Calculating Fabric Needs

While many stitchers may be quite experienced in calculating their project's fabric needs, there are some for whom this is appears to be an arcane art. Actually, it's a very basic arithmetic problem (no cringing now).

There are a few things you need to know before you start your calculations:

- ☛ **Vertical stitch count (VSC)** = The number of vertical stitches in the design area (length)

- ☛ **Horizontal stitch count (HSC)** = The number of horizontal stitches in the design area (width).

- ☛ **Fabric Count (FC)** = The count of the fabric you plan to stitch on.

- ☛ **Thread Count (TC)** = The number of threads you will stitch over (e.g. 1 for Aida and canvas, 1 or 2 for linen and evenweaves).

- ☛ **Margin (M)** = Will you frame it? If so, will you frame it with a mat? Guidelines for margins are:

Ornaments	- add 1 inch per side
Pillows or Stockings	- add 1-2 inches per side
no mat	- add 2 inches per side
1" mat	- add 3 inches per side
2" mat	- add 4 inches per side
3" mat	- add 5 inches per side
4" mat	- add 6 inches per side

Once you know these items you can begin your calculations. "/" is the common way to denote division and "*" multiplication, when typed on a computer keyboard. In these notations "x" means "by" as in 10 by 10, not multiplication.

Design Size = (VSC/FC*TC) by (HSC/FC*TC)

Let's take the following design parameters and use them for some examples.

Example 1: Our first example is with a piece on 14 count Aida we're going to do a 2" mat on.

> **Vertical stitch count** = 280
> **Horizontal stitch count** = 120
> **Fabric Count** = 14 count Aida
> **Thread Count** = 1 (1 Aida "square")
> **Margin** = 8 (4" per side)

By filling in the numbers our formula now becomes:

(280/14*1) by (120/14*1) = 20 x 8.5 (Design)

To determine the minimum cut fabric size you now add the **Margin.**

Fabric Size = (VSC/FC*TC) + **M** by (HSC/FC*TC) + **M**

Using the same numbers as before this becomes:

(280/14*1) + 8 by (120/14*1) + 8 = **28 x 16.5**

Example 2: Now we're going to do the calculations for 36 count linen stitched over two threads and this time we're going to do it with a 3" mat.

> **Vertical stitch count** = 280
> **Horizontal stitch count** = 120
> **Fabric Count** = 36 count linen
> **Thread Count** = 2 (2 linen threads)
> **Margin** = 10 (5" per side)

(280/36*2) by (120/36*2) = 15.5 x 6.75 (Design)

= (280/36*2) + 10 by (120/36*2) + 10 = **25.5 x 16.75**

Example 3: Stitching this over 1 on 36 count gives this measurement:

(280/36*1) + 10 by (120/36*1) + 10 = **17.75 x 13.5**

Stitching over 2 threads will give you the same result as an Aida with half the fabric count.

14 count Aida	= 28 ct evenweave (over 2)
16 count Aida	= 32 ct evenweave (over 2)
18 count Aida	= 36 ct evenweave (over 2)

Many evenweaves don't have a direct equivalent in Aida; e.g. 25, 26, 27, 30, 35 & 40 count linens. Hence the math formulas make it easier to figure for any type of fabric and any count (including uneveweaves).

Some techniques such as Hardanger or Bargello have patterns that don't always give you the number of stitches so check to see if the chart is drawn as stitched (over one) or is printed like a cross-stitch chart (where one grid is 2 fabric threads). Most counted canvas designs are stitched over 1 on canvas but you need to check the chart to see how the design is noted. If you get this wrong your fabric will be seriously over or under what you need. Your local shop can always help you if you're not sure you've calculated it correctly.

You may want to fudge the fabric cut based on the piece of fabric you have or plan to purchase. This is where common sense should prevail over math. If you have a design that would call for a 19" by 13" piece of fabric and your piece is 18" x 13.5" this may work perfectly fine if your margin is more than 2 inches. If this piece would only leave you with a 1" finishing border it wouldn't allow you enough room to frame the piece.