

## Sock Recipe

Socks are a wonderful canvas for creative expression. Once you learn a few basic tools and measurements, you can fill in the blanks with a wonderfully dyed yarn or with a lacy pattern repeat or a cable and you've suddenly got one-of-a-kind pair of socks to dazzle and amaze all who look upon your creation!

### Measurements:

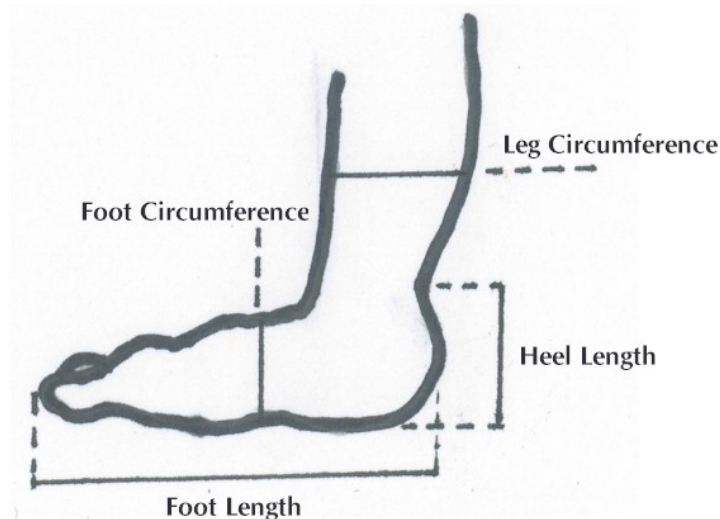
There are a few basic measurements that will help you plan out your fabulous new socks. They are:

Leg circumference

Heel length

Foot circumference

Foot length



When you use these measurements along with the gauge from your chosen yarn and needles, you'll have everything you need to put your basic sock on the needles.

### Gauge:

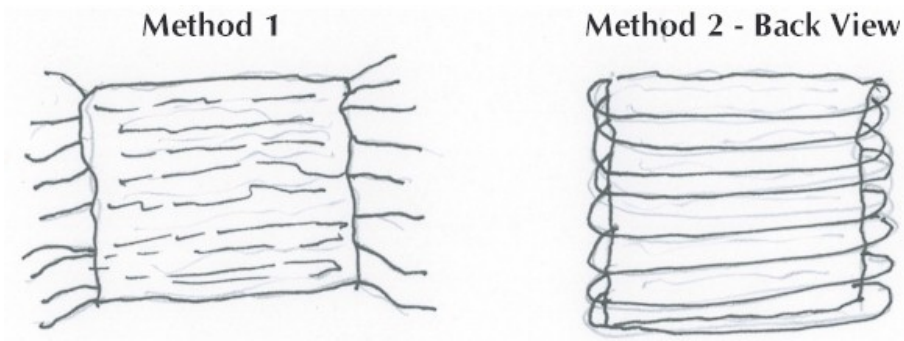
Although I came to embrace the importance of gauge at a very late stage in my knitting, for this sort of pattern it's where you have to start because it's how you'll know the number of stitches to cast on. Let's face it, casting on the appropriate number of stitches is really the most important issue facing the sock knitter. Cast on too few and it won't fit over your heel, too many and people will mock you. Tough place to be, especially since you don't need to go there at all.

To get an accurate gauge measurement for socks which are knitted in the round, you'll need to either do your gauge swatch in the round or at least in a way that mimics knitting in the round. You can do a flat gauge swatch but it can make a difference.

When you're knitting stockinette in the round, you're only knitting, that is, using the knit stitch around and around and around. You're never purling, right? This will affect your swatch. So to do a gauge swatch you can either, as mentioned above, knit it in the round which can make it a little difficult to do the stitch measurement or you can do the following.

Cast on the required number of stitches and knit across on the size needles you think will work for the yarn. When you get to the end of the row, instead of purling back either cut the yarn and start back at the beginning of the row, knitting across again, or leave a tail long enough to accommodate the width of the swatch without it puckering and bring the yarn back to the first stitch and knit across. The second method, it has been pointed out, will allow you to reuse the

yarn at some future point in time (like when you run out of yarn at the toe of your second sock – yeah, been there).



Now you've got all you need to start.

Here we go. Let's use the following measurements and gauge numbers as an example:

Leg circumference = 9"  
Heel length = 3"  
Foot circumference = 9"  
Foot length = 10"

Let's say with my gauge swatch I got 6 stitches and 9 rows to the inch on my size 3 needles.

$9 \times 6 = 54$  stitches to cast on.

Let me just make a practical note here. Consider whether you are working with a set of 4 double pointed needles, a set of 5 double pointed needles or 2 circular needles. If at all possible, when you are doing your ribbing, you don't want to start a needle with a purl stitch. It's not impossible to do, it's just harder to get it tight enough to avoid the ladder and it can be more awkward.

I'm doing my sock with a 5-needle set so I will be dividing my stitches over 4 needles (with 1 needle left over for the knitting), giving me 13.5 stitches per needle. Awkward. There are a couple of things I can do. I can make adjustments to the number of stitches I cast on – say, add or subtract a couple of stitches – or I can place a different number of stitches on each needle. I could place 14 stitches on needles 1 & 3 and 12 stitches on needles 2 & 4. That will keep me good for using half of the stitches for my heel (I generally use the stitches from Needles 4 & 1 for my heel flap). But doing this will mean that I have to start 2 needles with purl stitches.

I could also add a couple of stitches, casting on 56, and divide them 12/16/12/16 on my needles. This will allow me to start each needle with a knit stitch and, yes, I will go to these lengths to not have to deal with a purl stitch at the beginning of my needle. Once you've finished the ribbing, you can redistribute the stitches evenly over the needles. I can also, once my ribbing is finished, decrease these 2 extra stitches if I want to.

If I wanted to, I could even do a different ribbing pattern. It's my sock after all and I can do what I want to!

I've decided to go up a couple of stitches, casting on 56 stitches to knit my ribbing. Now I will make the cuff of my sock as long as I want it to be.

Knee sock note: If you're going to knit knee socks, you will need to do a couple more measurements such as calf circumference just above or below the knee (wherever you want it to fall), calf circumference at the widest point and the length between these. You will need to do some increasing and decreasing to match the shape of the calf which means more math. You'll want to either do your ribbing on smaller needles or use thread elastic with your knitting to give you enough hold to keep the socks up. I leave that up to you to discover!

If I want to show off a particularly pretty yarn colorway, I may want to just make my socks with stockinette stitch to let the colors shine through. If I want to have a pattern, there are a few things I will need to consider.

1. If the pattern is going to be brought down through the foot of the sock, the pattern should only be on the top part of the foot. The bottom of the foot should remain stockinette stitch – much more comfortable.
2. Until the knitter is used to working with patterns, it's helpful for the pattern repeat to be the same as the number of stitches on the needles (once they've been redistributed evenly across). For instance, with my socks I will have 14 stitches on each needle. If I have a pattern which uses 14 stitches then I can easily repeat it over each needle. If my pattern uses 13 stitches, I can probably add a little knit or purl stitch between the actual repeat to make up the 14 stitches. This won't always work but there are ways to do these things.
3. If I want to use a lacy pattern, I have to take into account that lace will spread more than stockinette and I will want to do my swatch using the lace pattern to ensure I get the proper fit.
4. If I want to use a cable pattern, I have to take into account that cables pull the stitches in and I will probably need to add at least 1 stitch to each cable repeat to accommodate this property of cable patterns.
5. If I want to use a color pattern, I have to take into account that, unless I'm really careful with the yarn being carried behind, I may not have as much elasticity in the fabric as I would have just using a single color.

### Now to basic sock construction:

As with anything knitterly, there are myriad ways to do everything. What follows represents only my personal favorite sock construction.

I've got my 56 stitches cast on and my K2/P2 ribbing has now reached about an inch, maybe an inch and a half. For this sample, I'm just going to knit in stockinette stitch until my cuff reaches about 4".

Now I'm ready for the heel. I have 2 options with the heel. I can either work it in stockinette stitch (or a color pattern) or, if I think I'm going to give these socks some wear and tear, I can do a reinforcing stitch that will give it a little strength. You probably don't want any kind of lacy or cabled pattern on the heel flap for comfort's sake. If you are particularly hard on heels and/or toes, you might consider using some reinforcing thread carried with your yarn. You can buy reinforcing thread in various colors but I've also known people to use polyester sewing thread as well.

I've knit across needles 1-3. I will start the stitches below using all the stitches from needle 4 and needle 1 (all knitted onto one needle). The heel flap will be knit flat.

#### *Stockinette option -*

Row 1: Slip the first stitch as if to knit (this will create a nice, neat edge for picking up the gusset stitches), knit across the row. (28 stitches)

Row 2: Slip the first stitch as if to purl, purl across the row.

Repeat Rows 1 & 2 until the heel flap measures 3 inches (remember my measurements at the beginning?).

#### *Reinforced option -*

Row 1: Slip the first stitch as if to knit (SL1)(this will create a nice, neat edge for picking up the gusset stitches), \*K1, SL1\*. Repeat from \* to \* across the row, ending with a knit stitch.

Row 2: Slip the first stitch as if to purl, purl across the row.

Repeat Rows 1 & 2 until the heel flap measures 3 inches. This will create a more dense fabric which will stand up to wear much better.

#### Heel turning:

Still working flat, work the following short rows to turn the heel.

(NOTE: There are a number of ways to work short rows. This is just how I do it and it works for me.)

The theory of turning the heel is based on knitting to the middle of the row plus a few (depending on how many stitches you have on the needle) then working out from the middle, decreasing 1 stitch at the end of each short row until you reach the outside stitches. You can make the turning flatter by knitting further past the middle before you start the 1<sup>st</sup> short row (helpful for thinner yarn where you have more stitches cast on) or more pointed by starting your short rows closer to the middle (better for worsted weight or a thicker yarn). The following is only meant as a guide for how to start the turning of the heel.

Row 1: Slip the first stitch as if to knit, K7, K2tog, K1, turn.

Row 2: Slip the first stitch as if to purl, P8, P2tog, P1, turn.

Row 3: Slip the first stitch as if to knit, K9, K2tog, K1, turn.

Row 4: Slip the first stitch as if to purl, P10, P2tog, P1, turn.

Row 5: Slip the first stitch as if to knit, K11, K2tog, K1, turn.

Continue working in this way until you've incorporated all the stitches on the needle.

My visual clue for the K2tog is the gap between where I slipped the stitch on the previous row and the unworked stitch still on the needle. I will work the K2tog using the slipped stitch and the first unworked stitch.

The chart below may help explain the process. Please note that this chart does not match the number of stitches used above but it does show the flow of stitches across the short rows.

15																		k	s	
14	s	p																		
13																		k	s	
12		s	p																	
11																	k	s		
10			s	p																
9																k	s			
8				s	p															
7															k	s				
6					s	p														
5														k	s					
4						s	p													
3													k	s						
2							s	p												
1							k													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

s = slip stitch      k = knit stitch      p = purl stitch  
(all orange [darker] squares in a row represent 1 stitch)

Gusset:

The gusset is the little triangle piece on either side of the foot that gets me back to the tubular knitting of the foot. Once all the stitches are picked up along the side of the heel flap, I will work 1 decrease row and 1 even row until I'm back to the number of stitches that match the gauge for my foot circumference. In this sample, my foot and leg circumference are the same so I will decrease until I have 14 stitches on each needle. If I were working a pattern, I would continue the pattern with needles 2 & 3 and work needles 1 & 4 in straight stockinette stitch. If my foot circumference was smaller than my leg circumference, I would simply continue decreasing until I got to the number of stitches indicated by my gauge per inch multiplied by the circumference of my foot.

Back to the knitting. My working yarn is at the left end of the needle where I've just finished turning the heel. Using my working yarn and a crochet hook, I will pick up the stitches along the heel flap. Since I worked my heel flap by slipping the first stitch of each row, I have a fairly clear indication of where to pick up stitches (basically 1 stitch for every 2 rows of knitting on the heel flap). I can pick up more or fewer stitches depending on how the stitches lay along the heel flap. I will slide the new live stitches onto one of my free double pointed needles. You can pick up the stitches with your needle; I just find it easier to use the crochet hook, particularly with smaller stitches. I want to be careful, too, to pick up a stitch or two at needle 2 to avoid having embarrassing holes in my sock.

I'll knit across needle 2 and then knit across needle 3. If I were working a pattern, I would continue the pattern here.

Using my crochet hook again, I will pick up the same number of stitches from this side of the heel flap as I picked up for the first side. After I slide the stitches onto a double pointed needle, **using the same needle**, I'll knit half of the stitches from the heel turning needle. Now I'm going to slide the remaining heel stitches onto Needle 1 which leaves me with the same number of stitches on needles 1 & 4 and the original 14 stitches on needles 2 & 3. I'll work the decreases like this.

Round 1: Knit even all the way around.

Round 2: Knit to the last 3 stitches on needle 1, K2tog, K1. Knit needles 2-3. On needle 4, K1, SSK, knit to the end of the needle.

I'll just keep repeating rounds 1 & 2 until I have 14 stitches on all needles.

That leaves the foot. I'll just continue what I'm doing, knitting even until the foot reaches 8 inches from the heel turning. Remember, my measurement was 10 inches but I want to start working the decreases for the toe shaping at this point to keep within my measurements. Sometimes I will stop even 3 inches from the target end measurement so I can make the decreases more subtle.

For the toe shaping, you generally want to work your decreases on either side of the foot. To be in position for the decreases, I'll end my foot knitting by working needle 1. Now the needles on the top of the foot become needles 1 & 2 and the needles on the bottom of the foot become needles 3 & 4.

#### Toe Shaping:

##### Decrease Round

Needle 1 – K1, K2tog, knit to the end of the needle

Needle 2 – Knit to the last 3 stitches, SSN, K1

Needle 3 – K1, K2tog, knit to the end of the needle

Needle 4 – Knit to the last 3 stitches, SSN, K1

I'm going to work 1 decrease round and 1 even round until I have 5 stitches on each needle. The weight of my yarn and the number of stitches I've used for the foot will determine how many stitches I'll use to bind off. Since I'm not a fan of the pointy toe, I usually use about 40% of the number of stitches I've used for the body of the foot. For this example, 40% of 56 is 22.4. I'll probably round that down to 20 stitches (5 on each needle).

Finally, I will cut the yarn, leaving a 14" tail.

If I want a less pronounced tapering for the toe, I can start the decrease 3 inches from the end and work 1 decrease round followed by 2 even rounds several times. Then I will work 1 decrease round and 1 even round until I have the required number of stitches for the bind off.

Slide all stitches from Needle 1 onto Needle 2 and all stitches from Needle 3 onto Needle 4.

Using the tapestry needle, bind off using the Kitchener stitch.

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