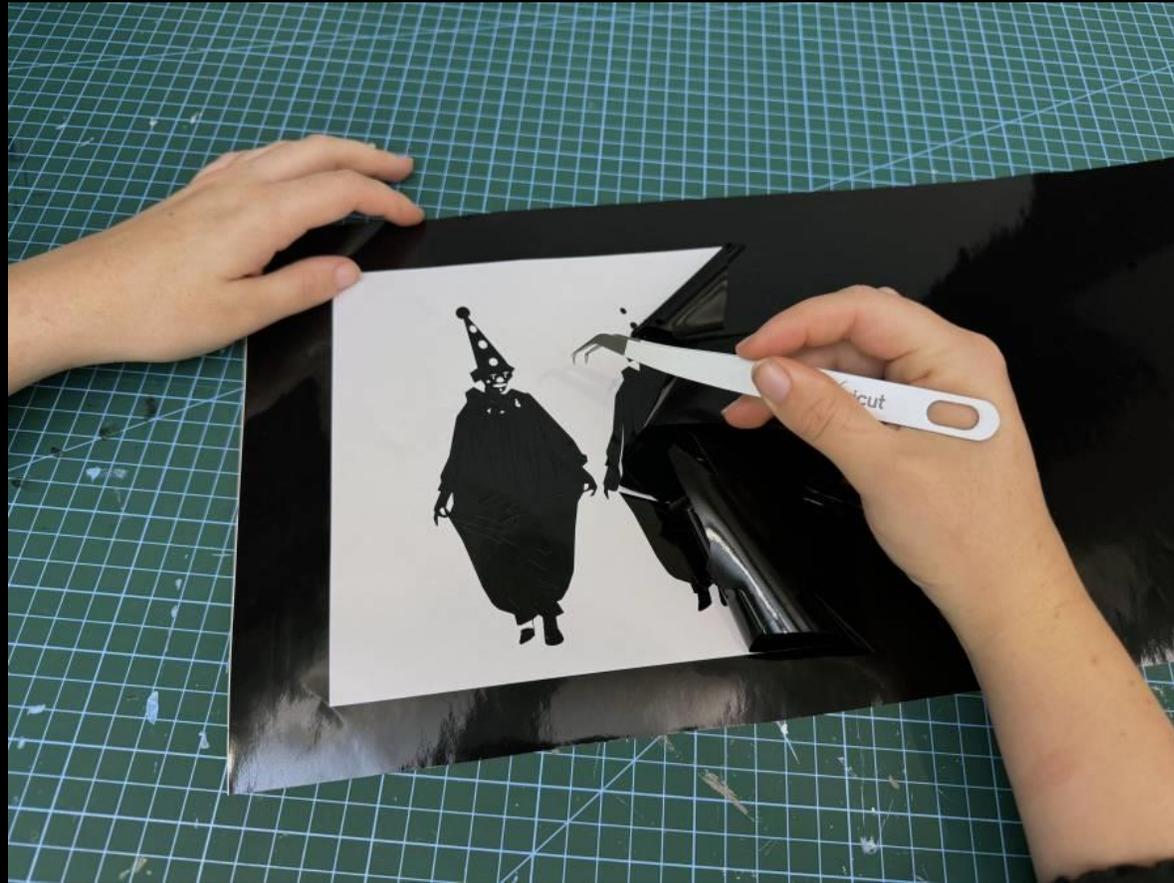STATE
LIBRARY
QUEENSLAND

Vinyl Cutter 101

Kat Johnston

02.2026

Acknowledgement of Country

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.

Our Roland Camm1 GS-24 Vinyl Cutter can be used to create various decals and sticker signage. Learn the basics of using Image Trace to create your design to be cut.

Come back to use the Vinyl Cutter during our Open Lab sessions as listed below.

WORKSHOP SUMMARY

Open Lab sessions are a chance to meet up with like-minded makers and tinkerers at The Edge with facilitators to support your creative needs in the space.

Bookings are required to use the equipment and you will be able to book with your SLQ account once you have completed a general induction.

Wednesday 12pm – 5pm
Thursday 1.30pm – 8pm
Saturday 12pm – 5pm

For more info and to book, head to https://www.slq.qld.gov.au/visit/spaces/edge

Welcome

- Check in and get set up on a computer

- Please ensure that you have already signed up for an Adobe Account at https://account.adobe.com – you will need this to access Adobe programs.

- Introductions - Why did you sign up? What are you hoping to get out of this workshop?

Overview of workshop

Today's Goals:

- Get hands-on experience with the vinyl cutter

- Learn key aspects of:
  - Designing/picking a good design for vinyl cutting
  - Workflow
  - Cutting your sticker/decal
  - Weeding and application

- At the conclusion of this workshop, you will understand the basics to produce a simple vinyl cut design and apply it confidently.

Equipment & Materials

- Computer with Illustrator
- Adobe account (created prior to arrival)
- Vinyl (various colours)
- Roland Camm1 GS-24 vinyl cutter with Cut Studio
- Application Tape
- Weeding tools
- Application squeegee

Health & Safety

- For all workshops at The Edge we like to familiarise participants with:

- Exit points

- Lab Risk Assessments

- Safe operating procedures

Raster vs Vector

- Raster images are suitable for screen display. They are made of individual pixels – blocks of colour.

- Vector images use 'math' to define the shape - like providing a set of instructions on how to draw it. Other machines (such as vinyl cutters) can use those instructions to reproduce those shapes as a cut path.
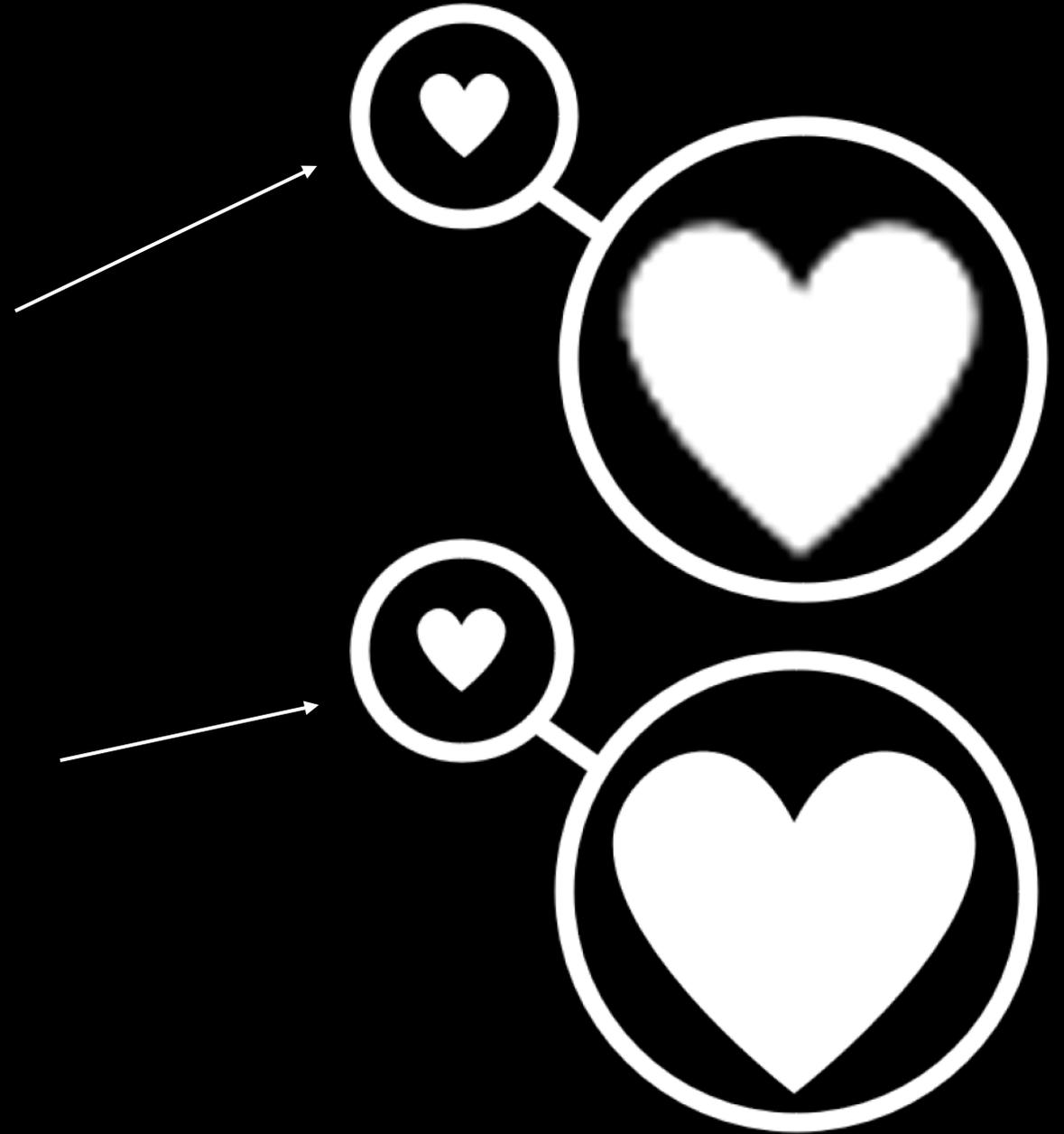
What makes a good image for vinyl cutting?

- **Bold details** – Tiny elements can often get lost in the design, and the blade may tear the vinyl trying to cut fine detail. It is also more difficult to weed!
- **Single colour** - we can only cut one colour of vinyl at a time. It is possible to create a layered design with multiple colours, but each colour must be cut and applied separately.
- **Fills only** – The vinyl cutter only interprets fills to define spaces,
- **Vector** - We need to provide the vinyl cutter with 'instructions' to cut by using a vector image where all objects are converted to paths.

We can create a vector from a raster image using a function called 'Image Trace' in a program like Adobe Illustrator.

Select an image to trace

Find and download an image you'd like to trace. Consider royalty-free image sites for creative commons or public domain images.

In future, you can even draw your own and scan it in! Just use a sharpie on white paper.

Remember: High contrast, one colour, not too over-detailed.

I'll use the file as an example:

https://commons.wikimedia.org/wiki/File:Horse_silhouette_facing_right.png

Create your design file

- Open Adobe Illustrator and sign in using your Adobe Account.
- Click 'create new'.
- Select a size (A4) and units of measurement (mm).
- Advanced options (eg, bleed) are not necessary for this workshop.
- When you are happy with your selection, click 'Create'.
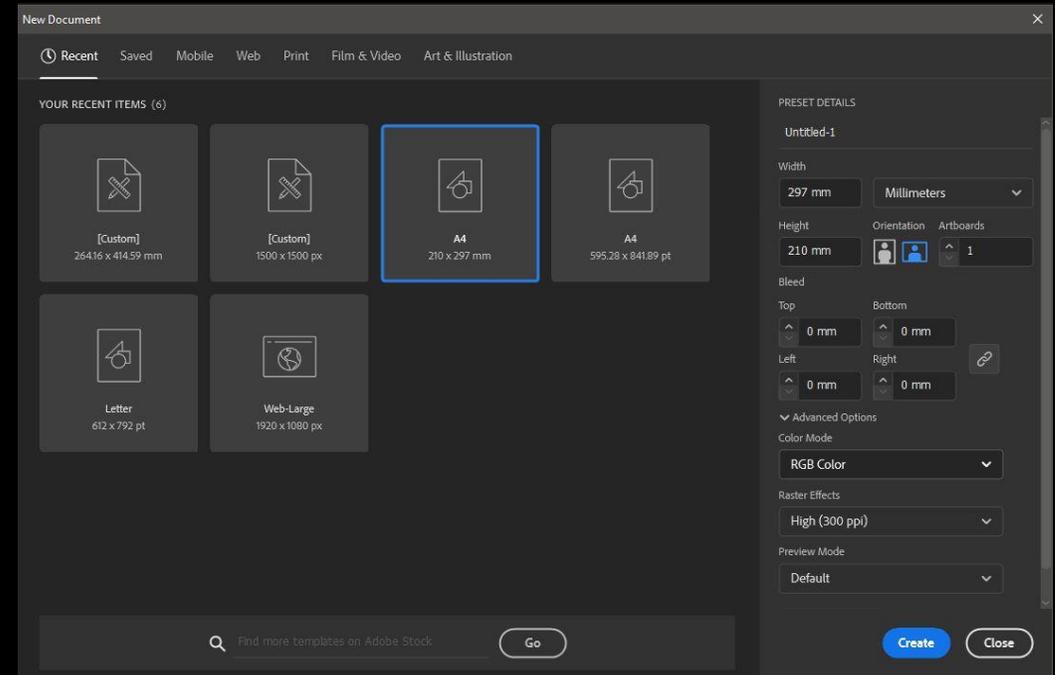
Set up your workspace

- We are going to use the 'Essentials Classic' workspace under Window > Workspace > Essentials Classic.

- Different workspaces give you different options for a variety of design cases.

- Let's also make sure rulers are visible by going to Window > Rulers > Show Rulers, so that we can easily check measurements.
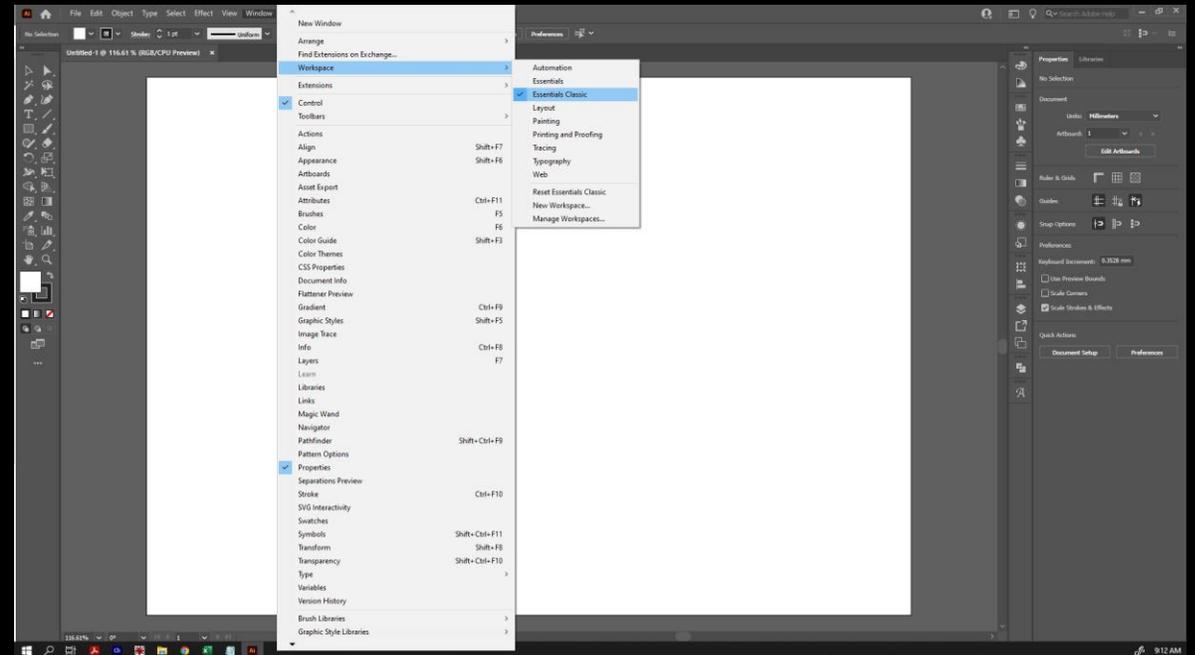
Navigating the Workspace
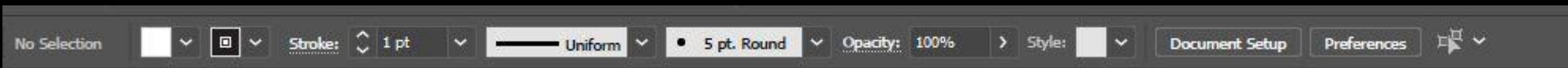
Context Bar - changes depending on what tool or object is selected.
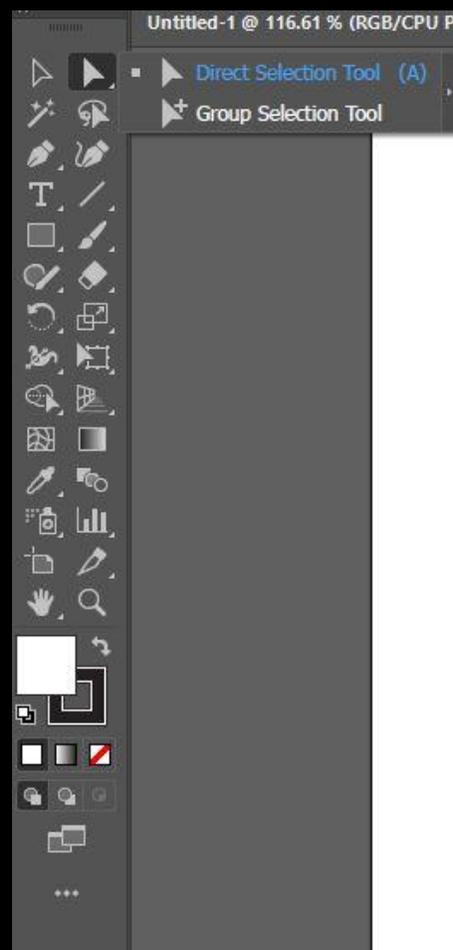
Tool Bar – some tools are hidden under others. You can tell from the triangle in the bottom right corner. Click and hold to bring up the other options.
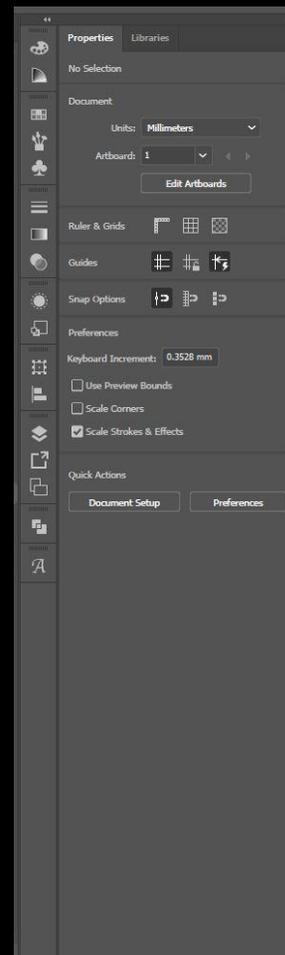
Panels – show controls for specific tools and processes. Bring up additional panels under the Window menu.

Basic Tools: Selection Tool

The Selection Tool lets you select and manipulate any object by dragging or clicking on it.

Click on an object to select it. If your object is unfilled, you will have to click the edge instead. Select multiple objects by holding down shift and clicking each one, or dragging a bounding box around them.

Click and drag the squares at the edges or sides of the bounding box to make it larger or smaller. (Holding down 'Shift' constrains proportions).

Hover your selection tool just outside the squares at the edges or sides of the bounding box - your cursor will change to a double-arrow symbol to rotate your object.
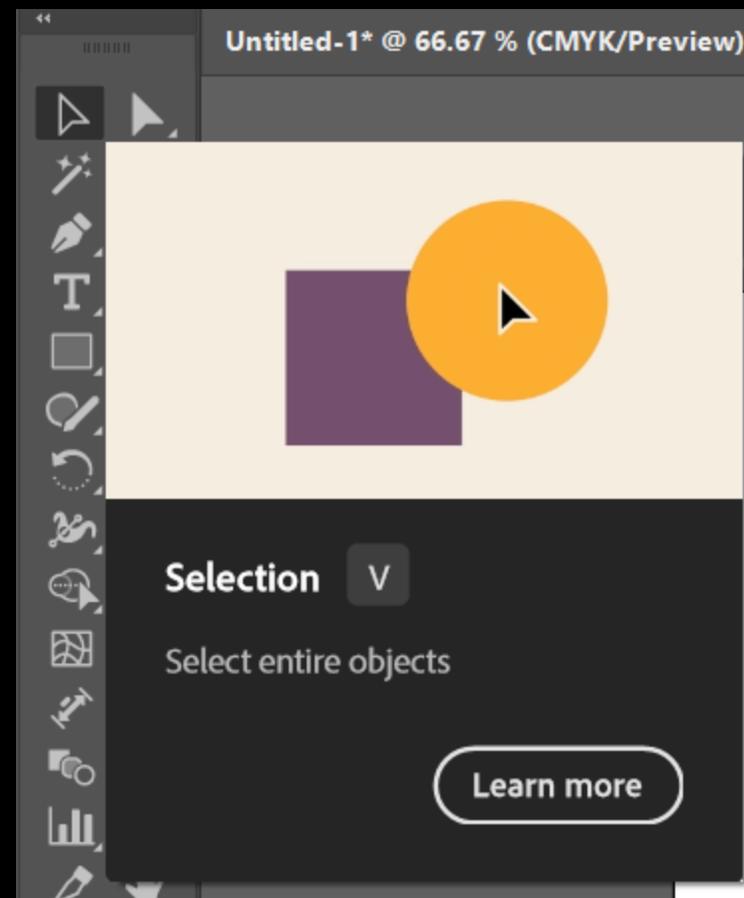
Basic Tools: Zoom Tool

While creating your design, you may frequently want to zoom in and out to see things close up. The Zoom tool is in the Left Toolbar and represented by the magnifying glass.

- To zoom in, simply click on the area you want to zoom to.
- To zoom out, hold down alt as you click on the area you want to zoom out from.
- You can also use the shortcuts ctrl- or ctrl+ (Windows) or command- and command+ (Mac) to zoom in and out no matter what tool you have selected.
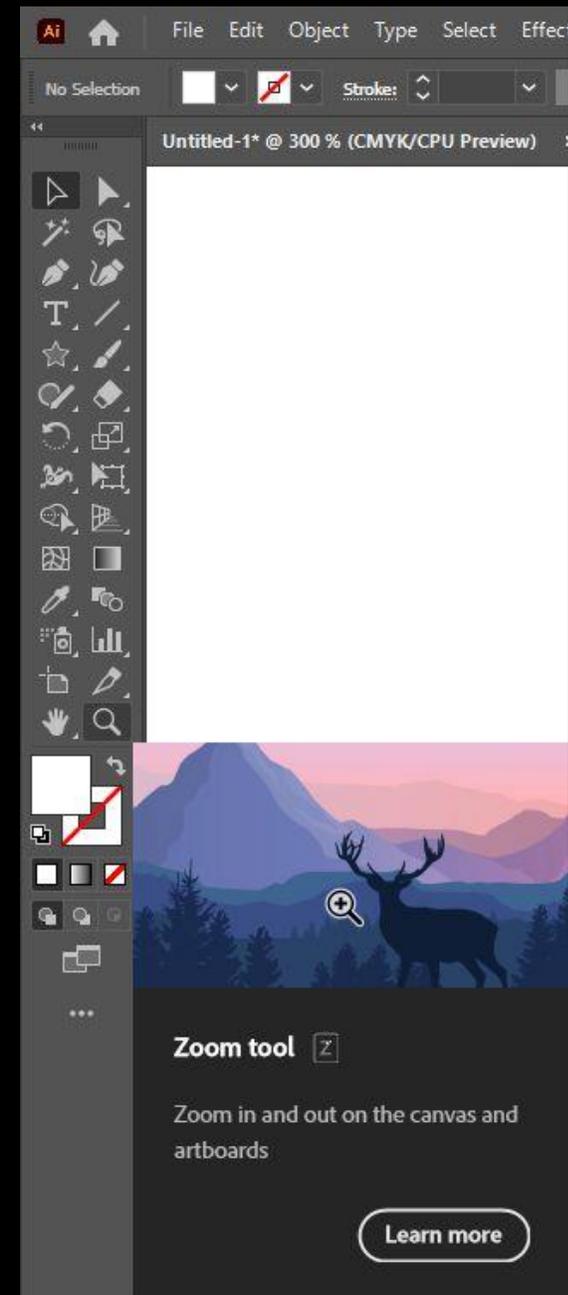
Place your image to trace

File > Place will allow you to select the image from your downloads folder.

It is easy to tell that it is a raster image, as the layer highlight colour doesn't outline the actual shape, it creates a bounding box around it instead:
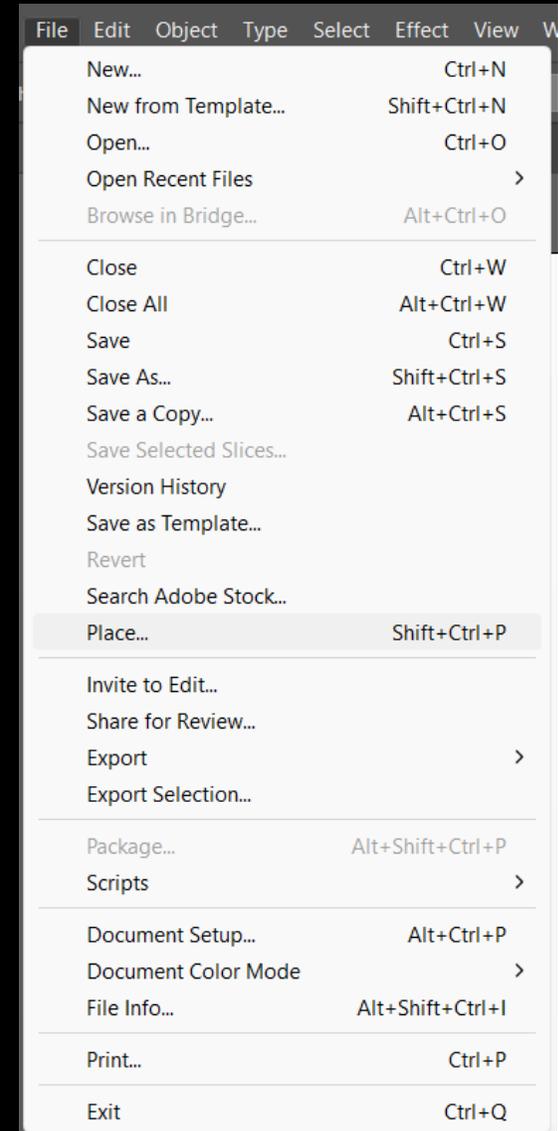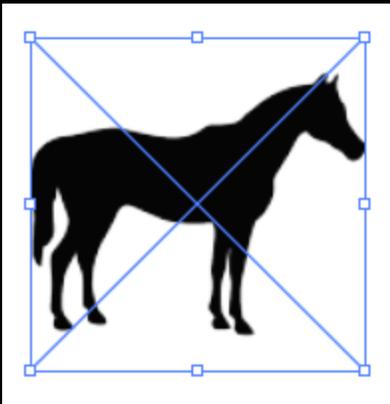
Image Trace

To create an image quickly today, we're going to use the Image Trace tool. Go to Window > Image Trace to bring up the panel.
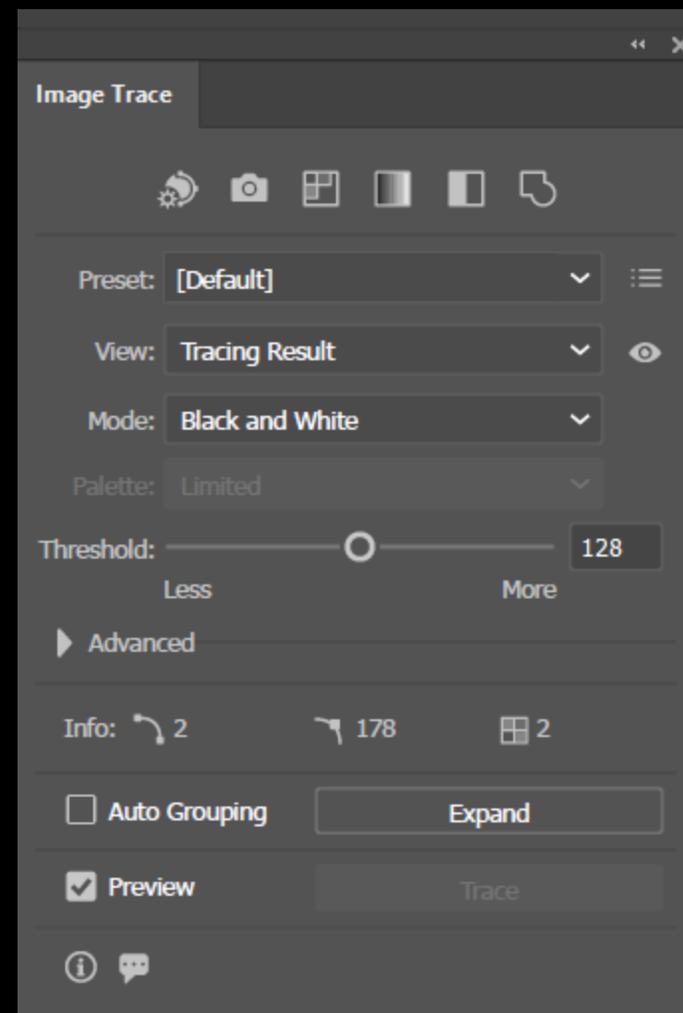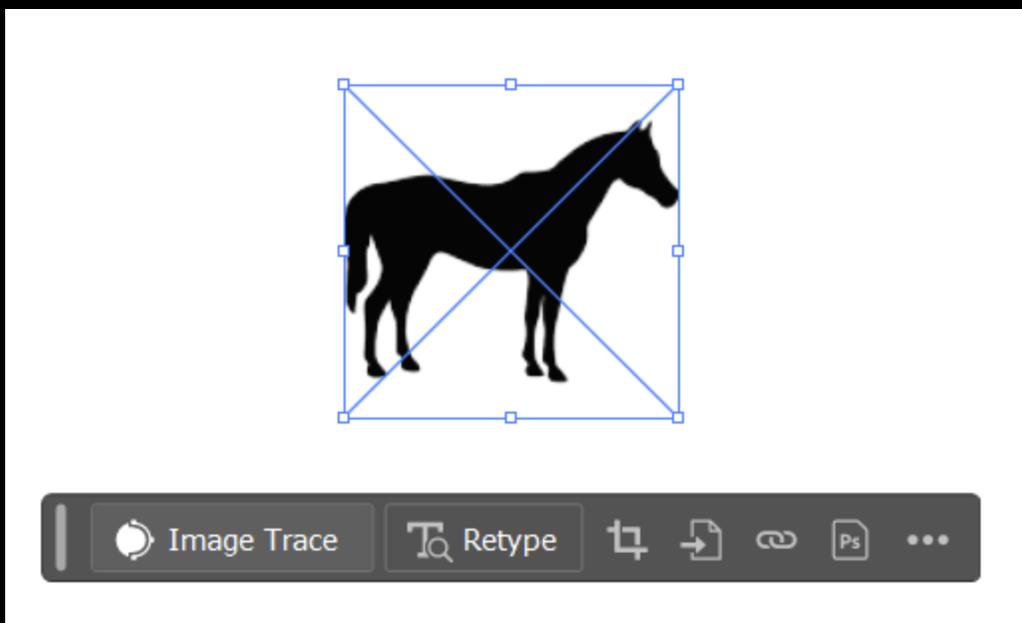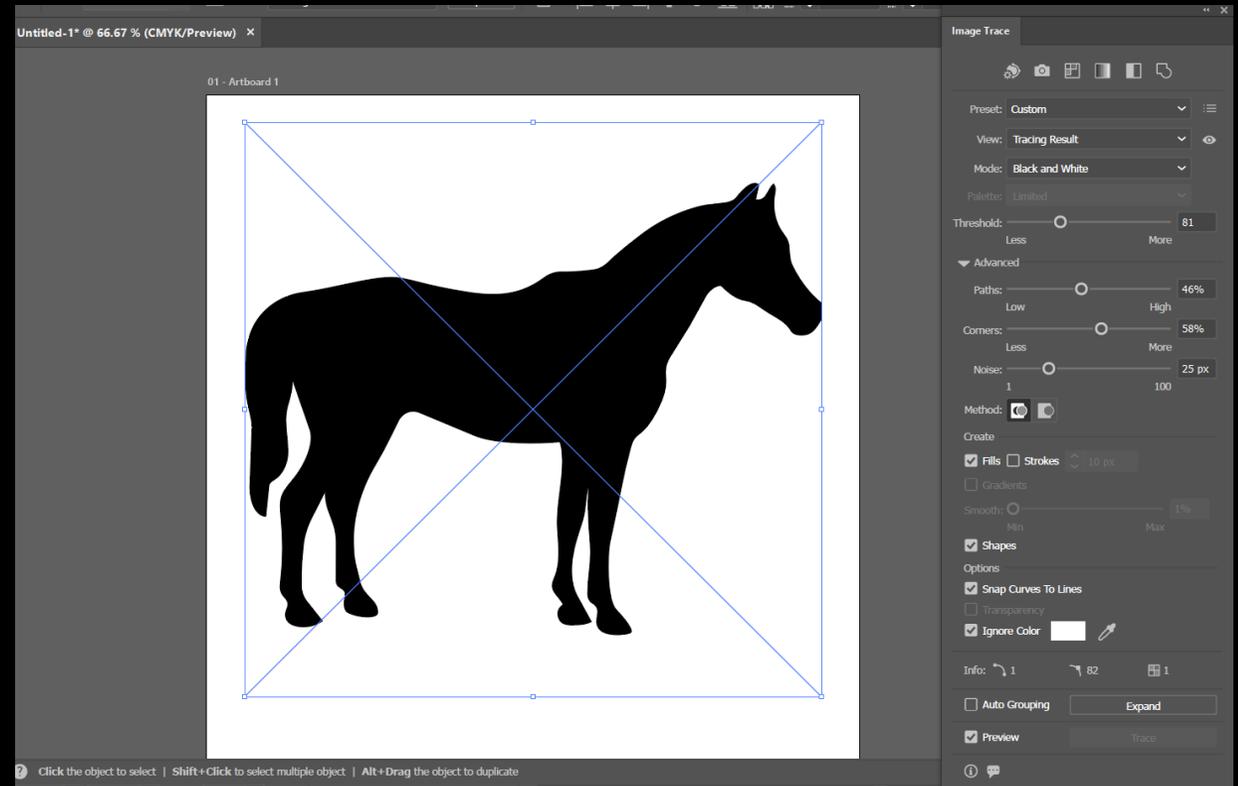
Image Trace (cont.)

Make sure that 'Preview' is selected. Click arrow beside 'Advanced' to provide more options.

Select 'Black and White' for the colour mode.

Other options include:

- Threshold (pixels above the threshold you set become black)
- Paths (higher = closer fit)
- Corners (higher = sharper corners)
- Noise (lower = finer details)
- **Ignore Colour (automatically exclude a particular colour – please ignore white)**

By having 'Preview' set we can see the results in realtime!

Expand your Image Trace

When you are happy with the produced result, click 'Expand'. This will convert your raster image to a vector shape!

We can see it is vector because our layer highlight colour outlines the shape, rather than only being a bounding box!

This shape is now ready to be cut on the vinyl cutter.
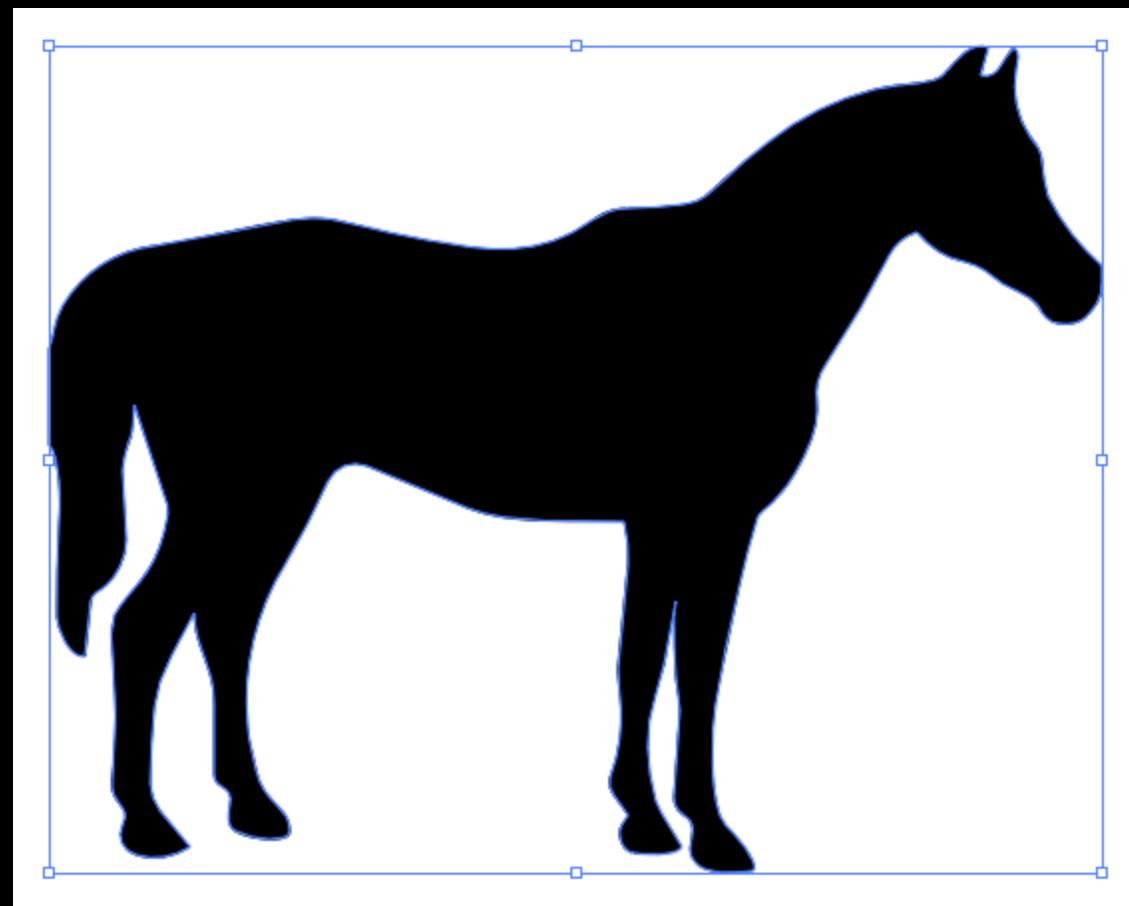
Text

To create text, simply choose the 'Text' tool from the left toolbar and click anywhere on the artboard to start typing.

Once you have typed whatever you want to, you can go back to the selection tool again, and use that to make it bigger/smaller/etc.

You will notice at this point that our top toolbar has changed to show some options pertaining to text. From there, we can change the font, alignment, etc.

Expanding Text

Text behaves differently from other shapes we've made - the text is still editable as text. You will see that it is underlined, rather than outlined.

To make it suitable for cutting, we need to turn it into a shape.

Go to Object > Expand in the top menu, to expand your text.

Tip: Expand is a one-way action. You cannot un-expand to edit your text again.
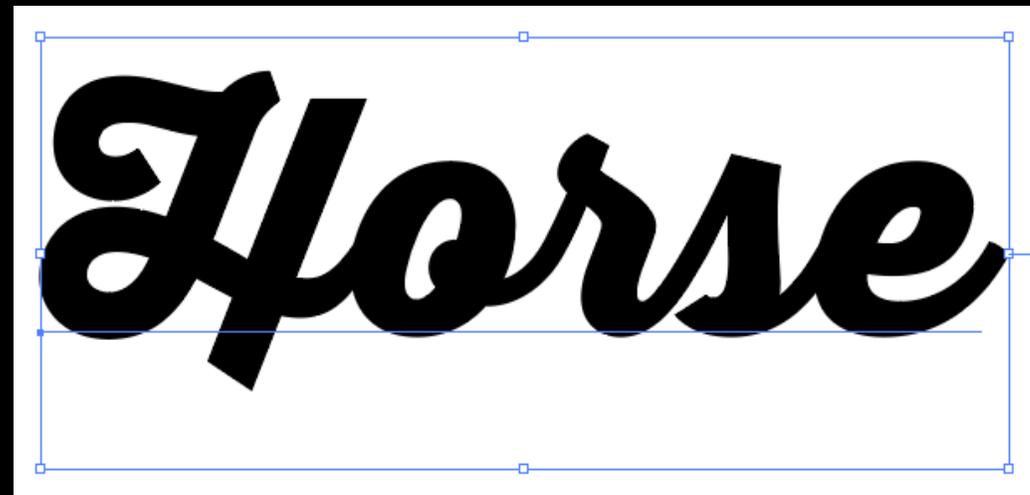

Before Expanding
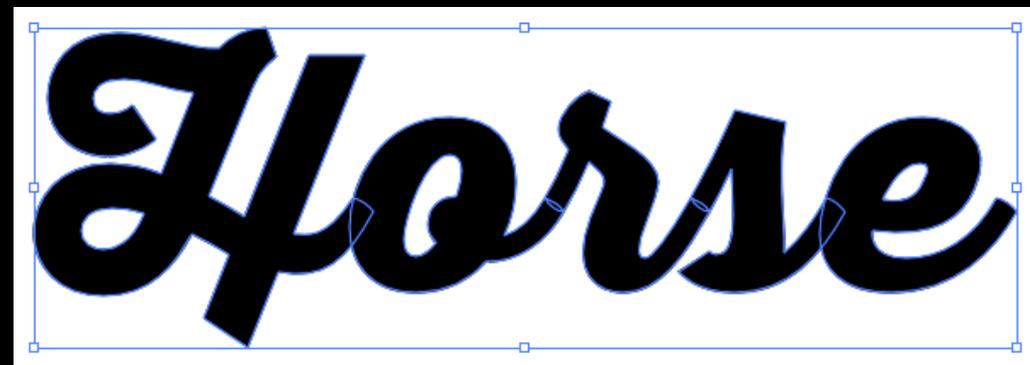
After Expanding (notice the overlap where letters join)

Use Pathfinder to create solid shapes

Expanding creates a separate object for every letter. Cutting tools like a vinyl plotter will cut each individually.

Use the Pathfinder tool to combine multiple shapes into one without overlap.

If you cannot see the pathfinder panel, it is located under Window > Pathfinder.
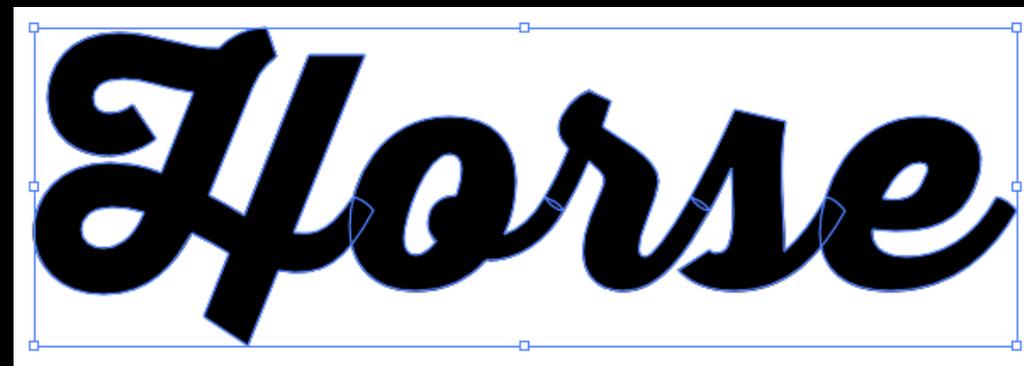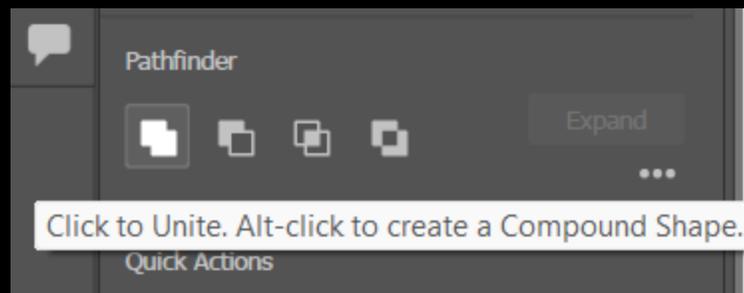

Before Pathfinder – five overlapping shapes
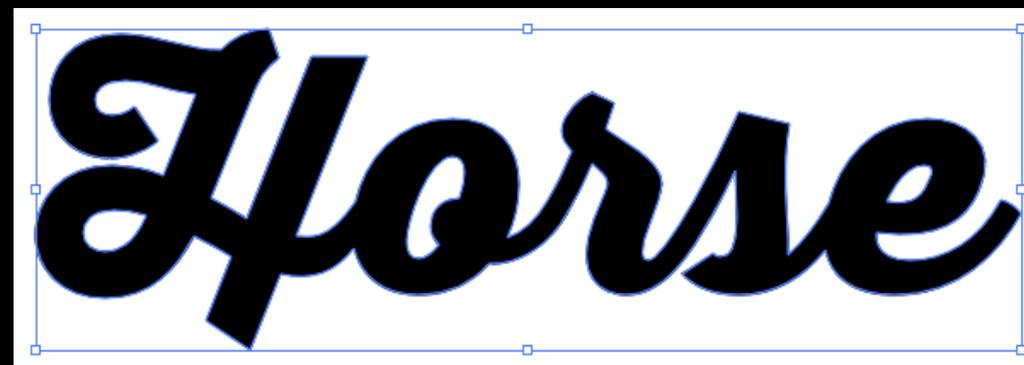
After Pathfinder 'Unite' – the full word is a single shape

Save your File

Make your final changes – you can even use the shape tool to add some extra interest!

Save your file. You can save it as an Illustrator or PDF file for use here at The Edge.

If you want to save it for home, save as a SVG or EPS. These are other common vector file types, and can be opened in other software such as Inkscape and Affinity.
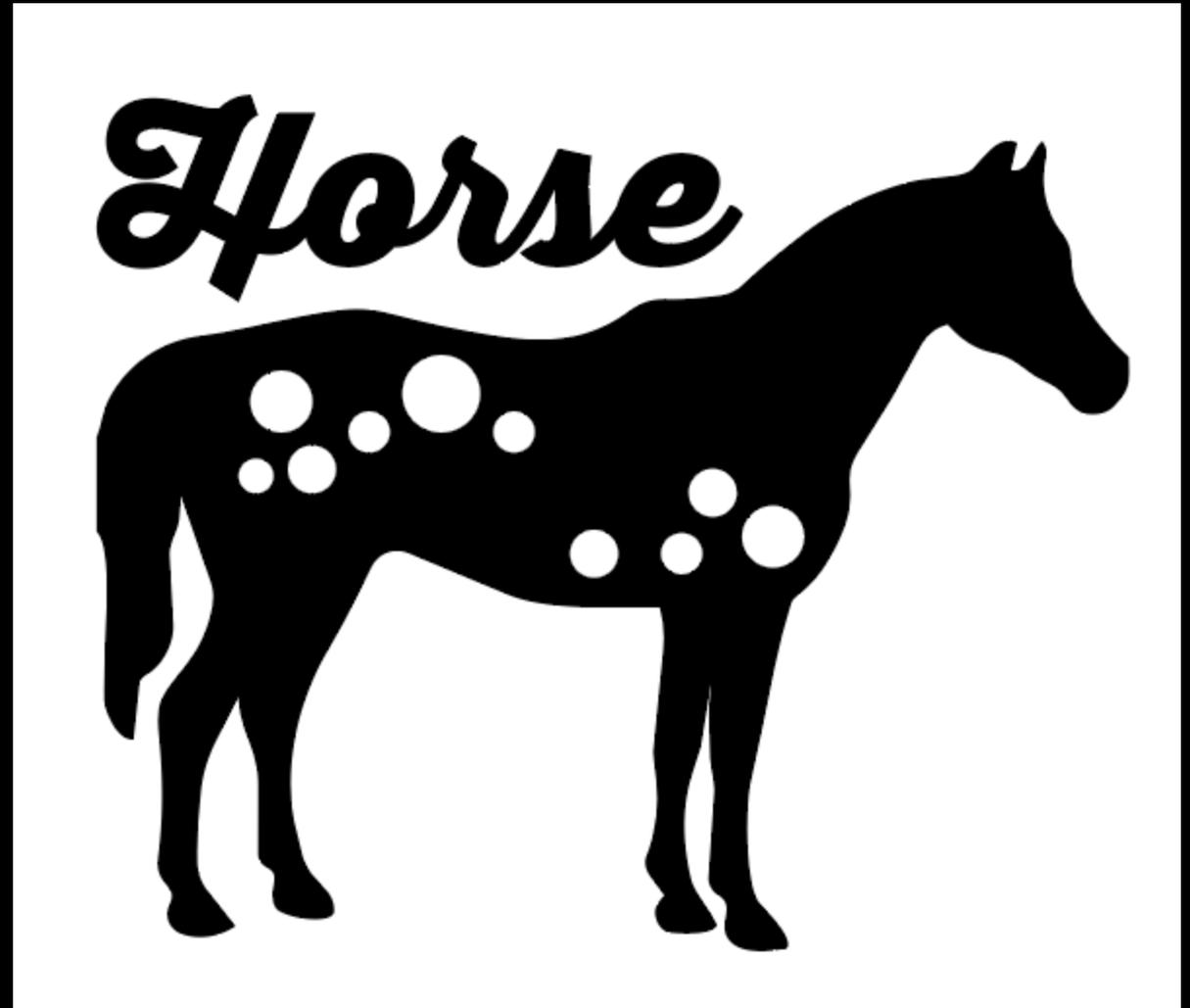
Vinyl Cutting

To use the vinyl cutter, we use Adobe Illustrator with Roland Cut Studio.

- See a staff member if you need them to log you into Adobe Creative Suite on the Vinyl Cutter computer.

- If you don't see the Roland Cut Studio panel in Adobe Illustrator, it is located under Window > Extensions.

Power on the Vinyl Cutter

Turn it on by clicking the button in the bottom left

The machine will initialise.
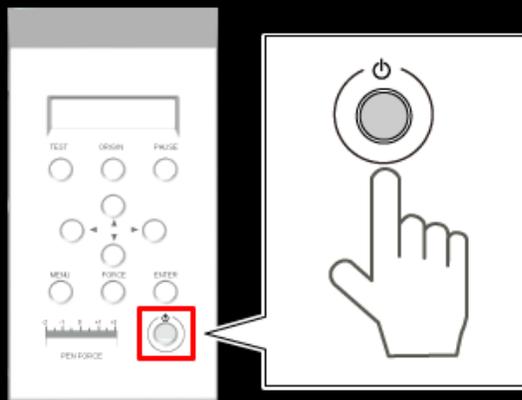
Release the loading lever

This lever in the back left lifts the rollers that hold down your material.

Push the lever **down to lift** the rollers
Pull the lever **up to drop** the rollers.
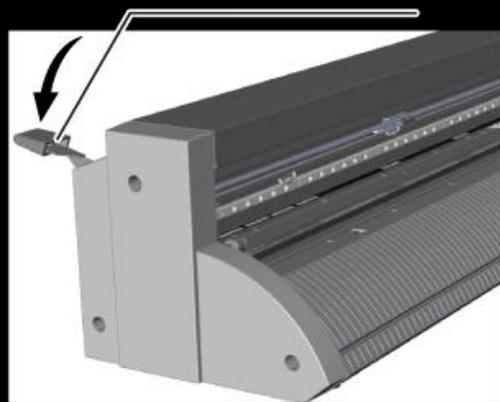
Loading your media

The white rectangles indicate areas where the rollers can be positioned.

The area below them have a textured surface to grip your media.

The vertical lines on the front of the machine are guide - they help you ensure that your media is straight and will not kink or bend as it feeds through.
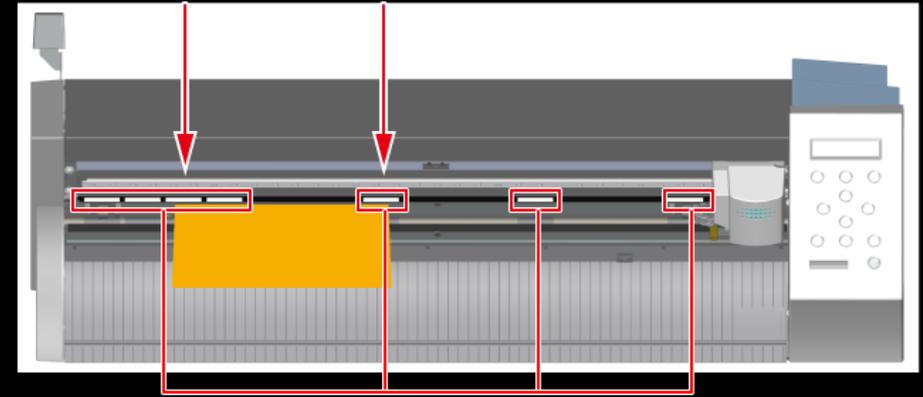
Grit Mark

Finish alignment

Roll media loads from the back of the machine. Allow plenty of slack , so that the media feeds through cleanly.

Sheet media can load from the front.

As you can see from the example picture, sometimes we lose a little width to ensure that the rollers are correctly placed.
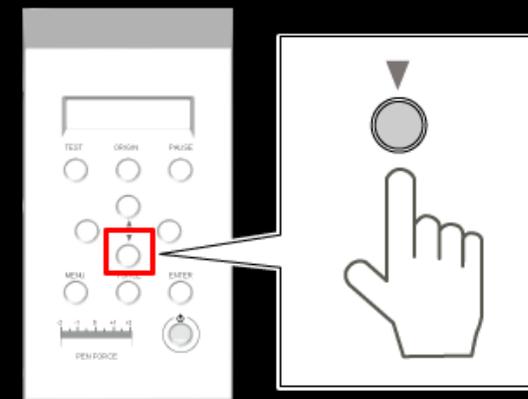
When your media is loaded, pull the lever up to lock into place.
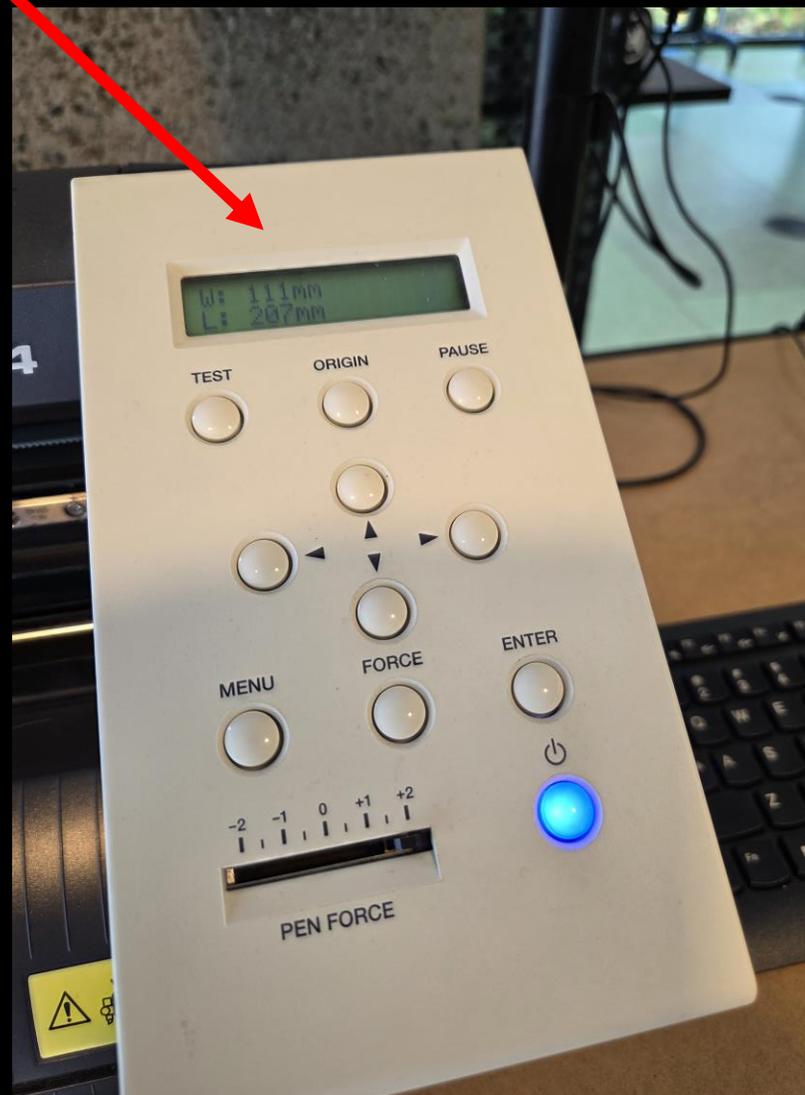
OK
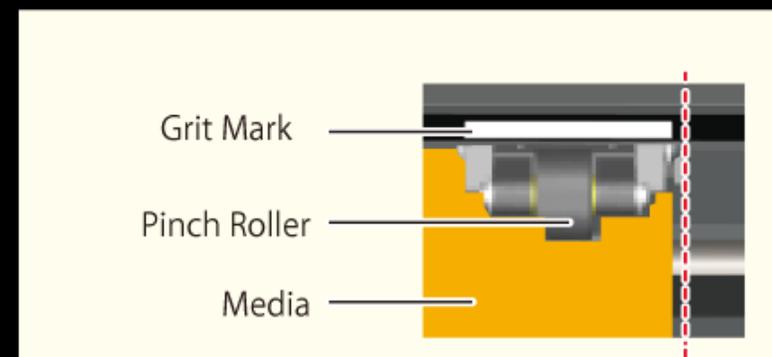
Calibrate the machine

Clicking the down button will allow you to select your media type. **Roll** for full rolls of vinyl, and **piece** for cut-down sheets are the ones you will likely use the most.
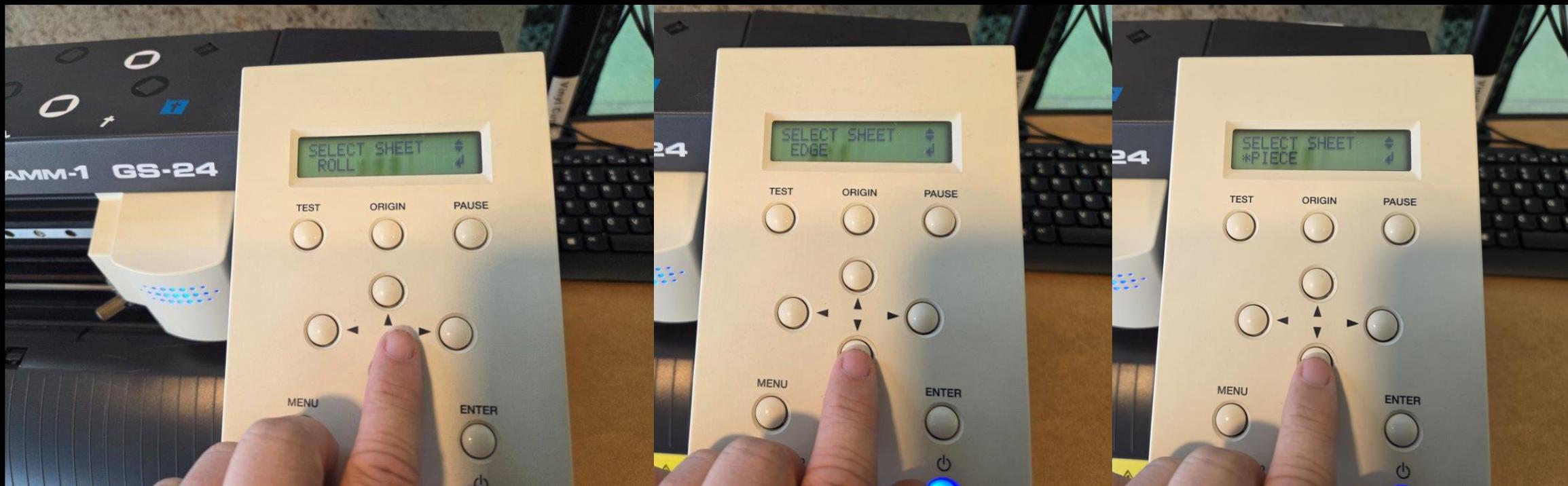
Note your media size

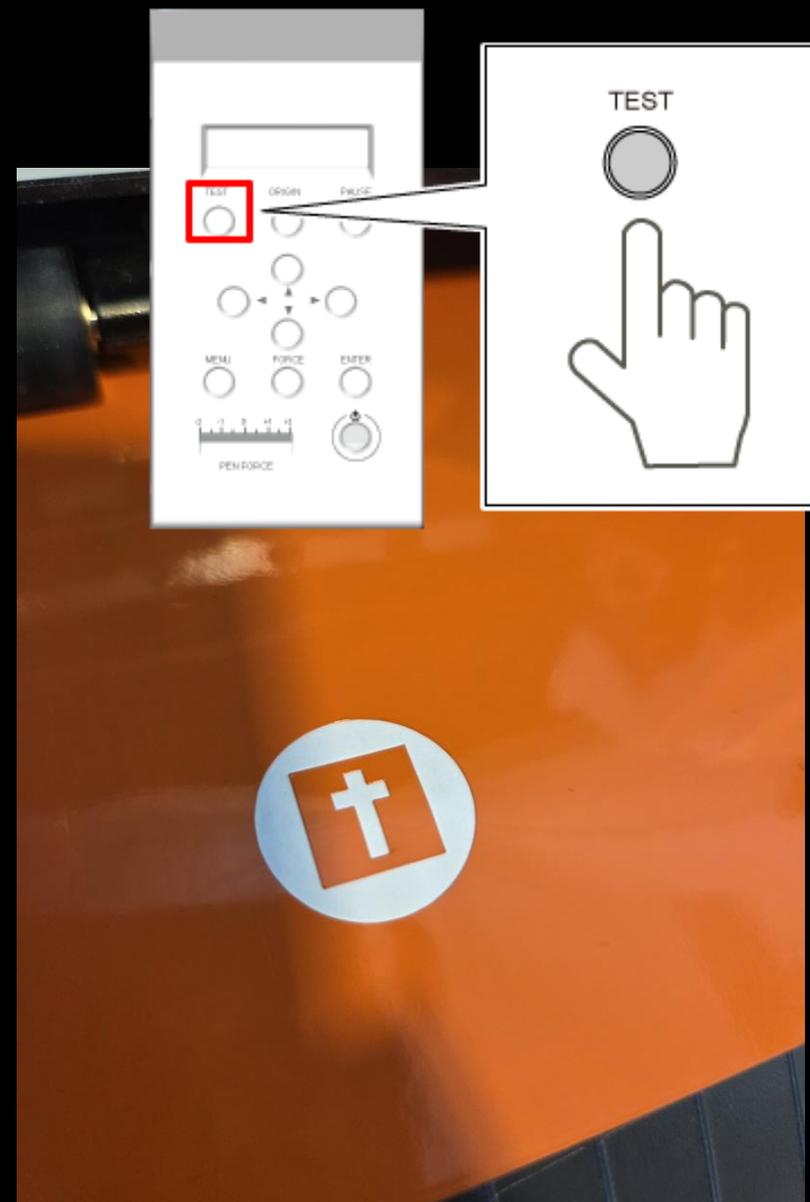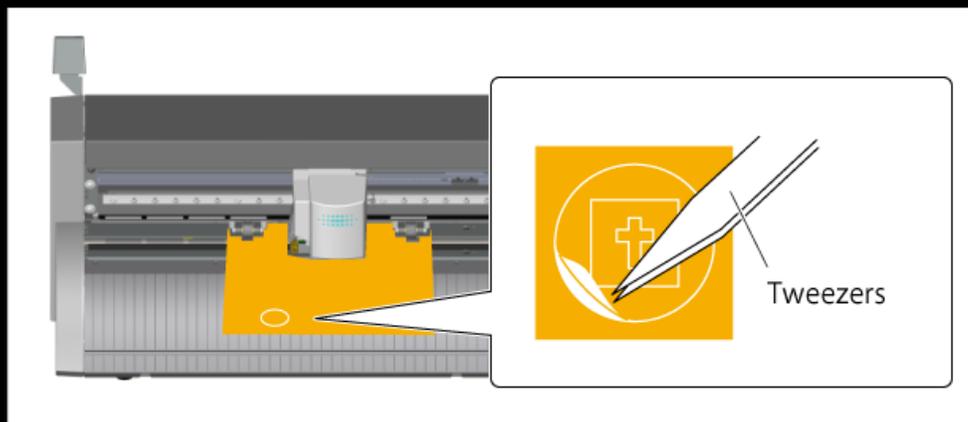Once the machine has calibrated, it will display the total working area.

Keep these dimensions in mind when you resize your artwork in Illustrator.

Perform a test cut

If you are unsure if your media is able to be cut on the vinyl cutter, you can perform a test cut.
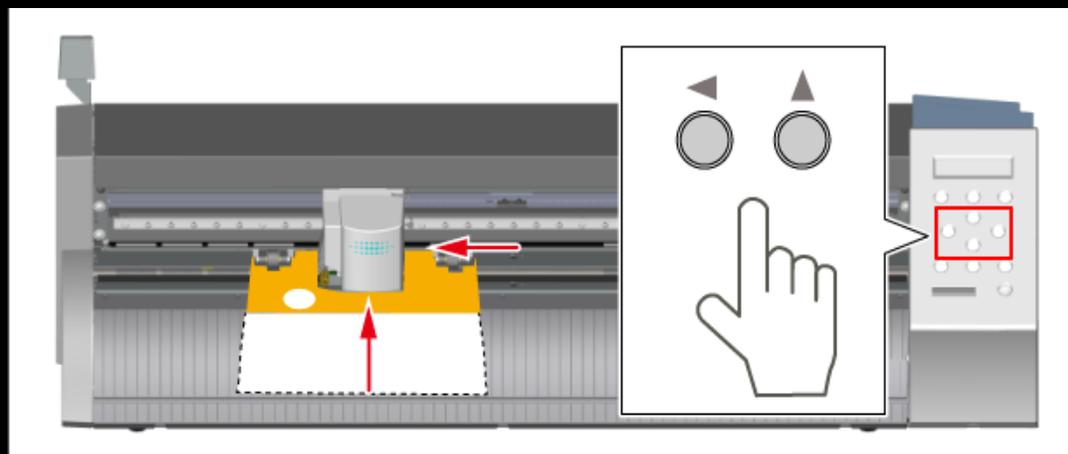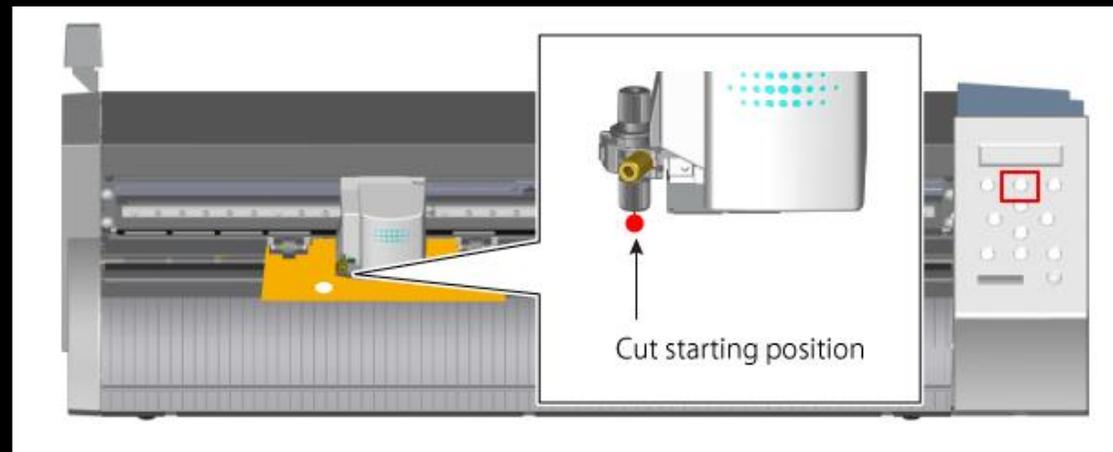
Click and hold the test button, and it will cut a test pattern to make sure that it fully cuts through.

Set your cut origin

Use the arrow keys to move the carriage to where you want your cut to start.

Hold down the 'origin' button for more than a second to set.

Cut starting position

ORIGIN
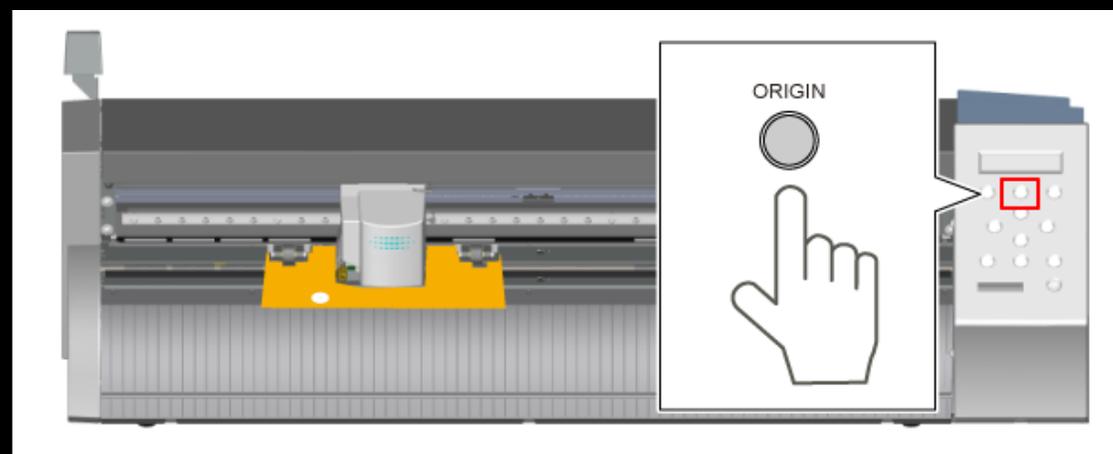
Export from Illustrator to Cut Studio

- Open your file in Illustrator.
- If the Cut Studio extension is not displaying, go to Window > Extensions > Cut Studio
- The Cut Studio extension will show a preview of your cut. Eg, here, the text has not been expanded – it must be expanded before it will display correctly.
- There are some options we can set there (eg, mirror, if designing for inside a window) also.

- When you can see your completed cut properly, click the Cut Studio button to export to Cut Studio.

Setting media size in Cut Studio

- Open Roland Cut Studio
- Go to File > Setup
- Select 'Change' under Media Size
- Select 'Get from Machine' and click ok
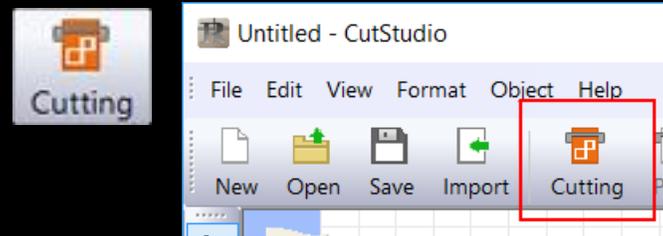- The media size in Cut Studio will update
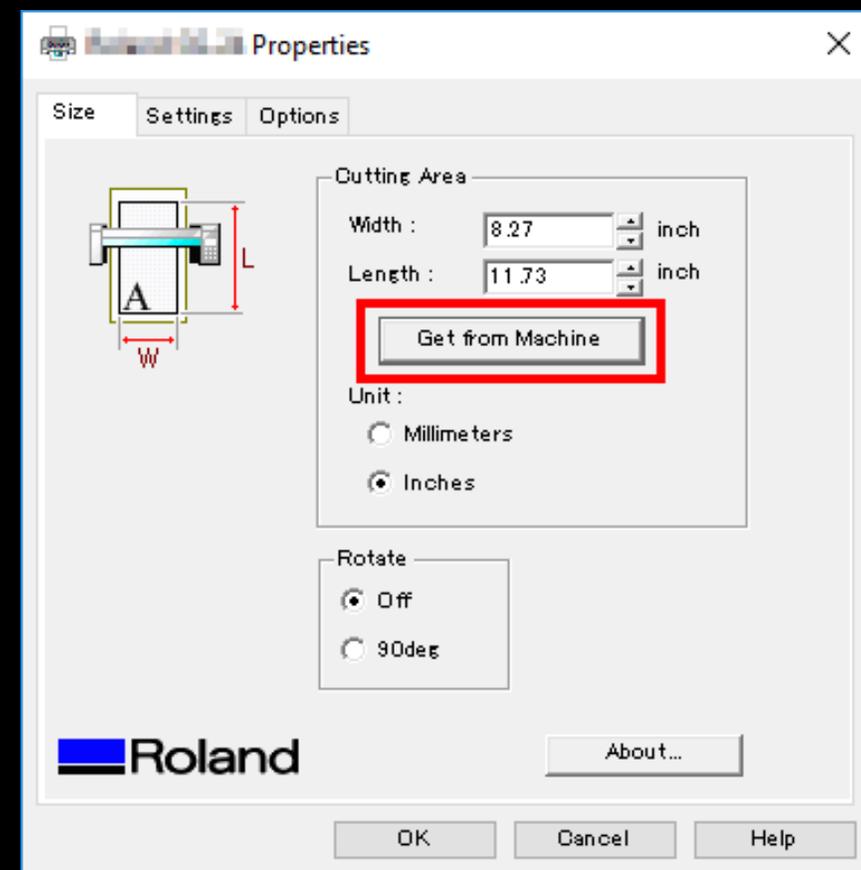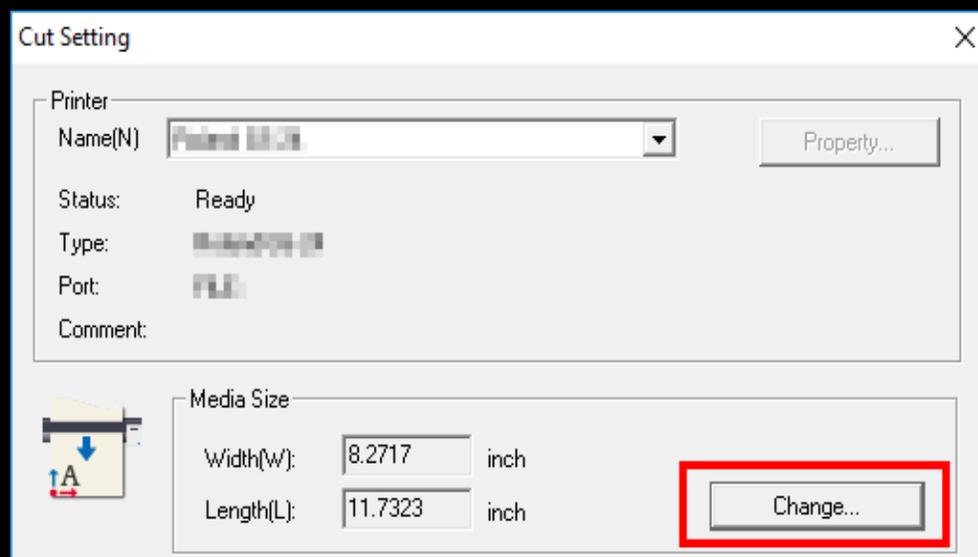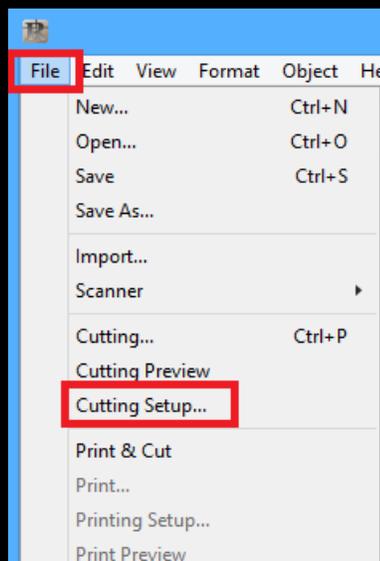
Perform the Cut

- Double-check that your design fits on the media before proceeding
- Click the 'Cutting' button
- Click 'OK', and the cut will begin.

Watch as your cut happens, so that you can respond quickly if something unexpected occurs.

To cancel cutting:

- Click the 'Pause' button on the machine
- Hold down 'Enter' for one second or longer.

Remove your media

- Click 'Menu' until 'Unsetup' appears on the screen.
- Press 'Enter' and the carriage will return to the side of the machine.
- Release the Loading Lever and remove your media.

- If you are removing from a roll – there is knife guide along the bottom of the machine.

- To power down the machine, click and hold the power button.
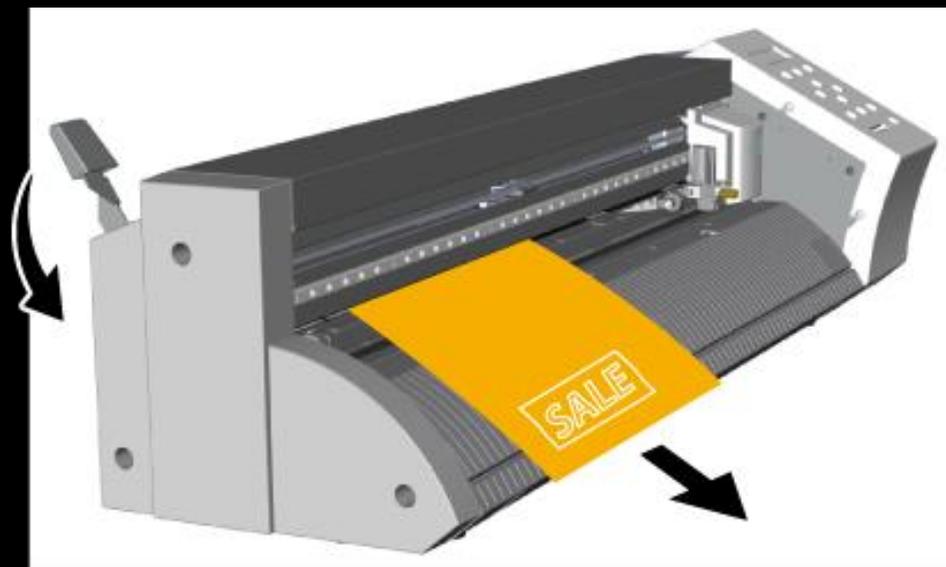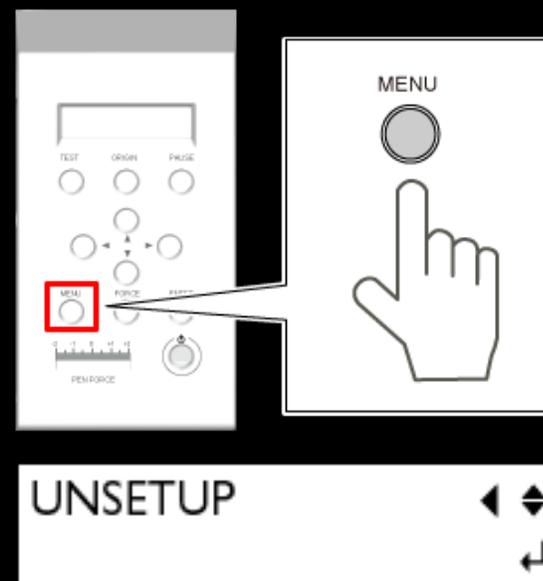
What is Weeding?

Weeding is removing any of the vinyl that you don't want to apply in your final design.

If you are creating a sticker/decal, you are weeding everything other than your design.

If you are making a stencil, you are weeding your design, so that the outside remains!

We have weeding kits available.

How to Weed Vinyl

- Use a surface that grips (such as a rubber cutting mat) beneath, to give more stability.
- Take it slow
- A light can help highlight the edges of the cuts in tricky areas
- If you are removing the outside of your sheet, start at a corner and work your way across Pull at a 45 degrees, almost parallel to the sheet. Keeping it low reduces the likelihood of the sticker peeling up with the excess.
- Come back and remove centre shapes.
- You can use tweezers, a pick tool, or a scalpel to help you if tricky pieces are pulling up.

Application Tape

Application tape helps you apply your weeded design to your final surface cleanly.

There are different varieties of application tape – today we're using a medium-tack paper tape.

Start by cutting a piece slightly larger than your design. If you have a large design, you can apply it directly from the roll – this can be more tricky, and you may need a friend to help.
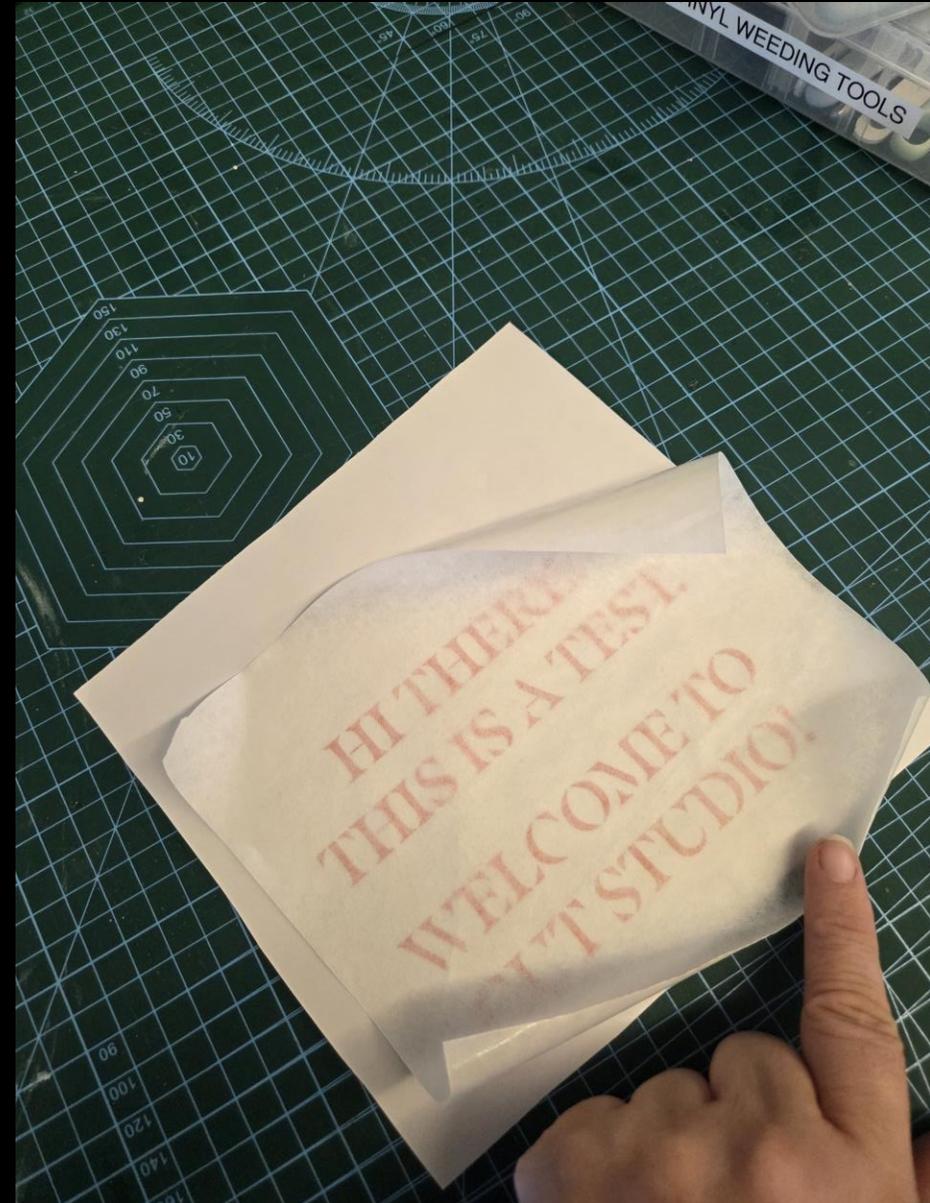
Applying Application Tape

If you are applying to a small design, you can gently lay your tape over the design, and let it relax into place

Squeegee with firm, even pressure from centre out, in a fishtail pattern, overlapping slightly with each stroke.

This:
- Helps push air bubbles out to the edge, rather than trapping them
- Helps decrease the likelihood of creases in your tape.

If you are applying application tape over a much larger area, you may need a friend to help. Tack the tape down at the end, while they hold tension at the other end, and gently roll it into place over your design, squeegeeing as you go.
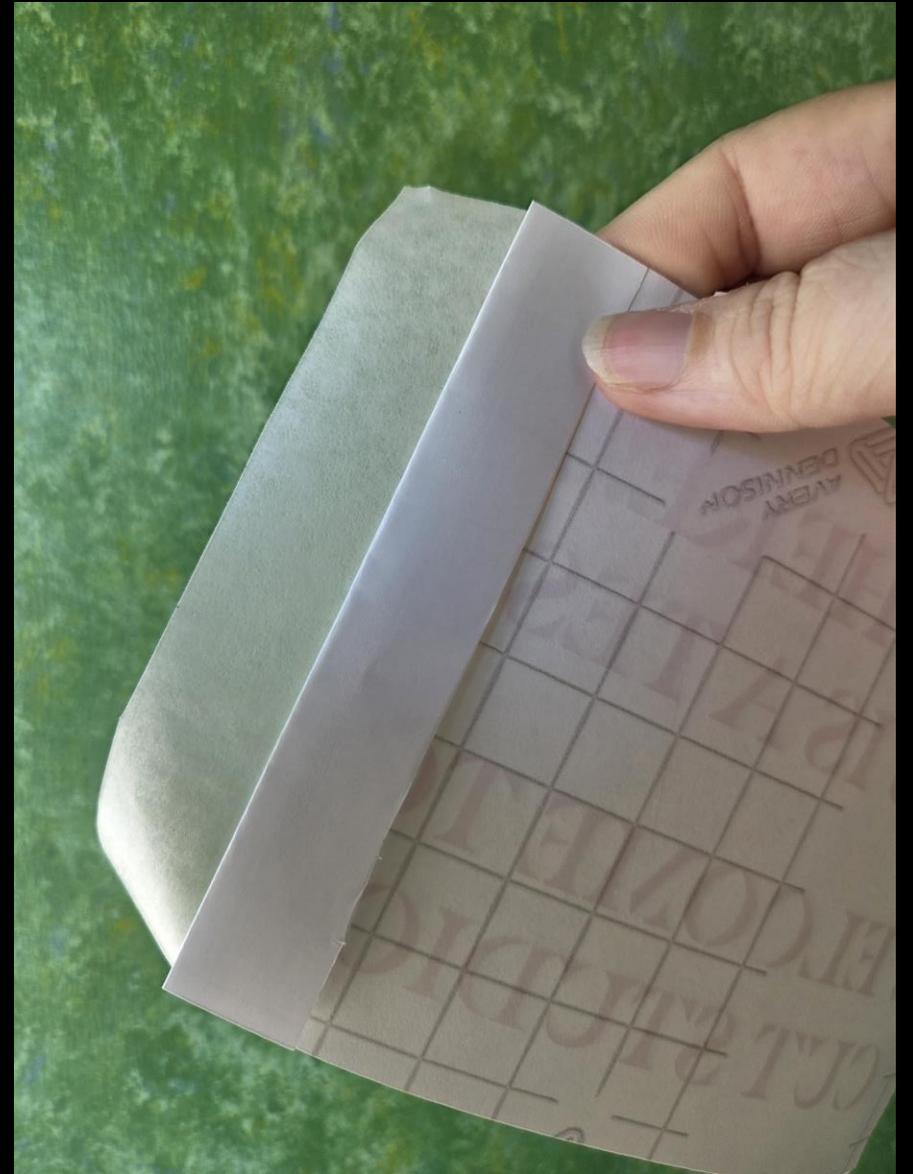
Finish up with a final firm pass of the squeegee.

Applying to a Surface

Fold back the edge of the backing paper – this exposes a strip of the application tape that you can adhere to your surface
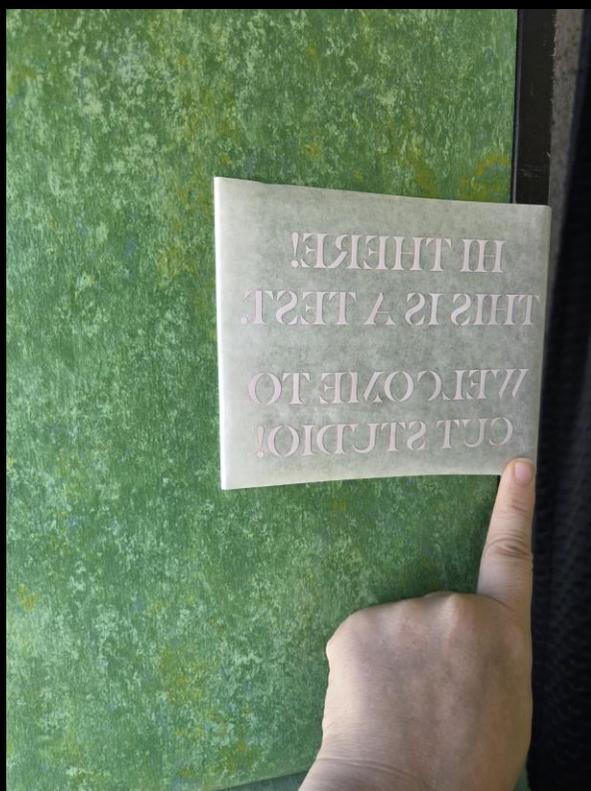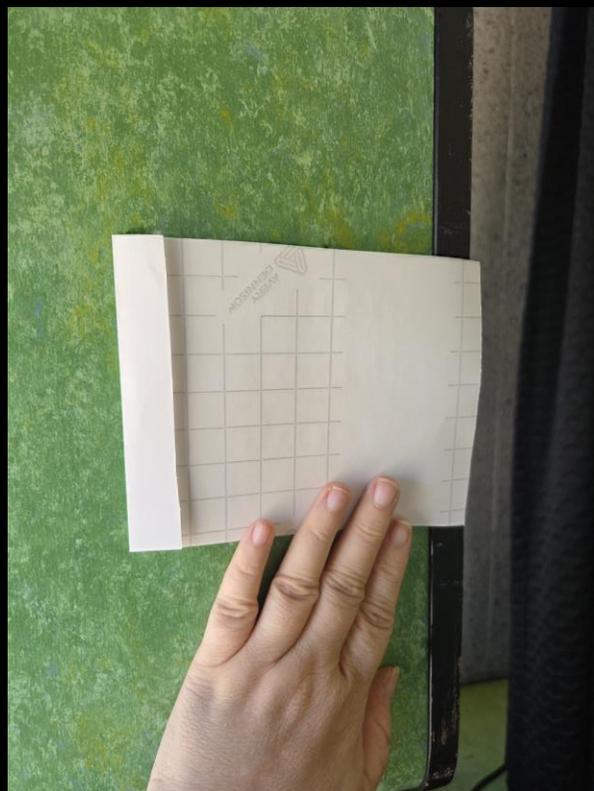
Work out the location you want your sticker in, and stick the edge of the application tape to the surface.
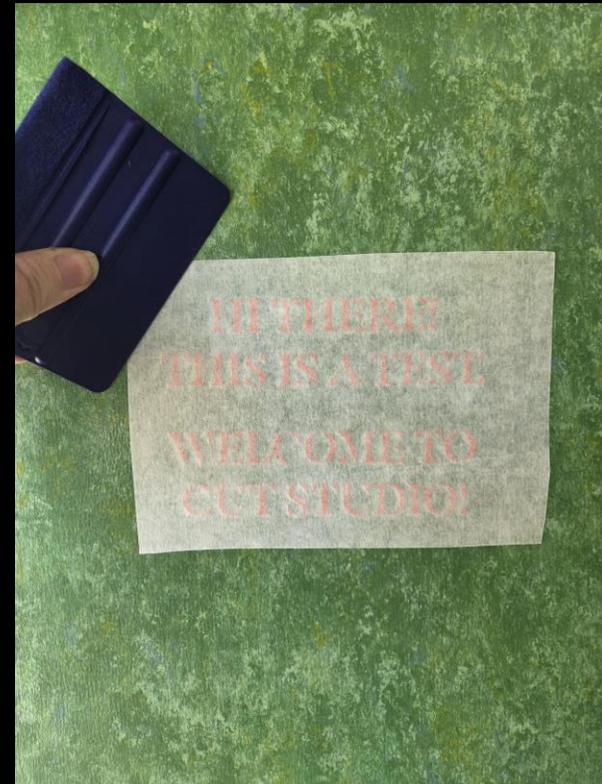
Application (cont)

Fold the sheet back and remove your backing paper
Hold the application tape up off of the surface at an angle. Maintain gentle tension.

Application (cont)

Gently apply pressure from the inside out, in a fishtail pattern – like applying the application tape. Follow up with a firm squeegee to ensure they have strong adhesion.

Remove your Application Tape

Remove the application tape from a corner – pull parallel to the surface, at a 45 degree angle. Go slow so that you notice if any pieces do not adhere correctly, and fix as you go.
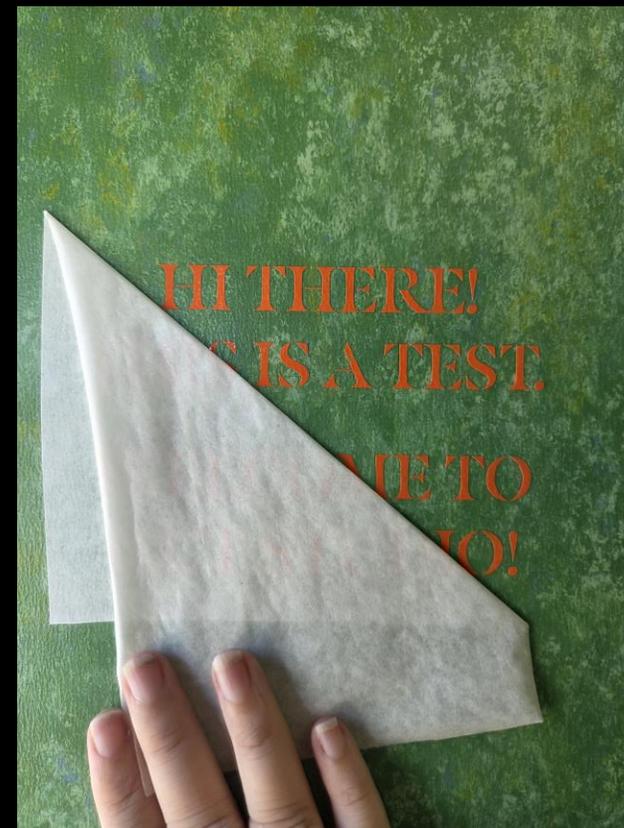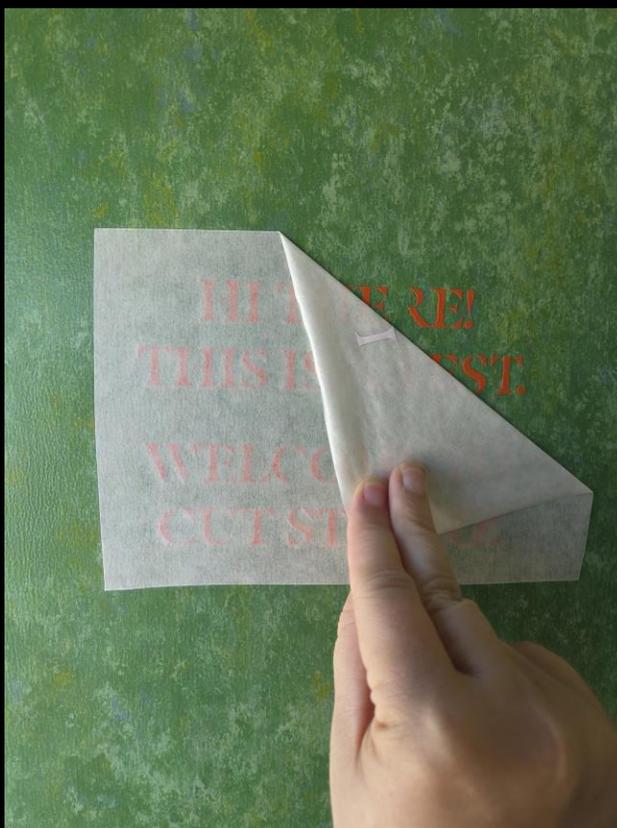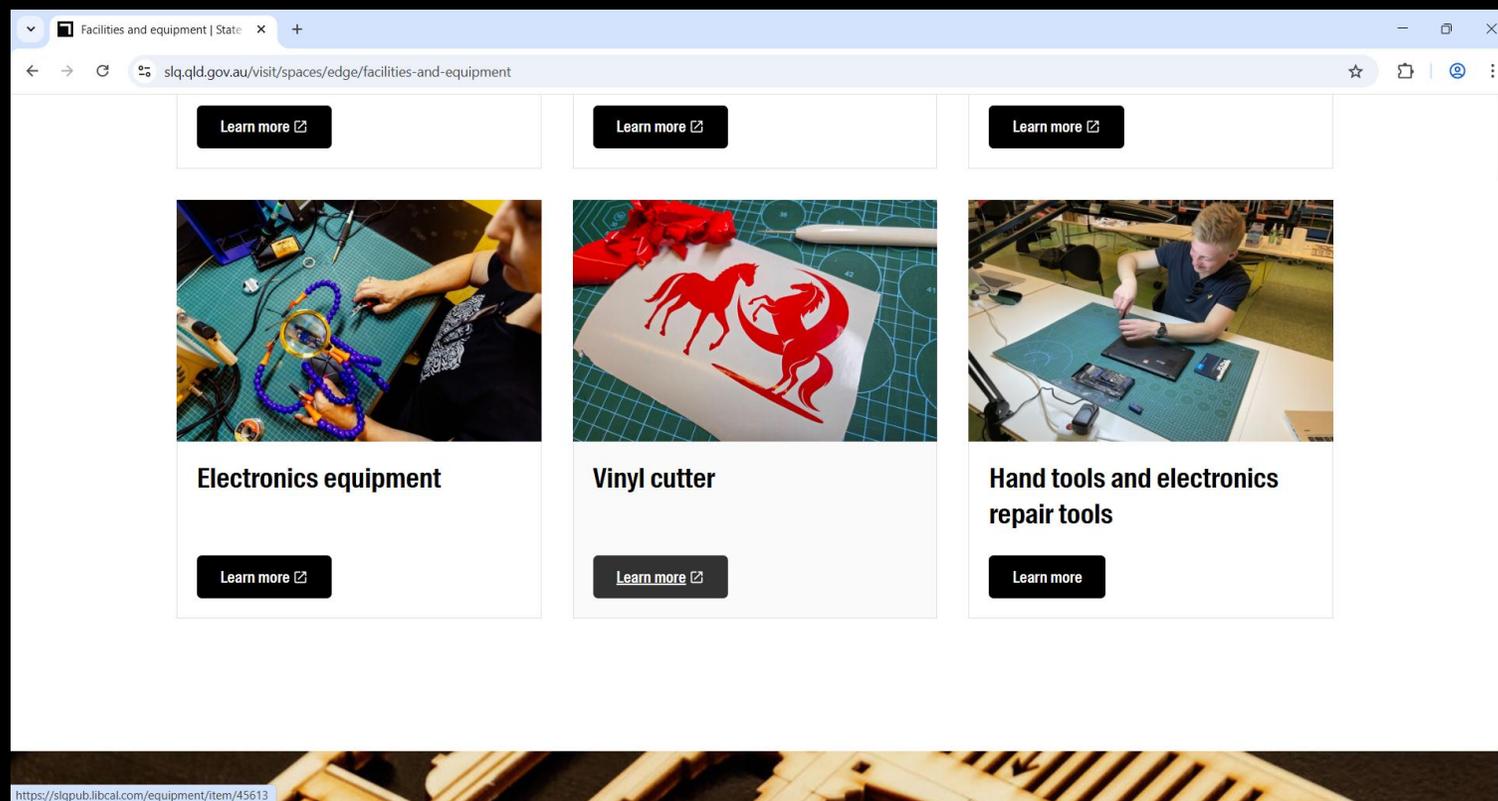
Book the Vinyl Cutter

You can book the Vinyl Cutter for our Open Lab hours:

- Wednesday 12pm – 5pm
- Thursday 1:30pm – 8pm
- Saturday 12pm – 5pm

Find it on the State Library website under Visit > Spaces > The Edge > Facilities and Equipment

Further Resources

- https://downloadcenter.rolanddg.com/contents/manuals/GS-24_Win_Manual_EN/GS-24_index.html The Roland Cut Studio user manual.

- https://www.slq.qld.gov.au/collections/information-collections/eresources/linkedin-learning
Access to LinkedIn Learning is free with State Library membership. When prompted to verify your library card, enter your State Library membership details (username and password). LinkedIn Learning contains a number of online InDesign training courses.

- https://wiki.slq.qld.gov.au/doku.php?id=workshops:public:start
The State Library of Queensland Wiki has a number of documented workshops that can assist you to learn related programs (eg, Adobe Photoshop, Illustrator, Inkscape and Procreate) to produce elements for your InDesign projects.

- https://onesearch.slq.qld.gov.au/
State Library of Queensland's OneSearch, to search the current collection for resources. In the search options, you can select to find free-to-use images and resources.

- https://www.youtube.com
Type in the name of a tool or option with the word 'tutorial', and you will have several options to pick from.

THANKS FOR ATTENDING

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Please complete our survey that will be sent out via Eventbrite.

Tag us on socials @statelibraryqld

Contact us on appliedcreativity@slq.qld.gov.au