

Chapter 27-P

NEW KNITTING OPERATIONS FOR MIKS

Making up new symbols for new knitting operations is not an issue only for those who chart in the computer. Those who chart by hand on paper may also face some new stitch maneuvers that don't lend themselves to the more typical ways we hand-draw our knitting charts.

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.

Note that to save wear and tear on my mouse wrist, I have typed up the bulk of the charts even in this version of the chapter in multi-column tables in my word processor using the knitting font. Just the tricky bits will be shown “drawn by hand on grid paper.”

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 *.

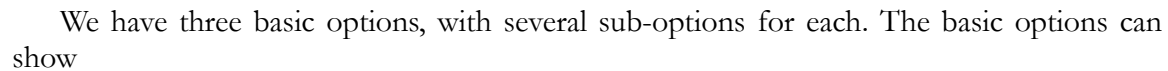
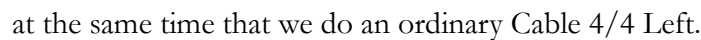
Row 3: sl 4 sts to cn and hold to back, K1, C2R, K1, (K1, C2R,
K1) from cn

Rpt rows 1-8.

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

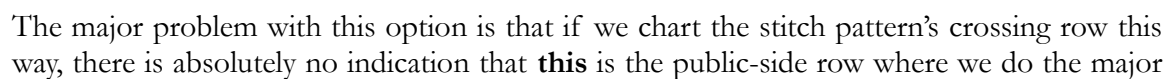


How do we represent the triple cross that occurs on row three? We have to do the same two groups of K1–C2R–K1 as on the other public-side rows



- And technically, there's a fourth option, where we use text rather than any symbols at all.

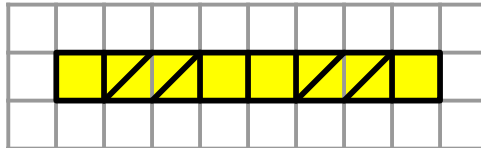
As shown above, we could use the complete set of six symbols that match the written-out instructions.



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.



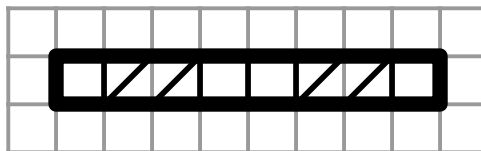
We can of course use any color, but yellow handily reminds us, "Slow down! Be careful here!" We will have to either remember the color's meaning or else put it explicitly in the symbol key.

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.

Solution B: Draw a Heavy Box Around the Symbols

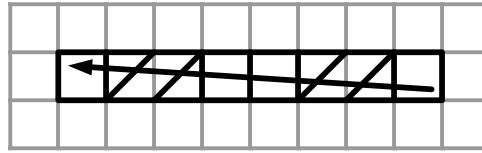
Depending on how fine a grid we have to use, we might be able to draw a thicker border around the entire set of symbols, which again acts as a warning that the symbols shown are not the complete story of what we need to do on these eight stitches.



It might be difficult, though, to draw a heavy border on a very fine grid without obscuring either the symbols for our new knitting operation or any of the adjacent symbols.

Solution C: Draw an Arrow

After we draw the individual symbols, we can draw a large arrow in the correct direction across them.



We have to be careful that we don't obscure any of the symbols beneath it.

Solution D: Block the Symbols from View

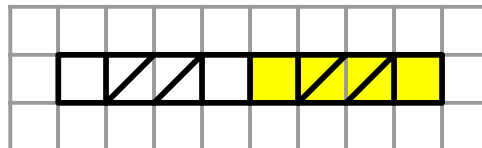
We draw the individual symbols as in solution A, then tape a small rectangle of paper along one edge over the individual stitch symbols, leaving the paper free to be lifted along the other edge. Since we have to lift the flap to see what we're supposed to do, we'll be prompted to do more than just the 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.

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

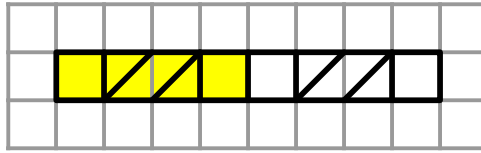
So if we decide we'll color, say, the front stitches of a unique cable that doesn't have a predefined symbol, we would color our triple-cross symbols this way:



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?

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.



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.

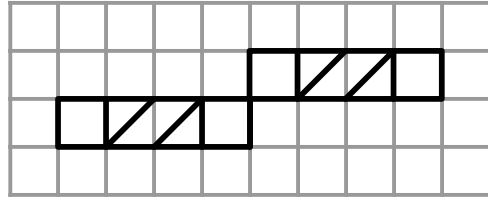
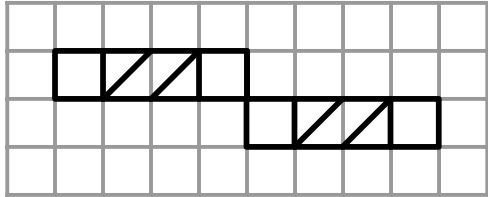
We can also make the decision about which group to color in such a way that makes it easy to remember what our decision was, as described later in the chapter.

Lesson Learned

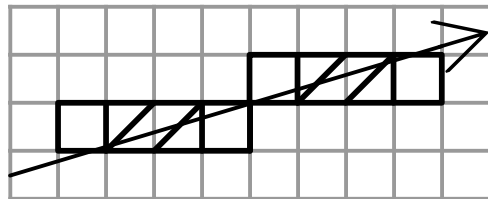
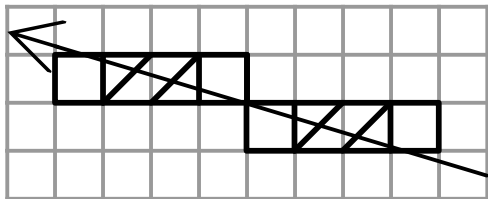
Why can't we simply color the stitches that we'll put on the cable needle? Because we still wouldn't know whether to put the cable needle to the front or to the back.

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

What if we draw the individual stitch symbols over two grid rows and put one group higher than the other? We can put either group on either row.



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



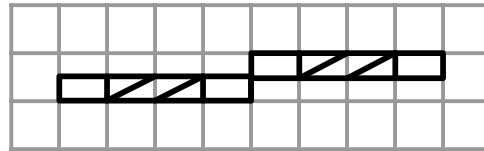
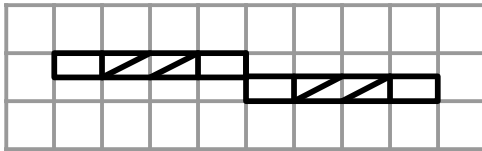
The imagined arrow's direction might be enough to suggest which way the larger crossing should be done.

The biggest problem with this solution is that **two grid** rows now show **one chart** row. If this special cable is just one of many stitch patterns in a larger project chart, then the

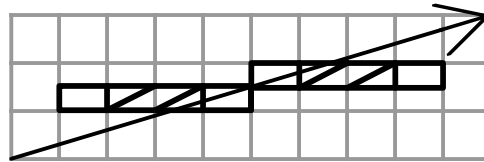
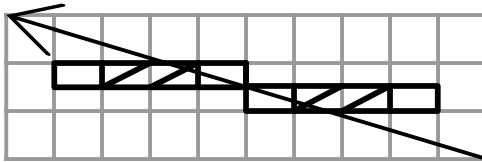
other stitch patterns will have **two chart** rows next to what is this pattern's **one chart** row, because we've used two grid rows to draw it. That will likely lead to errors as we work.

We would therefore need to adjust the rest of the chart to accommodate this option. The obvious thing to do would be to cut this stitch pattern vertically along its left and right edges, then cut the remainder of the stitch patterns horizontally at this spot. We then spread all the other patterns apart by one grid row. That keeps all the patterns' rows aligned above and below this double-height charted row. We would, however, need to fill in the gap in those other stitch patterns in some way that unambiguously reminds us that there's not an extra row of stitches there, especially if we're relying on the empty grid squares themselves to represent public-side knits.

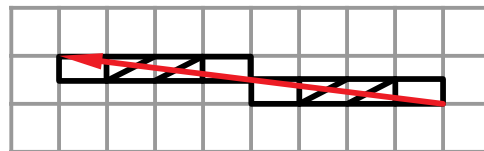
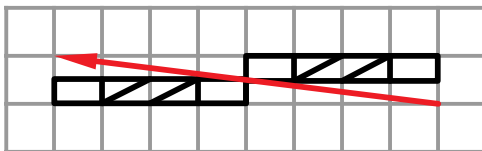
The easier thing to do is to shrink the two sets of symbols vertically so that both will fit into a single grid row, then move each group either up or down within that one grid row. We could raise or lower either group.



As before, I mentally drew arrows across the two groups, which might be enough to suggest which way the larger crossing should be done.

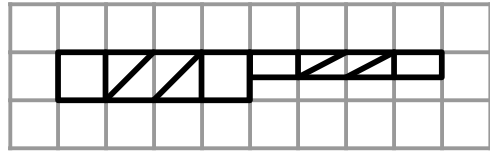
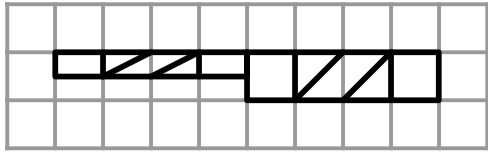


We could draw actual arrows, instead of relying on mental ones that may or may not suggest themselves the next time we look at the chart. Depending on the individual stitch symbols we need to use, it might be better to reverse the positions of the two groups so that we don't have to draw our actual arrow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

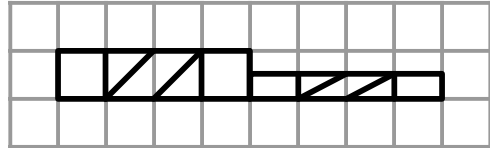
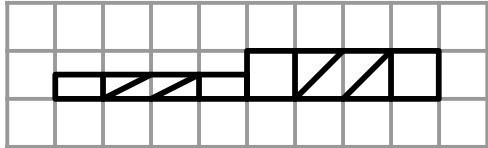


Solution G: Draw Just One Group Half-Height

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



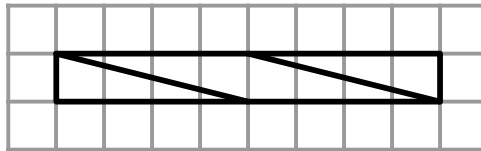
We could position the shrunken symbol set in the bottom half of the grid row instead.



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

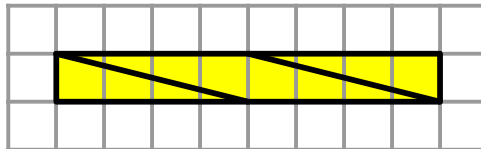
Option 2: Show Just the Major Crossing Symbol

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

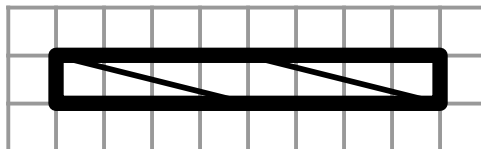


This option has the same problem as using the six individual stitch symbols: since it looks like an ordinary Cable 4/4 Left, we might forget to work the cable's two halves as K1–C2R–K1. We have most of the same fixes as before.

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

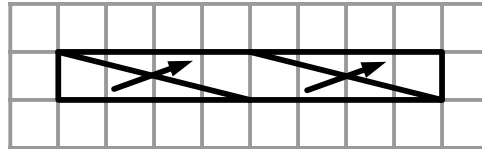


or add a heavy border per solution B



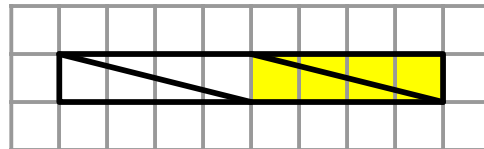
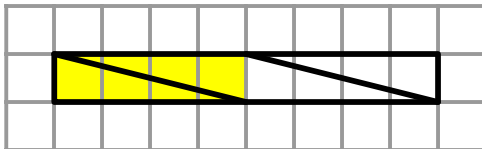
but both of those solutions still have a limitation, in that we don't know what stitches to work as we're doing the larger crossing.

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.

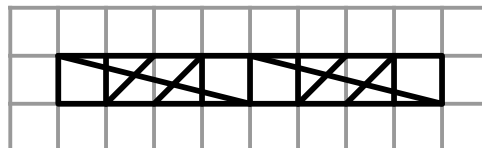
Solution E, coloring half the symbol, might not in itself make much sense, but then again, that could be a useful prompt.



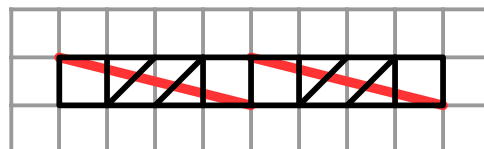
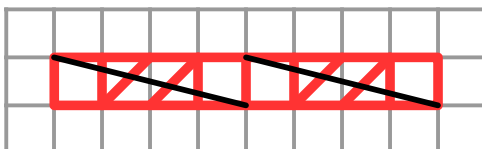
Solution F, drawing the groups half-height, and solution G, drawing one group half-height, won't really work here because we have only one symbol.

Option 3: Use All the Needed Symbols

We could draw all the needed symbols to explicitly show everything we need to do on this group of stitches.

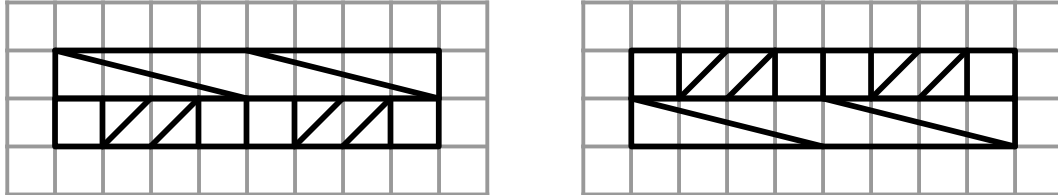


Since this composite symbol looks a little odd, we could draw either bit of the composite symbol set with a different color and optionally make those lines a bit thicker to make it easier to understand how the symbols' lines group together.



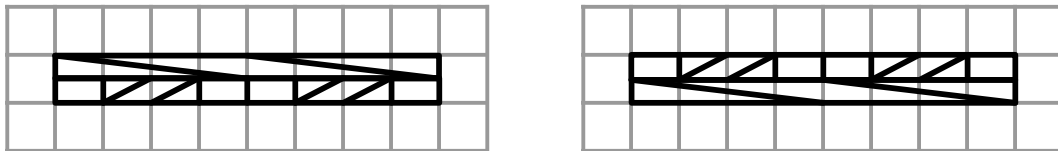
Some of us might find the overlaid version of the composite symbol too busy. In that

case, we could draw both the larger crossing symbol and the individual symbols, but put them in two separate grid rows. Either symbol or set could be put in either grid row.



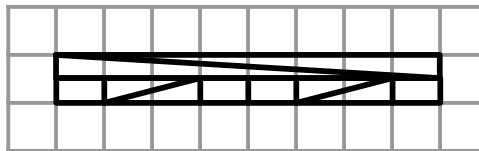
But as before, we now have this one stitch pattern using two grid rows to show one chart row, which may cause issues for any other stitch patterns in the project chart.

The easier thing to do is to shrink the two sets of symbols vertically so that both will fit into a single grid row. We could put either set either above or below.

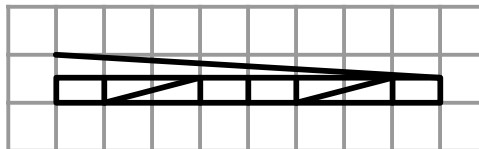


Now, it's true that the shorter symbols are a bit harder to read, but it's just this one composite symbol every eight rows.

We could perhaps simplify our complete symbol by omitting some of the diagonal lines



and even the larger crossing symbol's outer border.



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.

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 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.

	• • • • •		24
23	• • • • •		
	• • • • •		22
21	• • • • •		
	• • • • •		20
19	?		
	• • • • •		18
17	• • • • •		
	• • • • •		16
15	• • • • •		
	• • • • •		14
13	• • • • •		
	• • • • •		12
11	• • • • •		
	• • • • •		10
9	• • • • •		
	• • • • •		8
7	?		
	• • • • •		6
5	• • • • •		
	• • • • •		4
3	• • • • •		
	• • • • •		2
1	• • • • •		



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.

	[] [] [] [] [] [] [•] [] [•] [] [] [•] []	8
7	[] [] [] [] [?] [] [] [] [] [] [] [] []	
	[•] [] [•] [] [•] [] [] [] [] [] [] [] []	6

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

		8
7		
		6

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

		8
7		
		6

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

		8
7		
		6

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.

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.

						.		.		.			8
7							.		.		.		
	.		.		.								6

Lessons Learned

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

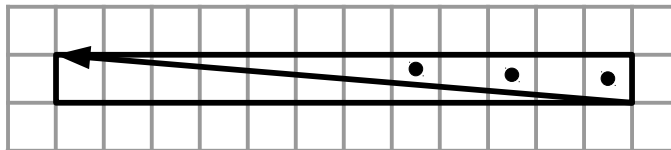
The one question this preliminary chart **doesn't** answer, though, is, Which group should be visible after the crossing: the seed stitch or the stockinette? That is, do we put the first group of stitches, the seed-stitch portion, to the front or back of the work before we knit six?

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.

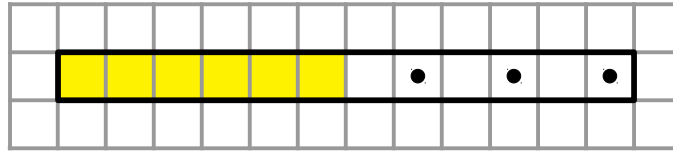


For this particular cable, I moved two of the purl dots upward slightly to make sure they remained visible.

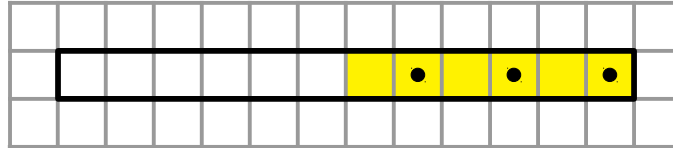
Solution D, using a flap of paper over the stitch symbols, lets us draw an arrow or write the crossing direction on the flap. When we get to those stitches, we peek underneath to see the detailed stitch symbols.

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.



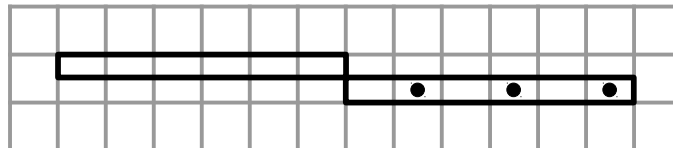
The obvious issue is that we don't know for sure what the color indicates, just that it means something. The specific something has to be put in the symbol key or somewhere else on the page as ordinary text.

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 to put the cable needle to the front or the back of the work.

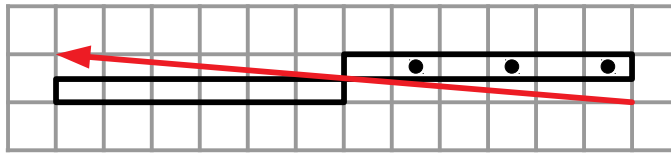
Solution F: Split the Full Set of Symbols into Two Lines

Since we already know that using two grid rows to show a stitch pattern's single chart row will cause problems with adjoining stitch patterns, we'll skip straight to drawing the symbols half-height within a single grid row.

Let's draw some boxes around each group to make the two halves of the crossing less ambiguous, since my paper charts assume an empty grid cell is a public-side knit.



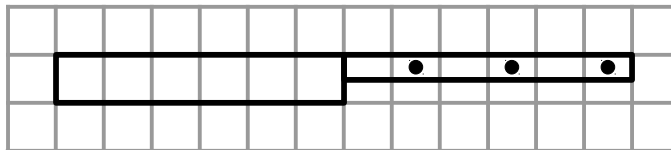
If we're comfortable that the mental arrow suggested by the relative positions of the two groups means that we cross the cable to the left, then we can leave it as is. If we want to add an actual arrow to the chart without taking any chance of drawing over any of the individual symbols, we can reverse how the groups are raised and lowered.



Solution G: Draw Just One Group Half-Height

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

Since the stockinette portion is the front, visible part of the cable, it's shown full-size.

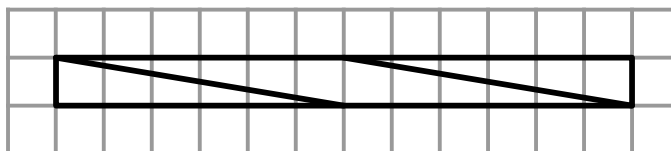


In this case, since an empty grid square represents a public-side knit, using a rectangle around the grid cells for each half of the cable helps make the meaning clearer.

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 grid row tall, so it won't affect patterns to its left and right in the project chart.

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.



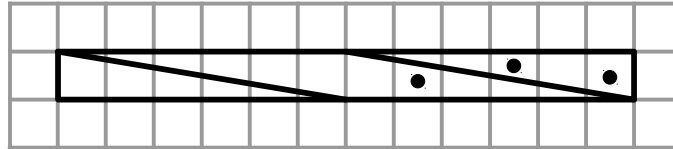
A Possible Problem

This option 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 this version of the chart.

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

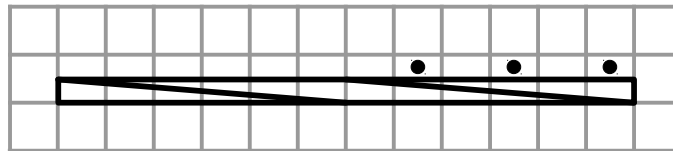
Option 3: Use All the Needed Symbols

In option three, we draw all the necessary symbols in a single grid row, placed on top of one another. I've adjusted the positions of two of the purl dots so that they aren't clobbered by the cable symbol.

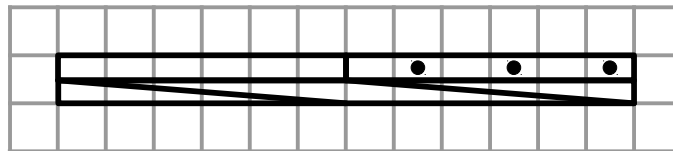


Because of the particular combination of individual symbols used in this cable compared to the triple-cross cable, we can show both sets of operations relatively easily. Note that since the individual symbols don't actually touch the crossing symbol, it may not be necessary to color one or the other, the way we did with the triple-cross cable. Using different colors for the two sets of actions, though, is always an option.

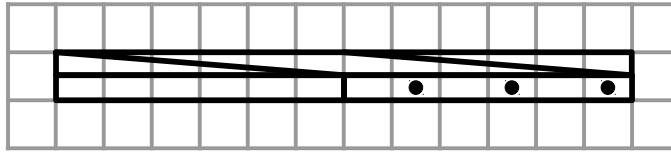
But we could also draw each group of symbols half-height. The resulting charted row may be a bit cryptic since we're using empty grid squares to represent knit stitches.



We might draw some rectangles around the two sets of stitches making up the two halves of the cable, just to add a bit of clarity.



The relative placements of the two groups could also be reversed.

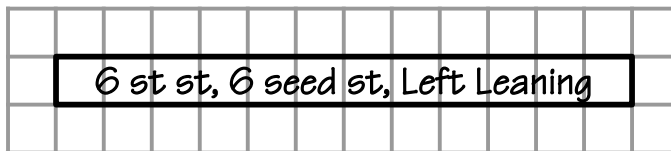


Option 4: Use Text Instead of Symbols

In this option, we put a phrase in the grid row 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.



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 draw a cable symbol or arrow, we'll know which direction the crossing should lean. If we use a word or phrase either right in the chart or on a small piece of paper partially taped to the chart, we'll again know which way to cross the stitches.

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 shrink 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 shrinking 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.²

² In the two complete charts for the seed-stitch cable, I took the lazy way out and used the knitting font rather than drawing them by hand. For the shrunken symbols, I altered them with my word processor's Character dialog box, making them superscript and bold, then changing their scale width to 171 percent so that they were essentially the same width as the full-sized symbols above and below them. (If I had made them merely superscript to shrink them or even just manually reduced their font size, they would be narrower than the surrounding symbols.)

	Left Slanting: Color	
	• • • • •	24
23	• • • • •	
	• • • • •	22
21	• • • • •	
	• • • • •	20
19	• • • • •	
	• • • • •	18
17	• • • • •	
	• • • • •	16
15	• • • • •	
	• • • • •	14
13	• • • • •	
	• • • • •	12
11	• • • • •	
	• • • • •	10
9	• • • • •	
	• • • • •	8
7	• • • • •	
	• • • • •	6
5	• • • • •	
	• • • • •	4
3	• • • • •	
	• • • • •	2
1	• • • • •	

	Right Slanting: Size	
	• • • • •	24
23	• • • • •	
	• • • • •	22
21	• • • • •	
	• • • • •	20
19	• • • • •	
	• • • • •	18
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1	• • • • •	

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!