



Nina's Sweater Class

Lesson 3: Shaping the Torso

Shaping refers to the decreases and increases knit into the body of a sweater that cause it to deviate from the plain straight lines of an unshaped sweater. In this section of our class, you will refer to your sample sweater and your sketch to determine the kind of shaping you will knit. If there is no change in the width of the body in your sample or fantasy sweater (that is, the body is just a straight tube) then you do not need to worry about shaping, just knit on until you have enough rows (including the hem already knit) to make the measurement "E" on your schematic.

The instructions in this lesson address simple waist and bust shaping. If your sample or fantasy sweater is curved in the body like the shape of a real human torso, then you will want waist/bust shaping. Other shapes can be achieved by adapting these instructions--the last page of this lesson contains a discussion of these techniques.

In order to calculate the waist shaping that will work for YOUR sweater, you will need these key measurements from your schematic (provided in lesson 1.)

- A – The width of the cast-on edge, laid flat (as used in the last lesson)
- B – The width of the torso at the NARROWEST point (the waist)
- C – The width of the sweater from armpit to armpit. (the chest)
- D – the length from the cast on edge to the narrowest part of the torso (the waist)
- E – The length of the torso, from cast on edge to armpit.

First, multiply A, B, and C by 2 to get the circumferences around these parts of the torso:

2A = _____
 2B = _____
 2C = _____

Now, subtract 2B from 2A, and from 2C:

2A – 2B = _____ inches to DECREASE from hem to waist.
 2C – 2B = _____ inches to INCREASE from waist to armpit.

Now, convert these INCHES measurements to STITCHES by multiplying the last 2 numbers above by S, your stitch gauge (as calculated in lesson 1), and then round to resulting numbers (which may have decimals as well!) so they are divisible by 4.

_____ stitches to DECREASE from hem to waist.
 _____ stitches to INCREASE from hem to waist.

We will be shaping the sweater with decrease and increase rounds that eliminate or add 4 stitches per round. That is why you rounded the above numbers so they are divisible by four! Now, divide the above numbers by 4, to find the NUMBER OF DECREASE/INCREASE rounds needed for your shaping:

_____ DECREASE rounds between hem and waist (1)
 _____ INCREASE rounds between waist and armpit (2)

We'll leave these numbers for a moment and now take a look at our vertical measurements from the schematic. We'll begin with the decrease section, for which you will only need the numbers labeled (1) above. The increase section will be worked later in a similar way, and will use the numbers labeled (2).

You have already worked a certain number of inches of length into you hem, so subtract this number from D (from your schematic) to find the distance you still need to knit to reach the waist:

$$D - \text{Hem} = \underline{\hspace{2cm}} \text{ inches.}$$

Now, multiply this number by R to see how many rows you have until you reach the waist:

$$\text{Inches} \times R = \underline{\hspace{2cm}}$$

Now, round this number to one that is divisible by (1), which you calculated above.

$$\underline{\hspace{2cm}} = \text{Rounds until waist}$$

We will be working the shaping as follows: you will work a decrease round (I'll explain that in a moment!) and then work a certain number of plain rounds, and then repeat, until you have reached the waist and decreased away all the stitches you needed to (as calculated above.) The decrease round plus the number of round before the next decrease can be calculated by dividing this last number by (1) = $\underline{\hspace{2cm}}$ (3)

Remember that the decrease round counts as one round, so subtract 1 from (3) to find the number of plain rounds between the decrease rounds:

$$(3) - 1 = \underline{\hspace{2cm}} \text{ plain rounds between decrease rounds.}$$

Well, that is enough maths for me! Let's work through this section before moving on to the increase section. If you like to get every bit of math out of the way, you can skip ahead and return to this later. But I am anxious to get back to knitting, so I'll knit this first and calculate my increase section later!

A ROW COUNTER can be indispensable at this point in your project, because you will need to keep track of which round you are on, to keep the decrease rounds evenly spaced. An experienced knitter may be able to read her work well enough that a row counter is not necessary, but I find that a row counter makes life much easier! You may also note your number of rounds with a tally system on paper, which works just as well.

First, you will work a decrease round as follows. You have a marker at the beginning of your round (this is where I put my row counter) and one at the center of the round. The first half of the stitches on your circular needle is the front of the sweater. The second half of the stitches is the back of your sweater. The markers mark the side seams. We are going to place our decreases on either side of the side seams. In pattern talk, this means your decrease round is worked like this, starting at the beginning of the round:

K1, ssk, k to 3 sts before marker, k2tog, k1. Slip marker and repeat.

4 stitches have been decreased!

Now, work as many plain rounds as you calculated in the final step above.

You will repeat these steps: Decrease round, plain rounds (1) times. (1) refers to the number of decrease rounds that you calculated above. Because we used the math above to space the decrease rounds evenly over the number of rounds needed to reach the waist, we now have knit the torso of the sweater as far as the waist, and have shaped it so that it will fit correctly over the waist and hips!

We will now use the same process to calculate the increase rounds that will shape the body of the sweater between the waist and the armpits.

Return to your vertical measurements. Subtract D from E to find the length of the garment between waist and armpit.

$E - D = \underline{\hspace{2cm}}$ inches from waist to armpit.

And now multiply this number by R to find the number of rounds from waist to armpit:

Inches \times R = $\underline{\hspace{2cm}}$

Now, round this number to one that is divisible by (2), which you calculated above.

$\underline{\hspace{2cm}} =$ Rounds from waist to armpit

The increase section will be worked exactly like the decrease section: an increase round that adds 4 stitches will be followed by a certain number of plain rounds, and then the whole process will be repeated (2) times. (2) is the number of increase rounds you calculated above.

The increase round plus the number of round before the next decrease can be calculated by dividing this last number (rounds from waist to armpit) by (2) = $\underline{\hspace{2cm}}$ (4)

Remember that the increase round counts as one round, so subtract 1 from (4) to find the number of plain rounds between the increase rounds:

$(4) - 1 = \underline{\hspace{2cm}}$ plain rounds between increase rounds.

Now we are ready to finish the torso of the sweater!

Once you have completed the decrease section above (and this includes knitting the required number of plain rows at the end of the last repeat!), you will work the increase section, as follows. Work one increase round as follows, starting from the beginning of the round:

(Note: I use a backward loop over the right hand needle as my M1 increase because I find it to be the most invisible. One of the most popular increases these days is KFB, which I do not recommend, because it will throw off your stitch counts and is very visible on the right side of the work.)

K2, m1, k to 2 sts before marker, m1, k2. Slip marker and repeat. 4 sts increased.

Now work the number of plain rounds between increase rounds that you calculated above.

You will repeat these steps: Increase round, plain rounds (2) times. (2) refers to the number of increase rounds that you calculated above. Because we used the math above to space the increase rounds evenly over the number of rounds from waist to armpits, we now have knit the torso of the sweater as far as the armpits, and have shaped it so that it will fit correctly over the waist and chest!

Further Modifications

As you become more proficient at shaping your sweaters, you can modify the above instructions to achieve a variety of effects. The adventurous knitter may wish to try some of them right now!

Instead of placing the lines of decreases and increases at the side seams, you may move them closer to the center of the sweater to make mock princess seams that are visible on the front and the back of the body. You can change the directions of the increases and decreases when you do this (switch ssk for k2tog and vice-versa) for a different effect as well.

You may modify your D and E numbers to allow for longer stretches of plain knitting, either to accommodate a long waist, or to finish your increases well below the armpits (which can work better for larger busts) and work plain for the remainder of the sweater's length.

You may also shape the bust with short rows—this works well to accommodate larger busts and adds extra length to the front of the sweater, so that the hem stays even. If you would like to try some short rows, you will need to identify the largest part of your bust, and work them, when you reach that height in the torso. Typically this is about halfway through in increase section. When you reach this point, put your increases on hold while you work the short rows; you will resume working the increases when they are done.

The short rows will be worked across the front of the sweater (the first half of your stitches) only. The number of short rows worked is up to you—work more if you are using a thinner yarn, fewer if you are using a heavier yarn. To work the short rows, knit to one stitch before the first marker, then wrap and turn. Purl back to one stitch before the beginning of the round marker, then wrap and turn. Knit to a few stitches (3-6, more for a light yarn and less for a heavy one) before the first wrapped stitch, wrap and turn again, then purl back until you are the same number of stitches before the wrapped sts, and wrap and turn again. Repeat this process, always wrapping the stitch the same number of sts before the last one, until you have 3-6 wrapped stitches on each side of the torso (more for a large bust, fewer for a smaller one), ending after a purl row. You do not want the wrapped stitches to reach all the way across the torso, rather, you want them bunched up at either side, like bust darts on a tailored jacket.

Now, knit across until you come to a wrapped stitch. Work this stitch together with its wrap, and continue knitting until you reach the next wrapped stitch. Wrap and turn again. Now purl until you reach a wrapped stitch at the other end of the row. Work this stitch together with its wrap, and continue in purl until you reach the next wrapped stitch. Wrap and turn again. Repeat this process until you have knit the final wrapped stitch on a knit row. One wrapped stitch near the beginning of the round should remain unworked. Resume knitting in the round, and work this last wrapped stitch together with its wraps when you come to it. Resume your increases when you return to working in the round as well.

If you feel like trying any of these modifications on your current sweater project, go right ahead! Or, feel free to file them away for future reference—when you have more experience with custom sweater knitting, you will find it much easier to implement them.

When you have finished all the steps in this lesson (which may take more than one week, as it will for me!) you are finished with the torso of your sweater! We'll be letting it rest while we work the sleeves, which are coming at you for next week's lesson. Give yourself a big pat on the back when you have finished this step—you are well on your way to having a finished sweater!