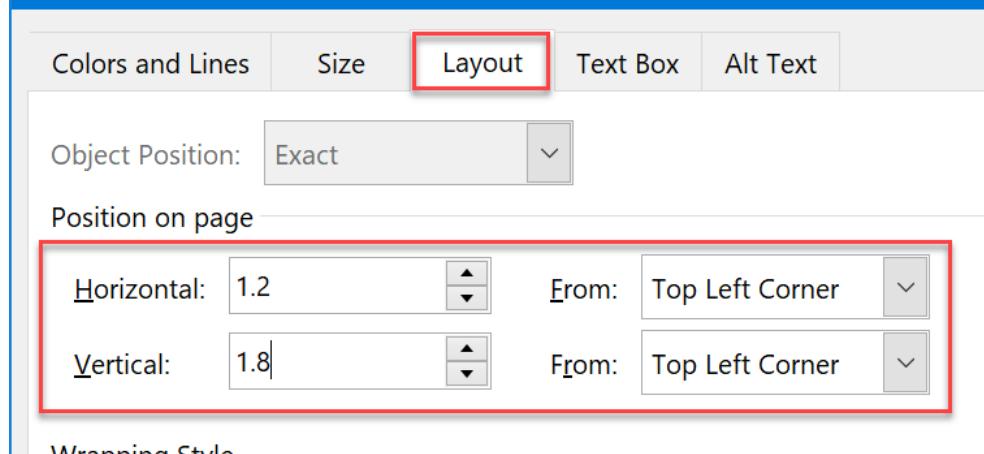
Right-click on the border of the text box and choose "Format Text Box...". Note that if you don't see the option to format it when you right-click, this may mean that you have clicked inside the box which puts the text box into editing mode for the text within the box. To fix this, click somewhere outside of the text box, then move your mouse pointer back to the text box border again and right-click on it. You should see the option to format the text box this time.

Make the changes shown on the next page.

Format Text Box

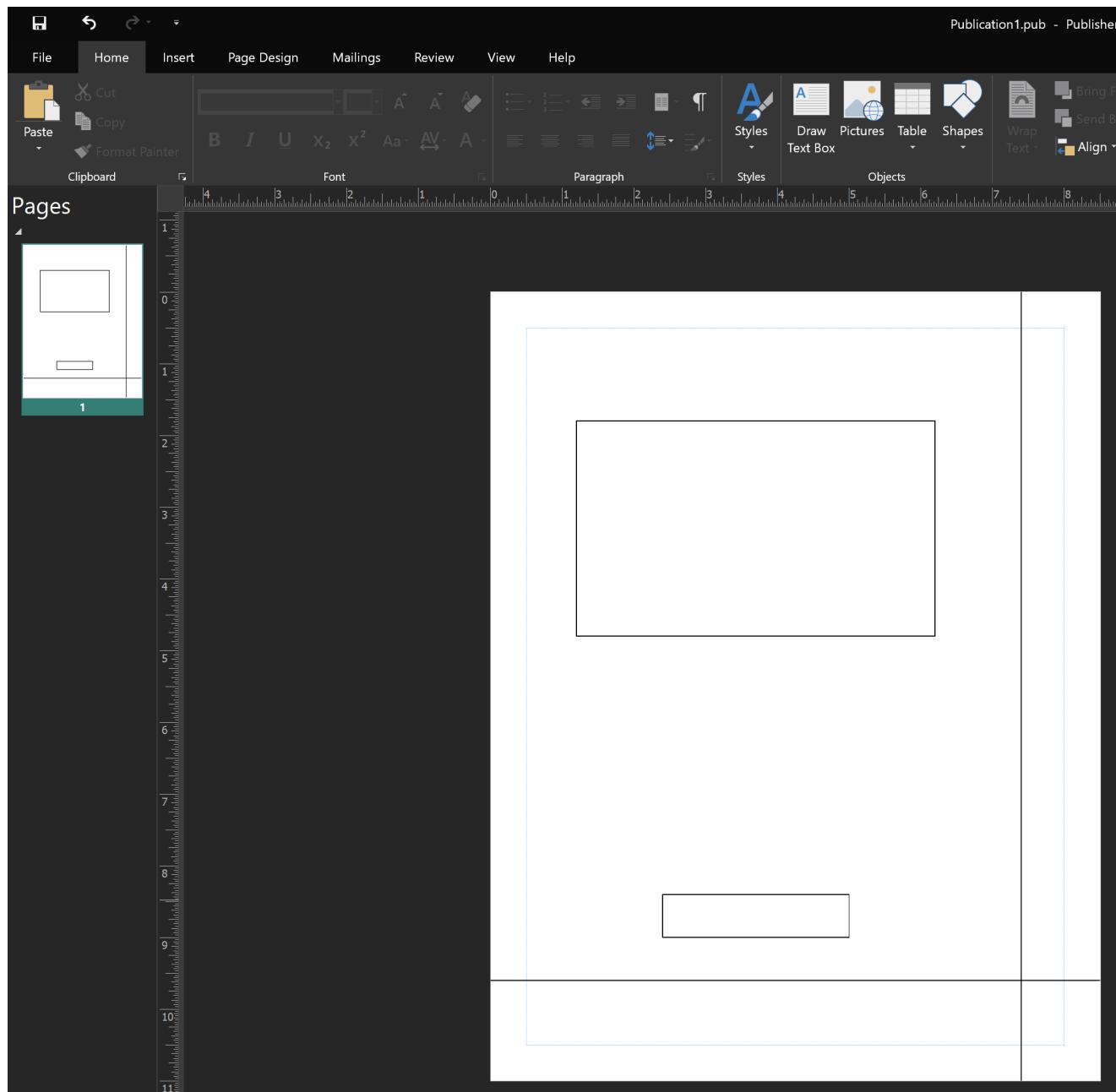


Format Text Box



Create another text box. This will become the bar on the back of the envelope. This time I won't tell you what to modify. You should be able to figure it out from what we have just done. I will simply remind you that we know that the upper left corner of the bar will be 8.4" down and 2.4" from the left of the page. The width of the bar is 2.6" and the height is 0.6".

When you are done, the page should look like the figure on the next page.



All the elements needed are now on the page. At this point we just need to format the text boxes. Note in particular that the bar needs to have its text placed upside down.

Click within the large text box for the front of the envelope. Type any text that you want to place here. On the "Home" tab at the top of Publisher you will find controls for changing the font, changing the size of the font, centering the text, left or right justifying the text, etc. pretty much just like Word, Outlook, or any Office program. Use these to adjust the text as you like.

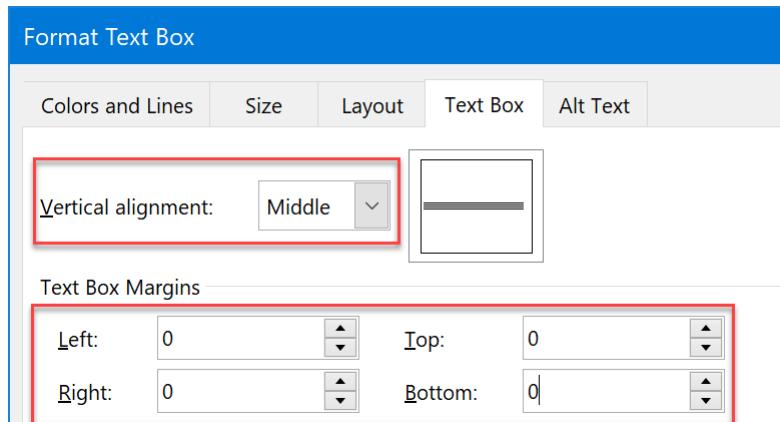
If you want to add a picture, just drag and drop an image onto the page, then drag the handles to resize it and drag it onto the text box. If you need to rotate the image, right click on it, select "Format Picture", go to the "Size" tab and set the rotation (typically either 90 or 270 degrees).

For the bar, to get the text upside down, do this:

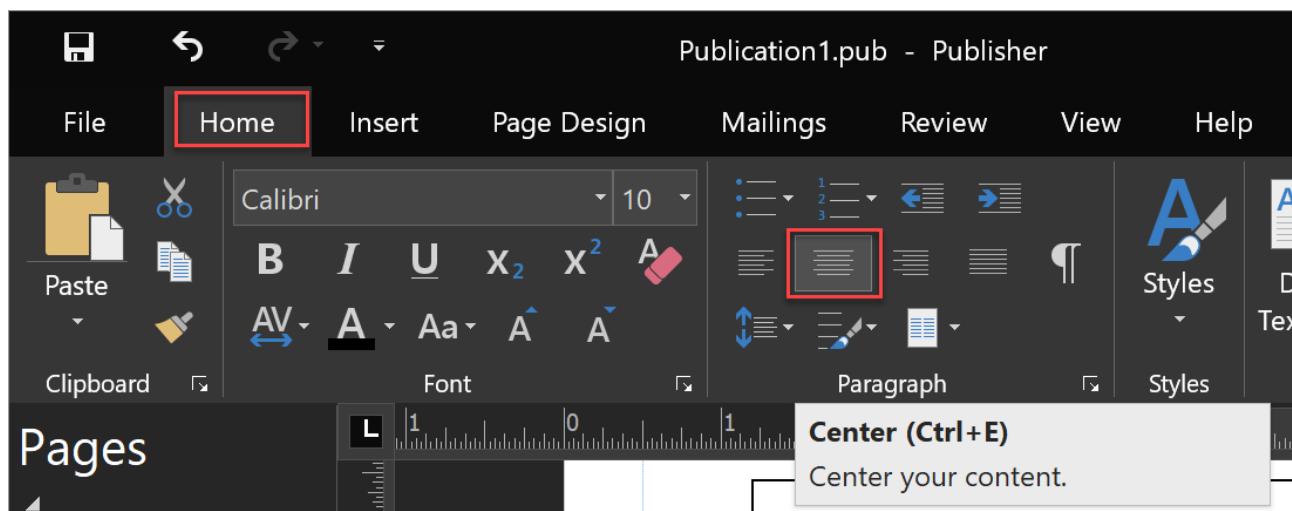
Right-click that text box and choose "Format Text Box...". Go to the "Size" tab and set the rotation to 180 degrees. When you type text into that box it will now appear upside down.

Since the bar can very small on smaller envelopes, I also suggest eliminating the margins and centering the text within the text box to maximize the usable space. Here is how to do that:

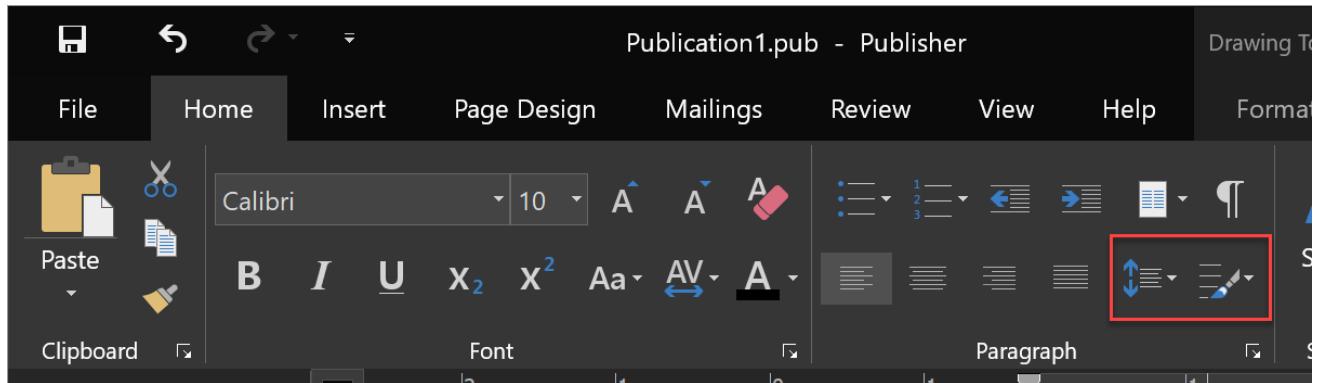
Once again, right-click that text box and choose "Format Text Box...". Go to the "Text Box" tab. Set "Vertical alignment" to "Middle". Set all 4 margins to 0 (zero). It should look like this:



Click on "OK" to save your changes, then click within that text box and press CTRL+A. CTRL+A will select all the text in the text box if you have any there. In the ribbon bar at the top of Publisher, select the "Home" tab and then click on the "Center" button as shown in the illustration below. Note that as an alternative, once you have selected all the text with CTRL+A you can simply press CTRL+E to center it.



Finally, select the "Line Spacing" and "Paragraph Spacing" icons shown in the illustration on the next page. Set Line Spacing to 1.0 and Paragraph Spacing to None. This minimizes the wasted space between lines.



With these settings and a small enough font size, you should be able to fit even more than one line of text on the bar.

At this point you are basically done. One suggestion that I have is to go back into the settings for the text boxes and remove the border from around them. The reason for this is that the border will accentuate any faults. For example, if any folds are not 100% dead on in the right spot or if your printer does not have absolute perfect alignment, you will notice this tiny imperfection because the border will not line up exactly with the creases on the page. Without the border you will never notice such tiny imperfections.

Tips for Aligning Images on Your Envelopes

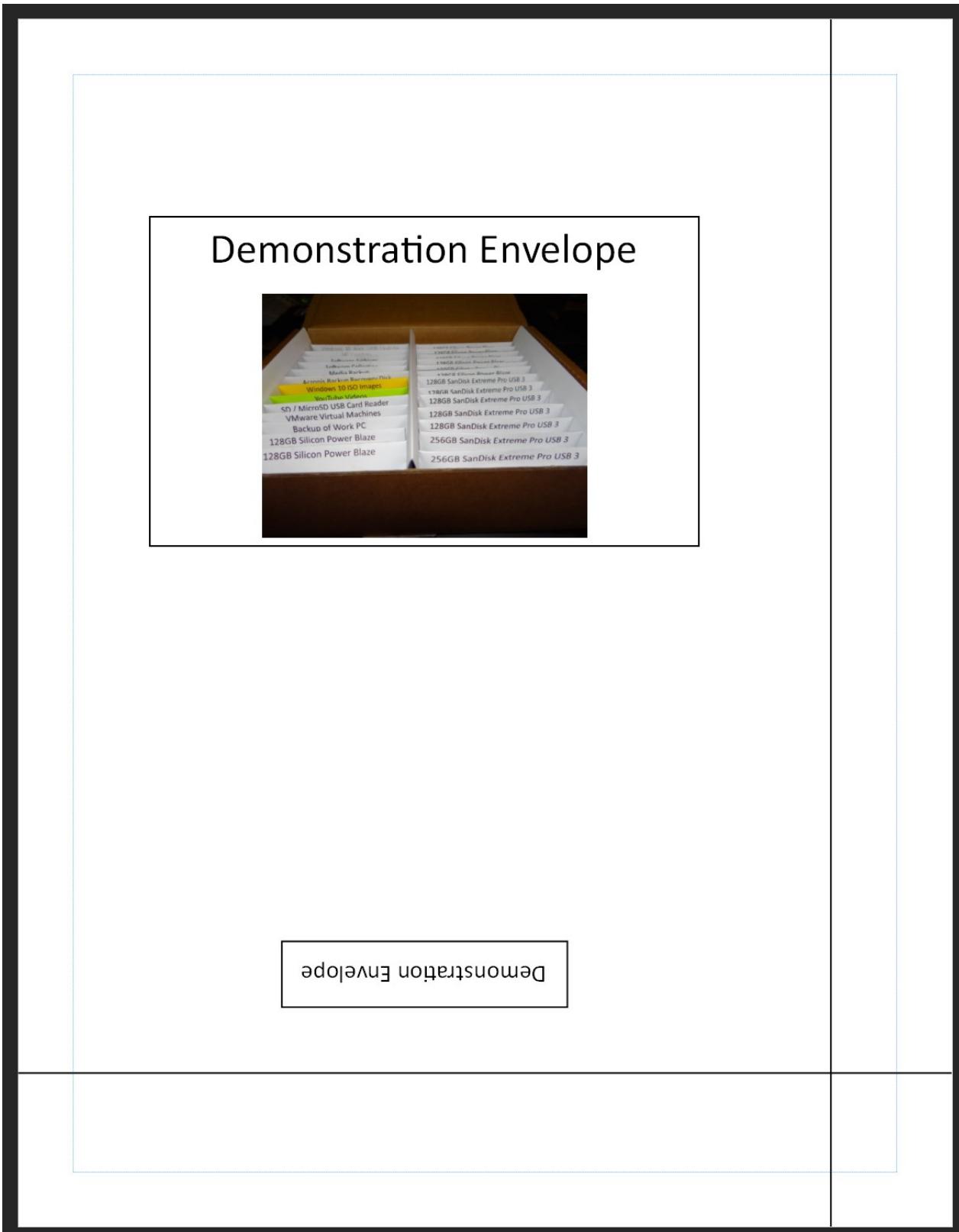
If you want to align a picture that you are placing on the envelope so that it is perfectly centered, drag the picture slowly left or right until you see a very fine pink line that goes through your picture up to the center of the text box. It will look something like this (note the red arrows pointing to the pink line):



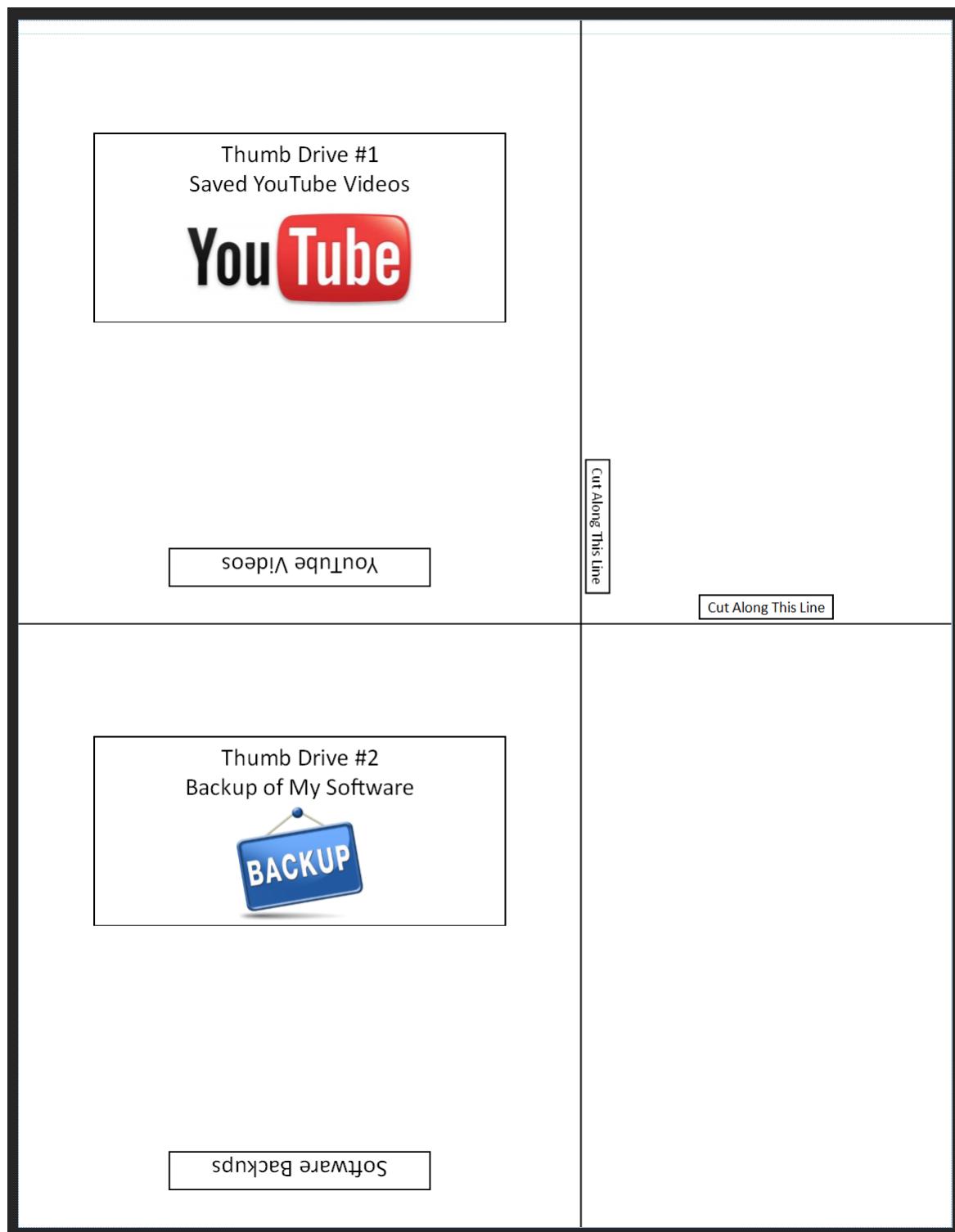
When you see that pink line it indicates that those elements are perfectly lined up at the center point.

Special Circumstances

All the above instructions make the assumption that you are placing one envelope on the page and that it is oriented straight up like in this example:



Now, consider a special circumstance such as printing two envelopes on a single page like this:



All your calculations for the first envelope (the one closer to the top of the page) will be correct so no changes are needed for it. For the second envelope, just looking at the page, you can clearly see that the horizontal measurements remain the same. Both envelopes are the same distance from the left side.

However, the vertical measurements are going to need adjustment for the second envelope. Fortunately, this is easy to do.

Let's take some numbers here for the purpose of illustration. These are actual numbers for my Thumb Drive Holder template. Let's assume the following values for the first (upper) envelope:

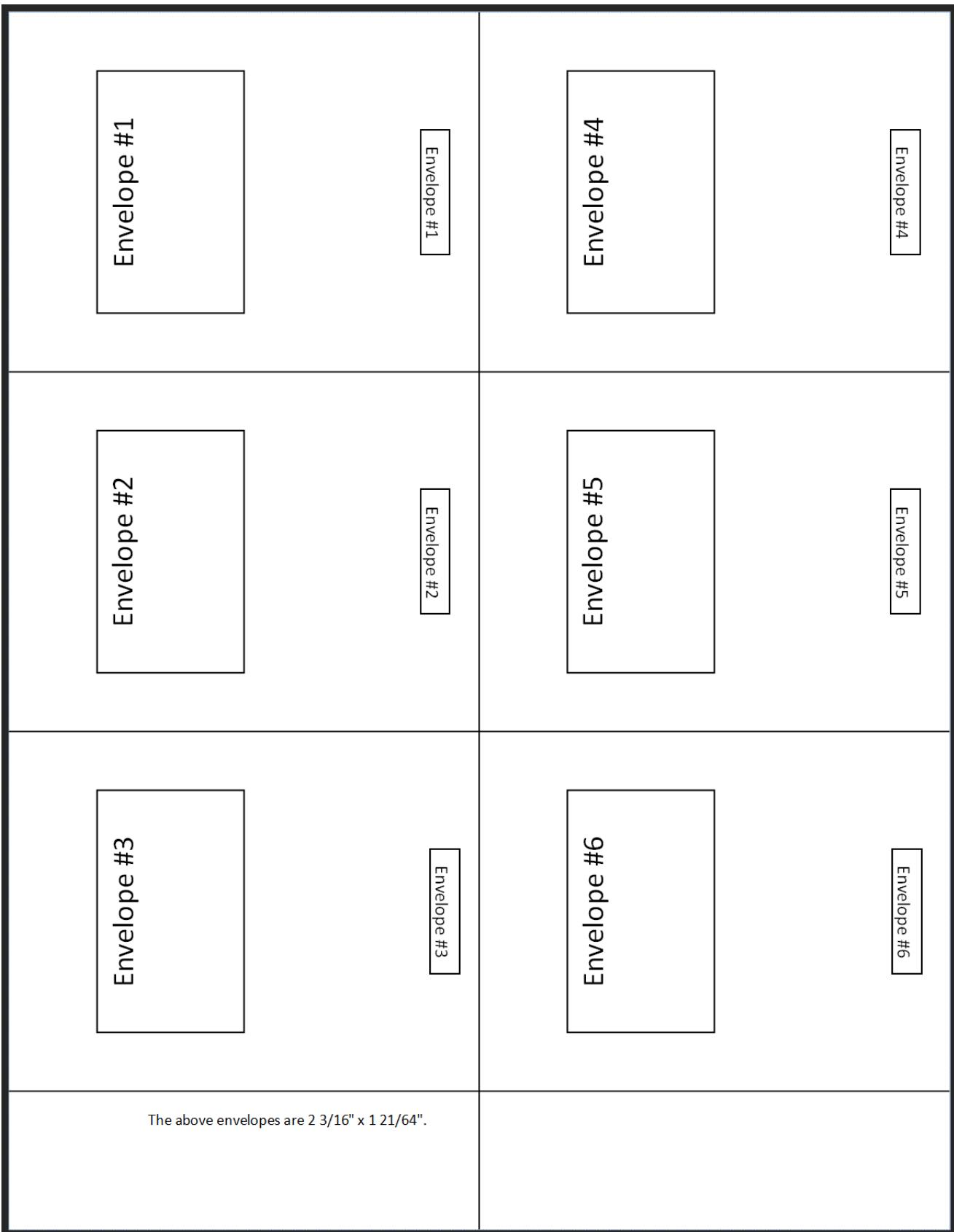
Page size is 5.5" high.

The upper left of the front face is 1.031" from the top of the page.

For the second envelope, all you need to do is add the height of the page for the first envelope to all your measurements. So, the top of the second envelope front face is going to be that $1.031" + 5.5"$ from the top which is 5.531".

To summarize, all you have to do is add the height of the first page to all the vertical measurements.

Now let's take one more extreme example, six small envelopes on a single page. That looks like the image on the following page.



The above envelopes are $2\frac{3}{16}$ " x $1\frac{21}{64}$ ".

We won't go into all the numbers on this one because you should have everything you need to figure this out now, but here are the things you need to keep in mind to create a design like this:

- 1) Since all the envelopes are sideways, your calculations for vertical and horizontal will be flipped. For example, in your calculations to determine how far down from the top of the page the front face is located, note that this will now be the distance from the left edge rather than the top since each page is oriented with the top of the page facing the left side of the physical piece of paper. Also, the sides of the envelope are now oriented facing up and down and not left and right so the numbers that your calculations will give you will be distances from the top of the page rather than from the left side of the page.
- 2) Obviously, both the text boxes and text in them need to be rotated sideways.
- 3) Envelope 2 and 5 will need to have all the vertical measurements increased by the **width** of the first envelope page. Envelopes 3 and 6 will need to have the vertical measurements increased by **2 times the width** of the first envelope page since they are the third envelopes down on the page.
- 4) Envelopes 4, 5, and 6 will need to have all the horizontal measurements increased by the **length** of the envelope page.

* Appendix A - Tweaking the Page Size *

If you create an envelope of a specific size, you can "tweak" the resulting calculated page size to ensure that the page size is a perfect increment of whatever fractional size you wish. For example, you can size the page to the nearest 1/8, 1/16, 1/32, etc. of an inch.

In the steps below, we will assume for this example that we calculated that we will need a page size of 9.2" wide x 12.8" long to create an envelope 6" wide x 4" high. We want to tweak the page size to the nearest 1/16 inch.

Note that with the steps below we will always end up with an envelope that is either unchanged or very slightly larger than it was originally designed. It will never be smaller.

1) Determine the fractional size that you want to use. In this example we will assume that we want to size the page to the nearest 1/16 of an inch. Note that the "16" in this fraction is the "denominator".

2) Convert the fraction to a decimal value.

Example: $1 / 16 = 0.0625$

3) Examine the page length. If the value determined in step 2 divides perfectly into the page length, then skip to step 9. In this example, this is not true so we will continue with step 4.

TIP: If the page length is a whole number, then the number in step 2 will divide perfectly into it.

4) Take the portion of the page length after the decimal point and divide it by the value in step 2.

Example: $0.8 / 0.0625 = 12.8$. If it is not a whole number, then tweak it up to the next highest whole number. In this case, we tweak it up to 13. Divide this number by the denominator of the fraction from step 1 (16 in this example).

Example: $13 / 16 = 0.8125$

5) Take the whole number of the page length and add the value from step 4 to it. This is the new page length. Make a note of this new page length.

Example: $12 + 0.8125 = 12.8125$.

6) Determine the amount that the page length was increased by taking the new page length and subtracting the original page length.

Example: $12.8125 - 12.8 = 0.0125$

7) We need to calculate how much this affects the envelope width. To do this, take the number calculated in step 6 and multiply by 0.25.

Example: $0.0125 \times 0.25 = 0.003125$

8) Take the change in the envelope width calculated in step 7 and add it to the original page width. This is a preliminary new page width but it may still need to be tweaked further.

Example: $0.003125 + 9.2 = 9.203125$

9) If you arrive here by skipping to here from step 3, then make a note that the page length remains unchanged. The new page length is the same as the old page length. Examine the page width calculated in step 8. If the value determined in step 2 divides perfectly into the page width calculated in step 8, then the result of step 8 will be the final page width and you can skip to step 12. In this example, $9.203125 / 0.0625$ is 147.25. Since the result is not a whole number we will proceed to step 10.

TIP: If the page width calculated in step 8 is a whole number, then the number in step 2 will divide perfectly into it.

10) Take the portion of the page width after the decimal point, using the width calculated in step 8, and divide it by the value in step 2. If the result is not a whole number, tweak it up to the next whole number.

Example: $0.203125 / 0.0625 = 3.25$, tweak up to 4.

11) Take the result of step 10 and divide it by the denominator of the fraction from step 1 (16 in this example).

Example: $4 / 16 = 0.25$

12) Take the whole number of the page width and add the value from step 11 to it. This is the new width.

Example: $9 + 0.25 = 9.25$

12) The New page size in this example is $9.25W \times 12.8125H$ ($9 \frac{1}{4} \times 12 \frac{13}{16}$). Note that both the length and width are now perfectly divisible by 1/16ths.

13) At this point, you should recalculate all dimensions based upon the new page size.