

4			—	—			
			—	—			3
2			—	—			
			—	—			1
	6	5	4	3	2	1	

WS RS

Numbering

- The rows are numbered on the sides. The stitches are numbered on the bottom.
- Start at the bottom and work up. (This is true for top down also.)
- Always read from right to left on RS
- Always read from left to right on WS.
- When knitting in the round, only read from right to left.
- Almost all of the time you start at the bottom right-hand corner but always start with the lowest number. I have seen charts that started on the left with 0 and on the left with 1.
- Sometimes the same symbol means different things on the RS and the WS

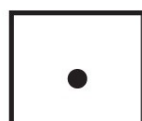


Knit on RS, Purl on WS

Purl on RS, Knit on WS



k on RS; p on



p on RS; k on

In the chart below, only the right-side rows are shown. This might mean that the WS rows would be simply knitted or purled.

Pattern Chart

		○	∧	5
	○	∧		3
○	∧			1
4	3	2	1	

Chart Key

	K
○	YO
∧	K2 tog

The Chart Key (Legend) Shows what each symbol stands for. On a project in the round there is only one meaning for each symbol. For a project that is knitted flat, there will be instructions for both the right and wrong side. Most chart symbols will bear some resemblance to the stitch they are representing, as the stitch will appear on the right side of the work.

Hint: Study the chart key. If there is an abbreviation that you don't know, check for Abbreviations in the pattern. If you still are in the dark, search for it on YouTube. Sometimes designers will put links in the pattern that will go to videos that will show you the technique. Don't assume that you know what a symbol stands for. Some designers do not follow standard charting conventions!!!

The chart shows what the row will look like AFTER the stitches are completed.

●	●	○		
	○			∧
				●
○			∧	●
			●	●
		∧	●	●

	∧			○	
∧			○		
		○			∧
					●
	○			∧	●

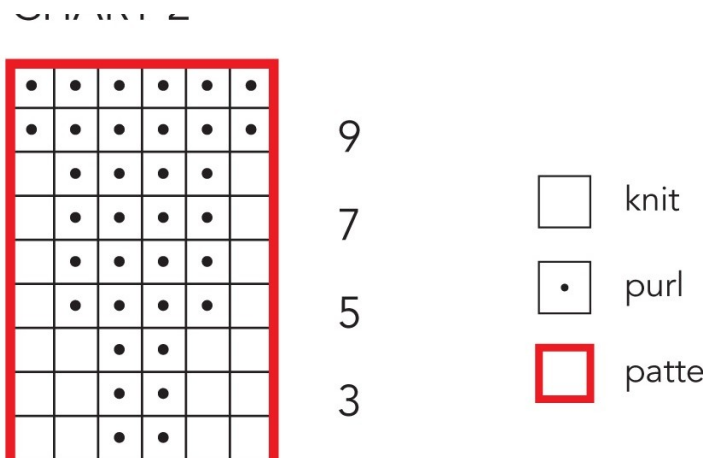
For example, in the chart on the left the K2tog symbol is highlighted in yellow. It appears in a single square even though two stitches are worked from the left needle, because only one stitch will remain on the right needle after the decrease is worked.

And when a yarnover increase is worked, no stitch will be worked from the left needle, but one stitch will be added to the right needle when the yarn is draped over the needle, so the yarnover symbol (usually a circle) will be shown in a single square.

Repeats

With charts, an entire motif that is repeated horizontally and /or vertically will be marked by colored lines, highlighted squares, or brackets below the chart (or some combination of these). Unlike repeats in written instructions, the size and placement of a chart repeat is usually determined by the largest repeat on any given row.

This chart shows a project knitted in the round. Notice there are no other stitches, and the key only has one meaning for each symbol.

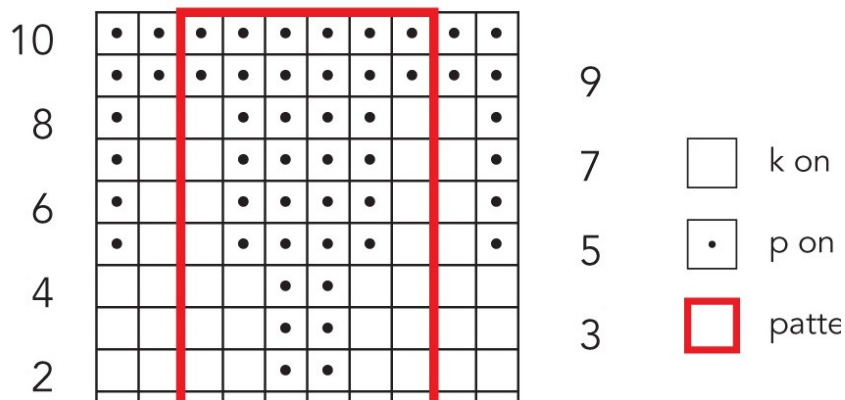


Reading a Chart Worked in Rounds

The chart above has a 6-stitch repeat, with no stitches outside the repeat, so it needs to be worked over a multiple of 6 stitches (6, 12, 18, 24, 30, etc.). Row 1 will be worked like this: *K2, p2, k2; repeat from * to end. Because we're working in rounds, Rows 2, 3, and 4 of the chart will be worked exactly like Row 1. Rows 5, 6, 7, and 8 will be worked like this: *K1, p4, k1; repeat from * to end. Rows 9 and 10 of the chart contain only purl stitches. After Row 10 is complete, go back to Row 1 and work the next 10 rows of the chart as before.

Hint: Put a marker at the beginning of each repeat. (I ALWAYS use a green marker at the beginning of a round or as the first marker on the right side. Do not use a green marker anywhere else. Ask me how I know!)

This is the same repeat but for a flat project. There are edge stitches that are only repeated once in the row, and the key has meanings for both RS and WS.



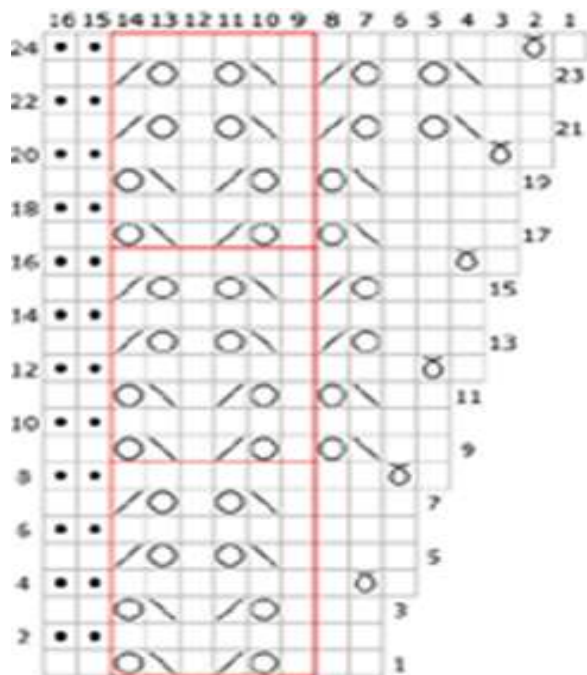
Reading a Chart Worked Flat

When working a chart flat, additional stitches are often added outside the repeat to give the pattern a certain appearance at the beginning and end of the row, and/or to make the pattern symmetrical. As mentioned earlier, the stitches outside the repeat are worked only once.

The chart above will be worked over a multiple of 6 stitches, plus 4 additional stitches (6 + 4, 12 + 4, 18 + 4, 24 + 4, 30 + 4, etc.). With this chart, the 4 extra stitches are divided equally on each side of the repeat (but this won't always be the case). Row 1 is a right-side row and will be worked as follows: K2, *k2, p2, k2; repeat from * to last 2 stitches, k2. Because we're working back and forth, Row 2 is a wrong-side row and will be worked as follows (using the same pattern repeat as shown on the chart): P2, *p2, k2, p2; repeat from * to last 2 stitches, p2.

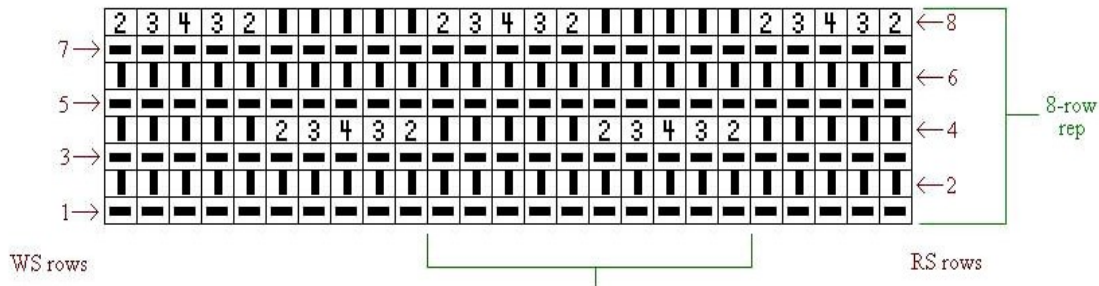
Notice that this wrong-side row has purl stitches where Row 1 has knit stitches, and vice versa, even though both rows look the same on the chart.

Hint: Using a "Life line" in a complicated pattern is a good idea. I might put one at the beginning of each repeat. (If it is a very complicated lace, I might put lifelines before particularly difficult rows.)

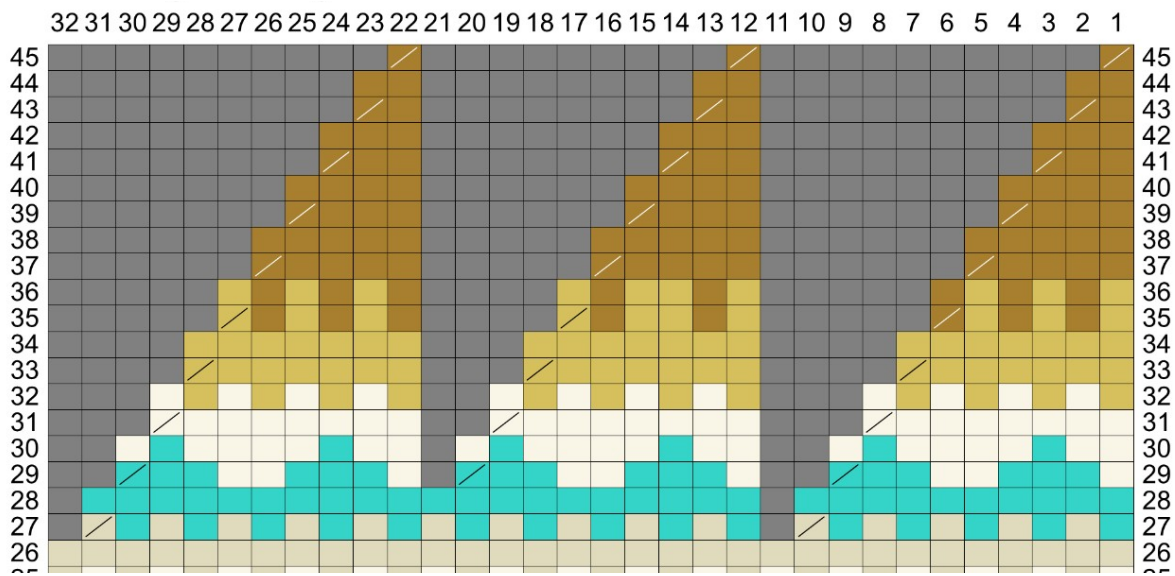


Starting with a RS row, work rows 1 to 24 of the Time Vortex Lace Increase chart 7 times until there are 52 sts, incorporating an additional horizontal repeat after each vertical repeat.

This chart starts with the wrong side (notice where the 1 is.)



NO STITCH



Yarn		Stitches	
	Semisweet		k
	Spiced Cider		k2tog
	Vanilla		No stitch
	Sandcastle		
	Aquarium		

Because Charts are done as grids with the stitch count always the same it is sometimes necessary to put in place holders. A gray or black box is used to keep the grid aligned. This is what is called a “No Stitch”. The chart shown above is for the top of a hat where there are K2tog decreases and no corresponding increases. The key shows the gray box being “No stitch.” No stitches can also be used in the body when there are decreases and the increases don’t happen until the next row.

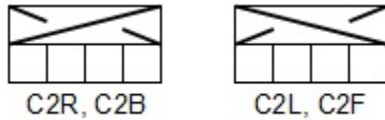
Hint: Since this is a very long repeat (32 stitches) I might put stitch markers at row 11 and 21. On some of the rows with long stretches of the same color, I write in the number of stitches. Sometimes the designer does this for you.

Cables

The chart symbols for cables vary among the designers, but there are some commonalities:

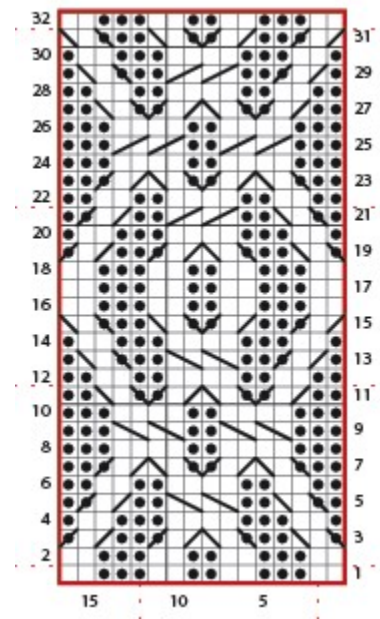
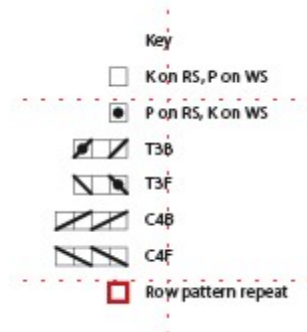
- The symbol is a rectangle as long as the number of stitches involved in the cross-over
- There is at least one strong diagonal line indicating the direction of the cross-over
- There is sometimes at least one weak diagonal line indicating the stitches behind the cross-over stitches
- If the cross is to the right, the first stitches are held to the back. If the cross is to the left, the first stitches are held to the front.

Hint: I'll be RIGHT BACK.



This graphic shows two opposite cables. The one on the left, with the strong slant up and to the right (and a broken slant down and to the right), has various abbreviations, including C2R (cross 2 over 2 to make a Right-slanting cable), C2B (cross 2 over 2 by putting the first two stitches in Back), C4R (cross the left-most 2 over the right-most 2), and so on. (Yep – the abbreviations could start with C2 or C4, depending on the pattern writer – wouldn't real standards be nice?)

The second has the cable going in the other direction. It has a strong slant down and to the right (and a broken slant up and to the right). Its abbreviations include C2L (cross 2 over 2 to make a Left-slanting cable), C2F (cross 2 over 2 by putting the first two stitches in Front), C4L (cross 2 over 2 to make a Left-slanting cable), and so on.



Written out, row 3 would be: (slip the next 2 stitches to cable needle and hold at front, P1, K2 from cable needle), P2, repeat (), [slip the next stitch to cable needle and hold at back, K2, P1 from cable needle], P2, repeat [].

Charts for specific kinds of knitting patterns

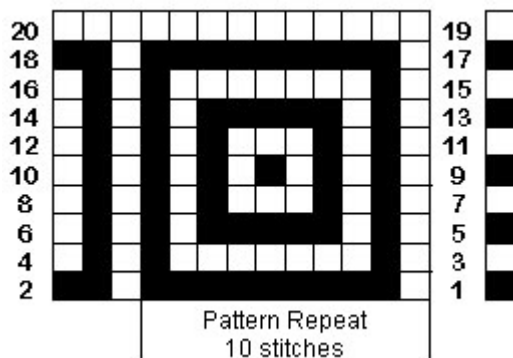
Mosaic Knitting

The charts usually have a color bar on the right side indicating which color is being worked for each row. Only one color is worked at a time, the other color is slipped purlwise.

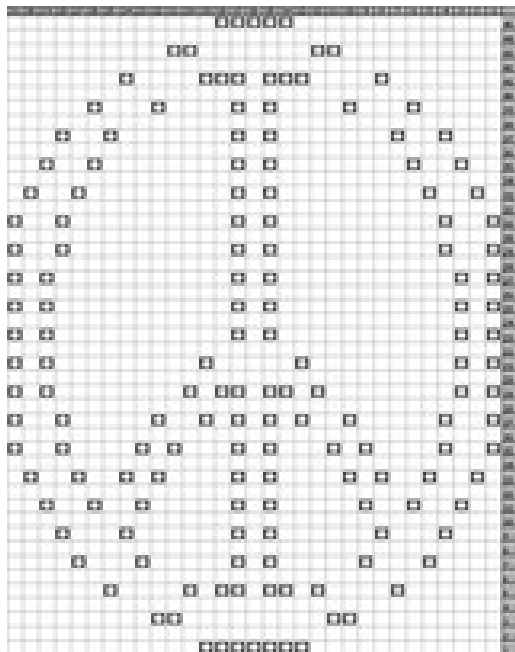
Always cast on with the white, knit/purl one row and then tie on the black. (Otherwise you wouldn't have the white to slip.)

Notice that each row is numbered both with an odd and even number. Because each WS row is the same as the preceding RS row, the rows on the chart are compressed for convenience.

The second row worked in a color is always worked exactly the same as the first: if a stitch was knitted in the odd row, it is worked in the even row; if a stitch was slipped in the odd row, it is slipped again.



Double knitting: each box represents 2 stitches



If you look at the first row of the chart, you'll see that if you were working regular two-color knitting, you'd knit 12 stitches in your first color, 7 in your second color and 12 again in your first color.

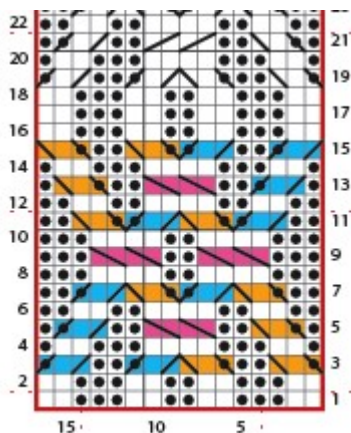
But in double knitting you are alternating stitches on each side of the work as you knit across. So those first 12 stitches are actually 24 loops, 12 for the "front" or the side facing you and 12 for the "back" or distant side. Because you want those stitches to be your background color, just knit the "front" stitches with the "front" color and purl the "back" stitches with the "back" color 12 times, for a total of 24 stitches.

Now you need to switch colors to start forming the image. The way that is done is to simply knit with the "back" color on the "front" stitch and purl with the "front" color on the "back" stitch as many times as you need to for the pattern. So here you'd knit 1 with the back color, purl 1 with the front color 7 times, for a total of 14 stitches.

Then you just switch back to knitting the front with the front background color and purling the back with the back background color for the remaining 12 stitches on each side.

Helpful Hints

1. Print your graph **Hint: If the pattern is originally printed, I scan it to my computer, then print another copy.**
2. Make the graph larger
3. Put it into a plastic sleeve
4. Use post-its or movable tape to mark your row
5. Color the chart and keys. **Hint: I color code all right leaning stitches in warm colors and left leaning with cool colors.**
6. Use stitch markers
7. Use life lines
8. Use row counters



Making your own graph paper

<http://www.tata-tatao.to/knit/matrix/e-index.html>

Use Excel to make a chart. I have included a template for the excel spreadsheet I use.

If you print on clear or thin paper, you can put it over a picture and copy it.

Bibliography:

Barbara Walker, Charted Knitting Designs, A Third Treasury of Knitting Patterns

<https://www.youtube.com/watch?v=tkjWNRe9oA4> Reading Charts by Mary Beth Jacobs (part of TKG Learn To Knit playlist)

Lilly Chin, Stitches from the show Knitty Gritty.

<https://stitchmastery.com/>

This is a program for creating charts. There is a free version that lets you do some things, but the full version costs \$90.

<https://stitchmastery.com/fonts/>

This is a free download to install knitting stitch symbols in your font choices. There are also PDFs which show the symbols and the keystrokes that would be used to make them.

KnitCompanion is free for the first 2 weeks and then has a subscription service.

It is a pattern tracking app for knitters and fibers artists.

- Uses any PDF pattern
- Can attach to your ravelry account and get the patterns from there
- Keeps track of rows & repeats
- Can scribble and make notes on the pattern
- Can change colors on the pattern

Comparison Table

App	Pattern Type	Best Features	Drawbacks	Best For
KnitCompanion	Written + Chart Patterns	Row tracking, voice guidance	Limited free features	Advanced knitters
Stitch Fiddle	Chart Patterns	Visual chart creation	Not for managing patterns	Designers and visual learners
Pattern Keeper	Chart Patterns	Row-by-row tracking	Limited written pattern support	Chart-based knitters
Ravelry	All Pattern Types	Pattern library, community forums	No pattern-reading features	Social and beginner knitters
Chart Minder	Chart Patterns	Free chart design tool	No interactivity or tracking	Designers of custom charts

How to Choose the Right App for You

Choosing the right app depends on your preferences and knitting habits. Here are some tips:

1. **Skill Level:**
 - Beginners: Start with Ravelry for inspiration or KnitCompanion for row tracking.
 - Advanced Knitters: Go for KnitCompanion, Stitch Fiddle, or Pattern Keeper.
2. **Pattern Type:**
 - Written Patterns: KnitCompanion excels here.
 - Chart Patterns: Stitch Fiddle, Pattern Keeper, or Chart Minder are great choices.
3. **Budget:**
 - Free Options: Ravelry and Chart Minder.
 - Paid Features: KnitCompanion and Stitch Fiddle offer premium upgrades.
4. **Creative Needs:**
 - Want to design your own patterns? Stitch Fiddle or Chart Minder is perfect.
 - Need customization tools for adapting patterns? KnitCompanion delivers.