

The Truth About Knitting and Gauge

Part 1

by Cheryl Brunette

It's time to stop tiptoeing around the subject and heed the advice of Mark Twain: "When in doubt, tell the truth." And the truth is, you must know how to use math if you hope to build sweaters that fit you and your loved ones.

Now before you have a mathphobic anxiety attack, look closely at what I've said: you have to know *how to use* math. You know how to use the transmission in your car and the microwave, but you probably don't know how they work. Likewise, you don't need to know how math works; you merely need a few good measuring tools, a calculator, and some tips on how to use them in order to stop crossing your fingers and start to accurately predict the size sweater you'll get.

Simplify, simplify...

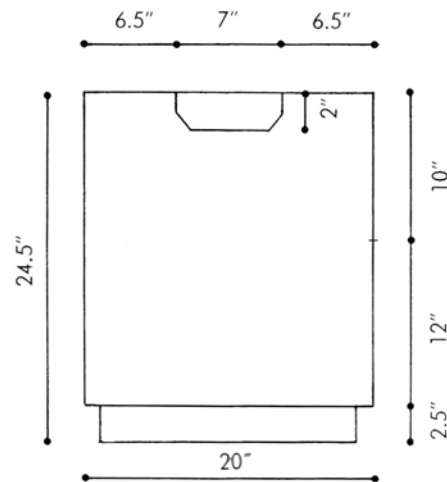
One of the reasons gauge seems confusing is that a pattern throws so many numbers at you at once. There are inches and centimeters and grams and sizes and stitches and rows and a bunch of abbreviations that make it look even worse.

So relax, step back and concentrate for a minute only on the dimensions of the finished sweater you envision. Where do those dimensions come from? There are, generally, three sources:

1. A pattern tells you how long and wide to make it based on a generic body size recorded by the National Bureau of Standards or based on a designer's experience. ([Sweater 101](#) has diagrams with measurements on them for 30 standard sizes in 3 styles for each size.)
2. You can measure a sweater that fits you well.
3. You can measure your body and, following the advice of a book like [Sweater 101](#), you can decide how long and how wide to make each piece.

Don't even think about gauge until you have the size under control. I suggest you draw a "Sweater Blueprint" [[See the article "The Sweater Blueprint"](#)] a sketch of each piece with the widths and lengths noted alongside your drawings.

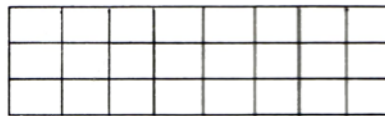
For today's example, we'll use this:



It is the front and back of an adult, drop-shoulder sweater, with a finished chest measurement of 40 inches, and 24.5 inches in length. It is knit from bottom to top, and not from side to side.

Finally, It's Time to Play Gauge

We are going to build these two sweater pieces out of lots of little interlocking loops called stitches. They are shaped, usually, like little rectangular bricks:



I know they don't look like rectangles; they look like this:



But you can see the usefulness of visualizing them as little bricks when you are trying to decide how many of them you need.

Because we want to make sweater pieces that we will measure in inches, we need to know how many of these little bricks it takes to make one inch. When we are calculating the side to side or width numbers, we use the stitch gauge or the stitches per inch. When we calculate the top to bottom or length numbers, we use row gauge or the rows per inch.

Get Out Your Calculator... and punch in some numbers. If your gauge is 5 stitches per inch, how many stitches do you need to make a sweater piece that is 20 inches wide? One hundred, right? You multiply the inches (20) by the stitch gauge (5) and voila!

Don't let the multiplication talk scare you. Look at the sketch and imagine filling it in with the little bricks, 5 per inch.

If your stitch gauge is 4 per inch, how many stitches do you need to cast on? Eighty this time. At 4.2 stitches per inch, how many stitches are in each shoulder? Twenty-seven is close enough.

By now it should be clear that the bigger your bricks are, the fewer of them you need.

Row Gauge ...

For now we are going to ignore the rib at the bottom of the sweater and concentrate on the body. If your row gauge is 7.2 rows per inch, how many rows must you knit to get to the top of the back? At which row do you stop to remove the front of neck stitches? Your answers should be 158 rows and 144 rows. If you didn't get those answers:

1. Check the battery in your calculator. (Mine is simple, more than 20-years-old, cheap and solar powered. I recommend solar.)
2. Set this article aside and let the information simmer on a back burner in your brain for a few days. Then reread it and try again early in the morning.

Almost a half century ago, I did two cartwheels and broke my left wrist—twice. It was only while having it set in a cast for the second time did I understand that my destiny lay along some path other than a career in junior high cheerleading. If, after three months, you still don't understand how gauge works, gracefully accept that perhaps your gift is to pursue watercolors as a hobby instead of knitting.

Otherwise, join me in part two of this article series where you'll learn to measure and calculate your own gauge with an accuracy worthy of NASA.