Let's Talk About *Sox*

A customizable, top-down sock workshop for your favorite feet

By Marie Greene

All feet are the same. Right?

Wrongo.

Socks, and even sock patterns, are designed for average feet. Whatever those are. There's an assumption that the circumference of your ankle will be the same as the circumference around the center part of your foot. While length is assumed in store-bought socks, hand knit socks will at least acknowledge that foot length varies, giving you instructions to begin the toe decreases at a point determined by your own foot length.

But what if you have spectacular ankles? Calves that won't quit? Skinny ankles and extra wide feet?

Top-down, customizable socks to the rescue.

Contrary to popular belief, you can try on top-down socks as you go. But more than that, top-down socks are designed with a very useful recipe that makes them an easy choice for creating your own customizable socks.

Let's start by getting your measurements. We'll walk through these in class (please wait until indicated in class to take your measurements).

Calf circumference:

_____

Ankle circumference:

_____

Foot circumference:

_____

Length of foot:

_____

Are your ankle and foot circumference the same (or close)?

Sock Fit

Socks are designed to fit with negative ease. As with sweaters, "ease" tells you how the garment fits in relationship to your body. Positive ease means there's extra room, zero ease means the garment size and your size are the same, and negative ease means the garment is actually smaller than your measurement.

Meaning: If your ankle measures 8.5 in/21.25 cm, then you want your sock to measure smaller than 8.5 in/21.25 cm around the ankle.

How much smaller?

The rule of thumb is 10% (or about 1 in/2.5cm) smaller. Most knitters find it easier to use the 1 inch/2.5 cm guideline, because it's quick and easy to calculate. If you're on the fence or between sizes, my rule is to err on the side of a little extra negative ease, if necessary. I often like the fit of 1.5 in/3.75 cm negative ease in a sock, so don't be afraid to go that far if works for you. Either way, a sock with an ideal fit for our 8.5 in/21.25 cm example (with the appropriate amount of negative ease) would measure somewhere in the range of 7-7.5 inches/17.5-18.75 cm.

Unlike sweaters, we don't need wiggle room in our socks.

But what we DO need is a cuff that can have ample negative ease and still manage to fit over our whole foot and heel on its way to our ankle. This is where a good stretchy cast-on comes in handy. The more negative ease you have in your sock, the more important that stretchy cast-on becomes. I like the cable cast-on for a general sock cast-on, but if I need something stretchy I use the Estonian Cast-on.

Let's Swatch

Every new knitting design begins with a swatch, and now that you're blazing a new trail for your sock design you'll need to approach your project like a designer.

Using the sock yarn and needles that you have handy for class, cast on 25 stitches and work 25 rows in stockinette stitch (knit on the right side, purl on the wrong side). Your swatch will ideally be less than 4 inches /10 cm – and that's okay. Socks have less surface area for gauge variations to dramatically affect the fit, so you can get away with a slightly smaller swatch. As long as your swatch measures more than 2 in/5 cm, we can get the information we need.

Press your swatch flat and smooth it out, then measure the stitches over a 2 in/5 cm space.

Divide that number by 2 and you have your stitch per inch (or per 2.5 cm) gauge. This is the magic number that creates the foundation for your entire sock.

The Recipe Worksheet

Your stitch gauge per 1 in/2.5 cm:

_____

Your ankle circumference:

_____

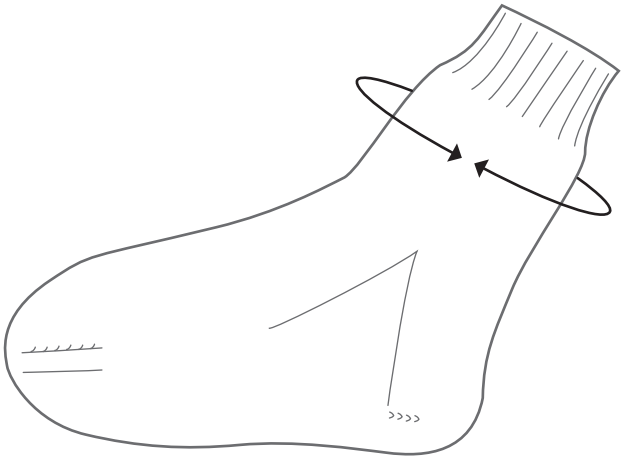
Ankle fit (ankle circumference minus 1 in/2.5cm or 10% or so for negative ease):

_____

Approximate cast-on (ankle fit x stitch gauge)*:

_____

*For this example, we're creating an ankle sock. If you'd like to create a sock with a longer leg section, use your calf circumference in place of ankle circumference throughout this formula. We'll be talking about this in class.



Why your cast-on number might vary:

- Multiple needed for ribbing

Do you want to use a stitch pattern? If so, how many stitches do you need? Enter the stitch multiple (needed for the pattern repeat) here:

_____

Will you need to increase or decrease any stitches to have the amount necessary for your stitch pattern?

Let's find out!

- What is your approximate cast-on number (above)?

  _____

- What is the stitch multiple of the decorative pattern you'd like to use?

  _____

- Cast-on number/pattern stitch multiple =

  _____

- Does it work out evenly? If no, let's find out how many stitches we need to adjust. We'll do this in class. Jot down your notes below.

  _____

  _____

  _____

  _____

  _____

  _____

Sample Math (using The Recipe)

Stitch gauge per 1 in/2.5 cm: 8 stitches

Ankle circumference: 8 inches/20 cm

Ankle fit (the desired final measurement which includes negative ease for best fit): 7 inches/17.5 cm

Approximate cast-on (ankle fit x stitch gauge): 7 x 8 = 56 stitches

Does this work for a 2x2 ribbing? Yes. Because 2x2 ribbing needles a multiple of 4 st (k2 + p2), and 56 can be divided by 4 evenly. (56 / 4 = 14)

So, for our example, we'd cast on 56 stitches with our favorite stretchy-but-substantial cast-on method and work a [k2, p2] ribbing for about 2 inches.

Do you want to knit your leg in stockinette stitch (knitting every round), or do you want to add a decorative stitch pattern?

- **Stockinette stitch:** Continue knitting the leg of your sock in the round until leg portion measures about 5 in/12.5 cm (shorter or longer, as desired).
- **Decorative pattern:** Increase the number of stitches necessary for your stitch pattern on the next round using your preferred increase (note: usually if I'm working an increase round immediately after ribbing, I'll use the kfb method as it blends in fairly well). Work in chosen pattern until leg portion measures about 5 in/12.5 cm (shorter or longer, as desired).

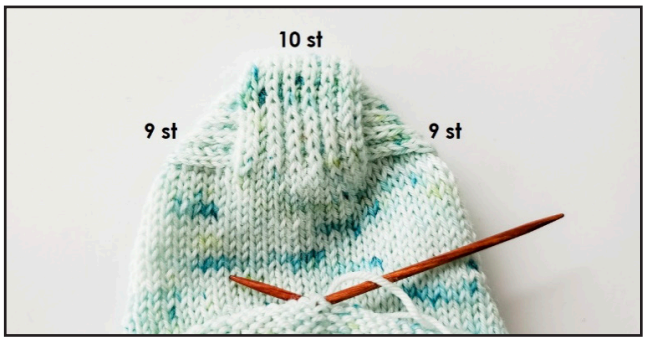
Heel Formula

Traditionally, the heel is worked over half of the total number of stitches. Using our example, if we've cast on 56 stitches, we would place 28 stitches on a holder for the instep (to work later) and work back and forth on the other 28 stitches to work the heel. Often, I will adjust my stitch count so I have an odd number of stitches on the heel to balance out a slipped-stitch reinforced heel pattern, and/or may make an adjustment for an instep pattern to keep it evenly positioned on the top of the foot. So while these numbers can be fiddled with for your own purposes, we'll stick with the simple 50/50 rule for now. (You can always get more adventurous later on.)

Work back and forth on your heel stitches (in stockinette, or in a reinforced heel pattern) until your heel is a square. It should measure the same from top to bottom (starting where the flap begins) as it does side-to-side. When your heel flap is square, begin the heel turn with the Rule of Thirds.

Divide your heel stitches approximately into thirds. Since 28 doesn't divide evenly, we want two even pieces, and the third piece can be different to accommodate the number of stitches we have.

These stitches will account for the center and two sides of the heel for the heel turn. I like to make sure the two sides are even and place the remaining stitch count in the center. For a heel with 28 stitches it would look like this:

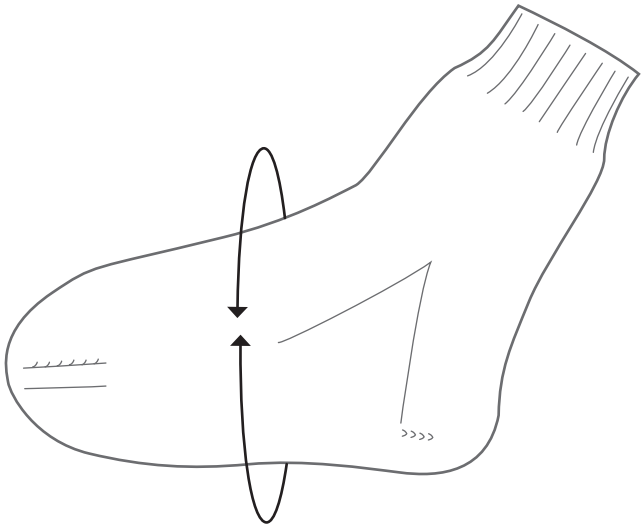


Once you've completed your heel turn, it's time to pick up and shape the gusset. You'll notice that when you pick up the stitches around the gusset and instep to join the sock in the round, you'll have more stitches than you started with in the beginning. Typically, the goal is to work gusset shaping – in the form of mirrored decreases (on either side where the gusset meets the instep) – until you return to the original stitch count.

This is where you can make adjustments if you need to adjust your stitches for the size of your foot. If your foot and ankle circumference are the same, you will work gusset decreases until you return to your original stitch count. (This will get you back to your original circumference and will ensure that your foot and ankle circumference match.)

Using our example sock, we would decrease on the gussets (every other round) until we return to our original 56 stitches. We would then work the remainder of the foot in the round until we are ready to begin toe shaping.

If your foot circumference is noticeably different than your ankle circumference, use the stitch-per-inch math (as well as the 1 inch or about 10% negative ease) to determine your adjusted stitch count goal.



But let's say your foot is 1 in/2.5 cm larger than your ankle. Using our example:

Stitch gauge per 1 in/2.5 cm: 8 stitches

Foot circumference: 9 inches/22.5 cm

Foot fit (incorporating negative ease): 8 inches/20 cm

Decrease down to: 9 x 8 = 72 stitches

This means that in order to have one extra inch (or 2.5 extra cm), you would work fewer gusset decreases so that you end up with 72 stitches to work the remainder of the foot.

Can you apply this math to an existing pattern? Yes! We'll cover this in class.

Toe

Continue knitting the foot until you're ready to work the toe shaping. (This point will depend on the length of your foot and the kind of toe shaping you've decided to use.) Keep in mind that your sock length – as with the rest of the sock - should have negative ease. If your foot measures 9 inches/22.5 cm, your sock should measure no more than 8 inches/20 cm. You will typically begin toe shaping at a point that feels too early; **trust the process.**

Can you do this?

Yes, yes you can. Creating a custom sock may feel daunting, but here's the thing: it's just math (and basic math, at that). If you know your ankle and foot circumference measurement and you can calculate your number of stitches in 1 in/2.5 cm, then you use that math to make adjustments to an existing pattern or even create your own.

Notes: