

## Top-Down Socks From Measurements

**Yarn:** For durability and best wear, yarns specifically made for socks are recommended. Most sock yarns contain nylon, Lycra or other man-made fibers, which give them better and longer wear, and often they are machine washable and dryable. This pattern allows you to use any type and weight of yarn, as your pattern will be built around a gauge swatch and the measurements of the foot of the intended wearer. Fingering weight socks are lightweight, sport or DK of a medium weight, and worsted weight socks are thick and warm. The chart below will give you an idea of how much yarn you'll need, in yards. These amounts are *approximations*.

	Fingering	Sport	Worsted
Babies	150 yd	125 yd	100 yd
Child's small	250	200	175
Child's medium	300	250	200
Women	400	350	300
Men	500	400	300

**Needles:** You will need one set of double pointed needles in the size of your choice. For making socks, a general rule of thumb is to use needles two sizes *smaller* than the size recommended on the label of your chosen yarn. Socks should be of a dense material, with little light showing through your swatch. If your stitches are loose and open in appearance, try going down a needle size until you get a firm, dense material.

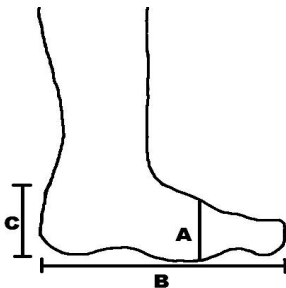
**Gauge Swatch:** For most projects, gauge is everything. For socks, it is even more important, as your socks will be built around your gauge swatch. Your swatch will ideally be 4" x 4" and knit in the round in stockinette stitch. When measuring your gauge swatch *be sure to include fractions of a stitch*; if you're getting 4 <sup>3</sup>/<sub>4</sub> stitches per inch, do not round it to 4 <sup>1</sup>/<sub>2</sub> or 5.

**Measurements:** Gather the intended wearer, a tape measure, a sheet of paper, and a pen or pencil. The tape measure should be *comfortably snug* when measuring around the foot. Where the directions indicate "*while standing*", be sure to follow them as written! Our feet change shape and size dramatically when our body weight is placed on them!

A: Measure around the widest part of your foot, usually the ball, *while standing*.

B: Length of foot from heel to toe *while standing*. This measurement is best made by having the intended wearer stand on a sheet of paper, marking the heel and toe, then measuring the distance between.

C: Measure the height of the heel while standing, from the top of the heel to the floor.



Gauge in sts/inch	
Measurement A	
Measurement B	
Measurement C	

Now for the fun part – a little bit of math!

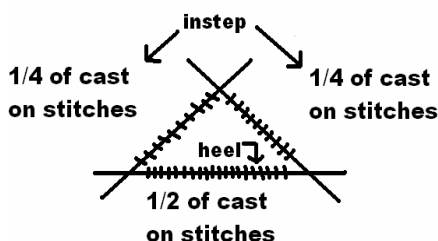
Multiply your gauge (in stitches per inch) by A\* (if your measurement A is greater than 9.75 inches, *deduct 1 inch from A before you make this calculation*).

(Ex: My gauge is 7 sts/inch and my foot measures 8 inches around while standing.  $7 \times 8 = 56$ )

Now round that number to *the nearest multiple of four*. (Luckily, in the example given, that would be 56!

Usually you'll need to round up or down a little). This number represents the number of stitches you will cast on for the cuff of your sock.

Loosely cast on stitches and distribute onto three dpn so that one half of the stitches are on one needles, and the other half of the stitches are divided between the remaining two needles as shown:



The needle containing half of your total number of stitches is the heel needle, and the other two needles are the instep. Join for knitting in the round, being careful not to twist the stitches. Work in knit 1, purl 1 rib for 1-1/2", or desired length. This is the top cuff of your sock, and using a 1:1 rib here will help the sock to stay up. Change to pattern of your choice (\*) and work until the cuff is the desired length (6-9" for an adult crew sock is about average. You can adjust this measurement according to your own needs)

*(\* any pattern that is divisible by four can be used for the cuff of your sock, or you can work in stockinette if desired. Ribs of any type will hug your feet, while stockinette stitch will create a looser sock. You can refer to any good stitch dictionary for lace, cable, or knit and purl combination stitches to embellish your sock. The sky's the limit! Many people working their first pair of socks choose a simple rib, such as knit 2, purl 2 or knit 3, purl 1.)*

**Heel Flap:** The following is worked back and forth in rows on the heel stitches only.

Row 1: Slip 1 stitch as if to purl, knit 1; repeat across row.

Row 2: Slip 1<sup>st</sup> stitch, purl across row.

Repeat these two rows until the heel flap measures "C" from your measurements above. End having just worked a knit row.

**Turning the Heel:** This is for many knitters the most intimidating and the *most rewarding* part of the sock experience. Don't think about it too much, just follow the directions, and watch the heel turn! Continue working in rows, beginning with the purl side facing you:

Row 1: Purl to 2 stitches past the center stitch; purl 2 tog, purl 1, turn.

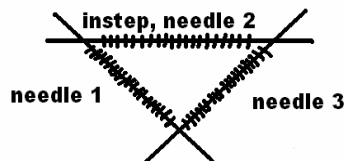
Row 2: Slip 1, knit 5, knit 2 together through the back loops (tbl), knit 1, turn.

Row 3: Slip 1, purl 6, P 2 tog, P1, turn (note the gap between the two stitches you purled together.)

Row 4: Slip 1, knit 7, K2tog tbl, K1, turn (once again, you closed the gap with your K2 tog)

Continue on in rows, working one more stitch on each row than the row before, and closing the gap with a P2tog or K2tog tbl each time. Continue until all stitches on either side of the gap have been used up; end having just worked a knit row. Make a note of how many heel stitches remain.

**Heel Gusset:** Now you will get the sock back onto three needles and from here on the sock is worked in the round. To get back to three needles, you will need to pick up stitches on either side of the heel flap. With right side of sock facing you, and using the needle that holds your heel stitches, pick up and knit down the side of the heel flap by knitting into each edge stitch. Another way to determine the number of stitches to pick up is to count the number of heel flap rows worked and divide in half. Your instructor will explain how to count these rows effectively. Using an empty needle, knit across all of the instep stitches *in your chosen pattern stitch as established*. With another empty needle, pick up and knit along the second side of the heel flap, and then across half of the heel stitches. You should now have your sock back on three needles, with all of the instep stitches (*work these stitches in chosen pattern*) on one needle, and the heel and heel gusset stitches evenly divided on the other two needles. (*These stitches are worked in stockinette stitch*).



**needles 1 and 3 should each contain half of your heel and heel gusset stitches.**

On the next round you will begin decreasing the heel gusset stitches.

Round 1: Needle #1 - knit to last three stitches, K2tog, k1.

Needle #2 - work across in chosen pattern stitch

Needle #3 - K1, SSK, K to end.

Round 2: Knit all stitches on needle 1, work pattern stitch across needle 2, and knit all stitches on needle 3. Repeat these two rounds until you have remaining the total number of cast-on stitches.

**Foot:** Continue working as established (knit needles 1 and 3, and work pattern on needle 2) until the foot measures 1-1/2" less than measurement B.

**Toe Decreases:** Toe stitches are usually *all* worked in stockinette stitch, but you can continue through the decreases in your chosen pattern if desired.

Round 1: Needle #1 - Knit to last 3 stitches, K2tog, K1.

Needle #2 - K1, SSK, K to last 3 sts, K2 tog, K1.

Needle #3 - K1, SSK, K to end.

Round 2: Knit all stitches.

Repeat these two rounds until foot measures the length of measurement B. Using needle 3 continue to knit across needle 1 so that your remaining stitches are evenly divided on two needles. Cut your yarn, leaving a tail at least 10 - 12" long. Graft toe stitches using Kitchener stitch. Turn sock wrong side out and run in all yarn. Now make another sock!