Learn to Knit

These instructions will get you started in making a knitted polyhedron shape for the Perovskite project. The instructions and diagrams are from www.redheart.com so if you need additional information visit their site for other tutorials.

Slip Knots

A slip knot is the starting point of everything you do in knitting and is the basis for the cast on.

(1) Make a circle with yarn, about 12” from end.

(2) Pull a loop through the circle.

(3) Insert the needle into the loop.

(4) Pull the loop gently and evenly to tighten and slide the knot up to the needle.
**Cast On**

Broken down in very simple terms, knitting is just a matter of transferring loops from one needle to another. To get started, you’ll need to put loops on one needle, and that process of creating loops is called casting on.

There are several methods of casting on. Each has a unique purpose and produces a different edge. Try different methods to find the one most comfortable and suitable to your project. For other methods, visit [www.redheart.com](http://www.redheart.com).

**Long-Tail Cast On (also called Thumb Cast On).**

This method of casting on produces a very elastic edge, which is particularly useful when followed by garter stitch or stockinette stitch.

Measure approximately 1” of yarn for each stitch needed and make a slip knot at this point.

1. Place slip knot on needle (counts as first stitch) and hold needle in right hand with the skein end of the yarn over your first finger. Wind the tail end of the yarn around your left thumb from front to back.

2. Bring needle down in front of thumb.
And (3) insert point under loop in front of thumb.

(4) Bring tip of needle under loop in index finger, following direction of arrow.

(5) Pull needle down through loop on thumb, following direction of arrow.

(6) This forms a stitch on needle.

Repeat instructions for each stitch to be cast on, counting each loop on needle (including the slip knot) as a stitch.
**Knit Stitch (k)**

(1) With the working yarn at the back, insert right-hand needle into first stitch no left-hand
needle, from front to back.

(2) Wrap yarn around right-hand needle, from left to right over the point of the needle.

(3) Pull wrap through the stitch, forming a loop on the right-hand needle.

(4) Slip the stitch off the left-hand needle.

When all the stitches on the left-hand needle have been transferred to the right-hand
needle, turn the work and place the needle with the stitches on it to the left hand to start
the next row.

When knitting every row (also known as garter stitch), both sides of the knitting will have
raised horizontal ridges.
**Purl Stitch (p)**

1. With the working yarn at the front, insert right-hand needle into first stitch on left-hand needle, from back to front.

2. Wrap yarn around right-hand needle, from right to left over the point of the needle.

3. Pull wrap through the stitch,

4. Forming a loop on the right-hand needle. Slip the stitch off the left-hand needle.

When all the stitches on the left-hand needle have been transferred to the right-hand needle, turn the work and place the needle with the stitches on it to the left hand to start the next row.
**Stockinette Stitch (St st)**

Stockinette stitch is the most familiar type of knitting and is comprised of alternating knit and purl rows. This is the pattern you will be using for the polyhedron shape. In stockinette stitch, the knit rows are the right side of the work and each stitch resembles a "V". In reverse stockinette stitch, the purl rows are the right side of the work.

![Image of stockinette stitch]

**Knit Increases**

There are several ways to increase, and each method adds extra stitches to the row unless they are paired with compensating decreases. Increasing is used whenever a knitted piece needs to be wider, such as sleeve shaping.

Unless the pattern specifies otherwise, knit into the front and back of a stitch to increase, as both Make 1 Stitch and Yarn Over methods of increasing can leave small holes in the work.

**Increasing 1 stitch (inc)**

On a knit row, work into the front and back of the next stitch: knit into the stitch and before slipping it off the left needle, twist the right needle behind the left and knit the same stitch again through the back loop. Slide the original stitch off the left needle—there are now 2 stitches on the right needle made from the original one.

On a purl row, the method of increasing is similar. Purl into the front of the next stitch, then purl into the back of it before sliding it off the left needle.
Make 1 stitch (M1)

Another form of increasing is to work into the strand between two stitches. This is easier but leaves a little hole in your work.

(1) To make a new stitch, insert the right needle from front to back under the horizontal strand that runs between the stitch on the right needle and the stitch on the left needle.

(2) Insert the left needle under this strand from back to front.

(3) Knit through the back of the strand to twist the new stitch and prevent a hole.
Cast / Bind Off

When your knitted piece is finished, binding off closes the stitches so that they do not unravel when taken off the needles.

From beginning of row, knit 2 stitches, insert tip of left-hand needle into first stitch on right-hand needle and pull this stitch up, over the second stitch and completely off the needle. Knit another stitch and repeat process.

Cut the yarn, leaving an 8” end for weaving in. Pull the end of the yarn through the last stitch on the right needle and tug it gently to fasten off the last stitch.

Dropped Stitches

A dropped stitch need not be devastating—it’s an easy problem to fix if you catch it within a few rows of the drop. If you don’t see it until several inches have been worked, there will not be enough yarn around the dropped stitches to fix the problem, and the best solution is to unravel the knitting back to the dropped stitch and re-knit these rows.

The easiest method to pick up a dropped stitch is to use a crochet hook. Work with the knit side facing you (turn the work over if you need to because of pattern stitches).

Insert the hook into the free stitch from the front. With the hook pointing up, catch the first strand of the ladder from above it (see illustration) and pull it through the stitch on the hook.

Continue in this manner until you’ve worked up through the rows and then replace the stitch on the left-hand needle, being careful not to twist it. If you’ve found more than one dropped stitch, secure the others with a safety pin until you are ready to pick them up.
Working from a Pattern

Before picking up needles and yarn, sit down and read through the pattern you will be using. Patterns are written in a language of their own, and this will help you become familiar with special stitches and abbreviations. Although not all publications use the same abbreviations, the terminology will become familiar with a read-through.

Gauge

Gauge is the number of stitches (and spaces) per cm and the number of rows (or rounds) per cm.

Your gauge and the gauge specified in the pattern must be the same so that your project will finish to the correct size. This is especially crucial when making sweaters or other projects that must fit. Before starting your project, take the time to make a gauge swatch.

To check gauge, using the same yarn, needles and pattern stitch specified in the instructions, make a swatch that is approximately 6” square. Work in pattern for about 6”, and then bind off. Let the swatch relax for a bit, and then flatten it without stretching to measure.

Using pins, mark off a section of stitches in the centre of the swatch that measures the same as the gauge given in the pattern square. Count the number of stitches and rows in this section. If they match the gauge, you can start right in on your pattern.

If you have too few stitches, you are working too loosely—change to smaller needles and make another swatch. If you have too many stitches, you are working too tightly—change to larger needles and make another swatch. Keep making swatches and experimenting with needle sizes until you obtain the specified gauge. If you’re still having trouble, try a different style of needles in the same size to see if that helps (if you’re using aluminium, try wood; if you’re using wood, try acrylic, etc.).

When the stitch gauge is correct, most likely the row gauge will also be correct. Slight variations in row gauge can be acceptable since the lengthwise proportions of a garment are usually given as a measurement in the instructions.
These are standard abbreviations that may appear in patterns on redheart.com. Any abbreviations specific to a pattern will be given at the beginning of the pattern.

beg ... begin(ning)
CA, CB, CC, etc. ... Color A, B, C, etc.
dec ... decrease
inc ... increase
K ... knit
lp(s) ... loop(s)
mm ... millimeter
P ... purl
pat ... pattern
psso ... pass slipped stitch over
rem ... remaining
rep ... repeat
rnd(s) ... round(s)
RS ... right side
sk ... skip
sl ... slip
st ... stitch(es)
St st ... stockinette stitch (knit RS rows, Purl WS rows)
tog ... together
WS ... wrong side
yo ... yarn over
* , ** , + or ++ ... repeat whatever follows the *, **, + or ++ as indicated
[ ] ... work instructions in brackets the number of times indicated