Chapter 27-C

NEW KNITTING OPERATIONS FOR MIKS

It's impractical to add new symbols to the knitting font for every new stitch, cable, or other knitting operation that knitters around the world continue to create. How could I, or anyone else, keep up with all the new inventions? And even if I did keep adding symbols, we'd all have to keep downloading updated versions of the font, then search through several thousand symbols to find the one we wanted to add to our chart.

In light of this limitation, we have at least two alternatives for charting new knitting operations.

- We redefine a specific symbol to mean a specific operation in a specific chart for a specific project (which is always an option for all symbols).
- We combine existing symbols to represent the new operations.

Cables are one particular area of constant invention, so let's see how we can create in our charts a representation of a new cable by combining basic stitch symbols.

Example 1: Triple-Cross Cable

What if the middle two stitches in each half of a Cable 4/4 Left were themselves a Cable 1/1 Right? The picture shows two repeats.

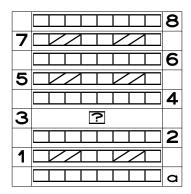
multiple of 8

C2R: sl 1 st to cn and hold to front, K1, K1 from cn (alternatively, go behind first st, K second st in back loop, K first st, drop both sts off needle)

Foundation row A and all WS rows: P.
Rows 1, 5, and 7 (RS): * K1, C2R, K1 *, rpt btw *.
Row 3: sl 4 sts to cn and hold to back, K1, C2R, K1, (K1, C2R, K1) from cn
Rpt rows 1–8.

We can easily chart almost the entire cable, since we already know how to chart the C2R.





How do we represent the triple cross that occurs on row three? We have to do the same two groups of K1–C2R–K1 as on the other public-side rows



at the same time that we do an ordinary Cable 4/4 Left.

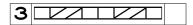


We have three basic options, with several sub-options for each. The basic options can show

- ust the individual stitch symbols
- (Let use the major crossing symbol)
- all the symbols, both the individual symbols and the major crossing symbol And technically, there's a fourth option, where we use text rather than any symbols at all.

Option 1: Show All the Individual Symbols

As shown above, we could use the complete set of six symbols that match the written-out instructions.

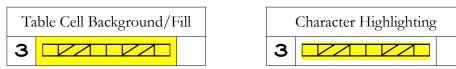


The Problem

The major problem with this option is that if we chart the stitch pattern's crossing row this way, there is absolutely no indication that **this** is the public-side row where we do the major crossing. If we're at knit night or watching a movie, we might well work through these six symbols and forget to do the larger crossing.

Solution A: Color the Symbols

One solution is to use color as a reminder or warning that we don't simply work these eight stitches as charted. We can change either the table cell's background color (or fill color, depending on the word processor), or we could add highlighting to the symbols. It's hard to see any difference between these two options if the cells' internal margins are very narrow, so here's what they look like with all four margins set to 0.06 inches.



We can of course use any color, but yellow handily reminds us, "Slow down! Be careful here!" We will have to either remember the color's meaning or else put it explicitly in the symbol key.

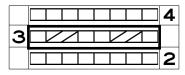
But suppose our project is worked in several colors, with all the different areas of color shown in the chart: one section is red, another is yellow, a third is blue. If our unusual cable is in the middle of the yellow section, then we can't use yellow to alert us to this special group of stitches.

We could use a different project color in the middle of the yellow area, or we could instead use a color that doesn't appear anywhere in the project. If our project is red, yellow, and royal blue, then we might use green or even light blue for the warning color.

If we don't have a color printer, we can use a highlighter or colored pencil to alter the printed black-and-white chart. It would be a good idea, however, to pick a warning color that prints as a very light gray and color the electronic chart where needed. Since it prints as a pale gray, we can color over it easily, but because it's also in the electronic version, the warning color will be visible when we open the file to print the chart in the future. Otherwise, we have to type notes somewhere in the chart file explaining that such-and-such cells need special care, and if the chart is on a page by itself, we may not remember to look for the special instructions on a separate page if all we print is the chart.

Solution B: Draw a Heavy Box Around the Symbols

Depending on how small a font size we have to use, we might be able to set thicker borders around the table cell in question, or if we're working from a printout, we can hand-draw a thick box around the ordinary symbols.



We can see that rows two and three are a bit taller than row four, so that the border doesn't obscure any of the content in those two cells. This added height may look a bit more extreme if we have to shrink the font size to six points or smaller.



What if we need to shrink the font size to fit the full project chart on a single page? It might be difficult to hand-draw a heavy-enough box around row three on a printout without obscuring symbols in any of the cells. If you've printed out this chapter, or at least this page, see if you can darken row three's cell borders without covering any part of the symbols.



Solution C: Draw an Arrow

We could use the Line object on the Drawing toolbar to draw a large arrow in the correct direction across the group of individual symbols.



We may have to play with the color, type, and width of both the line and the arrowhead so that they don't obscure the individual symbols.

Solution D: Block the Symbols from View

If we're working from a printout, we could tape a small rectangle of paper along one edge over the individual stitch symbols, leaving the paper free to be lifted along the other edge. Since we have to lift the flap to see what we're supposed to do, we'll be prompted to do more than just the actual symbols shown on the chart itself. We could then draw a left-pointing arrow or write "left leaning" on the flap to tell us which way to cross the cable's stitches.

Of course, this solution means that the electronic chart itself doesn't contain all the key information. If we record the crossing direction elsewhere in the file, we may or may not remember to add the little flap to the printed chart.

Solution E: Color One Half of the Cable

This solution is applicable specifically for cables, but the idea might also work for other new knitting operations.

We use the full symbol set that we work across the cable, but instead of coloring the entire set as in solution A, which reminds us to not work blithely across the symbols as shown,

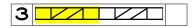
we color the stitches that will be either in the front, visible part of the cable or in the back, mostly invisible part of the cable.¹

So if we decide we'll color, say, the front stitches of a unique cable that doesn't have a predefined symbol, we would color our triple-cross symbols this way:



When we get to this point in the chart, we will place the first four stitches on the cable needle and hold it to the back, because the second four stitches are supposed to be the front, showing stitches of the completed crossing.

And if we decide to color the stitches that will wind up essentially invisible, because they're the back stitches in the crossing?



Either way is fine, but we will probably need to jot a note to remind us which group, the stitches at the front or back of the completed crossing, are the ones we've colored.

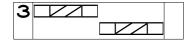
We can also make the decision about which group to color in such a way that makes it easy to remember what our decision was, as described later in the chapter.

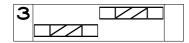
Lesson Learned

Why can't we simply color the stitches that we'll put on the cable needle? Because we still wouldn't know whether to put the cable needle to the front or to the back.

Solution F: Split the Full Set of Symbols into Two Lines

What if we split the individual stitch symbols into two lines in the table cell and put one group higher than the other? We can put either group on either line. We can use spaces to move the symbols to the proper place, or, since they're two separate paragraphs within the table cell, we can move them with the Left Justified or Right Justified text formatting buttons.





Did you do what I did? In my mind, I immediately drew arrows across the two groups.

¹ Note that throughout this chapter, *front* and *back* will most often refer to the relative positions of the two parts of the crossed cable, rather than where we put the cable needle to help with the crossing. The front, visible part is the one closest to an observer, and the back, mainly invisible part is the one closest to the wearer.





The imagined arrow's direction might be enough to suggest which way the larger crossing should be done.

The major problem with this solution, though, is that this one chart row is now two lines tall. If there are other patterns to its right and/or left in the project chart, they'll all have double-height rows at this point as well, even if they have only one line of symbols in them. Some of us would not be bothered by a taller chart row, but others would not like it.

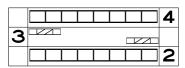
We can shrink the font size, so that the table cell is the same height as the rest of the stitch patterns that might be on either side of it.

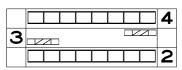




But if we need to resize the chart to try to fit it on one page, our special font size for this table cell will be lost.

Other big problems, of course, are that they're harder to read and aren't aligned with the chart symbols above and below them.





We could draw actual arrows, instead of relying on mental ones that may or may not suggest themselves the next time we look at the chart. Depending on the individual stitch symbols we need to use, it might be better to reverse the positions of the two groups so that we don't have to draw our actual arrow across the symbols, optionally using a warning color to make it really stand out.



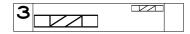


In a moment, we'll look at an alternative that fixes the alignment issues, makes the symbols a bit easier to read, and allows us to change the font size of the entire chart without losing the special formatting we need for this row of our new knitting operation.

Solution G: Draw Just One Group Half-Height

In this tweak of solution F, we leave one group of stitches at its full size and make the other group shorter.





We could switch which lines of symbols are which size.



While this solution does make half the symbols easier to read, this chart row is still taller than rows to its right and/or left would be, because the symbols are on two physical lines and one set is full size.

What if we leave the symbols all on one line but manually change one group to a smaller font size?



This solution works fine—until we need to shrink the font size of the entire project chart to fit it on one page. Then these hand-changed symbols will become the same size as the rest of the symbols in the chart and so lose their meaning here.

While half the symbols are again easier to read, the meaning is ambiguous. How do these size differences tell us which way the larger crossing leans?

There's a better way to make the symbols shrink, which we'll look at later in the chapter.

Option 2: Show Just the Major Crossing Symbol

Since this particular cable crosses four over four to the left, we can use the standard cable symbol found under the lowercase d.



This option has the same problem as using the six individual stitch symbols: since it looks like an ordinary Cable 4/4 Left, we might forget to work the cable's two halves as K1–C2R–K1. We have most of the same fixes as before.

Per solution A, we could color the single symbol as a warning



or add a heavy border per solution B



but both of those solutions still have a limitation, in that we don't know what stitches to work as we're doing the larger crossing.

If we do solution C, we draw two arrows to show the smaller crossings.



If we use solution D, where we cover the larger crossing symbol with a flap of paper we have to lift, we could write on it the stitch sequence of the cable's two halves.

Solution E, coloring half the symbol, might not in itself make much sense, but then again, that could be a useful prompt.



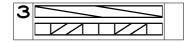


Solution F, drawing the groups half-height, and solution G, drawing one group half-height, won't really work here because we have only one symbol.

Option 3: Use All the Needed Symbols

If we put all the individual symbols **and** the wide cable symbol on two lines in a single table cell, we can put the wide symbol either below or above the group of six.





We see everything we're supposed to do, but row three is again twice as tall.

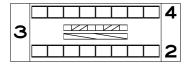
It is possible to stack the symbols on top of one another in the computer, which is left as an exercise for the reader (hint: put either the complete set of individual symbols or the larger cable symbol in a text box drawing object).

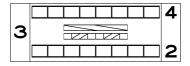
What if we shrink the font size for those two lines of symbols?



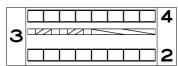


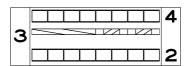
They're a bit harder to see, and they are now misaligned with the symbols in the rows above and below them. They will suffer the same problem as the groups in solutions F and G for option one if we need to shrink the font size of the entire chart.



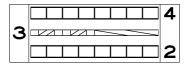


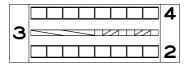
Will both sets fit on a single line?





My word processor allows me to move text vertically within table cells to the top, middle, or bottom of the cell, so let's move row three's symbols to the middle of the cells.





Will we be confused by having sixteen stitches' worth of symbols all on a single line? Maybe not today, but in five years, we may have trouble remembering what this doubled set of symbols means.

Option 4: Use Text Instead of Symbols

As long as we're sure we'll remember to do K1–C2R–K1 in both halves of the cable, then instead of using any symbols, we can simply write in the chart a phrase indicating the larger crossing's direction.



For some situations, we might have enough space to write out fuller instructions that capture everything we're supposed to do. In this first version, I had to shrink the font size a bit to get it all to fit.

We might be able to save a bit of space by changing which characters we use and therefore make the font bigger again.

The important thing is to avoid ambiguity so that all the information is right here in the actual spot we'll be looking at instead of elsewhere in the electronic file (unless we put in the cell itself a note that tells us to look at a different spot in the file).

Example 2: Seed-Stitch Cable

What if a twelve-stitch-wide left cable was half seed stitch and half stockinette?

multiple of 12

Rows 1, 3, 5, 21, and 23 (RS): (K1, P1) 3 times, K6.

Rows 2, 4, 6, 20, 22, and 24 (WS): P6, (P1, K1) 3 times.

Row 7: sl 6 sts to cn and hold to back, K6, (K1, P1) 3 times from cn.

Rows 8, 10, 12, 14, 16, and 18: (P1, K1) 3 times, P6.

Rows 9, 11, 13, 15, and 17: K6, (K1, P1) 3 times.

Row 19: sl 6 sts to cn and hold to back, (K1, P1) 3 times, K6 from cn.

Rpt rows 1-24.

In the initial chart, only the crossing rows are uncertain. (The photo cuts off the bottom two or three rows of the first of two repeats.)

When considered from the public side, eleven rows make the right half of the cable in seed stitch and the left half in stockinette. On eleven other rows, the right half of the cable is stockinette and the left half is seed stitch.

On rows seven and nineteen, we cross the last six stitches in front of the first six, which swaps the positions of the seed stitch and stockinette halves while making the cable

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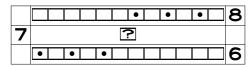


slant to the left. Since there isn't a predefined symbol for the crossings in this cable, or even a symbol that's twelve stitches wide, we will combine knits and purls, and possibly other symbols, to show us what to do.

An Extra Complication

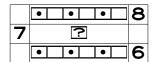
Unlike the triple-cross cable, the two halves of this cable's crossings do **not** have the same sequence of stitches. In the triple-cross cable, both halves of the cable were K1–C2R–K1, but in the seed-stitch cable, one half of the cable is all knits while the other half alternates knits and purls. That difference makes our task—and our options—more complicated.

Since the two halves of the cable use different stitch sequences, it would be easy to misinterpret the two cabling rows. Why? Let's concentrate on the first crossing, looking at rows six through eight.

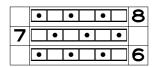


Since the left-most stitch in the seed-stitch parts of rows six and eight is a public-side purl, that means the first stitch we work in the seed-stitch part of the cable-crossing row seven must be a knit. If we remove the six knit symbols from those two rows, the issue will be instantly clear.

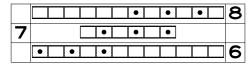
The seed-stitch half of the cable is



so on row seven we must alternate K1–P1 for those six stitches.



But our full chart needs to show the six knit stitches on each of those rows for the other half of the cable. We know where they go on rows six and eight

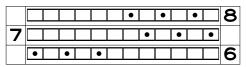


but where do they go in row seven, since we cross the two groups? Do we show them before or after the six seed stitches?

While we can use the options we had for the triple-cross cable, we'll find different problems with this cable, since its two halves are different stitch patterns.

Option 1: Show All the Individual Symbols

Whether we use a cable needle or not, we'll **work** the six stockinette knits before the six seed stitches, so we'll put the six knits to the left of the seed stitch. The chart therefore shows the **post-crossing** order of the stitches.



Is this row as charted enough to remind us to do the crossing? It should be, because as we approach this stitch pattern on row seven, what we'll see on our source needle is seed stitch in the first half of the cable and plain stockinette in the second half. That's the opposite of the order shown in the chart's row seven, so hopefully we'll realize that we need to cross the cable's groups.

Lessons Learned

Why use post-crossing order instead of pre-crossing? Because post-crossing order goes back to our very first rule of charting: the chart shows all stitches and rows as they appear when looked at from the public side of the piece. We should therefore show the cable's stitches in the order that they'll be on the **working** needle when we've **completed** the cable (as opposed to what they'll be on the source needle before we start the cable). Since we know that on row seven we'll work the stockinette half first, the six stockinette stitches are the first ones in the chart row. (And of course, on row nineteen, we would put the seed stitches first, before the stockinette.)

If we think about charting plain old seed stitch (and not as just half of a unique cable), what the chart shows is not what the **existing** stitches are on the **source** needle. What the chart shows is what the **newly formed** stitches on the **working** needle look like from the public side: the stitches we just made, not the stitches we made them from.

However, note that this idea is just a Lesson Learned, not a Charting Rule. For some of us, it will make more sense to show the symbols in pre-crossing order. The rest of the chapter will show the individual symbols in post-crossing order.

The Problem

The one question this preliminary chart **doesn't** answer, though, is, Which group should be visible after the crossing: the seed stitch or the stockinette? That is, do we put the first group of stitches, the seed-stitch portion, to the front or back of the work before we knit six?

We're back to our original question: How do we show the crossing direction in the chart?

Only Some of the Solutions for Option 1 Work

What if we use the various solutions for option one for the triple-cross cable? Solution A, coloring the entire set of stitch symbols, wouldn't tell us which way the cable should cross. Neither would solution B, a thick border around all the symbols, be of any help in that regard. But either solution would alert us to the fact that we have to do more than simply work the stitches as shown.

Solution C, drawing an arrow for the crossing direction on top of the individual symbols, would work in some situations; in others, we might obscure some of the symbols.



Solution D, using a flap of paper over the stitch symbols, lets us draw an arrow or write the crossing direction on the flap. When we get to those stitches, we peek underneath to see the detailed stitch symbols.

Solution E: Color One Half of the Cable

Instead of coloring all the individual symbols as in solution A, we color half of them, either the stitches that will wind up as the front, visible part of the cable



or those that wind up as the back, invisible part of the cable.



The obvious issue is that we don't know for sure what the color indicates, just that it means something. The specific something has to be put in the symbol key or somewhere else in the file as ordinary text.

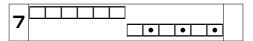
Remember that per one of the Lessons Learned, we can't simply color the stitches that

go on the cable needle, because we won't know whether we put the cable needle to the front or the back of the work.

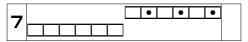
Solution F: Split the Full Set of Symbols into Two Lines

As with the option to color only half the cable symbols, we can either raise or lower each of the two parts of the cable, the front stitches or the back stitches.

In the first chart, we raise the front, visible stitches and lower the back, invisible stitches.



We could raise and lower the groups the other way if that makes more sense.



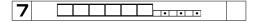
We will have to determine for ourselves which way of raising and lowering the groups works best for us. If we rely on the first arrangement to suggest a mental arrow indicating the crossing direction, another time we may not be reminded of a mental arrow. We could draw an actual arrow across the second arrangement without obscuring any of the individual stitch symbols. What works for one knitter may only lead to incorrect knitting for another, even if that other knitter is us—five months or five years from now.

We also now have a chart row that's two lines high. Every pattern to the right and left of this pattern will also have its row be two lines high, even if it needs only one line for its symbols. Needing an extra line in a single table cell could be the difference between fitting the chart on a single page—or not!—for those of us who like to work from paper.

Solution G: Draw Just One Group Half-Height

What if we left the symbols for the front stitches of the finished cable the normal font size and only changed the symbols for the back, mainly invisible stitches to a smaller font size? This method helps us get the front, visible part of the cable correct in needles and yarn.

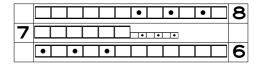
Here the front stitches are twelve points and the back stitches are six points.



It's true that the smaller symbols in the crossing row won't be aligned with the stitches in the rows before and after them, so let's add two more rows to the chart to see how bad that effect will be. Note that if we put each stitch pattern in its own table column, the misalignment will affect only the seed-stitch cable pattern's rows if our chart has more stitch patterns on either side of this one.



We could now use the Left Justified text alignment setting to force all the symbols to the proper side of the table cell.



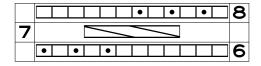
The issue with manually changing the font size of some of the symbols is that if we need to shrink the font size of the entire chart, we have to remember to come back to this group of symbols and shrink them smaller still. But what if we don't remember to do that?

We'll look at a better solution in a moment.

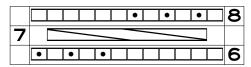
Option 2: Show Just the Major Crossing Symbol

Instead of showing all the individual stitch symbols, we can use just the directional symbol to show how the stitches should be crossed. That means the chart row will be only one line tall, so it won't affect how other patterns in the chart look.

Since for this particular cable our source needle will show us which group of stitches we work as seed stitch and which as stockinette, we can simply show a regular cable symbol that slants in the correct direction. This chart uses the Cable 3/3 Left symbol.

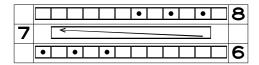


Even though this cable symbol is just six stitches wide, it shows the correct crossing direction. It's also easy to add it to the chart: just type a lowercase c. The knitting font does have ten-stitch-wide cable symbols, which we can copy and paste it from the font catalog.²



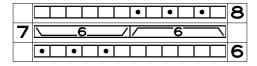
We could use any of the font's arrows as well.

We could try to use our word processor's Insert | Symbol menu item, but that dialog box is not very adept at showing symbols more than one stitch wide, since normal alphabets don't have characters with such wildly varying widths. Plus, that's more work than just typing a c!



Whichever of the directional symbols we put in the chart, we will need to remember to work all twelve stitches of the cable, since the font doesn't have any symbols more than ten stitches wide.

If we want to really remind ourselves that this cable is twelve stitches wide, we can use the bracket symbols introduced in part one's chapters on decreases and increases.



We'll each have to decide which bracket direction indicates the stitches at the front of the finished cable and which indicates the back stitches.

Since there are bracketed numbers up to ten, we can chart cables up to twenty stitches wide (and note that the two "halves" of the cable don't need to have the same number of stitches if we use these brackets).

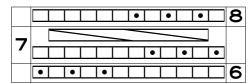
A Possible Problem

Any of these options shows us which way to cross the two groups of stitches, but we lose the specifics we might need to work the cable's stitches properly. For cables where both halves use the same stitch sequence, like the triple-cross cable, it may be overkill to show both things explicitly. Even for our seed-stitch cable, we'll be able to see clearly on our needles which half of the cable is seed stitch and which is stockinette, even though the specific symbols are not shown in any of these versions of the chart.

For other stitch patterns, the directional symbol(s) alone may not suffice.

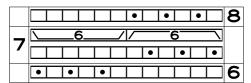
Option 3: Use All the Needed Symbols

We could do the same thing we did in the triple-cross cable, combining the individual stitch symbols with the widest cable symbol available.



It's true that the cable symbol is only ten stitches wide, but even so, it should be enough to prompt us to do the crossing correctly.

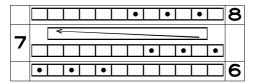
We could use the bracket symbols above or below the individual stitch symbols.

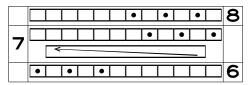


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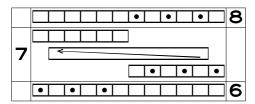
Since the brackets are directional, we can use them to show which group is at the front and which is at the back—once we decide which bracket direction means what!

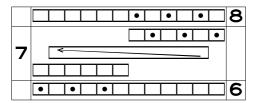
We can put arrows above or below the line of individual stitch symbols





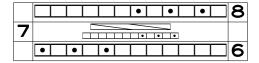
or we could even combine any of the directional symbols with the groups of regular stitch symbols split into separate rows.

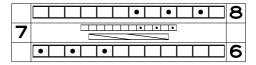




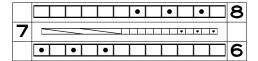
Using three lines is probably overkill for this particular cable, but representing the stitches this way may well be necessary for complicated stitch patterns.

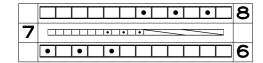
If we shrink the font size to make this chart row be the same height as the chart rows to its left and right, then we'll have to remember to shrink this particular chart row to an even smaller font size should we need to make the chart fit on a single page.





Perhaps both groups of stitches would all fit on a single line at this smaller point size.



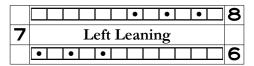


If we use this solution but then have to shrink the font size of the entire chart, we'll still have the problem of these symbols no longer being smaller than those around them.

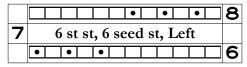
The better solution is coming right up!

Option 4: Use Text Instead of Symbols

In this option, we put a phrase in the table cell instead of the stitch symbols.



We'll again be able to tell just from the stitches on the source needle where we work seed stitch and where we simply knit all six stitches. For some cables and other new knitting operations, though, we might not be able to tell how to work the individual stitches just from what we see on the source needle when we get to that point. If we're uncertain and if we have the space, then we can put all the information in the cell explicitly.



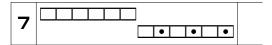
The Better Way to Shrink Symbols

If we want to put the cable's two groups of stitches on separate lines in their table cell, then the entire table row will be two lines tall, even in stitch patterns that have all their symbols on a single line. If we want all the chart rows to be the same height but give the appearance of two groups, then we need to keep all the symbols on one line but shrink one or both sets vertically. If we resort to simply changing the font size of either or both groups, then those changes will be eliminated should we have to change the font size of the entire chart.

Let's look at how we can change the formatting for the two halves of the seed-stitch cable while keeping all the symbols on a single line.

Superscripts and Subscripts

For the seed-stitch cable variations in solution F of option three, we had the symbols on two physical lines (or paragraphs) in the table cells.





Then we experimented with making these groups of symbols six points, compared to the twelve points of the row number, which restored the chart row to its original height.

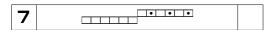




This technique works fine, until we need to change the font size of the entire chart, which means these symbols will also be changed.

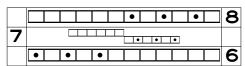
The better way to shrink either or both sets is to keep all the symbols in a single line but change the font **position** for each group to be either superscript or subscript.³ In the following pair of charts, the higher group has been formatted as superscript and the lower group as subscript.





Note that the word processor automagically scales the symbols' **apparent** font size in addition to raising or lowering the symbols' positions. The symbols are all technically still at twelve points, even though they are smaller than that when measured with a ruler.

Let's see what the first variation looks like when placed between other pattern rows.



When I copied and pasted in the group from the example table, the table row's height did not change, so my word processor's default settings for scaling both superscripts and subscripts worked well. Some of us may need to manually change the settings on our word processor's Font or Character dialog box if the default values increase (or decrease) the table row's height more than we like.

One issue with this method, though, is that the characters' font size must scale appreciably to be raised or lowered without affecting the overall height of the table row. The chart

³ Superscripts are used for footnote numbers, and both superscripts and subscripts are frequently used in scientific and mathematical contexts. A superscript is a raised character, like the 2 in $E = mc^2$, and a subscript is a lowered character, like the 2 in H_2O .

above is at twelve points, and row seven's symbols are the equivalent of about six and half points tall. If we have to use seed-stitch cable in so large a chart that we have to shrink the chart's font size to fit it on one sheet of paper, it's going to be really hard to read the raised and lowered symbols.

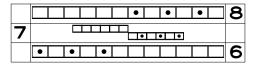
Here's the same bit of chart at six points so we can see just how small the symbols representing the cable crossing will be. Note that all I have to do is set the entire table to be at six points; there's no need whatsoever for me to fiddle with the symbol point size for row seven.



But we have some more tricks we can do to help make these shrunken symbols easier to read.

Font Weight

The first is to simply select them and make the font bold.

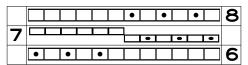


And if we have to have the chart at six points to fit it all on one page?



Symbol Width

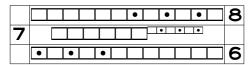
There's also an option to stretch text horizontally. In the Font or Character dialog box, there's a setting called "scale" or "scale width." The default value is 100 percent, which means the characters will all be their natural width for whatever point size they're at. A little trial and error led me to set the scale width to 171 percent, which makes them almost the exact width of the natural-size symbols in the rows below and above them.



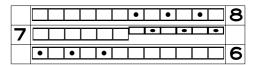
If we do the exact same adjustments in the six-point version of the chart (bold font and scale width of 171 percent), the crossing symbols are a little clearer.



If we want to keep one set of symbols full-size and shrink only the other, we can do that as well. Here we've superscripted the cable's back, mostly invisible stitches.



We can do the same appearance tweaks as before to make the symbols easier to see and to align them with the rows below and above.



And if we have to shrink the entire chart to, say, six points to fit it on a single page, then we don't have to remember to fix the symbols in this table cell, as the superscripting will automagically make those symbols smaller.



Remembering the Formatting Meanings

There's one key thing we've omitted in this discussion with our sample cables. What if we need to chart a right-leaning cable? The major crossings in both our sample cables leaned to the left, so if we're using a cable needle, we put the first half of the cable's stitches on the cable needle and hold it to the back.

What if we need to chart a cable that slants to the right, which means the first group of the cable's stitches are put on a cable needle which is then held to the front, not the back? Oops!

Focus on the Important Thing

Let's work through our options again, focusing **on the outcome itself**, the way the final cable slants, rather than the way we **get** the outcome. This shift in focus has the added benefit of making the chart usable by all knitters, whether mirror-image or traditional.

Non-Formatting Solutions

If we're using a cable symbol or arrow from the knitting font, we'll know which direction the crossing should lean. The numbered brackets would require a note in the symbol key or elsewhere as to which direction of bracket means which part of the cable is more visible or less visible.

If we use a word or phrase either right in the table cell or on a small piece of paper partially taped to the printed chart, we'll again know which way to cross the stitches. Remember, though, that using a separate flap means that key information is not directly in the electronic version of the chart (though we can of course note it elsewhere in the file).

Using Format to Indicate a Unique Cable's Slant

But if we want to chart a unique cable by combining ordinary symbols, we can format those stitch symbols to indicate which stitches wind up at either the front or the back of the **finished** cable, whether those stitches are the ones put on a cable needle or not. For a left-slanting cable, we would alter one group of stitches; for a right-slanting cable, we alter the other group of stitches.

But which way do we go: alter the front symbols, or alter the back? And how will we remember which way we made this arbitrary decision?

Remember Something Else Instead

Sometimes it's easier to remember a mnemonic that helps us remember something than it is to remember the something itself. (Or is that just me?)

- If I wanted to use color to indicate which group of a cable's stitches winds up either highly visible at the front or nearly invisible at the back, I would pick a color whose name starts with an f or a b. I can't think of an ordinary color that starts with f, but blue and brown both start with b.
- If I wanted to superscript (or subscript) the appropriate symbols as my cue, do I alter the front or back stitches of the cable? In my mind, I would keep the *front* stitches *full-sized* (both of those start with f) while I would make the *back* stitches *baby-sized* (both of those start with b).

In my chart I would therefore put the stitches in the order they'll be after I've crossed the cable, according to the Lesson Learned, then the highlight color or superscript/subscript formatting would be applied to the group of stitches that winds up at the back, hidden behind the visible stitches of the front part of the cable.

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I'll remember that *blue* or *baby-sized* go with *back* or *behind* much more easily than whatever random decision was made when I flipped a coin to see if I should alter the cable's front or back symbols.

Come up with a mnemonic device that works perfectly—and unambiguously—for you.

Summary

With so many choices, we can play around with the various options—and devise others—until we find the one that makes the most sense to each of us individually.

And if you create a solution, please share!

⁴ In both crossing rows of the right-slanting cable, the superscript symbols are bold. In row nineteen, the table cell is set to Centered text in row nineteen and Right Justified in row seven. I didn't bother changing the scale width in either row.