

Chapter 1

BASIC KNITTED FABRICS

In this chapter, we'll convert written-out instructions to charts, watching the charts grow symbol by symbol. We're just doing an overview at this point, getting our feet a bit wet as to how charts are just a pictorial representation of knitting instructions.

As much as possible, please don't start thinking about the actual mechanics of how we construct knitting charts, whether on paper or in the computer. Those details will be covered at length in later chapters.

Let's Start at the Beginning

The first two stitches we all learn are knit and purl, so we'll start with them. In this book, knit stitches will be represented with



and purl stitches will be represented with



The First Rules of Knitting Charts

Since this book will show charts constructed stitch by stitch and row by row, there are a few basic rules that we have to discuss immediately.

Charting Rules

Charts show all rows as they will appear when looked at from the **public side** of the piece, the side that would show if we were wearing a sweater.¹

Each row of the chart represents one row of knitting.

¹ *Public side* is a clearer term than *right side*, because *right side* could refer to the part of a sweater (especially a cardigan front) on the wearer's right. *Right side* could also refer to the right edge of a knitted item or chart. The other side, including the inside of a sweater, is therefore the *private side*. The main text will use *public side* and *private side*, but written-out instructions will use the conventional abbreviations *RS* and *WS*.

Each symbol represents one stitch.²

We chart public-side rows from right to left.

We'll see these rules applied in our very first swatch.

Stockinette Stitch

Stockinette stitch is made by knitting across the public-side row, then purling back. Typical instructions for a small swatch of stockinette stitch might be

CO 10.
 Row 1 (RS): K.
 Row 2 (WS): P.
 Rpt rows 1–2.
 BO.



The Public-Side Row

The written instructions use *RS* for “right side” (which we’re calling the “public side”) and *WS* for “wrong side” (which we’re calling the “private side”). The instructions tell us to knit across the first row. Since the knit symbol is just an empty rectangle, the first stitch looks like this:



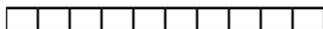
The second knit stitch goes to its left, based on one of our first charting rules.



In the same way, here is the chart with the third knit stitch added.



As each stitch symbol appears on a public-side row, it goes to the left of the existing symbols. So we wind up with ten knit symbols for the first row of the chart.



² This is a lie, but it will suffice for the time being.

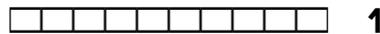
The Row Number

Now we need to add the row number.

Charting Rule

Row numbers are placed **next to the first stitch worked in the row**, for both public-side and private-side rows.

This means public-side row numbers are put on the right edge of the chart because the first stitch worked is at the right end of the row.



The Private-Side Row

Two more charting rules now come into the mix.

Charting Rules

The chart shows row one at the bottom, with successive rows above the previous ones, exactly in the order we would work them with needles and yarn.

Private-side rows are charted left to right, and they must swap knits and purls.

For row two, we have to purl back. Since row numbers are put next to the first stitch worked on the row, the private-side row number will be to the left of the stitch symbols.

2

We're using



for purl stitches, so row two would start with

2 

Or would it? Remember the very first rule of charting: the chart shows what the work looks like from the **public** side of the piece.

Since a purl stitch worked on a private-side row looks like a knit stitch from the public side, then row two actually starts like this:

2 □

The next private-side purl stitch is to the right of the first symbol and shows itself as what it looks like from the public side, in accordance with both parts of the private-side charting rule.

2 □□

The third purl stitch is to the right of the second, because private-side rows grow from left to right.

2 □□□

The entire row two just keeps adding more knit symbols, each of which represents a purl made on the private side.

2 □□□□□□□□□□

The Chart for Stockinette Stitch

Since rows three and four just repeat rows one and two, we make copies of the same two rows with the correct row numbers. Here's the complete chart for our stockinette swatch.

4	□ □ □ □ □ □ □ □ □ □	3
2	□ □ □ □ □ □ □ □ □ □	1

The Symbol Key

The reversal of purl to knit on the stockinette chart's private-side rows explains why charts always have symbol keys with wording like this:

□	K on RS, P on WS
●	P on RS, K on WS

The symbols are thus matched up with the stitch we have to work depending on whether

we're working on the public side or the private side. That means that when we chart a private-side row from written-out instructions, we have to change the purls to knits and the knits to purls.

The symbol key has its own charting rule.

Charting Rule

A symbol key will show how to work each symbol on public- and private-side rows.

Reverse Stockinette

Since we can simply look at the private side of the stockinette swatch, there's really no need to make a swatch in reverse stockinette. Let's watch the chart grow, though, seeing how it abides by all the charting rules we've seen so far.

For a ten-stitch, four-row swatch of reverse stockinette, the instructions would be

CO 10.
Row 1 (RS): P.
Row 2 (WS): K.
Rpt rows 1-2.
BO.



The Public-Side Row

Row one is all purls. Since it's a public-side row, the row number is to the right of the stitch symbols. Here are the row number and the first stitch.

◻ 1

Since public-side rows grow right to left, the second purl stitch is added to the left of the symbol already in the chart.

◻◻ 1

Now the chart grows with the third purl stitch.

◻◻◻ 1

And finally, here's the complete row one.



The Private-Side Row

Row two is all knits, but since it's a private-side row, the chart must use the purl symbol according to one part of the private-side charting rule.

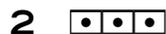
Here is the first stitch of row two, along with its row number, and they're both at the left edge since private-side rows grow from left to right according to the other part of the private-side charting rule.



Here are the second



and third symbols of row two, both of which go to the right of the existing symbols.

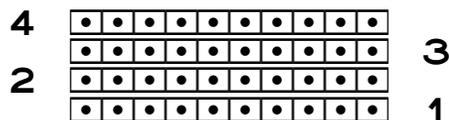


The chart's complete row two is



The Chart for Reverse Stockinette

Rows three and four grow exactly the same way as rows one and two, so the entire chart for our small swatch of reverse stockinette looks like this:



Compare the Charts to the Swatches

A piece of stockinette stitch is smooth, plain and clean and classic. In the chart, there are no obstructions or any indication that the stitches are anything but good old ordinary knits.

• □ 1

Here are stitches three

□ • □ 1

and four.

• □ • □ 1

The complete row one is

• □ • □ • □ • □ 1

The Private-Side Row

Row two, a private-side row, grows from left to right, and the row number comes first as usual. But the chart switches knits to purls and purls to knits on private-side rows, so that each stitch is represented by the symbol of the stitch it will look from the public side. The instructions start with a knit stitch, but since a private-side knit is a public-side purl, the first symbol on row two comes out as a purl. It's put all the way against the row number.

2 □

The second stitch in the instructions is a purl. But on a private-side row, it's a public-side knit, so the row grows with a knit to the right of the existing row symbols.

2 □ • □

The third stitch is a knit, but it shows as a purl on our chart's private-side rows.

2 □ • □ • □

So as the row keeps growing by alternating knits and purls (which from the public side are purls and knits), the complete row two looks like this:

2 □ • □ • □ • □ • □ • □

Let's look at rows one and two together.

2 □ • □ • □ • □ • □ • □
 • □ • □ • □ • □ • □ 1

The Chart for 1x1 Ribbing

All public-side rows are the same as row one and all private-side rows are the same as row two, so the chart just duplicates the first two rows to make the last two rows.

The swatch photo next to the written-out instructions doesn't really look like this final chart. But if we stretch the swatch slightly side to side, we'll see the columns of purl bumps in between the columns of the knit Vs.

4	•	•	•	•	•	•	•	3	
	•	•	•	•	•	•	•		
2	•	•	•	•	•	•	•		
	•	•	•	•	•	•	•		

2x2 Ribbing

As with 1x1 ribbing, 2x2 ribbing is also alternating columns of stockinette and reverse stockinette, except that each column is two stitches wide.

Written-out instructions for a piece of 2x2 ribbing on twenty stitches might be

CO 20.
 Row 1 (RS): * K2, P2 *, rpt btw * across.
 Rpt row 1 3 more times.
 BO.

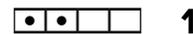


The Public-Side Row

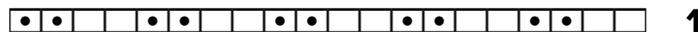
For row one, the chart grows from right to left as usual, starting with the row number and a pair of knit stitches.



Then the row adds a pair of purl stitches.



The rest of row one grows with groups of these four stitches.



The Private-Side Row

For the private-side row two, it again starts with a pair of knit stitches, but they must be shown as purl symbols, and they're placed at the left edge of the chart, next to the private-side row number.

2 

Then two purls follow, which are charted as knits, since that's what they look like from the public side.

2 

The rest of row two grows with alternating pairs of symbols as already established.

2 

The Chart for 2x2 Ribbing

Rows three and four are just repeats of rows one and two, so we copy them and fix the row numbers. As with the 1x1 ribbing, we have to stretch the 2x2 swatch slightly from side to side to see the purl columns between the knit columns. (The photo shows only three pairs of knits and purls, compared to five pairs in the chart.)

4  **3**
2  **1**
2  **1**
2  **1**



Seed Stitch

This knitted fabric, called *moss stitch* in the running text on page 158 of *Donna Kooler's Encyclopedia of Knitting*, is highly textured and looks the same on both sides. It does not curl, so it makes it great border for a flat project worked in stockinette stitch (or any knitted fabric that's basically stockinette).

If we wanted a ten-stitch, ten-row piece of seed stitch, the instructions might be

CO 10.
 Row 1 (RS): * K1, P1 *, rpt btw * across.
 Row 2 (WS): * P1, K1 *, rpt btw * across.
 Rpt rows 1-2 4 more times.
 BO.



The Public-Side Row

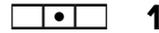
Since seed stitch’s row one starts with a knit, the chart starts



The second stitch is purl, and it goes to the left of the first stitch, since public-side rows grow from right to left.



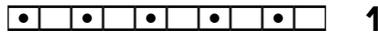
Then it adds a second knit



and a second purl.



The entire first row continues to alternate knit and purl, so the complete row is



The Private-Side Row

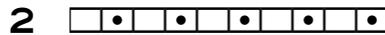
Row two is similar in that it alternates knits and purls, but the instructions say the first stitch is purlled. From the public side, that’s a knit stitch.



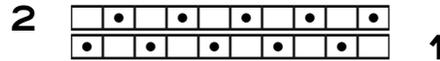
The second stitch is a knit stitch, which looks like a purl from the public side.



As the row grows from left to right, it continues to alternate purl and knit, which the chart must show as knit and purl, according to both parts of the private-side charting rule.

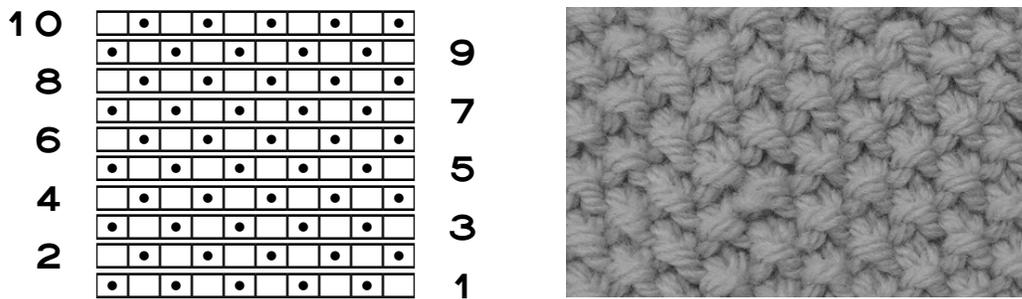


When we see rows one and two together, the knits and purls are not on top of one another like they were in either of the ribbing charts.



The Chart for Seed Stitch

Since rows three through ten are the same as rows one and two, they all grow the same way as rows one and two, except for substituting the correct row numbers. Both the chart and the swatch have a checkerboard of purl bumps.



Seed Stitch Is “Broken” 1x1 Ribbing

Compare the first two rows of 1x1 ribbing with the first two rows of seed stitch.



In row two, the seed stitch stitches are moved over one stitch compared to 1x1 ribbing. Seed stitch is what results if we get off by a stitch in 1x1 ribbing, which also means that 1x1 ribbing is what results if we get off by a stitch in seed stitch.

Seed stitch, like 1x1 ribbing, alternates knits and purls, but 1x1 ribbing keeps the knits on top of the knits from row to row (when considered from the public side). Seed stitch, though, alternates knit and purl as we travel up and down through the column of each stitch.

So 1x1 ribbing alternates knits and purls only from left to right, but seed stitch alternates knits and purls from left to right **and** from bottom to top.

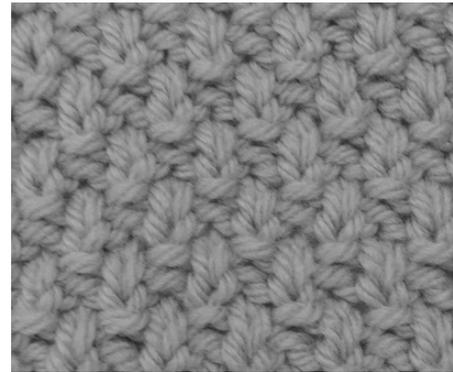
Understanding the underlying structures of seed stitch and all kinds of ribbing allows us to work either pattern over any number of stitches without having to wade through written-out instructions that vary depending on how many stitches are on our needles.

Moss Stitch

Moss stitch, which Maggie Righetti calls *Irish moss stitch* in *Knitting in Plain English* (page 135) and *Sweater Design in Plain English* (page 89), is worked similarly to seed stitch, except that we work **two** rows of 1x1 ribbing before we “break” the ribbing by moving the stitches over one stitch. Like its cousin seed stitch, it’s reversible and lies flat, so it makes a good border for stockinette-based fabrics.

If we wanted a ten-stitch by twelve-row swatch of moss stitch, the instructions might be

CO 10.
 Row 1 (RS): * K1, P1 *, rpt btw * across.
 Row 2 (WS): Rpt row 1.
 Row 3: * P1, K1 *, rpt btw * across.
 Row 4: Rpt row 3.
 Rpt rows 1–4 2 more times.
 BO.



The First Public-Side Row

Since the first stitch of moss stitch’s row one is a knit, the chart starts off

□ 1

It adds the purl stitch to the left in accordance with the charting rule for public-side rows

● □ 1

and the complete row one grows by adding several more pairs of stitches.

● □ ● □ ● □ ● □ ● □ 1

The First Private-Side Row

Row two starts with a knit, but from the public side, which is how the chart is drawn, that’s a purl stitch.

2 □ ●

The second stitch is a purl stitch, which looks like a knit from the public side. The symbol is switched, and the private-side row grows from left to right.

2 □ ● □

As the second row grows, it continues to alternate knit and purl, represented with purl and knit.

2 

Here are the chart's first two rows.

2 
 **1**

So far, moss stitch looks exactly like 1x1 ribbing.

The Second Public-Side Row

Row three, a public-side row, starts with a purl

 **3**

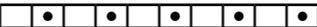
then it adds a knit

 **3**

and a purl

 **3**

and continues to alternate them across the row. The entire row three is

 **3**

The Second Private-Side Row

Row four starts with a purl, but since it's a private-side row, we have to switch it to a knit to chart it. The row number will be all the way to the left, and the first stitch symbol must be to its right.

4 

The next stitch is a knit, which the chart must show as a purl.

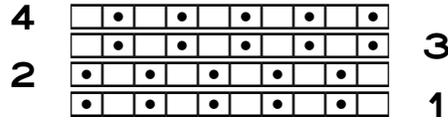
4 

The row continues alternating purls and knits, always showing them as their opposites.

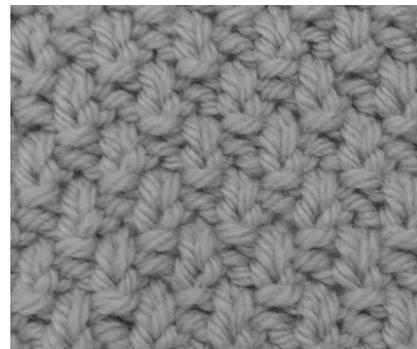
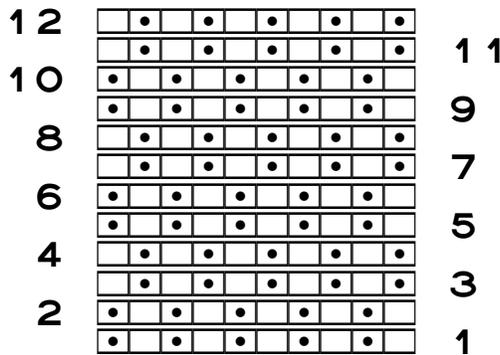
4 

The Chart for Moss Stitch

The four written-out instruction lines are charted this way.



These four rows are repeated twice more but with the proper row numbers. When we compare the chart to the swatch, we can see the stacks of knit stitches nestled between the stacks of purls.



Compare Moss Stitch to 1x1 Ribbing

If we look at just rows one and two, moss stitch is identical to 1x1 ribbing. Rows three and four are also identical to 1x1 ribbing, except that they’re moved over one stitch compared to rows one and two, which is what “breaks” the ribbing.

An Alternate Moss Stitch

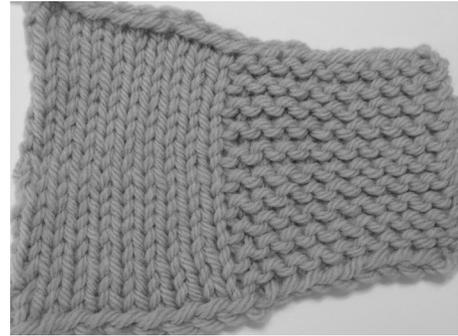
Vogue Stitchionary Volume 1: Knit and Purl (pattern 6) and *Cowgirls* (page 102) both use the name *moss stitch* for this pattern, while *Donna Kooler’s Encyclopedia of Knitting* calls it *double moss stitch* (page 159), and the *Harmony Guides 450 Knitting Stitches: Volume 2* calls it *box stitch* (page 18).

In this reversible, non-curling fabric, we start with two rows of 2x2 ribbing. For rows three and four, we “break” the 2x2 ribbing by moving the stitches over two stitches.

CO 20.
 Row 1 (RS): K.
 Rpt row 1 19 more times.
 BO.

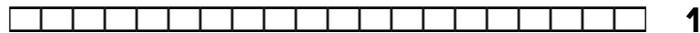
But let's split those twenty stitches into ten of garter and ten of stockinette, which will be instructive in several ways.

CO 20.
 Row 1 (RS): K.
 Row 2 (WS): P10, K10.
 Rpt rows 1-2 9 more times.
 BO.



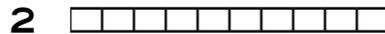
The Public-Side Row

The twenty stitches of the public-side row one are shown as all knits, with the row number to their right, according to the charting rule for public-side rows.

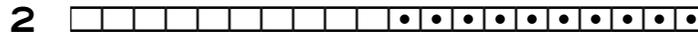


The Private-Side Row

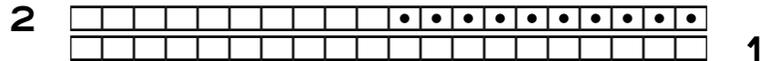
Row two, a private-side row, is half purl, half knit. Since a knit stitch on the private side is a purl stitch on the public side, row two on the chart will start with ten knits for the "P10"



and finish with ten purls for the "K10."



Here are the two chart rows put together.



The Chart for the Half-Garter, Half-Stockinette Swatch

To get twenty rows total, the chart repeats rows one and two nine more times but substitutes in the proper row numbers.

If we choose to border stockinette-based fabrics with garter stitch, we must be aware that the garter stitch left and right borders will be shorter than and thus want to pull in the central fabric.⁴

Charting's Rules of Reversal

As we watched the charts grow, we saw that something on every row is reversed. What that something is depends on whether it's a public- or private-side row.

1. We read written-out instructions for public-side rows from left to right in the ordinary way and show the stitches as they are, but the reversal is that the chart row grows from right to left.
2. On private-side rows, we read the instructions from left to right and the chart row grows from left to right, but the reversal is that private-side rows swap knits for purls and purls for knits.

One More Reversal

A third reversal offers another way to grow public-side chart rows in, er, a reversal of the reversal we already know.

3. We can read written-out instructions for public-side rows from right to left and show the stitches as they are, but the reversal is that the chart rows grow from left to right.

Summary

We can combine and summarize the first and third rules, which gives us a single rule for both public- and private-side rows.

For	We read the instructions	The chart rows grow	Do we swap K and P?
Public-side rows	in either direction	in the opposite direction	no
Private-side rows	from left to right	from left to right	yes

For public-side rows, then, we chart the symbols in the opposite direction that we read the written-out instructions. For private-side rows, we read and chart in the same direction, but we have to change knits to purls, and vice versa.

⁴ To fix this problem, see the appendix "Border Details."

Using the Second Public-Side Reversal

Public-side rows in all the basic fabrics' charts grew using reversal number one: reading the written-out instructions from left to right but watching the chart grow from right to left. The right-to-left reading option was not used or even mentioned for several reasons.

- ☉ Having one exact, explicit rule for both public- and private-side rows was sufficient to get started with.
- ☉ Reading text from right to left can feel a bit odd the first few times we do it.
- ☉ Reading right to left is really only useful when we're charting in the computer, and then it becomes extremely useful indeed. It will therefore be described thoroughly in that chapter.

We will, however, use the summary version of the public-side rule of reversal in our charting rules.

Charting Rules

Whichever direction we read written-out instructions for public-side rows, we add the symbols to the chart in the opposite direction while showing the stitches as they are, knits as knits and purls as purls.

On private-side rows, we read the instructions from left to right and add the symbols to the chart from left to right, but we must swap knits for purls and purls for knits.

Let's Review

Here's a summary of the charting rules we've seen so far. And believe it or not, we've already used almost all the rules in just this first chapter. We'll add just a few more rules as we work through the rest of knitting's basic stitches.

Charting Rules

The chart shows all stitches as they look from the public side.

Each row of the chart represents one row of knitting.

Each symbol on the row represents one stitch.⁵

The row number goes next to the first stitch that will be worked on that row. Since public-side rows are worked starting at the right edge (when we look at the public side), their row numbers go to the right of the stitch symbols. Private-side rows start at what is the left edge when we look at the public side of the work, so on the chart, private-side row numbers are to the left of the stitch symbols.

A symbol key will explain what each symbol means depending on whether it is worked on a public- or private-side row.

Row one is at the bottom of the chart. Subsequent rows go above existing rows, in exactly the same order as we would work them.⁶ So we read a knitting chart starting with the bottom row of the chart, which represents the first row we work, and read upwards to the top row of the chart, which represents the last row we work.

Whichever direction we read written-out instructions for public-side rows, we add the symbols to the chart in the opposite direction while showing the stitches as they are, knits as knits and purls as purls.

⁵ Remember that, at this point, this statement is a lie.

⁶ If we're working a sweater or its pieces from the top down, we still put row one at the bottom of the chart and subsequent rows above it. It's just that the bottom of the chart happens to represent the neckline, shoulder, or top of the sleeve instead of the piece's bottom edge.

On private-side rows, we read the written-out instructions from left to right and add the symbols to the chart from left to right, but we must swap knits for purls and purls for knits.