

Binary Cable Hat

By Firefairy

Specially Designed for Hat Attack 2008.

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This hat comes in two versions. The version shown above has 16 cables and 4 cable crossing rows, and represents the numbers from 0 to 15 in binary. The other has 32 cables and 5 cable crossing rows, and represents the numbers from 0 to 31 in binary.

I recommend working this hat using Lamb's Pride Worsted or any other worsted weight yarn with uneven twist (knits up as \ or / instead of \). You need a gauge of 5 spi and 6.5 rpi in stockinette. Remember to check your gauge (as much as is possible) once you start your hat to be certain that your gauge has not changed significantly when you switch to the ribbing pattern.

You will also need needles 1mm/2 sizes smaller than that used to obtain gauge.

This hat is not designed to be a watch cap; there is no allowance made for a rolled-up brim. Your finished hat should be about 15 inches from edge to edge over the top. This should cover small heads from earlobe to earlobe, without popping off of larger heads. If you want a longer hat, I recommend adding rows between the last cable row and the decreases, so that the binary stays visible around the hat.

Variation 1: 16 Cables

This hat has 16 cables, with 4 cable rows. The cable crosses are placed so that the hat represents the numbers from 0 to 15 in binary, reading from left to right.

The main body of this hat is knit in this rib pattern- P2, K2, P1, K2. Until the decreases, this is the stitch order for all rows, including cable rows. For ease of comprehension and safe division of repeats, the P2 stitches are considered to be P1 on either side of each cable. This also places the end-of-row and needle division points (as relevant) between two of the same kind of stitch (purl), which reduces laddering. Use of stitch and row markers is up to individual taste.

Read All Instructions Before Starting.

Standard Abbreviations:

CO: Cast on loosely using Longtail cast-on

K: Knit

P: Purl

K2T: Knit 2 together decrease

P2T: Purl 2 together decrease

Cable Row Abbreviations:

1: Cable Cross: P1, transfer next 3 sts to cable needle without changing orientation. Holding cable needle in back of work, K2 from left needle. Transfer leftmost st from cable needle back to left needle without changing orientation; P. K remaining 2 sts on cable needle. P1 from left needle.

0: Cable No Cross: P1, K2, P1, K2, P1

Optional Fibonacci Stripe Variation:

Change colors after rows 1, 2, 4, 7, 12, 20, 33 (or count CO as a row and decrement those numbers by 1).

Showoff Beading Variation:

Place beads in the purl columns between cables. This will require 960 beads if you put one on every row, 480 if you alternate rows, 320 if you put a bead every third row, or 192 if you put a bead every fifth row of the body of the hat. Keep in mind that adding many beads will make the hat somewhat less able to contract, which will increase the minimum head size on which it can fit.

Variation 1: 16 Cables

Read All Instructions Before Starting.

CO and work rows 1-3 on smaller needles, then transfer to size used to obtain gauge.

CO 112 sts: leave the slip knot on your needle/s, but do not count it as a stitch. When joining, transfer slip knot to right-hand needle and check to make sure round is not twisted, then work (P) first stitch of the round. When you reach the end of the round, work (P) the slip knot together with the last stitch.

Place 56 stitches on each needle or section if using ML or 2 circs, 28 on each needle if using 5 DPNs. If you are using 4 DPNs, and thus need to divide the stitches into 3 parts, just make sure you place the needle transfers between 2 purl stitches.

Rows 1-6, 8-11, 13-16, 18-21, 23-30: (P1, K2, P1, K2, P1) 16 times.

Cable Rows:

Row 7: (1, 0) 8 times.

Row 12: (1, 1, 0, 0) 4 times.

Row 17: (1) 4 times, (0) 4 times, (1) 4 times, (0) 4 times.

Row 22: (1) 8 times, (0) 8 times.

Crown decrease pattern:

If you have been using a single short circular, now is the time to get out your DPNs or other circ for the decreases. See the third paragraph on this page for how to distribute stitches.

Row 31: (P1, K2, K2T, K1, P1) 16 times.

Rows 32-33: (P1, K4, P1) 16 times.

Row 34: (P1, K1, K2T, K1, P1) 16 times.

Row 35: (P1, K3, P1) 16 times.

Row 36: (P1, K3, P1) 15 times, then P1, K3. Do not work last st as part of this row. Move row counter (if applicable) to just after the K3. Final st is now 1st st of row 37, and is used in the P2T. You will need to repeat this shift at each needle transfer.

Row 37: (P2T, K3) 16 times.

Rows 38-39: (P1, K3) 16 times.

Row 40: (P1, K1, K2T) 16 times.

Rows 41-42: (P1, K2) 16 times.

Row 43: (P1, K2T) 16 times.

Rows 44-45: (P1, K1) 16 times.

Row 46: K2T 16 times.

Rows 47: K

Row 48: K2T 8 times, then pull yarn through sts and draw tight. Weave in ends, and you are done!

Variation 2: 32 Cables

This hat has 32 cables, with 5 cable rows. The cable crosses are placed so that the hat represents the numbers from 0 to 31 in binary, reading from left to right.

The main body of this hat is knit in K1P1 rib. Until the decreases, this is the stitch order for all rows, including cable rows. Use of stitch and row markers is up to individual taste.

Read All Instructions Before Starting.

Standard Abbreviations:

CO: Cast on loosely using Longtail cast-on

K: Knit

P: Purl

K2T: Knit 2 together decrease

P2T: Purl 2 together decrease

Cable Row Abbreviations:

1: Cable Cross: Transfer next 2 sts to cable needle without changing orientation. Holding cable needle behind work, K1, transfer leftmost st from cable needle back to left needle without changing orientation, P1, K remaining st on cable needle, P1

0: Cable No Cross: K1, P1, K1, P1

Optional Fibonacci Stripe Variation:

Change colors after rows 1, 2, 4, 7, 12, 20, 33 (or count CO as a row and subtract 1 from each of these numbers)

Showoff Beading Variation:

Place beads in the purl columns between cables. This will require 1920 beads if you put one on every row, 960 if you alternate rows, 640 if you put a bead every third row, or 384 if you put a bead every fifth row of the body of the hat. Keep in mind that adding many beads will make the hat somewhat less able to contract, which will increase the minimum head size on which it can fit.

Variation 2: 32 Cables

Read All Instructions Before Starting.

CO and work rows 1-3 on smaller needles, then transfer to size used to obtain gauge.

CO 128 sts; leave the slip knot on your needle/s, but do not count it as a stitch. When joining, transfer slip knot to right-hand needle and check to make sure round is not twisted, then Knit first stitch of the round. When you reach the end of the round, Purl the slip knot together with the last stitch.

Place 64 stitches on each needle or section if using ML or 2 circs, 32 on each needle if using 5 DPNs. If you are using 4 DPNs, and thus need to divide the stitches into 3 parts, just make sure you place the needle transfers between 4-stitch repeats.

Rows 1-5, 7-10, 12-15, 17-20, 21-24, 26-29: (K1, P1, K1, P1) 32 times.

Cable Rows:

Row 6: (1, 0) 16 times.

Row 11: (1, 1, 0, 0) 8 times.

Row 16: (1, 1, 1, 1, 0, 0, 0, 0) 4 times

Row 21: (1) 8 times, (0) 8 times, (1) 8 times, (0) 8 times

Row 25: (1) 16 times, (0) 16 times.

Crown decrease pattern:

If you have been using a single short circular, now is the time to get out your DPNs or other circ for the decreases. See the third paragraph on this page for how to distribute stitches.

Unless otherwise noted, there are 16 repeats in each of these rows.

Row 30: (K1, K2T, P1, K1, P1, K1, P1) (112 sts.)

Row 31, 32: (K2, P1, K1, P1, K1, P1)

Row 33: (K2, P1, K1, K2T, P1) (96 sts.)

Row 34, 35: (K2, P1, K2, P1)

Row 36: (K2T, P1, K2, P1) (80 sts.)

Row 37, 38: (K1, P1, K2, P1)

Row 39: (K1, P1, K2T, P1) (64 sts.)

Row 40, 41: (K1, P1, K1, P1)

Row 42: (K2T, K1, P1) (48 sts.)

Row 43, 44: (K2, P1)

Row 45: (K2T, P1) (32 sts.)

Row 46: (K1, P1)

Row 47: K2T (16 sts.)

Row 48: K

Row 49: K2T 8 times, then pull yarn through sts and draw tight. Weave in ends, and your weapon is loaded and ready!