

Middle Atlas Intarsia-in-the-Round

a how-to guide

by Irene Waggener

Intarsia-in-the-round was used by knitters in Morocco's Middle Atlas mountains to create colorful leg warmers with tessellating patterns (see Resources and Links on p. 10). This pamphlet outlines my hypothesis for how this technique was used to create these patterns.

You can read more about this tradition in:

Besancenot, J. (2000) *Costume du Maroc*. Casablanca: Editions les Croisée des Chemins.

Rabaté, M.R. and Sorber, F. (2007) *Berber Costumes of Morocco*. Paris: ACR Édition Internationale.

Waggener, I. (2020) *Keepers of the Sheep: Knitting in Morocco's High Atlas and Beyond*. Houston: 106 Meters from the Road.

This how-to guide is available free of charge at the following website:

<https://106metersfromtheroad.com/>

It was originally published as part of the *Middle Atlas Skirt Pattern* by Irene Waggener. The pattern includes these notes on intarsia-in-the-round as well as an essay about the tradition, a step-by-step guide with photos for how to do intarsia-in-the-round, and pattern charts. You can find the pattern on the Irene Waggener Designs page on Ravelry:

<https://www.ravelry.com/patterns/library/middle-atlas-skirt>

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You may print and use this pattern and the items made from it only for your personal, non-commercial use. You may not distribute or sell electronic or paper copies of this pattern or parts of this pattern. Send questions and comments to 106meters(at)gmail.com. Pattern Version 1_2026.

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Intarsia-in-the-round Techniques

Intarsia is generally worked back and forth in knit and purl rows. For this reason, many knitting books suggest that intarsia should be worked flat. However, intarsia-in-the-round is possible when specific techniques are used. A combination of twisting the old and new yarns and slipping stitches to specific parts of the pattern at the beginning of a round closes the gaps between blocks of color. The following information outlines how and when to employ these techniques so that your knitting will be as gap-free as possible.

Tension

Intarsia-in-the-round requires frequent tension checks when switching from one color to the next. It is very easy for stitches to become loose. This is easily addressed when switching colors. Gently pull on the new color to be used to make sure the stitches in the rows below are the correct tension before knitting with that new color. In areas where several colors are twisted together, slightly more force may be necessary, but be careful not to break the yarn. This is one instance in which pulling tightly on the working yarn is better than not pulling enough.

Bobbins

Each color in the pattern has its own bobbin. If a pattern is repeated five times, five bobbins of each color in the pattern are required. Bobbins with a lot of length tend to get tangled; however, a bobbin that is too short can be hard to use. If the bobbins are frustrating, consider working with shorter lengths of loose yarn left untied.

When more yarn is needed, the spit-splicing method is best. This creates a smoother reverse side of the fabric; limits the number of yarn ends hanging from the work; and greatly reduces the number of ends to sew in once finished. The spit-splicing method works best with 100% wool that has been minimally processed and has a bit of fuzziness or grip to it.



Twisting Yarn

Crossing the old yarn over the new yarn before purling or knitting with the new yarn will close gaps in certain situations - for vertical line color changes and right diagonal line color changes (see below). It is important to maintain tension when twisting yarns to prevent loose stitches. Before knitting with a new color, gently pull on the new yarn to take out any slack that may have been introduced earlier.



Vertical line color changes

Twist yarns every round (knit and purl sides) by crossing old yarn over new yarn before working with the new yarn.



In this photo, the vertical line color changes occur between the brown and blue and white and purple color blocks.



Twisting yarn on the knit side: old color (white) crosses over new color (purple) before knitting with the new color.



Twisting yarn on the purl side: old color (purple) crosses over new color (white) before purling with the new color.



Right diagonal line color changes

Twist yarns every round (knit and purl sides) by crossing old yarn over new yarn before working with the new yarn.



In this photo, the right diagonal color changes occur between the blue and white color blocks. When working on the purl side, the right diagonal color changes occur between the brown and purple color blocks.



Twisting yarn on the knit side: old color (blue) crosses over new color (white) before knitting with the new color.



Twisting yarn on the purl side: old color (brown) crosses over new color (purple) before purling with the new color.



Left diagonal line color changes

Do not twist yarns (knit and purl sides).
Pick up new color from under old color.

NOTE: Always start a round (knit and purl sides) one stitch past the left diagonal stitch. This prevents gaps at the beginning of the round because the yarn does not need to be twisted on the left diagonal. See 'Purl side start' and 'Knit side start' below for detailed instructions.



In this photo, the left diagonal color changes occur between the purple and brown color blocks. When working on the purl side, the left diagonal color changes occur between the white and blue color blocks.



On the knit side, the new color (brown) comes from under the old color (purple).



On the purl side, the new color (blue) comes from under the old color (white).

Purl side start

Beginning of round: start by slipping the first set of stitches including the stitch that will be the new color stitch on the left diagonal.

After slipping these stitches, purl all the way around to the beginning of the first needle, remembering to twist old and new yarn at vertical color changes and right leaning diagonals.

Purl the slipped stitches at the beginning of the first needle, finishing with the left diagonal color change stitch. Now, all stitches on the first needle have been worked. Slip these stitches back onto the left needle to bring the work back to the beginning of the round. Turn to work the knit side.



These images are for demonstration and show the work flat instead of in-the-round. Reading the stitches from right to left, the first left diagonal occurs with the blue color block next to the white color block.



In this demonstration image, the stitches on the right were slipped - including the stitch that will be the new left diagonal stitch (one white stitch past blue color block).

Begin purling with the first stitch after the new left diagonal stitch (in this image, that is the white stitch on the left needle). The slipped stitches on the right are worked at the end of the round, ending with the left diagonal color change stitch (in this image, that is the white stitch on the right needle, which will be knit with the blue yarn).

Knit side start

Beginning of round: start by slipping the first set of stitches including the stitch that will be the new color stitch on the left diagonal.

After slipping these stitches, knit all the way around to the beginning of the first needle, remembering to twist old and new yarn at vertical color changes and right leaning diagonals.

Knit the slipped stitches at the beginning of the first needle, finishing with the left diagonal color change stitch. Now, all stitches on the first needle have been worked. Slip these stitches back onto the left needle to bring the work back to the beginning of the round. Turn to work the purl side.



These images are for demonstration and show the work flat instead of in-the-round. Reading the stitches from right to left, the first left diagonal occurs with the brown color block next to the purple color block.



In this demonstration image, the stitches on the right were slipped - including the stitch that will be the new color stitch on the left diagonal (one purple stitch past brown color block).

Begin knitting with the first stitch after the new left diagonal stitch (in this image, that is the purple stitch on the left needle). The slipped stitches on the right are worked at the end of the round, ending with the left diagonal color change stitch (in this image, that is the purple stitch on the right needle, which will be knit with the brown yarn).

Working direction - exceptions

In general, work back and forth alternating between knitting one round and purling the next. However, when the colors flip, as they do in rounds 10 and 1, do not turn the work. Continue knitting the next round, carrying the new color over from the right side. Whether or not stitches are slipped at the beginning of the color-flip round depends on where the diamond pattern sits at the beginning of the round. Continue reading for further information.



Left: Red lines indicate areas in the pattern where the colors flip in the following round.

Right: Yellow lines indicate areas in the pattern where the colors flip, which corresponds to the red lines in the image on the left.

If the color-flip round happens before the start of a new diamond shape at the beginning of the round, as in rounds 10 to 11, do not slip any stitches at the beginning of the color-flip round (round 10). Knit the round from the beginning, twisting yarn as necessary. Turn work. You are now ready to work the purl side (round 11). Do not slip any stitches at the beginning of this round. Purl the round from the beginning. This round starts with the beginning of a new diamond shape. The overlapping twists required by this new diamond pattern will

If the color-flip round happens in the middle of a diamond shape at the beginning of the round, as in rounds 1 to 2, slip the first set of old color stitches at the beginning of the round (first 8 stitches). Continue knitting around following the pattern and twisting yarn as necessary. Knit the slipped stitches from the beginning of the round, and slip these stitches back onto the left needle. Turn work. You are now ready to work the purl side (round 2). Follow directions for a purl side start as outlined above.

Resources and Links to Museum Objects

Bibliography

Besancenot, J. (2000) *Costume du Maroc*. Casablanca: Editions les Croisée des Chemins.

Rabaté, M.R. and Sorber, F. (2007) *Berber Costumes of Morocco*. Paris: ACR Édition Internationale.

Waggener, I. (2020) *Keepers of the Sheep: Knitting in Morocco's High Atlas and Beyond*. Houston: 106 Meters from the Road.

Links to Museum Objects

The following objects can be found at: <https://collections.quaibranly.fr/>. Enter one of the identifying numbers in the search bar to retrieve the image.

Jambières de femme - Example 1

Location: Musée du Quai Branly

Identifying numbers:

N° inventaire : 71.1996.22.2.1-2

MH - Inventaire : 996.22.2.1-2

MQB - Numéro précédent : 71.1996.22.2

Jambières de femme - Example 2

Location: Musée du Quai Branly

Identifying numbers:

N° inventaire : 71.1996.22.3.1-2

MH - Inventaire : 996.22.3.1-2

MQB - Numéro précédent : 71.1996.22.3

Femme à l'handira - portrait by Jean Besancenot of a woman wearing Middle Atlas leg warmers

Location: Musée du Quai Branly

Identifying numbers:

N° inventaire : 74.1988.2.1

(not assigned) : 3749

MNAAO - Inventaire : M.88.2.1

Femme marocaine Moyen Atlas - portrait by Emile Gallois of a woman wearing Middle Atlas leg warmers

Location: Musée du Quai Branly

Identifying numbers:

N° inventaire : 75.15235.16

MQB - Inventaire : 75.15235.16

MNAAO - Inventaire Ancien Fonds : AF 15235.16

RMN - Numéro de photo : 96CN 22135

MQB - iconothèque ancien numéro de gestion : PP0184185