Laser Cut, Hand-Bound Books: Crafting the Grumpus' Treasured Tomes

SLQ Wiki Fabrication Lab 2025/07/14 12:13

Laser Cut, Hand-Bound Books: Crafting the Grumpus' Treasured Tomes

~~HERO-SUBTITLE Combining Digital Fabrication with Traditional Handcrafts~~



Acknowledgement

We acknowledge Aboriginal and Torres Strait Islander peoples and their continuing connection to land and as custodians of stories for millennia. We respectfully acknowledge the land on which we all meet today, and pay our respects to elders past, present and emerging.

Target Audience: Adult members of the public (16+)

Cadence: 4 sessions, fortnightly

Capacity: 10 persons per cohort

Context: Grumpus 2021

About

The master of the Great and Grand Rumpus is calling for artisans and tech-smiths alike to bind the whisperings of the world of the GRUMPUS into vivacious and venerable volumes to fill his library....

Throughout this workshop series you will take the stories produced by the world-writing workshops and bind them into a beautiful book to display as part of the Great and Grand Rumpus exhibition in the State Library Gallery later in the year.

To craft these creative chronicles we will be combining the traditional handcraft of book binding with the contemporary skills of digital fabrication. Along the way you will learn how to:

- Design a cover in Inkscape (vector graphics software)
- Cut and etch that design on our laser cutter (including a laser cutter induction)
- Sew up a text block from loose leaves of paper (the stories) using traditional materials and methods
- Turn our laser-cut pieces into a cover and complete our books.

We're also blessed to have a member of the library's Preservations Team co-facilitating this workshop series, and there will be an opportunity to visit their workshop here at the library in a bonus daytime session midway through the workshop series. There you will get a rare glimpse at the place where some of the real magic of the State Library happens, learn how real book binders carry out their works and see their super fancy guillotine as we trim up our books.

There are no special skills required, and bring your creativity, ideas and enthusiasm to each of the 4 fortnightly workshops starting Tuesday the 7th September to bring the book to life! You must be at least 16 years old to participate in this workshop.

As with all our workshops we will also be releasing the workshop structure for free via our wiki (where the outline is being drafted currently) so that if you want to run a similar workshop in your spaces after we have run ours, you have a head start with all our resources!

Session 1

Session 1

Design & Inkscape

Setup

Tools & Materials

Per participant:

- Sample inkscape file + cut demo from laser for reference
- Template for covers file (outline on base layer, include good image for live trace) on laptops have layer 2 active.
- Laptop +power supply
- Inkscape installed (all on same version)
- Internet connection

Prep

Set up demo cut on laser cutter

Send email to participants:

Hi!

My name is Billie, and together with Shane from the Conservation team we will be facilitating The Bookbinding workshops you've signed up for over the next few weeks. I'm very excited to meet you!

A couple of notes for the first session:

We will be doing a lot of work on the computer in a software called Inkscape.

You're encouraged to bring in your own laptop to work on, just be sure to bring a mouse, and have the software pre-installed, it can be downloaded here: https://inkscape.org/release/inkscape-1.1/ We do have some laptops here too if you would like to borrow one for the session, please bring a usb memory stick to take your file home with you if you will be using our laptops.

As you may have gleaned, these books will become part of the GRUMPUS. As our session time is pretty limited, please have a read about the GRUMPUS before you come, on this webpage:

https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:start

Your covers will take inspiration from "The Well" (a collection of art from children) which you can view here if you'd like to start gathering ideas before the workshop: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:grumpuslandonline:rrldev:thewellhome

Again, can't wait for these workshops! I'm really excited. See you on Tuesday at 6pm at the Edge Fabrication Lab.

Let me know if you have any questions, queries, comments or concerns. Thanks!

Galang nguruindhau (g'day in Turrbal)

Help

Cutting Template

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Inkscape Help



Inkscape Help

Inkscape can be tricky to start with but there is loads of info available to you! You can check out our wiki pages, both are full of guides, help and info: Inkscape wiki page Vector Graphics wiki page Or check out Inkscape's own resources; guides community

Remember too, the power of google! Inkscape is very popular software and if you're asking how to do something, chances are someone else has before too.

I've also made some videos specific to the kinds of things we're doing in this session below J

Videos

Video	Transcript
	Adding simple shapes often makes up the foundation of a graphic.
	To start, click on the rectangle tool on the left hand bar, then click and drag it to make a rectangle on your screen.
	You can hold down ctrl key and drag at roughly a 45* angle from your start point to force the rectangle to be a square.
	Similar with the oval tool, you can hold down control to force it to be a circle.
	You can also make pac-man shapes by changing the start an d end degrees of a circle.
inkscape_addandmoveshapes2.mp4	Holding down control while using the polygon tool []snaps the corner you're drawing out []to an angle increment of 15 degrees, Which allows you to snap things to be vertical or horizontal. You can also change the number of corners of a polygon using this box.
	Once you have a shape you can move it by clicking the select icon and then clicking and dragging the object, and releasing it when you have it in a spot you like. When moving you can snap corners to other corners by hovering them near each other until this "corner to corner" tooltip appears.
	We can also resize our object using these arrows and we can click on the object again to bring up rotate and skew tools.
	To de-select an object click somewhere that's blank on the canvas.

Video	Transcript
	Sometimes you want a graphic you can't find, and thankfully Inkscape offers a few ways to make your own.
	The simplest way is by using multiple primitive shapes to create more complex new ones,
	which you can do via various options listed under the Path menu You can combine shapes using union
	You can cut one shape from the another by selecting the one you want to keep,
	then shift-clicking the one you want to remove and using difference
	You can keep just the area that two shapes overlap using intersection
	Or just the bits they don't overlap using exclusion You can also use one shape to cut parts of another shape So you can more or recolour segments of it using division.
	You can combine these methods to build up some pretty complex forms, but if you want even more flexibility it's time to look at Bezier curves.
inkeene eustern ebenee2 mat	With this tool you can draw straight lines by left clicking to form your first point,
inkscape_custom_shapes2.mp4	then clicking again to form your first line, and again to form another, connected line.
	You can also make curves by clicking and dragging a new point, then releasing your mouse when you like the curve. And you can close a shape by clicking the first point once more.
	You can also edit your shape using the node edit tool.
	We can now click on these points and move their handles. You'll notice we can now move one handle to be long and one short,
	which allows us to further refine our shapes.
	But say we have a curve here but we want a corner. We can change it using this button. I can now drag this handle to make a corner.
	Similarly we can convert corners to straights again using this option, or to equal straight using this one.
	If you have a hand drawn picture you can scan that in and
	import it, then trace over it with a Bezier curve to make your graphic.
	That can be a good way to get a feel for things when you're just starting out wit Bezier curves.

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Video	Transcript	
	Sometimes you want a graphic you can't find, and thankfully Inkscape offers a few ways to make your own.	
inkscape_colourandstyle2.mp4	The simplest way is by using multiple primitive shapes to create more complex new ones, which you can do via various options listed under the Path menu You can combine shapes using union You can cut one shape from the another by selecting the one you want to keep, then shift-clicking the one you want to remove and using difference You can keep just the area that two shapes overlap using intersection Or just the bits they don't overlap using exclusTo change the colour of a selected object we can click on a pre determined colour from this palette at the bottom of the screen but if we want to choose a colour that isn't listed here, we need to open the fill and stroke tool from the object menu. The fill is the main colour of the shape. To change it click on the flat colour icon, and change the colour mode to Wheel. from here we can change the colour by clicking and dragging the little bar on the rainbow ring, and the circle within the triangle. We can also make the colour transparent using this alpha bar. If we want to give our object a gradient, we can do so using the linear gradient icon. From here we can change a colour in our gradient by clicking on the point and changing it using the wheel or a swatch. We can also edit the gradient by clicking on this icon. From here we can change a colour in our gradient by clicking on the point and changing it using the wheel or a swatch. We can also change the direction of the gradient by clicking and the clinear gradient by clicking on the point and changing it using the wheel or a swatch. We can also change the direction of the gradient by clicking and dragging these points at the end of the line	
	When we are happy with our gradient click off our object to set it. We can add boarders to our objects. These are called Strokes. To add one, select your object	
	Then head to the Stroke Paint menu and click the Flat colour icon. You can pick a colour for it here.	
	You can change various aspects of the line in the stroke style menu, like the width dashes and corner type.	
	This allows you to really make objects look and feel your own.	

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Video	Transcript
	Converting pixel-based images to vectors
inkscape_bitmap_trace.mp4	While you can manually trace a bitmap image in inkscape to make a vector file, for complex images it can be very time consuming!
	This is where Inkscape's "Trace Bitmap" function comes in. It allows you to take a bitmap image and will attempt to convert it to a vector for you through various methods.
	Brightness cutoff, tries to separate the image into black and white. This method is really good for images that already look a bit like stencils. click update to see a preview. Threshold changes the midpoint, or the point where it splits black and white, fiddle with it to capture the right amount of detail.
	Colours tries to seperate an image into the colours it's composed of. Good images already look like paper cutouts, or logos, with several distinct colours. You can specify the amount of colours it looks for by changing this setting. results may vary as computers interpret colour differences differently to humans, and sometimes it's easier to use brightness cutoff to split your image into parts and add colour after the fact.
	Centre line new feature, aims to reproduce your drawing with single lines, try it with very simple lines as complex ones are likely to crash.
	What If/Next: No matter the mode you're using playing with speckles, smooth corners, optimise can help further refine results. These changes won't show in preview, so Click apply to see the results. you may wish to make some changes and try again.
	You may also wish to edit small parts of your traced image after its made, or if you can't get the results you are after, you can go back to manually tracing images, check the end of the 'custom shapes' video to learn more.

Slides

SL SL Session 1	Before session: Email participants: Can bring own laptop, install inkscape (link to), bring mouse with scroll wheel that can be clicked in!!! (else have laptops here) Bring USB to transfer files home Divvy up books between participants, give them links Finalise webpage including videos of inkscape Set up laser with demo cut Materials: Per participant: Sample inkscape file + cut demo from laser for reference Template for covers file (outline on base layer, include good image for live trace) on laptops have layer 2 active. Laptop + power supply Inkscape installed (all on same version) Internet connection
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Acknowledgement of Country	
Intros!	Billie = Not a bookbinder, just an overly enthusiastic maker, background in theatrical costume making and 3D printing, facilitator here at Fabrication Lab Shane = Conservation Team = real book binder! :D
Why did you sign up? What do you want to make a book? What do you hope to get out of these sessions?	
GRUMPUS What do you know already?	
 The Great and Grand Rumpus Ideas from children put into 'The Well' Artists, designers, people like you bring to life in interactive exhibition in Library Gallery later in year These books will be exhibited there Books will contain printed copies of the art from <u>The Well</u> Our covers will be inspired by the art in The Well 	About Grumpus: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:start The Well: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:grumpuslandonline:rrldev:thewellhome
Our books	Demo pieces Laser cut plywood cover, painted and metal leafed, traditionally bound rest Headband & ribbon Show inner workings at back page, talk about gluing We're starting on covers today
 Course Overview Cover Design: Inkscape Making the text block: fold, sew, glue Bonus: Water marbling end papers Laser cutting induction Bonus: Conservation Tour + Guillotine Bonus: Cutting, painting, metal leafing covers Putting it all together 	

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Adding shapes	
Navigation Moving around • Click in mouse wheel + move mouse Zooming in and out • Ctrl + scroll wheel	
 Selecting things Click black mouse icon on tool bar at left Then click on the thing you want to move The little black arrows show you've selected it. Click the white space to de-select 	
 Moving things 1. Click black mouse icon on tool bar at left 2. Then click and drag the thing you want to move. 3. Let go when it's in the right place. 4. Click the white space to de-select it. 	
 Click black mouse icon on tool bar at left Click on the thing you want to rotate. Wait a second. Click again on the thing you want to rotate and the arrows on the outside of the object will change. Click and drag one of the corner arrows to rotate the object. 	
Adding text • Text tool • Resizing: • Overall • Text box	
Custom Shapes: Pen Tool • Adding points • Dragging points • Dragging lines • Corners vs smooth • Adding points • Deleting points	Don't worry if it's a bit uncomfy now! You will get the hang of it in no time.

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 Inspiration Primarily: The Well Also: Old book covers/ illustrations via pinterest, Archive.org, PublicDomainReview.org, googling, etc It's about the concept, not a literal interpretation 	The Well: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:grumpuslandonline:rrldev:thewellhome The aim isn't to reproduce the children's art in laser form, but to make something inspired by it.
 Copyright Art from well all ok, Your own drawings all ok (inspired by The Well) Good sources of free images on wiki like archive.org (just check licences) Fonts: check the licenses 	https://archive.org/details/StencilCatalogsCutStencilsForTheUseOfPracticalMen/page/n51/mode/2up?view=theater https://archive.org/details/ExcelsiorFrescoStencils/page/n43/mode/2up https://archive.org/details/250stencildesign00kpra/page/30/mode/2up https://www.pinterest.com.au/billieruben8695/book-covers/ https://publicdomainreview.org/
 Coming up Cover Design: Inkscape Making the text block: fold, sew, glue (21st Sept) Bonus: Water marbling end papers (23st Sept drop in 2-8pm) Laser cutting induction Bonus: Cutting, painting, metal leafing covers (book in open lab 12-6pm wed, 6-8pm thurs, 12-6 sat) Putting it all together! 	Next fortnight we will be sewing and gluing our text together!
 Homework Read a bit about the <u>GRUMPUS</u> Gather inspiration from <u>The Well</u> Draft cover for next session in a fortnight on template! Email Inkscape (SVG) files to me to me by Monday 20th Sep <u>billie.ruben@slq.qld.gov.au</u> 	Template above Download Inkscape at home here for free: https://inkscape.org/ If you don't have a computer at home you can come in and work on it here during open lab times GRUMPUS: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:start THE WELL: https://wiki.slq.qld.gov.au/doku.php?id=engagement:grumpus:grumpuslandonline:rrldev:thewellhome Draft cover for next session in a fortnight on template! Email Inkscape (SVG) files to me to me by Monday 20th Sep billie.ruben@slq.qld.gov.au
 Help Wiki page for <u>this course</u> loads of notes, links and Inkscape videos!! Wiki page for <u>Inkscape</u> Open Lab Help: Wed 12-6pm, Thurs 12- 8pm, Sat 12-6pm Google 	Wiki page for this course: https://wiki.slq.qld.gov.au/doku.php?id=workshops:prototypes:laser_cut_books&s[]=bookbinding Wiki page for Inkscape: https://wiki.slq.qld.gov.au/doku.php?id=facilities:fablab:software:inkscape

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Session 2

Session 2

Sewing Our Text Blocks

Setup

Tools & Materials

Prep

Before session:

Email participants after first session with homework

- Have the books printed (5 sheets per signature, grain line running along short edge,
- Have end papers printed
- Finalise sewing video
- Gather materials:
- Bone folder each
- Brayer each
- Awl each

awl_3d_printable.zip

- Punching template each
- Printed pages each
- Scissors each
- Sewing needle each (blunt thin good, can sand down tip)
- Waxed linen or polyester thread each (enough to weave back and forward between all signatures)
- Single ply cardboard each (for under punching)
- Tapes each

Help

Slides



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12:13 14:12:13











Session 3

Session 3

Laser Induction

Setup

As per laser induction, except folk will cut the templates for next week:



Tools & Materials

Manilla folders

Prep

Before session:

- charge ipads
- set up cut files on lasers
- gather manilla folders

Slides

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SL	CRAFTING THE GRUMPUS' TREASURED TOMES Session 3		
Grumpus: What h	nas come before		
 The story thus far 			
today			
Gluing & pressing t			
 Laser induction: on Gluing mull 	nine & practical		
Protect Pages			
	ertically around book ck into pages to secure,		
	e pages a bit from glue, where to tape our		



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Session 4

Session 4

Putting it all together

Setup

Tools & Materials

For each participant have:

- Pens
- PVA/EVA Glue (share between pairs)
- Brushes each
- Waste paper
- Knife
- Mat
- Steel ruler
- Wood
- Clamps

Prep

Slides



Photos with books!Photographer in!Consent forms	
Grumpus: What has come before • The story thus far	
 What we have done in the break Glued spine Trimmed edges on guillotine Glued on mull Glued headband and bookmark Glued spine lining (paper) 	Finishing Front Covers Painting (Acrylic) Gold leafing: Brushes Size: https://artmaterialsupplies.com.au/shop/jo-sonja-tannin-sealer-and-gold-size/ Leaf
 Today Add end papers Making our covers Putting book into cover Celebrating!! 	
Tip on end papers Grain line Fold papers Glue 	

Laser Cut, Hand-Bound Books: Crafting the Grumpus' Treasured Tomes



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Lots of ways to make a book	
Types	
Laser edges	
 Laser cut wood blocks for indenting 	
Laser cut stamps	
Where to go from here	
 QLD Bookbinders Guild 	
Youtube channels:	
 Deep dives into various construction methods: DAS Bookbinding (Brissy guyl) 	
 Fun/ lighthearted: Sea Lemon iBookbinding: Tutorials, guest speakers (also have website) 	
• Wiki	
 Open Lab & Hack the Evening 	
Show opening	
 12th December 	
What happens after	
 Keep the works? 	
 Donate to schools? 	
Help	
Wiki page	
wiki page	

Slides, editable

bookbindingslides.pptx

Proposed non-grumpus workshop overview

Session 1

- Inkscape
- Sewing

(don't finish either of these during the session, take home with them)

Session 2

- gluing spines & pressing
- Laser induction (practical being cutting bookcloth templates for next week)
- adding mull, headbands and bookmarks

Session 3

- Painting/gold leafing covers (or dying with ink, as it keeps the texture better. Art spectrum liquid spectrum work well (NOT THE PIGMENTED KIND).
- Might be able to tee this up with Rachel Spano and also do marbling with paper conservators group? If not doesn't matter, I've purchased some marbled papers for the endpapers.
- Adding endpapers (if not marbled, else next week)

Session 4 Putting it all together

- creating cover (attaching laser cut pieces to bookcloth)
- 'casing in' (putting text block into cover)

Billie's Recomendations/ Notes

- Make them a fixed size, e.g. A5 (they can come back to make different ones. Templates will need to be updated accordingly, and paper of the right size gathered or cut.
- I believe I have purcahsed all required materials, they can be found in the bookbinding tub, or in the tubes with the paper type things (bookcloth and spine lining material is here)
- I returned the press we borrowed from preservations. We might be able to borrow a few, else clamps and plywood works well too.
- I would get preservations/ Shane Bell to trim all the books to size for us after Session 2.
- Might be nice to have some 3mm plywood for the covers. We can do it with 4mm, it's just a bit thicker than usual.

2022 delivery-Laser cut covers, hand sewn spines -

bookbinding

In 2022 Mick & Sarah were tasked with running this workshop series over the course of 3x 4hr sessions a fortnight apart.

see this fork over here

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