# Introduction to Tapestry Weaving: Workshop with Norma Rosier

Tapestry is an ancient form of weaving, in which the weft yarn completely covers the warp. Weft yarn is usually used in small areas to create pictures, rather than passing across from selvedge to selvedge. It requires a strong warp yarn, widely spaced, and a softer weft yarn which can be packed down well to cover the warp. Warps are usually cotton or linen, and wefts may be wool, silk, or many other fibres. Tapestry weaving can be used to create wallhangings, cushion covers, bags, rugs, etc.

Like any new craft, it is better to learn the basic techniques before working on a design. By weaving a simple sampler, you will become familiar with all the techniques you need.

Some tapestry terms

**Butterfly**: A small skein of weft yarn, used instead of a **shuttle**.
**End**: A single **warp** thread.
**Leashes**: Threads tied round some of the **warp ends** to create a **shed.**
**Selvedge**: A pair of **warp** threads at the outside edge, which are used together as if they are one **end**, to add strength.
**Sett**: The number of **warp ends** per inch, across the **warp**, in ends per inch (e.p.i) or may be ends per cm.
**Shed**: The gap created between two sets of **warp ends** to pass the **weft** through.
**Shuttle**: A wooden or cardboard holder for **weft** yarn. For tapestry, a simple stick shuttle is suitable, but a **butterfly** is often used instead.
**Warp**: The lengthwise threads which are wound on the frame.
**Weft**: The crosswise threads which are woven through the **warp**.

## Weaving a Sampler

### Winding the warp on the frame

Start on the right hand side of the frame, at the 6" mark. Tie the end of the warp to the top of the frame, and start winding by going down the **back** of the frame (**Fig. 1**). This is important! Wind around the bottom, lining up with the 6" mark at the bottom, then up the front, to the **same** point where you started (at the 6" mark). Now return down the back, lining up with the next mark in when you reach the bottom. Keep winding, each time lining up with the next mark in. Maintain an even tension as you wind, which should be fairly tight, but not too tight.

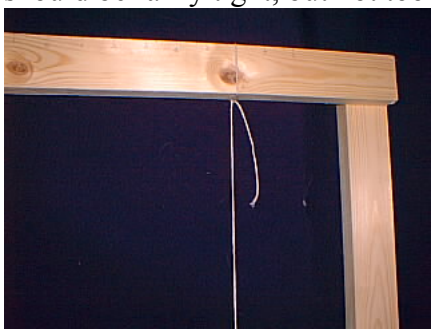

**Fig. 1**
Tie the first end to the top of the frame, and start winding down the back

You may find it easier to put the frame sideways (**Fig. 2**), winding down as far as the centre, then turn over to finish the other half. Keep winding until you have reached the 6" mark at the other side, on both top and bottom. Now wind one extra end, which should be at the back of the frame, so that you finish at the bottom. Tie the end of the warp to the bottom of the frame. You should now have a total of 75 ends.



**Fig. 2**
It is easier to wind the frame with it lying on its side. Wind down from one side as far as the centre, then turn over and wind up the other side.

To create the selvedges, tie the outer two left threads together at the top and bottom, so they act as one thread, and sit at the front of the frame. Do the same for the outer two right threads.

**Making the leashes**

The frame separates the warp ends into two layers, which forms a natural shed, which we will call **Shed 1**. Weft can be passed through this shed to weave one row. For the alternate shed, **Shed 2,** the weft has to go under the back ends and over the front ones. The easiest way to do this is to use leashes. Take a length of the warp cotton, about 6-7 feet (2 metres) long. Thread through the first bunch of warp ends, by weaving over the selvedge, under the next end (the one at the **back** of the frame), over the next (front) end, continuing in this way until a total of 6 back ends have been picked up **(Fig. 3)**. Holding the two loose ends of the leash thread, pull up the loops in between, so that all the loops and the ends are the same length **(Fig. 4)**. Tie the bunch of loops and the two ends in an overhand knot **(Fig. 5)**. Repeat across the warp, making six sets of leashes in all. Make sure that all the back ends are on a leash, and no warps or leashes are crossed **(Fig. 6)**.

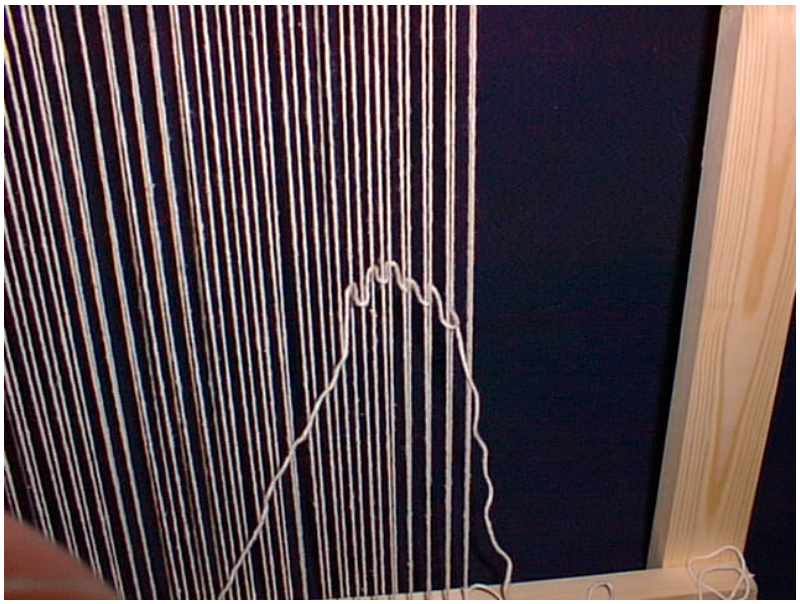

**Fig. 3**
Threading the leashes

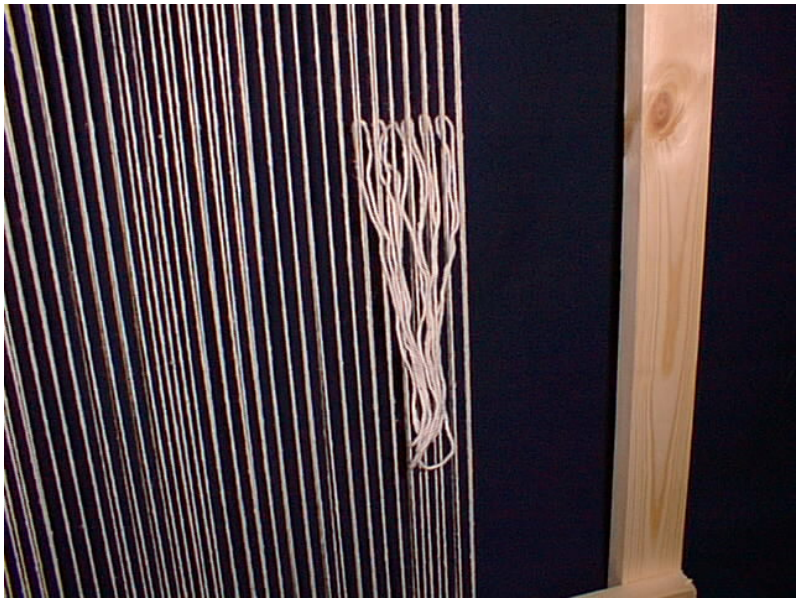

**Fig. 4**
All leashes the Same length

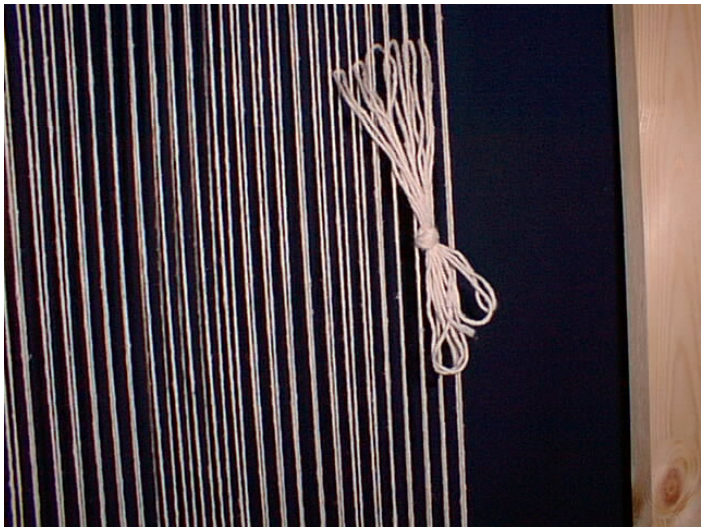

**Fig. 5**
One complete bunch of six leashes

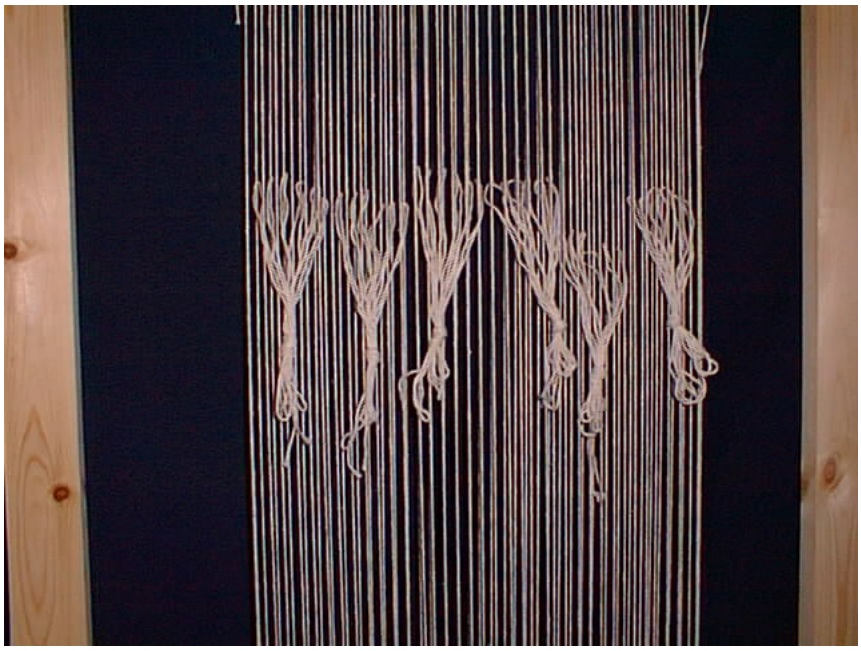

**Fig. 6**
Complete set of six bunches of leashes

**Weaving the header**

To create a firm edge to weave against, a few rows of heavier yarn are woven as a header. The warp thread would be suitable for this. The header will be removed when the finished piece is taken off the frame. Starting on the left, weave one row in shed 2, using the leashes, leaving a tail to tie round the frame. The easiest way to use the leashes is to pull on the first bunch with one hand, then put your other hand in the gap between the warps **(Fig. 7)**.

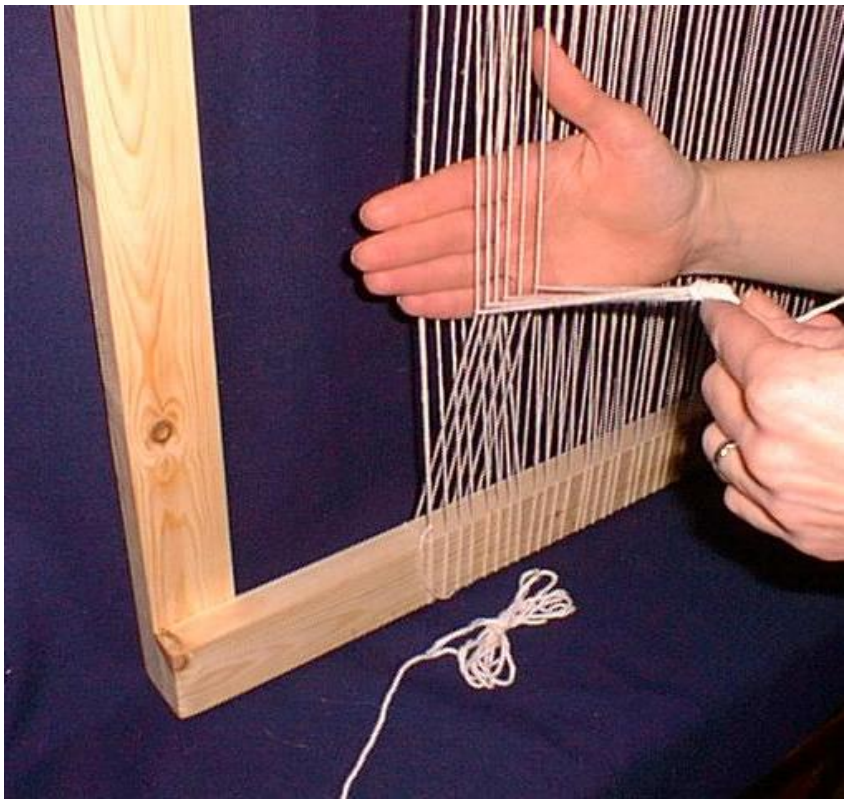

**Fig. 7**
Pull the leashes with one hand and use the other hand to hold the shed open.

You can then let go of the leashes, putting them up to the top of the frame out of the way, and pass the weft through with the other hand **(Fig. 8)**.

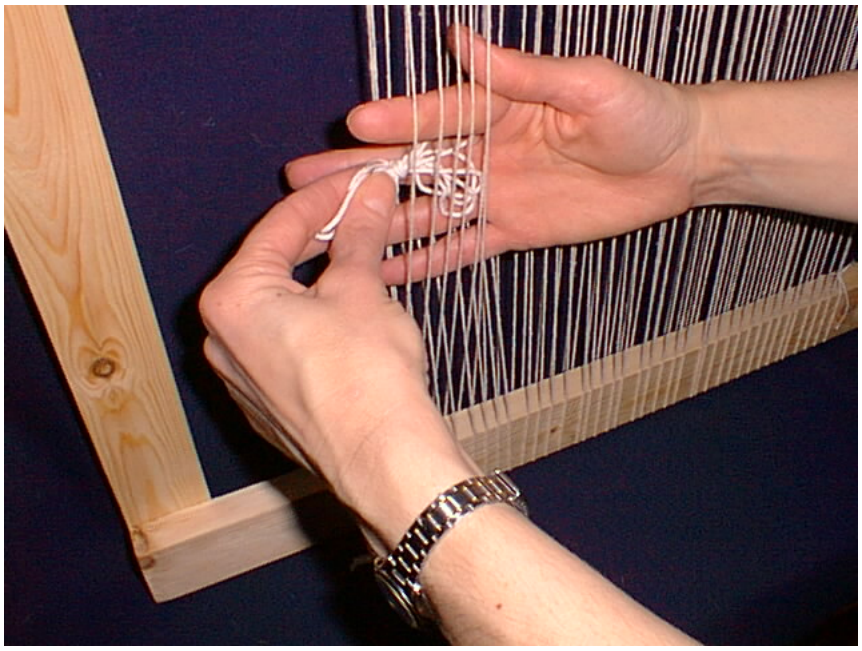

**Fig. 8**
Passing the weft through the shed

Continue across the width using each set of leashes in turn. This first row will not need any extra slack in the weft, as it is pulling the two layers of warps together. Tie the loose (beginning) end of the weft to the frame at the left. Beat down with a beater or fork, and even out the warps, realigning with the marks on the frame if necessary **(Fig 9).**

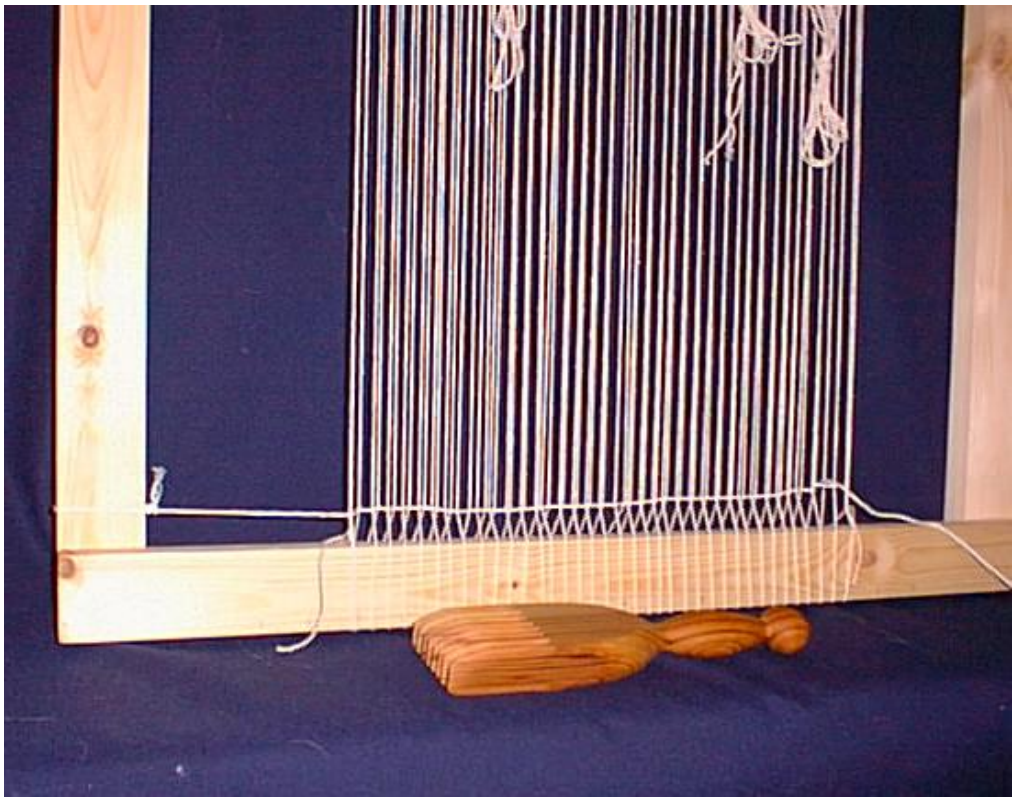

**Fig. 9**
The first row of the header is woven

Now weave a second row, using the natural shed. When you have passed the weft all the way through, you will need to leave plenty of slack, so that the weft can be beaten down between the warp threads and cover the warp completely. Leave a peak **(Fig. 10)** before beating down with the beater. Start beating in the centre, then work outwards, so that you don't pull any of the slack across **(Fig. 11)**. Now weave three more rows (shed 2, shed 1, shed 2), always leaving enough slack, and then tie the weft to the right edge of the frame **(Fig. 12)**. The warps should now be evenly spread and lined up with the marks on the frame, but if not, they should be evened out again.

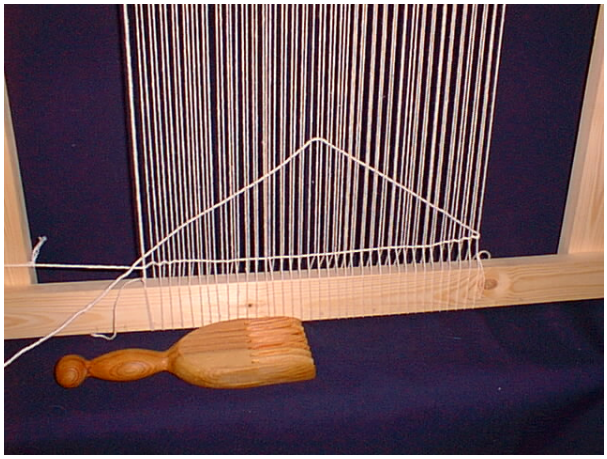

**Fig. 10**
Leave a peak to allow enough slack in the weft

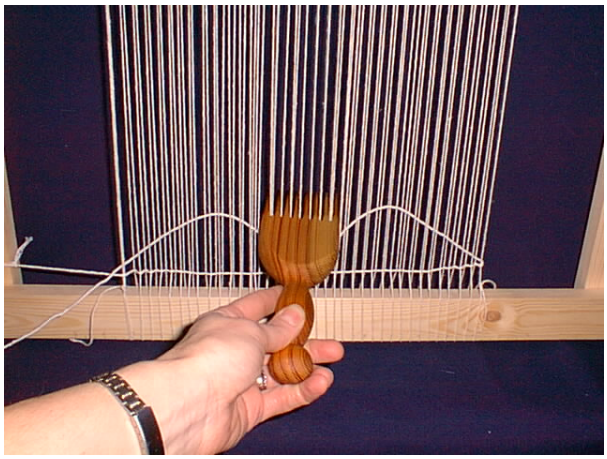

**Fig. 11**
Start beating from The centre

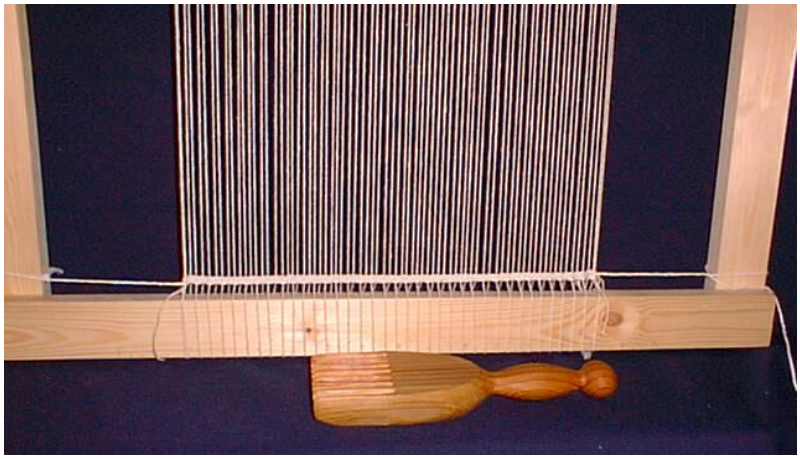

**Fig. 12**
The finished header

**Weaving the Sampler**

Using a dark coloured wool, either wind into a butterfly **(Fig. 13)** or wind round a cardboard shuttle. Starting with the opposite shed from the one you finished the header with, weave one row, leaving a tail of about 8 inches. To fasten off the end, pull out the first two inches woven. Split the wool into two (e.g. if it has 6 strands, there will be 3 strands in each) and poke one of the halves down through the warps, to hang behind. Take the other half and weave back to the selvedge, wrap round the selvedge an extra turn, then weave back (**all** in the same shed) to where you poked the other half through. Now poke this second half through, so that the two ends overlap around one warp end **(Fig. 14)**. The idea is that you will always have just six strands of weft, so there should be no bulky areas.



**(a)**



**(b)**



**(c)**

**Fig. 13** winding a butterfly
(a) Start by passing the yarn behind your thumb, leaving a tail hanging down. Then pass behind the little finger.
(b) Continue in a figure-of-eight round the thumb and little finger. Don't overfill. Break off the end, leaving a second tail
(c) Slip off the fingers, and using the second tail, wind round the middle a few times. On the last turn, slip your forefinger between the butterfly and the end to form a gap, then slip the end through where your finger is. Pull tight. The first tail is then used to draw out the wool.

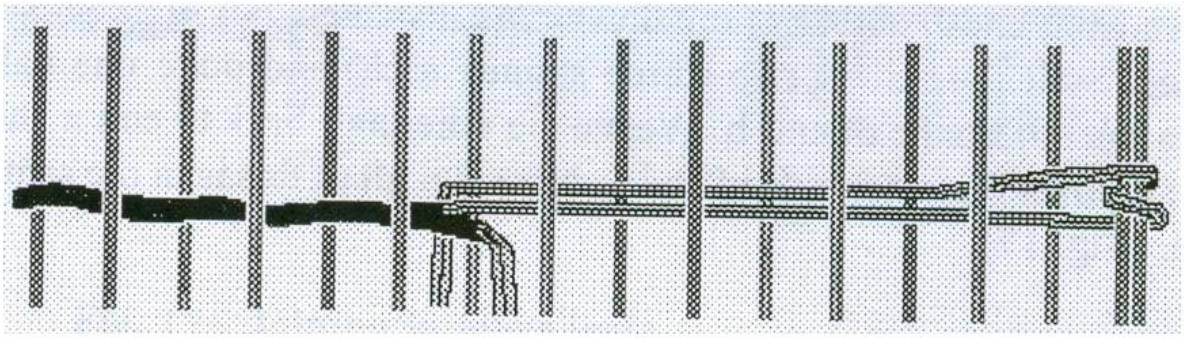

**Fig. 14** Joining in the weft at the beginning

As you weave each section following, refer to the finished sampler on the last page.

**Section 1 – Plain weave**
Weave a few rows in a dark colour, practising leaving enough slack as in Fig. 10, so that the edges do not draw in. To avoid getting loops at the edges, make sure the weft is snug around the selvedge, without being tight. If you find that you have difficulty preventing the edges drawing in, you can anchor the selvedges to the frame using a paper clip. Bend the outer edge of the clip open a little, pass it round the selvedge, then tie to the frame so that it is tight but not distorted. As you weave, you can unhook the clip every half inch or so, and re-hook it at the top of the weaving **(Fig. 15)**.

**Section 2 – Vertical stripes**
When you have woven about 10 rows in dark, join in a light, contrasting colour at the opposite edge to the one the dark weft leaves (but don't fasten off the dark one). Use the same method to join in the new weft as you did at the beginning **(Fig. 14)**. Now weave alternate rows in light and dark, making sure that the two weft threads interlock at the edge where they cross **(Fig. 16)**, Weave 10 rows in these alternating colours, which will create vertical stripes.

**Joining in more weft**
If you run out of one of the colours, you will need to join in a new butterfly or shuttle. You should make the join away from the edge. In the same way that you joined in at the beginning, there will be no more than six strands anywhere, if your yarn has six strands. Weave until you have about six inches of weft left, then split it into two (three strands each). Poke one half down between the warp ends (over end **a**). Weave the other half across three more bottom ends (i.e across another six warp ends in all) and poke that half down between the warps (over end **b**). Take the new yarn and weave from end **b** across to the other selvedge, leaving a tail of about six inches. Split the tail in two (three strands each) and poke one half down the other side of end **b**. Weave the other half back to end **a** and poke it down the other side of end **a**. Note that **all** of this is in the same shed **(Fig. 17)**.

**Section 3 – Horizontal Stripes**
To weave horizontal stripes, you need two rows of each colour. Weave one more row in the same colour as the previous row, then weave two rows of the alternate colour. Continue with two rows of each colour until you have a few horizontal stripes.

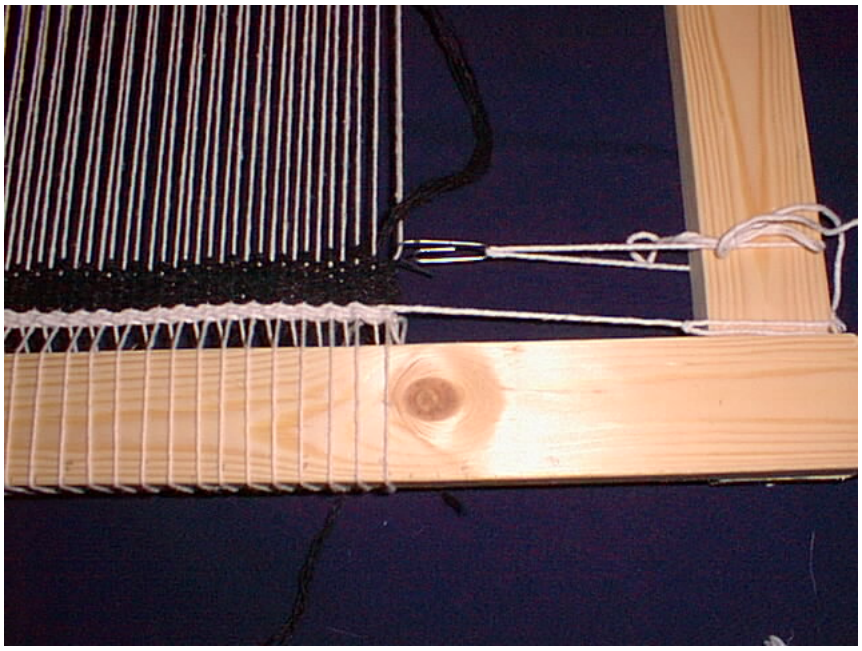

**Fig. 15**
Anchoring the selvedge to prevent draw-in



**Fig. 16**
Interlocking the two weft threads at the edge

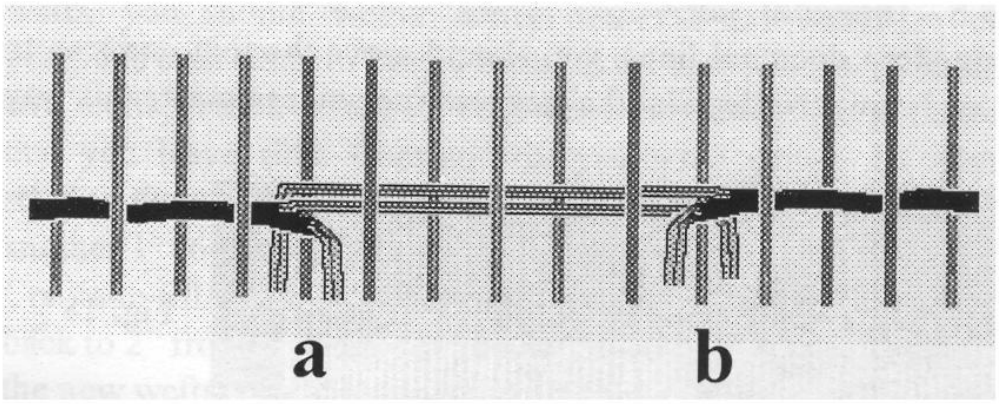


**Fig. 17** – Joining in more weft

**Section 4 – Vertical joins**

So far, you have been using one colour all the way across the row. This section uses two colours across the row. If both of your wefts are at the same side, you should weave one row in one of the colours, so that you are now starting with one weft at each side.

For the first row in this section, weave with the dark yarn across to the centre of the warp, then weave from the other side with the light yarn, to the same point. You must still leave the same amount of slack, so continue making peaks at the same angle for each weft **(Fig. 18)**.

For the second row, weave each colour back to the edge, making sure that just one of the wefts passes round the warp end in the middle but does not cross the other weft. If you continue making a vertical join between the two colours at the exact same point, you would leave a vertical slit where they meet. There are several ways to avoid this, but the following one makes sure that there is no excess yarn at the join, which would leave bumps in the weft. You need to make the two wefts meet slightly offset from the first join, so in the third row, weave one yarn back to the middle and take it just one warp end further across and let the second colour meet it as before. The fourth row is worked as the second. In the fifth row, the join should be in the same position as the first row. Continue staggering the join one warp end right or left till you have worked about 14 rows. Throughout, make sure that the warp end where the colours meet does not get missed, or used by both colours in a row. You can see the effect in **Fig. 18.**

**Section 5 – Diagonal joins**

To create steep diagonal lines, work as in section 4, but move the join one step to the left each time. Notice that the steepest line you can create this way is less than 45º because the weft packs down closer together than the warp is set. Continue weaving with a left facing diagonal line until you have woven 24 rows. Now make a diagonal line going to the right, but this time moving the join **two** warp ends to the right each time. This will make a shallower angle **(Fig. 18)**.

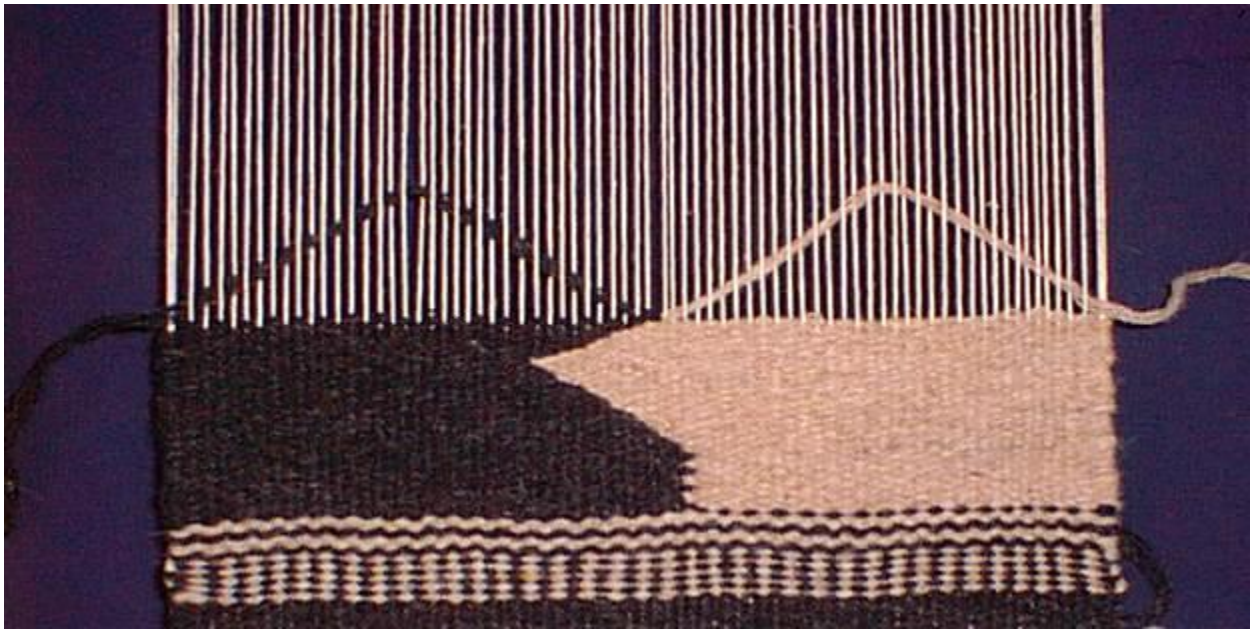

**Fig. 18** Making vertical and diagonal joins between two colours. Slack is still needed for short rows.

Continue for about 20 rows, then make another diagonal line to the left, moving the join **three** warp ends to the left each time. After 22 rows, make another line to the right, moving the join **four** warp ends to the right each time. Note the different angles formed according to how many warp ends are moved, and note that this is a smoother join than the vertical one.

**Section 6 – Hatching and slits**

Hatching is a way of blending two colours without a sharp join between them. Since you are using two very contrasting colours, the effect will appear quite stark, but if two similar colours were used, it would create a subtle blend. At the same time as working the hatching, you will bring in another two wefts, so you will need an extra butterfly or shuttle of each colour. If your wefts are at the outside edge, work another row to bring them to meet in the middle (it doesn't matter exactly where).
On the side where you have the dark yarn, start another light weft, joining the weft at the edge as you did at the beginning. Weave across for 2 inches (the width of one bunch of leashes). On the other side, where you have the light yarn, start another dark weft, again weaving across for 2 inches and joining at the edge as before. Now work the other two wefts out from the centre to meet these. Continue with all four wefts as follows: with the middle two, you should weave across towards the centre, meeting at different, random, positions each time, to blend in the two colours. Then weave back out to meet the outer two wefts. Weave the outer two wefts back to the edge, and then in to meet the middle wefts, keeping this join at exactly the same point, 2 inches from the edge, which will leave slits, but forms a neater vertical line than in section 4.
Continue until you have woven 16 rows since starting the new wefts. On the next row, bring the outer wefts across another inch (6 warp ends), moving the vertical joins further from the edges. Continue till 16 rows have been worked, then take the vertical joins back to 2 inches from the edge for another 16 rows. On the last row, each of the new wefts should be finished off, using the same technique as the starting join. The slits can be left open (as seen in kilim rugs) or they can be sewn up after taking the sampler off the frame.

**Section 7 – Curved joins**
To form a curved line between two weft colours, you need to alter the number of warp ends you move across each time. To follow a curved line, it can help to draw the shape on the warp with a coarse marker pen. Alternatively, draw the shape on a piece of paper and place this behind the warp. Draw a shape roughly like section 7, then follow it by placing the join where the line is, but remember that you will be beating the weft down each time. If you can weave the curve 'by eye', even better. This section is approximately 3 inches high.

**Section 8 – Completing the weaving**
You have now used all of the basic techniques. To finish off your sampler, you can repeat the first three sections in reverse (horizontal stripes, vertical stripes, then just one colour, to create a border to match the beginning. Alternatively, use up the rest of the warp to practise and explore the techniques further in any way you wish. You will find that you cannot weave too close to the frame at the top, as the front and back warps get too close together.

**Before** removing from the frame, weave six rows in waste yarn, which will be removed later.

**Removing the sampler from the frame**
First, either untie or cut the strings tying the header to the bottom of the frame, and remove the paper clips. Now cut the warp ends at the bottom of the frame, cutting between the warp and the frame to leave equal lengths at each side as much as possible. Cut the top end of the warps near the top of the frame.

**Finishing off**
To prevent the weft unravelling, you need to tie off the warp ends. Tie in overhand knots in groups of four, pulling out the header (at the bottom) or the waste yarn (at the top) as you go. The weft yarns hanging down the back do not need to be darned in, but you can trim these to about 2 inches long. The finished sampler should now be washed, by hand, using a gentle soap and warm water, as you would use for woollen garments. Rinse well, then lay out flat to dry, or you can pin out on a board so that it dries square. You can tie the top warp ends round a wooden rod, such as half-inch dowelling if you want to hang it.

**Hints and Tips**
You will need to find a comfortable position for weaving. One suggestion is to sit against a table or desk, propping the frame in front of you at an angle.

Here are a few of the problems that can occur, and their solutions.

1. Are the sides drawing in, despite using paper clips to pull them out? Are you finding that the warp is showing through, that is, not being completely covered by the weft after beating? Both of these problems usually mean that you are not leaving enough slack. Remember that the weft has to cover the warp completely and therefore needs to travel over and under each warp end, which remains straight under tension. However, the last two rows woven will not beat down completely until further rows are woven above, so don't worry if you can still see warp at the top edge .

2. Do you occasionally skip over three warp ends, instead of just one? This is caused by a poor shed. If the natural shed is becoming too narrow, you can put a stick between the warp layers and turn it on its side to increase the distance between the two layers. If it is the second shed that is causing the problem, it may be that the leashes are not all the same length, so you need to untie the knot and adjust it.

3. Are the warp threads becoming slack, making it difficult to beat down firmly? If all the threads are loose, try inserting a thin stick, or a knitting needle, between the warp threads and the top of the frame, to add more tension. If just a few threads are loose, you can use small pieces of thick cardboard on individual ends.

4. Do you have difficulty following a curved line? Remember that the weft will pack down further than it first appears, so you need to take this into account.

5. Does the selvedge appear to be beating further down than the rest of the tapestry? You can compensate for this by occasionally winding the weft an extra turn round the selvedge before the next row.

6. Do some areas beat down further than others within the tapestry? (This would be more likely to happen if you were mixing different yarns). Just work across the area involved and back again, to bring it up to the level of the adjacent area.

**And finally…**

I hope you have enjoyed this introduction to tapestry weaving. It is a relaxing and rewarding hobby, and you should now be ready to start on your own designs. There are very few fixed rules, so if you want to try something different, go ahead. You can use almost any materials for weft if you only want to hang it on a wall (rather than making a rug, for example), and it doesn't really matter if you want to mix different materials, though care is needed if you want to wash the finished piece. You can also add beads, feathers, or other found materials. The main thing to remember is that the warp needs to be strong, because it takes a lot of 'beating'.

Also, you don't have to work all the way across each row. You can build up areas separately instead, but make sure you work each area in the correct order, otherwise you will find some areas impossible to fill in (unless, of course, that is the effect you want).




**Fig. 19**

Completed sampler




**Fig. 20**

Close up of sections 1-4