

CITY AND GUILDS
UNIT ONE LEVEL ONE
AWARD IN BOOKBINDING

CURRICULUM AND COURSE NOTES
MULTI-SECTION BINDINGS



SHEPHERDS CENTRE FOR BOOK ARTS
76 ROCHESTER ROW, LONDON SW1P 1JU

MODULE 2 - MULTI-SECTION BINDINGS

The size of most books will necessitate the use of two or more sections; these are known as multi-section bindings.

Plain paper journal

In this exercise a full cloth cover is used to case in eight sections of folded paper. It is possible to use many other types of paper to achieve a similar result.

Materials

Please note that the materials specified here may differ on the actual course.

Remember to check the grain direction of the following materials:

Paper – 16 sheets of A4 (about 12 x 8in); enough to make eight 8-leaf sections for the bookblock.

Two folded sheets, slightly larger than the bookblock, of coloured or patterned paper for endpapers

Mull.

Kraft paper for the spine.

Cloth for the spine.

Pattern paper for the covers.

One sheet of greyboard, 2mm (about 3/32in) thick. You will need enough to allow the cutting of two cover boards slightly larger than the bookblock with the grain running head to tail.

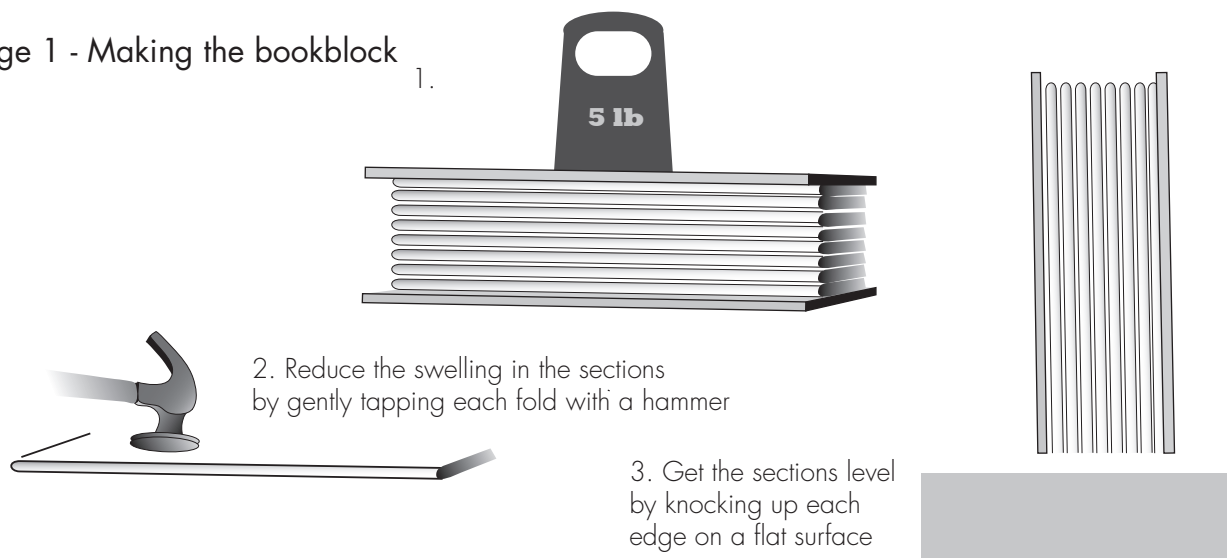
You will also need:

2m (6ft) lengths of thread.

Two 150mm (6in) lengths of sewing tape, 12-20mm (1/2-3/4in) wide.

You will also need two scrap pieces of board, slightly larger than the page size for 'knocking up' the sections. Fresh paste and PVA.

Stage 1 - Making the bookblock



Fold each sheet of paper twice to make a four-leaf section. Basically, this is the same procedure as folding the paper for a single section binding (see Module 1 Page 1). This time interleave two sections together to make an 8-leaf section. Repeat this procedure with the other sheets. You will then have **eight** 8-leaf sections (1). Reduce any swelling by placing all the sections between pressing boards and leaving them under a heavy weight or by gently tapping the folded spine of each section with a hammer (2). At this stage each section may be trimmed as described in Module 1 Page 3. Make sure all sections are trimmed to exactly the same size.

The next step is to knock up the sections ready for sewing. Remove the sheets from under the weight and place the sections, with all the folds at one side, between two boards cut slightly larger than the paper size. These boards should be square at the ends and placed flush with the top edge of the book. Holding the stack firmly in both hands, tap the top edge down on to a flat surface (3). Loosen your grip slightly as the paper drops against the

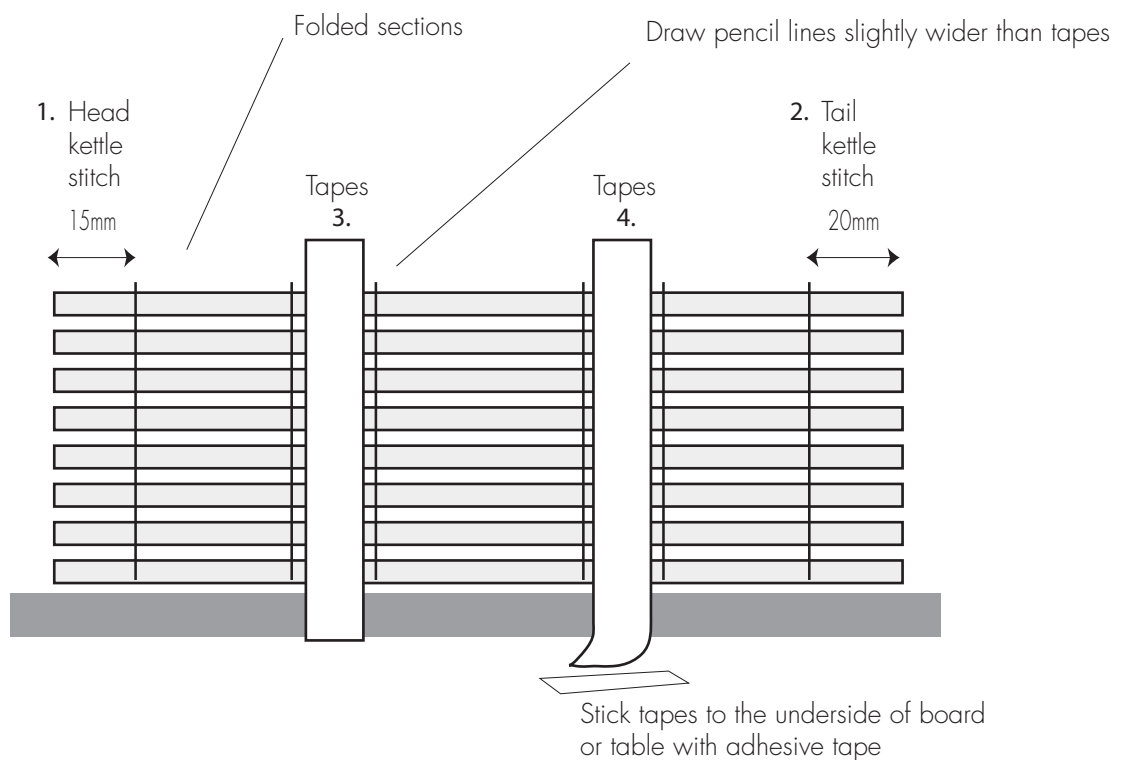
Turn the block through 90 degrees and repeat the action for the spine edge. Alternate this process between the top edge and the spine edge until the book feels level at both edges. Lay the bookblock flat on the table and, holding the book tight again, proceed to hammer along the edge of the boards to consolidate the folds. Knocking up sections in this way will result in a reasonably flat and level top to the book.

Lay the bookblock flat on its side with a heavy weight on top and make any final adjustments to the squareness using a set-square.

Marking the sections up for sewing

Mark the bookblock for sewing as shown in the diagram below. The first and last stitches, known as the kettle stitches (1&2), are placed about 15mm (5/8in) from the top of the book, and about 20mm (3/4in) from the tail.

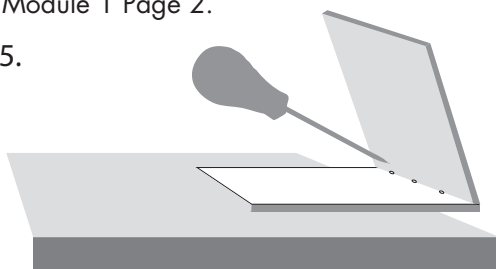
Two tapes (3&4) are placed equidistant between the two kettle stitches. Mark the positions of the stitches and those of the sewing tapes in pencil on the spine fold of the top section. Draw vertical lines down over the other sections using the set-square. The pencil lines showing the position of the tapes are drawn a little wider than the actual width of the tapes. Using some adhesive tape, secure the tapes at the appropriate positions to a block of wood or the edge of a table.



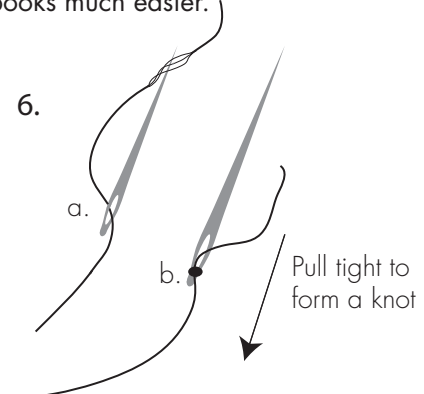
Working from the inside of each section, use a bodkin to punch a hole at each pencil mark (5). This action is not absolutely necessary, but it will make your first few attempts at sewing books much easier.

Thread the needle with one length of thread and lock the end (6a&b).
See Module 1 Page 2.

5.

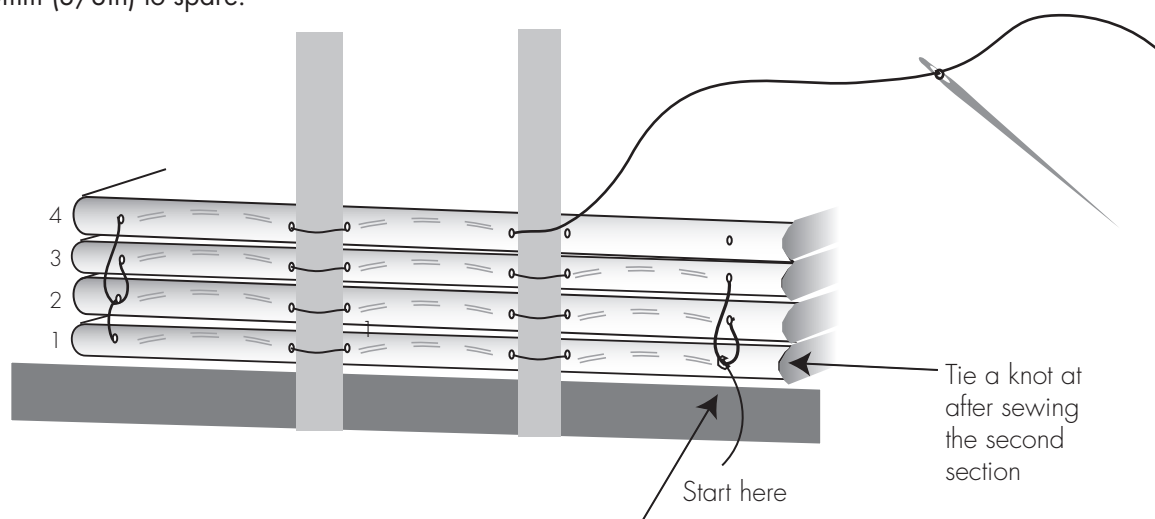


6.



Working on the last section of the bookblock first, take the needle in through the tail kettle stitch and out through the second hole (see diagram below). Hold the section against the first tape and bring the thread around the tape, in through the third hole and out through the next. Continue in this way until the thread emerges from the head kettle stitch. Take up any slack by pulling the thread parallel to the spine in direction of sewing. Pass the needle through the head kettle stitch of the next section and repeat the procedure down the length of that section until the thread emerges from the tail kettle stitch. Pull the thread tight. At this point the thread is knotted to the loose thread at the beginning. To help reduce swelling gently tap the spine edges of each section with a hammer as the sewing progresses.

Continue sewing along the third section and, when the needle and thread emerge from the head kettle stitch, pull the thread tight and then loop it through the lower kettle stitch before sewing along the fourth section. At the final kettle stitch, on the last section, the thread is knotted twice through the lower kettle stitch. Cut off the ends leaving about 10mm (3/8in) to spare.

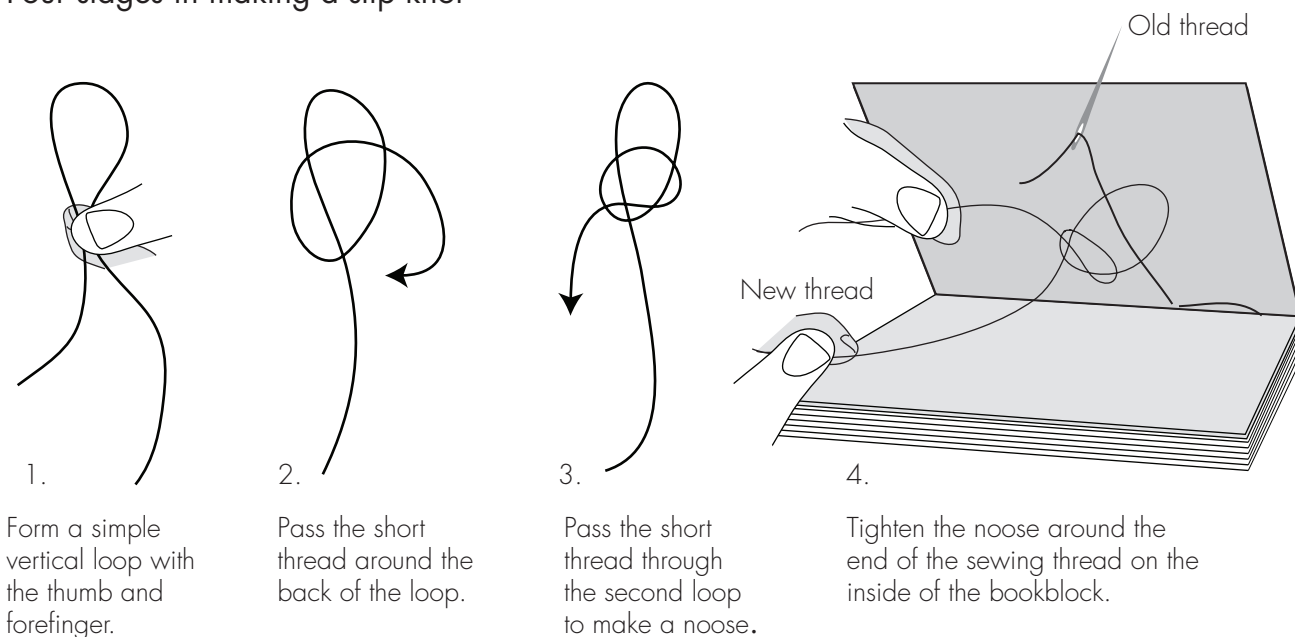


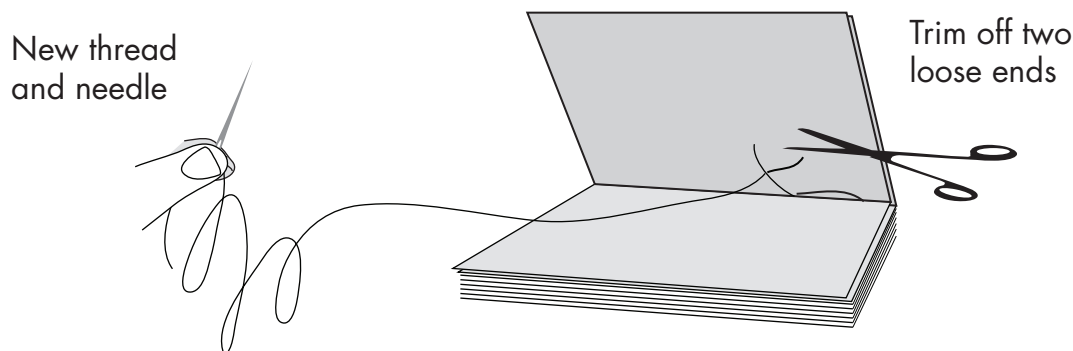
TIP

Test the tension of the thread inside the section by flicking with your nail. You should here it ping.

When sewing a book in this manner, it is only possible to handle a relatively short length of thread at one time. From time to time it will be necessary to tie in a new thread using a small 'weaver's' or 'slip knot'. This knot is made by forming a noose in the new thread, placing the noose over the end of the old thread at a point inside the book which will not pull through a hole. The knot is then pulled tight over the old thread until it clicks into position.

Four stages in making a slip knot

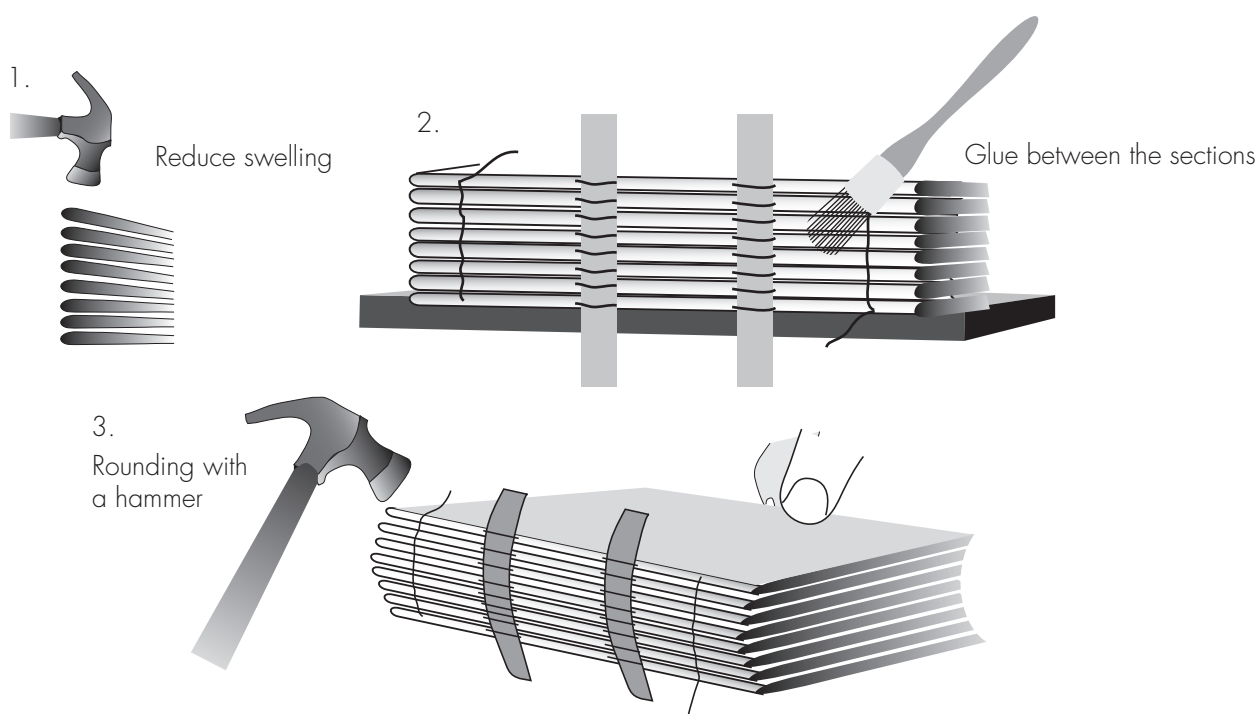




Complete the sewing and tie off the final section with a double knot.

The bookblock will still have a certain amount of swelling in the spine. Knock up the bookblock at the top and spine edges and then gently hammer along the spine edge to reduce any swelling (1).

NOTE Swelling in the spine is inevitable due to folding and sewing. It should be reduced where possible at every stage, but a slight swell in the spine helps the bookblock to be rounded (3).



Lay the bookblock flat on a board or the table, with the spine overlapping the edge, and set the spine and fore-edge square. Using PVA, glue out the spine, rubbing the adhesive well in between the sections but not over the tapes (2). Place the bookblock between pressing blocks, and under a weight, while the glue sets for about half an hour.

When the glue has started to dry out the spine must be rounded. Draw the top sections forward (towards the fore-edge) and gently hammer along both sides of the spine (3). Turn the book over and repeat the process. Continue working both top and bottom till you have achieved an even curve. A slight swelling in the spine helps and if your sewing is of the right tension, the spine will round in a gentle yet even curve.

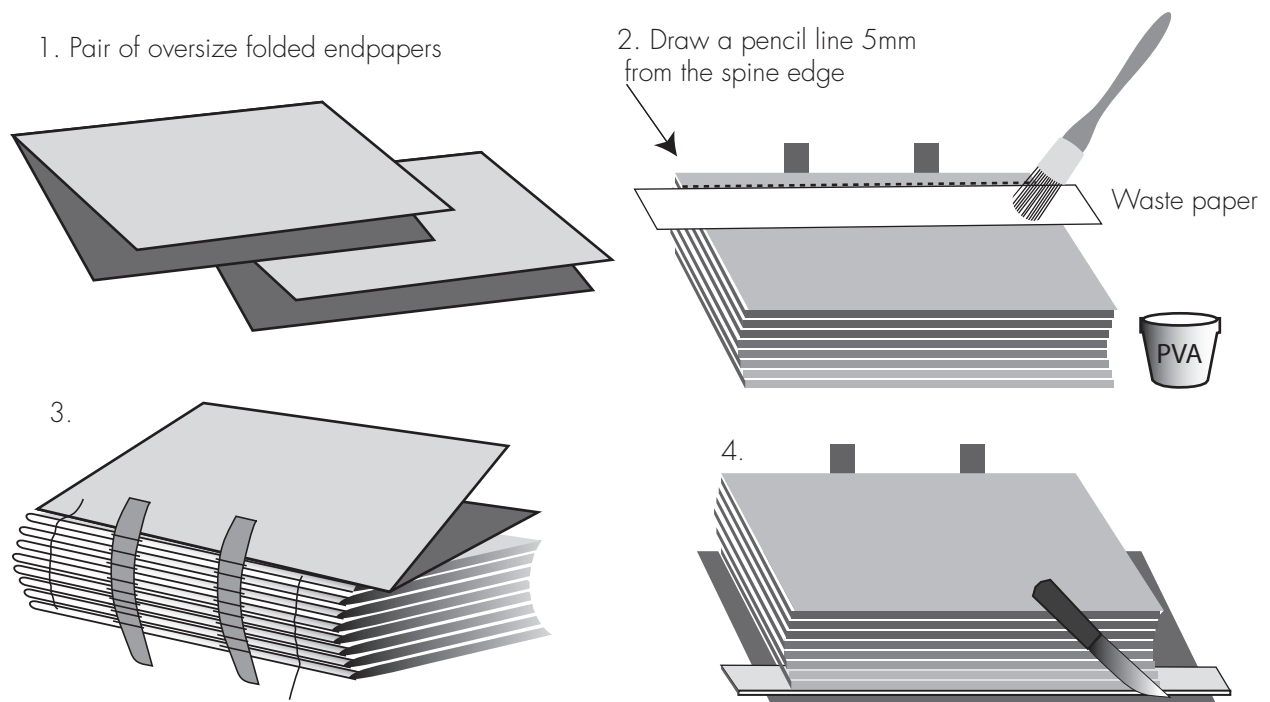
Add another layer of glue across the whole of the spine, including the tapes, and leave the bookblock between pressing boards under a heavy weight to dry. This will help retain the rounded shape of the spine. The next stage is to attach the endpapers.

Endpapers

Endpapers play an important role in bookbinding. They attach the bookblock to the case and they also have a decorative function.

Pick up any modern hardback book and you will see that the endpapers are normally made from a different paper to the bookblock (or textblock). The most common type of endpaper is made from a folded sheet glued to the first and last leaves of the bookblock.

The endpapers in this exercise are made by folding two sheets of paper in half and glueing to the spine edge of the bookblock (1&2). This process is called tipping in.



NOTE Always use a safety rule when cutting paper and other materials. A shoe knife (4) is a versatile tool because it cuts with both a horizontal action, as in slicing paper, and vertically as in trimming out endpapers (4).

Using a strip of waste paper as a guard, glue a line of PVA 5mm wide along the spine edge of the first leaf (2). Place one of the folded endpapers (1) along the spine edge (3). PVA dries quickly so endpaper should stick firmly within a few minutes.

The endpaper is larger than the bookblock so with a safety rule and sharp knife (4), trim out the excess paper so the endpaper lies flush with the textblock. Care should be taken to place the safety rule underneath the bookblock and flush with the edge of the bookblock.

Repeat the same procedure for the second endpaper.

The bookblock is now ready for the final stage of lining up the spine with mull and kraft paper.

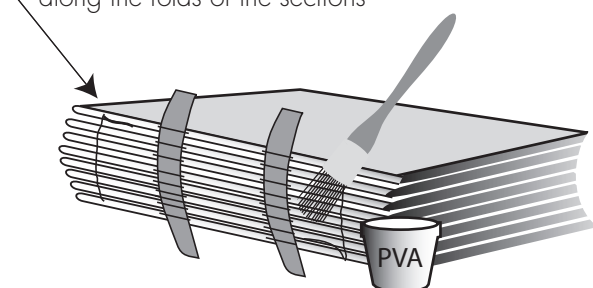
Lining the spine

The final stage of making the bookblock is lining the spine with mull and kraft paper. First glue the spine again with PVA, this time with a thicker layer of glue, making sure the two loose sewing threads are glued in along the folds of the sections (1).

PVA is a flexible glue and will allow the spine to bend without cracking when the book is opened. Next glue a piece of mull on to the spine (2). The mull should be slightly shorter than the bookblock but must cover the kettle stitches. It must also overlap the two endpapers by about 15mm(5/8in).

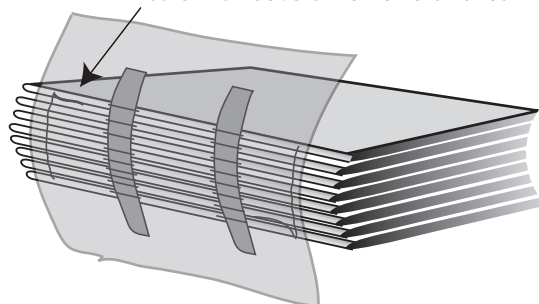
The final layer is a piece of kraft paper, exactly the same width and length of the spine (3). This can be glued on with PVA or a mixture of PVA and paste. If using just PVA, dampen the paper with a sponge or cloth and rub well down on to the mull. This will stretch the fibres of the kraft paper and as it dries will bite into the mull and the adhesive underneath. The aim is to create a solid yet flexible backstrip that will bind the sections firmly together.

1. Glue the loose sewing threads along the folds of the sections

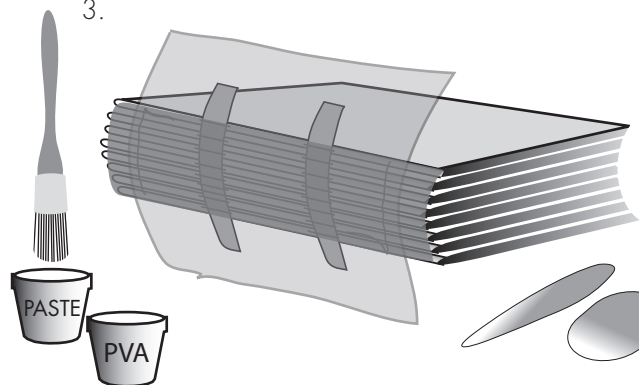


2.

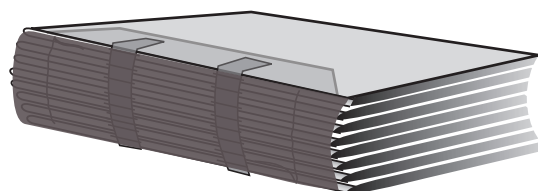
Ensure mull covers the kettle stitches



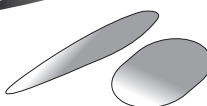
3.



4. Trim off the corners of the mull with scissors and tidy-up the ends of the tapes



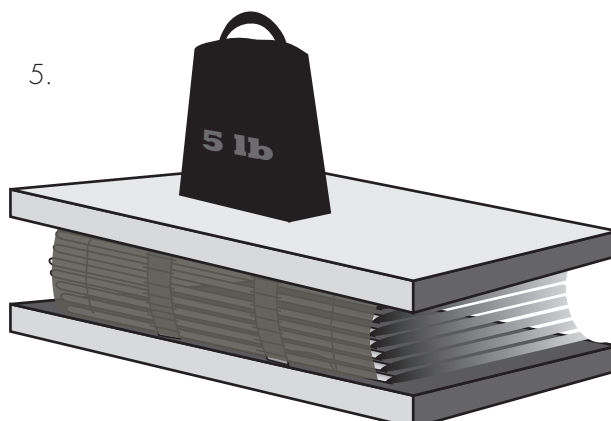
Rub the kraft paper down with a bonefolder and damp cloth or sponge



Cutting the boards

Follow the procedure on Page 4 of Module 1, ensuring the boards overlap the bookblock sufficiently to protect the edges of the paper. Place the bookblock between the boards and then between a pair of wooden boards with a heavy weight on top (5). Allow this to dry thoroughly before casing-in.

5.

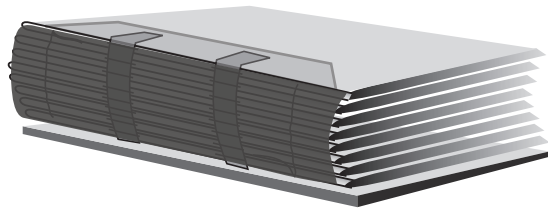


Making the Case

Page 4 of Module 1 describes how to make a case for a single section binding. The process is essentially the same for a multi-section binding but because of the additional thickness of the bookblock, a backstrip is needed to give the spine a rigid and pleasing shape.

The backstrip is usually cut from Manilla (a type of stiff paper) to give the spine a rigid shape. It is cut to the same length as the boards and its width is the measurement of the spine plus **one** thickness of board (1).

1.



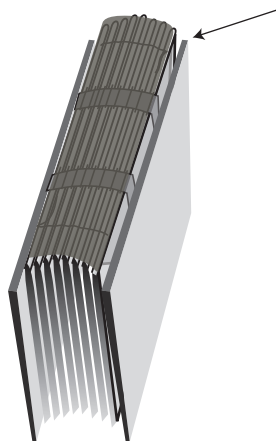
The width of the backstrip should be the thickness of the bookblock plus one width of board

If Manilla is not available for the backstrip, a stiff paper will suffice

The next step is to measure the distance between the boards, as in Module 1 Page 4. Remember to first place the boards in position on the bookblock, allowing 5mm (3/16in) for the joints (2). The manilla backstrip is held in place on the spine while a strip of paper is wrapped around the spine and bookblock. Mark off the distance between the boards with a pencil line (3). This measurement is all that is need to proceed with making the case (4).

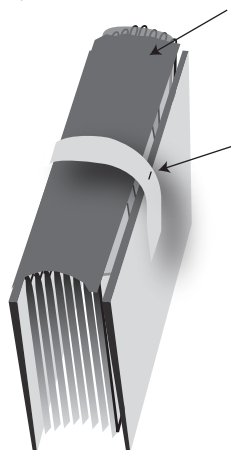
2.

5mm (3/16in) gap



3.

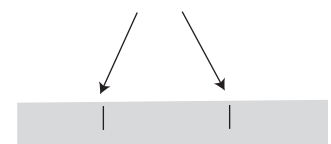
Manilla backstrip



Mark the position of the boards on both sides

4.

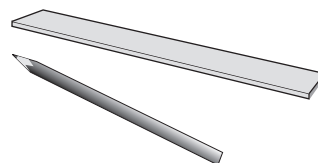
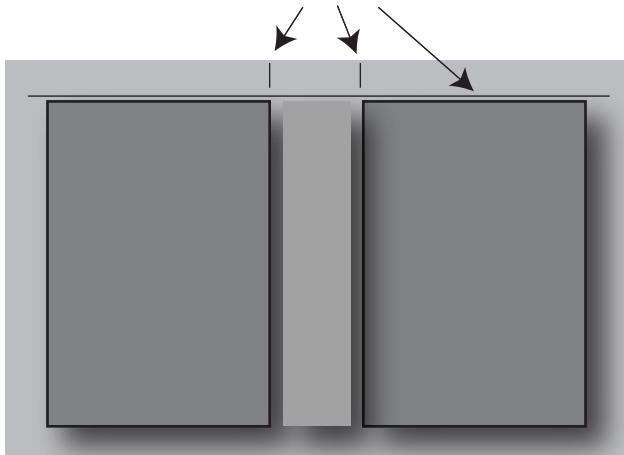
The pencil lines gives the measureme between the two boards



In this exercise the case is made from a single piece of bookcloth. The cloth must be cut large enough to allow a 15mm (5/8in) turn-in on each side (5). Do a dry run by placing the boards and the backstrip on the bookcloth and mark of the position of the boards.

5.

Pencil lines



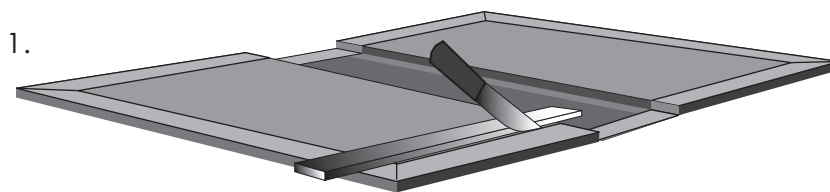
Using a pencil and the paper guage (4), mark off the distance between the two boards in the centre of the cloth. With a ruler, draw a pencil line along the top edges of the boards to ensure the two boards are level

Making the Case

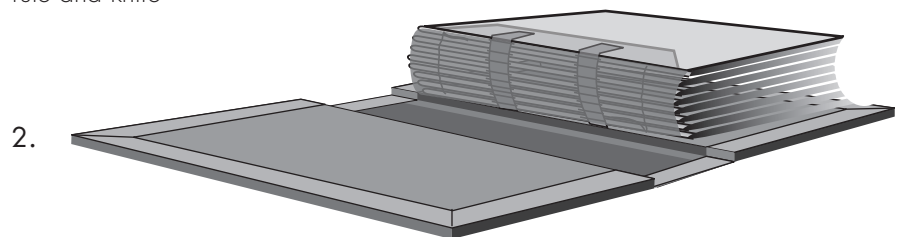
Glue out the cloth with a mixture of PVA and paste. The paste will give the adhesive a longer drying time and give you more time to make the case. Try and cover the whole area of cloth with an even layer of glue. Using the pencil lines as a guide, place the boards in position ensuring they are level at the top. Then place the backstrip in the middle, taking care to ensure it lies centrally between the boards.

Turn the cloth and the corners in as in the first module (Module 1 Page 5). Make sure there are no air pockets by drawing the cloth tightly over the boards and rubbing down well with a bonefolder.

Even though you may have cut out the cloth very accurately, the moisture in the glue may have distorted and stretched the cloth which will result in uneven turn-ins. Once the case is dry, go around the inside of the case with a knife and ruler and trim out the cloth in straight lines (1). As you pull away the excess cloth, a small layer of grey-board will come with it but this is of no consequence.



Steel safety rule and knife

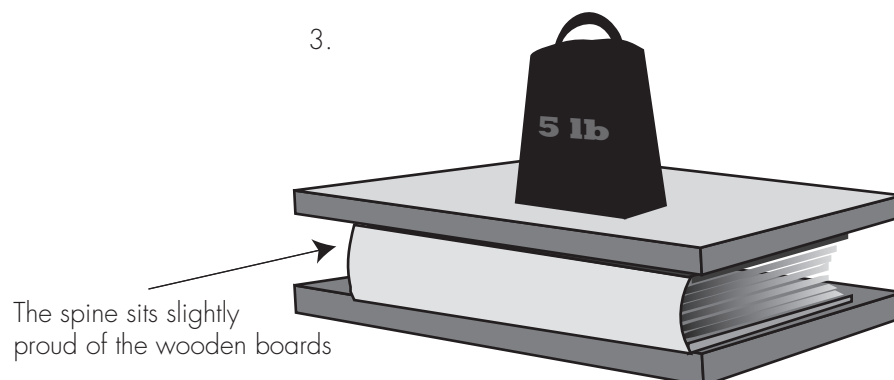


Casing-in

The case and bookblock are now completed and they are ready to be brought together for the final stage of casing-in (2). The process is the same as Module 1 Page 6.

Once the book is cased-in, it is essential the book is left to dry out under a weight (3). It is a good idea to insert some blotting paper or clean waste paper between the endpapers. This will help prevent any adhesive from sticking to the bookblock.

The spine will be slightly wider than the bookblock so when setting between the wooden boards, make sure the spine protrudes slightly over the edge of the boards.



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