

# Simple Bookbinding for the Beginner

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A guide to sewn book binding...

## Terms:

Sheet = 1 piece of paper cut to length and height needed

Page = ½ of a sheet

Section = A group of folded sheets, stacked together to make a small booklet

## Step 1: Decisions & Preparation

A) The first thing to do is decide what the final book is to look like. Decide on the size of the finished book, the paper type, and any cover specifics. Will you want to use cords or ribbons for binding. (If you are really bad at math, do the sewing pattern first to make it easier.) If you are rebinding an existing book, make careful measurements of the existing binding before disassembling.

### *Possible considerations for decisions:*

- Intended use and space needed per page for intended use - sketching, Plein Air, poetry, writing
- Book thickness or number of pages
- Desire for book mark (glued-in ribbon to place at last used page)
- A particular piece of fabric you want to use for the cover
- Shelf heights

B) Gather the materials and tools you will need.

### *Notes:*

- Finished book will be approximately ¼" taller and wider than the pages
- Sheets are folded in half to create pages sewn at the center
- Intended use dictates lined versus unlined paper, and drawing versus painting paper
- Book thickness will be about twice the thickness of the cut sheets

### *Sample Book:*

*A book of unlined sketch paper to be a **finished bound and covered** size of approximately 7¼" high, 6¼" wide, and approximately ½" thick.*

## Step 2: Section Preparation

A) Once paper size and type are known, buy or cut paper to size, remembering to cut the paper to the desired height, but TWICE the desired width of the finished pages. The stack of paper sheets should be about HALF the thickness of the desired finished book.



*Sample Book: Paper is cut to 7" x 12" until there is a ¼" thick stack.*

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If binding pre-printed sheets, 4 pages are printed on each sheet, 2 on the front and 2 on the back. These should NOT be printed on the sheets in page order. The correct printing order is a function of the number of pages in each section. For example, a book with 8 sheets will have the Title page and the last page on one side of the first sheet, and the first written page and the second to the last page on the other side of the sheet.

B) To create the sewing pattern for the bound edge, decide whether you are using cords or ribbons, and how many you will place in the binding. Plan to use 2 or 3 for small books, 4 for mid-sized books such as journals, and 5 for large books. Ribbons will be used for example and discussion.

Calculate spacings for sewing pattern as follows:

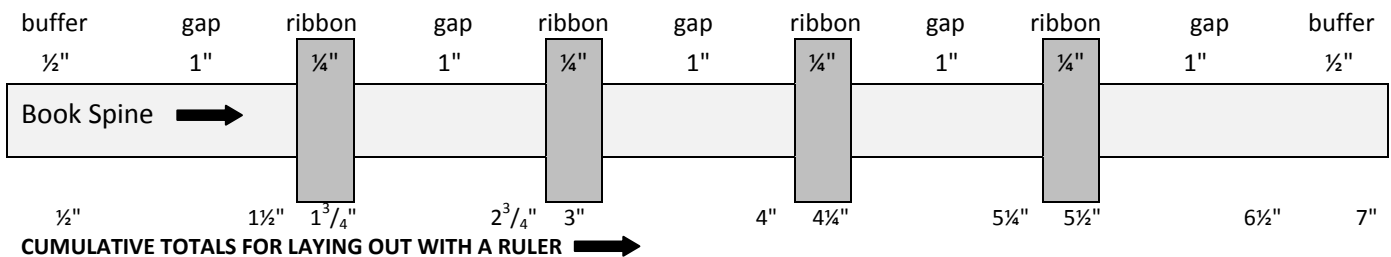
- START with the paper height
- THEN subtract the width of the number of ribbons (not done for cords which are wrapped during sewing and the needle inserted back through the same hole)
- THEN subtract 1" (½" buffer at the top and at the bottom of the spine)
- THEN divide the remaining height by the number of "gaps" to get the space between ribbons
- IF this is not an even number, adjust minor remaining amounts by adding or subtracting from the top buffer, or the gaps. If the top and bottom buffer are different dimensions, be sure to TRACK top and bottom so the sewing holes line up.

*Sample Book Sewing Layout: Four ¼" ribbons will be used to bind the 7" high book. There will be a gap from the top buffer to the first ribbon, between each ribbon, and to the bottom buffer for a total of 5 gaps.*

$$7" \text{ book height} - (\text{four } \frac{1}{4}" \text{ ribbons}) = 6" \quad \curvearrowright$$

$$6" - \text{two } \frac{1}{2}" \text{ buffers} = 5" \quad \curvearrowright$$

$$5" \div 5 \text{ gaps} = 1" \text{ gap}$$



C) Layout the sewing pattern on one sheet and pre-punch holes through all sheets. Use the needle intended for sewing for punching, doing small batches of sheets at a time, keeping papers carefully aligned in the stack being punched. Punch all the way through the stack.

D) Fold paper into groups of 6 to 8 sheets. This will result in a group of small booklets to be sewn together. You may want a bone folder to smooth folds.



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Start by folding the first sheet and creasing firmly. Gently fold remaining sheets for the Section individually, then add them 1 by 1 over the first sheet. Firmly creasing the fold of all sheets in the stack while holding the sheets together, pressing them toward the fold.

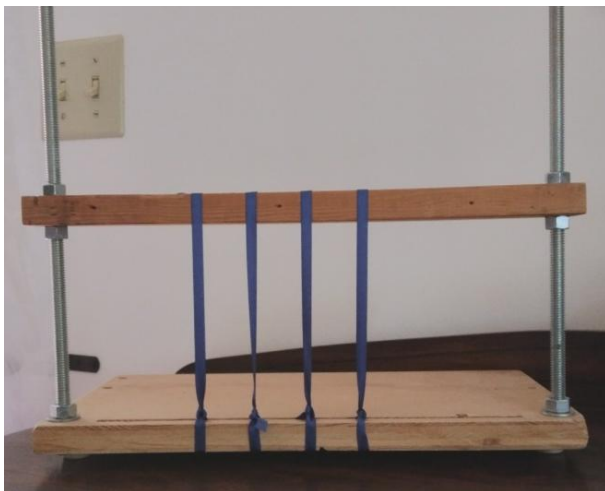
*Sample book: Start with 8 sheets, fold together to get a booklet with 16 pages (32 pages front and back.) Repeat until 1/2" thickness is achieved. For the example, that resulted in 5 Sections.*



### Step 3: Sewing

A jig is required to hold the ribbons in place during sewing. This is a simple device that can be made from scrap wood (sanded) and some all-thread. (For a low budget option, turn a chair upside down and use the seat and the rails between the legs.)

A) Attach ribbons by tying, taping or pinning them to the jig. Mark the sewing pattern lightly on the jig to allow proper layout. Check the top and bottom and make sure ribbons are basically vertical. Pre-punching will assist in correcting minor irregularities.

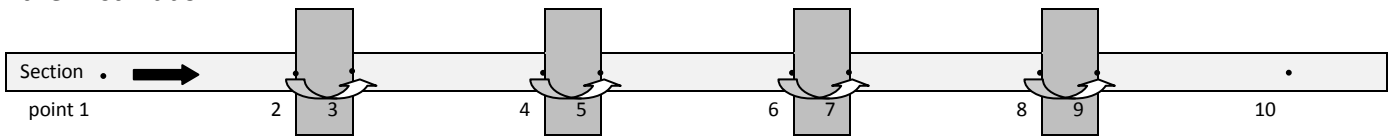


*Sample book: Place the first ribbon, then measure 1" from the right edge of the ribbon, to the left edge of the next ribbon, repeating until all 4 ribbons are placed.*

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B) Cut a manageable length of thread and thread the needle. Thread can be gauge 30 to 35 and cotton or linen. Needle eye should be no bigger than needed to accommodate thread. Set a spacer book on the base of the jig to ease sewing. Set the first Section on the spacer and align punched holes with ribbons.

C) Best to position the work so that sunlight shines to the inside of the work. Insert needle from the outside of the first Section into the first hole at the edge of the buffer (point 1), being careful not to catch the paper with the needle's point. LEAVE about 2" of thread hanging to be used for knotting later. Needle is now on the inside of the book and the thread will run along the inside fold to the next hole at the edge of the first ribbon.



Push the needle out through the pre-punched hole at point 2, going through all the pages in the Section and making sure NOT to catch any of the ribbon in the needle - ribbons should move freely under stitches.

Loop around the ribbon and go back into the book on the other side of the ribbon at point 3. Continue sewing into the book and out and around each ribbon, ending by coming out at the bottom buffer hole (point 10). Thread should be snug but not taut.



D) Place a new Section on top of the sewn Section 1. Starting where you ended (point 10), sew into the new Section at the hole directly above point 10 (on Section 1) and go around each ribbon as before, working in the opposite direction of Section 1. When you arrive back at the starting end, knot the 2" length left at the beginning with the working length of thread to secure the loose end and snug the sections together.

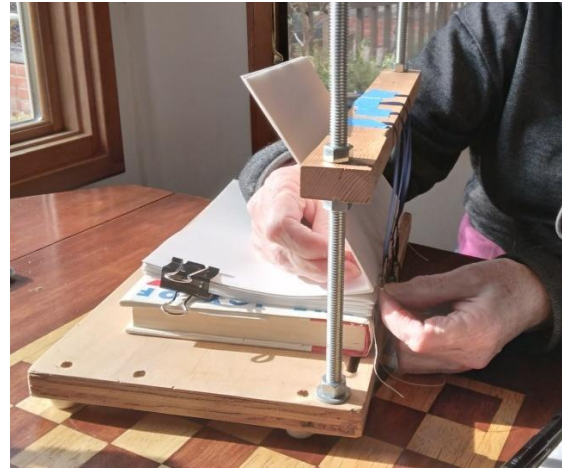
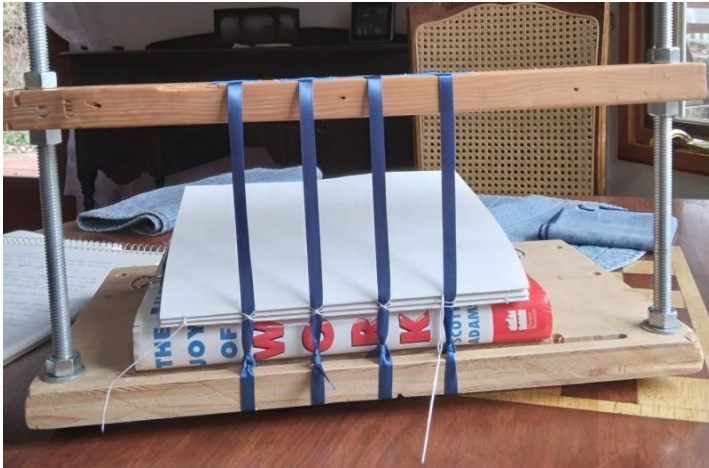
E) Section 3 is then added to the stack, and sewing proceeds as before with the following modifications:

- 1) When you reach each ribbon, do a half knot around the prior 2 threads (Sections 1 & 2) before pushing the needle back into Section 3 at points 3, 5, 7, 9.

- 2) At the end of Section 3 make a half knot at the last hole (point 10) in the stitch between Sections 1 & 2. When stitching the last Section, or on bigger books, make a half knot every third Section, into the prior one or two section stitches at each ribbon.

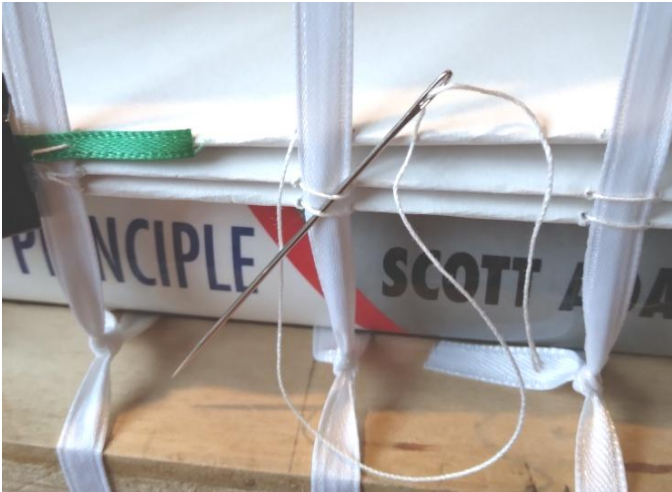
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3) IF this is your center section and IF you want a bookmark ribbon sewn into the binding, add it here and catch it into the first few stitches as you come out and around the ribbons to secure it. Alternatively, the ribbon can be glued in under the hinge cloth rather than sewn in.



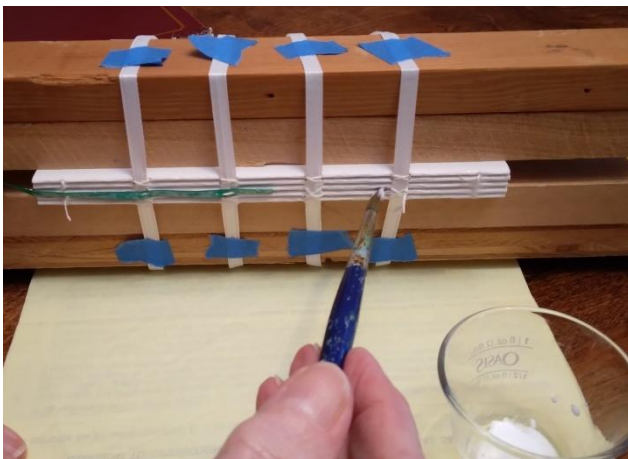
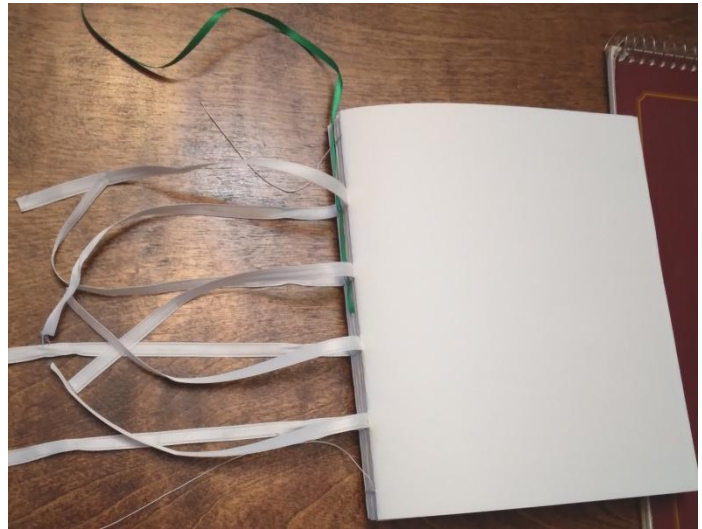
Make a full knot at the last point.

### KNOTS:



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F) When all sections are sewn, untie the ribbons and remove the sewn Sections from the jig. Press the book (snug but not squeezed too tight) between 2 blocks with  $\frac{1}{2}$ " to  $\frac{3}{4}$ " sticking out from under the boards at the sewn edge.



Ribbons should be attached top and bottom to hold them in place while the glue dries. Ribbons should be free to move within the sewing (not caught by the threads). Liberally apply white glue to the sewn Section edges. Glue is supposed to ooze a bit between Sections. Keep pressed until dry.

### Step 4: Remaining Book Elements

To complete binding, there are several other parts to be prepared and partially assembled.

A) FIRST, take measurements of the final sewn and glued Sections.

The **width** of the pages will be slightly bigger (probably  $\frac{1}{16}$ " to  $\frac{1}{8}$ " wider) than the original folded sheet when measured as a group. This is due to the thickness at the spine of each individual Section resulting from stacking the folded sheets, one inside the other. Notice the saw tooth appearance of the loose edges of the paper. Measure from the back of the Sections (the spine) to the furthest most edge of paper.

The **thickness** may have adjusted as well, depending on how tight the stack was when originally measured.



The **height** should be as planned, but verify this dimension as well.

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### B) Cut End Papers:

There are 2 End Papers to cut, front and back of the book. These can be plain or fancy papers, but must be glue-able.

Size: Height = the measured height ; Width = 2 times the measured width of the sewn and glued Sections.

*Sample Book: Section measured at 7" by 6<sup>1</sup>/<sub>8</sub>" after sewing, so end papers will be cut to 7" by 12<sup>1</sup>/<sub>4</sub>"*

### C) Cut Hinge Fabric:

There is 1 hinge fabric piece to be cut. It will go around the spine and be glued to the end papers and the spine to support it.

Size: Height = the measured height minus 1"; Width = the measured thickness plus 3"

*Sample Book: Section stack thickness measured at <sup>9</sup>/<sub>16</sub>" , so hinge fabric will be 6" high by 3 <sup>9</sup>/<sub>16</sub>" wide*

### D) Cut Spine Stiffener and Headbands (optional):

There are 2 headbands to be cut if desired, and 1 spine stiffener. These provide some additional reinforcement of the spine (stiffener) and protect the top and bottom of the book spine (headbands.)

Size for Stiffener: Height = the measured height; Width = the measured thickness

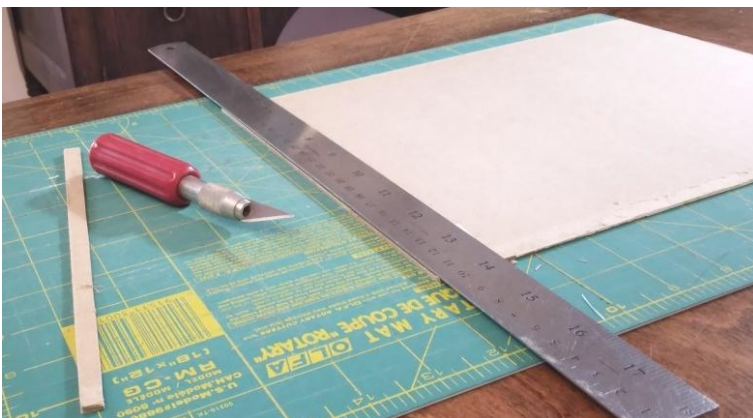
Size for Headbands: Height = as provided; Width = the measured thickness

*Sample Book: Stiffener will be 7" by <sup>9</sup>/<sub>16</sub>" ; Headbands will be <sup>9</sup>/<sub>16</sub>" wide each*

### E) Cut Boards:

There are 2 boards to be cut that will become the front and back of the book. A moderate weight cardboard type board is usually used. The stiff backs of drawing and sketch pads work (DO NOT ASSUME these boards were originally cut to right angles) or mat board. Use a rotary mat or other grid surface to get a true rectangle. The board will extend past the sewn and glued Sections by <sup>1</sup>/<sub>8</sub>" on THREE sides, and will sit to the INSIDE of the Sections by <sup>1</sup>/<sub>8</sub>" on the spine edge.

Size: Height = measured height of Sections plus <sup>1</sup>/<sub>4</sub>" ; Width = measured width



*Sample Book: Boards will each be 7<sup>1</sup>/<sub>4</sub>" by 6<sup>1</sup>/<sub>8</sub>"*

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### F) Cut Book Cover Fabric or Paper:

There is 1 Cover to be cut. This is the outermost part of the book, and will give it, its exterior appearance. It includes enough fabric to cover the boards, overlap the boards on the inside, cover the spine, and provide a hinge area to allow the boards to open freely. Suggest using fusible interfacing to stiffen fabric. For paper covers, use heavy or treated paper.

Size: Height = board height plus 2"

Width = measured thickness plus the width of both boards added together plus 2" (for overlaps) plus  $\frac{1}{2}$ " (for hinges) NOTE: The overlap dimension is not critical to be exact, so feel free to drop or add a little to make the math and the cutting easier.

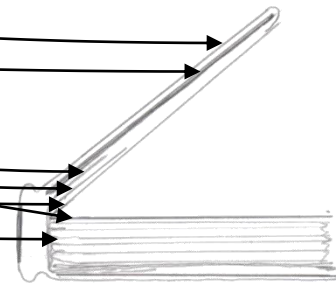
*Sample Book: Height =  $9\frac{1}{4}$ " ;*

*Width =  $\frac{9}{16}$ " (spine thickness) +  $12\frac{1}{4}$ " (2 board widths) + 2" (overlap) +  $\frac{1}{2}$ " (hinges) =  $15\frac{5}{16}$ "*

### Step 5: Assembly

Book is glued together in a multiple step process to allow pressing and drying of various areas. Different glues dry at different rates, so account for that in setting the drying time. Final layering:

- Cover fabric/paper
- Board
- Hinge Fabric
- Ribbon / Cord
- End Paper
- Sewn Sections
- starting with End Paper - same in reverse



A) Glue Boards to the Cover material. Boards must be placed so that they allow for the measured book thickness at the center, PLUS  $\frac{1}{4}$ " for a hinge on either side of that. They need to be even with each other vertically so they align when the book is closed, and square with each other. Pre-mark the back side of the cover to allow quick placement of the boards once they are covered with glue. Weigh down and dry.



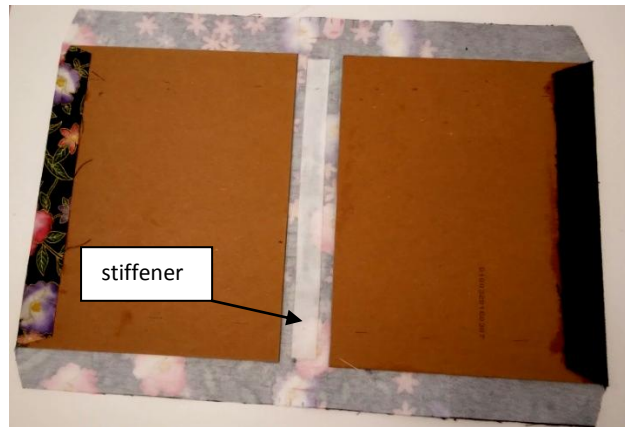


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B) Glue  $\frac{1}{4}$ " or a little less of the width of the End Papers to the first and last pages of the sewn and glued Sections adjacent and along the spine of the book. Make sure End Papers are aligned with the back edge of the spine. If they are too far toward the loose edges of the pages, they will tear when the book is opened. If they are too far back, it is difficult to glue the hinge fabric to the spine. Weigh down and dry.

C) Fold cover fabric over Boards, to the inside, and glue. DO NOT over clip the fabric at the corners or the Board will peek out at the corners. Do this in two parts - fold over each side panel and glue, then fold over the top and bottom panels and glue. Weigh down and dry for each step.

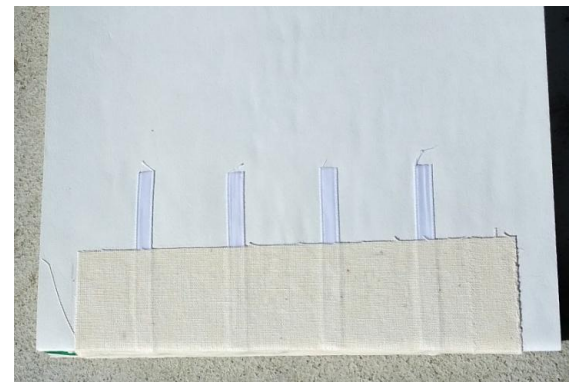
Glue the stiffener onto the fabric centering it so that it aligns with the final placement of the book spine.



D) Glue ribbons, hinge fabric and headbands. The loose ends of the ribbons from sewing should be reduced to  $1\frac{1}{2}$ " to  $2\frac{1}{2}$ " in length on the front and the back of the sewn Sections. Glue ribbons to the back sides of the End Papers in alignment with their position on the book. For books sewn using cord, the cord must be frayed and laid out across the End Papers as flat as possible, then glued down.

The hinge fabric is then glued over the ribbons and the End Papers on the

front and back, centered on the center of the spine, and glued to the spine as well as the End Papers. This may also be more easily done in two steps, gluing the hinge fabric to the front of the book, waiting for it to dry, then gluing the fabric to the spine and the back. This is less risky in terms of the hinge fabric shifting as it is drawn tight around the spine. If a bookmark ribbon was not sewn in, it can be added here, gluing it to the spine UNDER the hinge fabric.



The Headbands are centered and glued to the spine so that the thickened edge just peeps over the top and bottom of the pages.

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E) Glue the Boards (now covered) to the End Papers making sure to position the Boards so that they extend  $\frac{1}{8}$ " out from the top, bottom and front edge of the sewn and glued Sections. This leaves the Boards inset from the spine  $\frac{1}{8}$ ". Weigh down and dry.

ALL DONE!!

### Appendix A - Helpful Tools

Binder Clips	Bone Folder (paper creaser)
Color Pencil (for marking)	Exacto Knife
Non-stick board (for pressing on)	Paint brushes 6 round & 1" flat (for glue)
Rotary Mat	Rotary Cutter
Scissors with sharp tips	Sewing Needle
Straight Edge / Ruler (VERIFY ALL MEASURING DEVICES MEASURE THE SAME ie: Rulers versus Rotary Mat)	



*Bone Folder*

### Appendix B - Suggested Materials

Cardboard art pad backing (Boards)	Cotton Crochet Thread/ Linen Thread 30-35 gauge
Fabric or Paper (Cover)	Fusible Interfacing
Fabric - open weave cotton (hinge/stiffener)	Glue for cover, End Papers - Yes©,
Glue for spine, ribbons, hinge - white PVA	Paper (pages)
Paper (End Papers)	$\frac{1}{4}$ " Ribbon (polyester "silk")



#### *Materials Used for 2 made books:*

30 Cotton crochet thread, 35 Linen sewing thread  
60 lb sketch paper ( 8 / 6 sheets per Section)  
End Papers - tissue paper / calendar/ scrapbooking paper - glued to sketch paper  
Cotton fabric with fusible interfacing on the back for covers  
Cotton / Linen fabric very open weave for hinge  
Sketch pad cardboard backing for Boards  
Polyester silk ribbon for binding and decoration  
Pre-made headbands