

Gel Plate

Printing

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What is Gel Plate Printing?

Gel plates are soft, reusable monotype printing surfaces that pick up texture and ink so it can be transferred to another surface, like paper. No press is needed. Every print is unique. Mistakes become discoveries.

Understanding Layers

Gel plate printing builds upside down. Think of it like making a pizza in reverse: whatever should be on top of the finished print goes onto the plate first. Put the cheese down before the sauce. To get a leaf silhouette floating over a blue background, place the leaf on the plate first, then roll blue over it. The first layer down becomes the top layer of your print.

Typical Materials

- Gel plate (commercial or home-made)
- Water-based ink and paint
- Brayer
- Paper (tissue, printmaking paper, cardstock, or mixed media)
- Flat botanicals: leaves, ferns, pressed flowers
- Laser-printed images (for transfers)
- Baby wipes or damp cloth

Working with Drying Time

Acrylic dries fast, especially in warm weather. Once the paint loses its tackiness, it won't mark or transfer well. Work steadily; roll, mark, print. Have paper ready before applying paint.

Principal Process

1. Squeeze a small amount of paint onto the plate.
2. Roll the brayer in multiple directions until the surface looks evenly tacky, not wet. Listen for a slight sticky sound.
3. Make marks if desired. Draw into the wet paint with fingers, cotton buds. Dab with bubble wrap or scrunched tissue paper. Anywhere paint is removed, the paper will show through. Marks will appear as the base-paper colour, not the paint colour.
4. Lay paper gently onto the plate. Smooth with a flat hand. Heavy pressure distorts the gel and disrupts the paint layer.
5. Wait a bit for the paint to bond with the paper before peeling the paper from the plate. You can even wait until the paint is dry. Either way, peel from one corner in a smooth motion.
6. If the paint dries on the plate before you lay the paper, roll a fresh layer of wet paint over the top. Lay the paper, smooth, and peel. The fresh wet paint (the pick-up layer) will lift the dried layer with it.

The Pick-Up Layer

If paint dries on the plate before you can pull a print, don't panic. Roll a fresh layer of wet paint (or clear medium) over the dried paint, press paper down, wait a bit, then pull. The wet layer lifts the dried paint with it.

Why it works:

Acrylic paint is essentially liquid plastic; polymer particles suspended in water. When the water leaves, by evaporating or being absorbed, the polymer particles fuse together to form a plastic film.

When fresh wet paint meets dried paint on the plate, the polymer particles in the wet layer bond to the dried film underneath. The wet paint has stronger adhesion to the dried paint than the dried paint has to the non-porous gel plate surface.

When you pull the paper, everything lifts together; the fresh paint bonds to both the paper and the dried layer beneath it.

A commercial gel plate is made with mineral oil, and acrylic paint is water-based. Oil and water don't mix so the paint sits on the surface rather than bonding to it. That's why even fully dried acrylic lifts off; it sits on the non-porous surface without really gripping it.

Use any of these as a pick-up layer:

- Acrylic paint
- Matte, gloss, or gel medium (dries clear)

Use paper that is:

- Porous and absorbent, the paper needs to pull moisture from the wet paint, creating the bond
- Uncoated. Glossy or coated paper won't absorb properly

Papers that work well:

- Printer paper, cardstock, watercolour paper
- Tissue paper, tracing paper (great for collage)
- Book pages, brown paper, butcher's paper
- Tight-weave fabric (add fabric medium to your paint so it won't crack when dry)

Avoid:

- Glossy photo paper or coated stock as it can stick
- Heavily waxed paper as it resists paint absorption

Clear Pick Up Layers

Using clear medium instead of paint gets the dried marks/texture onto paper without adding another colour. A medium lifts the dried paint cleanly onto paper, and because the medium itself dries clear, only the original marks show.

Paint matte medium over dried paint layer, press tissue or paper down, wait several minutes, then pull. On translucent paper the result is a transparent print.

Botanical Printing

Botanicals yield three prints from one setup: a negative (silhouette where the leaf blocked paint), a ghost (subtle residue print), and a positive (detailed impression from the painted leaf itself).

Flat specimens work best. They can be fresh or pressed. Thick items won't make good contact with the plate. Avoid spiky botanicals that could scratch the surface. Dried herbs like lavender can be annoying; pieces of the flower head may stick to the plate and are fiddly to pick off. If bits of leaf or petal get stuck, remove them with tweezers.

Botanicals Process

1. Roll an even layer of paint onto the plate.
2. Arrange flat leaves or pressed flowers directly on the wet paint. You can use the same botanicals over and over.
3. Lay paper over everything and smooth gently. Peel to reveal silhouettes where the botanicals blocked the paint.
4. Remove the botanicals carefully. They now have paint on them. Set them aside.
5. Pull a ghost print from the residual paint on the plate.
6. Press the paint-covered botanicals onto fresh paper for positive prints showing veins and texture.

Image Transfer

This technique uses laser toner as a resist to create images in paint. Roll a thin layer of paint onto the plate, then place a laser print face-down on the wet surface. The paper absorbs paint everywhere except where toner sits. Toner is plastic and repels moisture. When the paper is peeled away, the image remains on the plate in paint. Pull a print to transfer it to paper.

Warning!

The process destroys the original print. Paint soaks into the paper and the image is gone. Print multiples of anything worth keeping. Only use pages from old books and magazines that can be sacrificed.

Tips for Image Transfer

- Use laser prints, not inkjet. (The library has toner photocopiers.)
- Text prints as readable, no need to reverse it.
- High-contrast images with bold blacks and clean whites transfer most reliably.
- Photographs from books and magazines work well; the halftone dot pattern helps the toner resist cleanly.
- Photocopies and laser prints of photographs also transfer, though some detail softens.

Image Transfer Process

1. Roll a thin layer of paint onto the plate. Less is better—too much paint floods the image and loses detail. If the layer looks thick or wet, roll the excess off the brayer onto scrap paper or another plate before continuing.
2. Place the laser print face-down on the wet paint.
3. Burnish quickly and firmly with a baren, brayer, or the palm of the hand. Work fast. If the paper sits too long, paint soaks through and the resist fails.
4. Peel the paper away. The image remains on the plate. Paint sits where the toner blocked absorption. Let this dry completely.
5. Once the image paint is fully dry, roll a second layer of paint, or brush a layer of medium, over the image. This is the pick-up layer; it bonds to the dried image and lifts it off the plate when you pull the print. Remember the upside-down pizza when choosing colour: the image is cheese, this new layer is sauce, the paper is the base.
6. Lay paper on the plate and smooth firmly. Let it dry before peeling. This can take time. Some people weight the print with a thick book. Adding a layer or two of scrap paper between the book and the print helps absorb moisture. Experiment to find what works best.

Experiment and enjoy.

Caring for the Plate

Over time the plate loses its glassy finish and becomes matte or cloudy. This is normal and doesn't affect printing. If shallow bubbles or dents appear, sandwich the plate between plain paper on a flat surface overnight. Irregularities will often smooth out. Some staining over time is normal and doesn't affect printing.

Cleaning

- Some people clean between prints, others leave residual paint for the next session. Old dried layer fragments can create interesting textures when fresh paint pulls them up.
- When ready to clean, use mild soap and warm water (never hot), baby wipes, or hand sanitiser.
- For stubborn stains, rub with baby oil, then wash with dish soap to remove the oily residue.
- Lift residue with sticky tape or a lint roller.
- Let air dry or pat dry. Don't use heat to dry.

Storage

- Store flat on a clean, smooth surface. The plate picks up any texture it sits on.
- Cover both sides with plain printer paper, smooth out air pockets. Don't use glossy photo paper; it can stick and damage the surface.
- Keep in the original clamshell if possible. Or get a hard shell box that fits the plate.
- Avoid direct sunlight and heat.
- Don't stack heavy items on top.

Avoid

- Sharp or pointy tools like pencils, toothpicks, or craft knives. Scratches are permanent.
- Oil-based paints left sitting too long; the oils can soften the plate.
- Harsh solvents and chemicals (acetone, nail polish remover).
- Dye-based inks (some stamp inks, spray inks, fabric dyes); they absorb into the gel and stain permanently, though staining doesn't affect printing.
- Solvent-based inks like StayzOn; they can degrade the surface.
- Masking fluid. Some people say it can etch a shadow into the plate.
- Glossy photo paper (it sticks and can damage the surface).
- Plastic wrap or waxed paper for storage; they wrinkle and imprint texture onto the plate.
- Textured or bumpy surfaces for storage. The plate picks up any texture it sits on.
- Old tape with degraded adhesive; it can leave a permanent sticky residue. Use fresh painters' tape or low-tack tape. Test first.
- Heavy pressure or stacking items on top.
- Heat sources and direct sunlight.

Staining and surface wear are normal; a well-used plate has personality.

More to Explore

This section lists other techniques often used in gel printing that we didn't have time to explore today.

Stencils and Masks

- Stencils – Place over wet paint, print, lift to reveal the pattern. Can also press into paint to leave an impression without removing exposed paint with a print.
- Masks – Opposite of stencils. Cover areas to protect them from paint. Torn paper, cut shapes, or any flat object works.
- Homemade stencils – Cut from plastic dividers or cardstock.

Stamps and Texture Tools

- Rubber & silicone stamps – Press into wet paint to lift paint and leave an impression; the stamp itself picks up paint for a positive print elsewhere.
- Foam stamps – Softer, creates subtle texture.
- Texture plates – Unmounted rubber or silicone sheets with raised designs; press into wet paint.
- Found objects – Bubble wrap, wallpaper, heat mats, corrugated cardboard, plastic lids, string, netting, doilies, lace.

Resist Techniques

- Wax crayon resist – Draw on paper with wax crayons, then print onto the wax drawing. Paint transfers around the wax, not on it.
- Wax rubbings – Make a rubbing over textured surfaces with wax crayon. Place rubbing face-down on inked plate; wax areas resist the paint.
- Vaseline resist – Apply through a stencil for a grungier effect than stenciling alone. Wipe off with baby wipes after printing.
- Masking fluid – Draw or write with masking fluid on paper. Once dry, print over it. Rub away dried fluid to reveal the layer beneath.
- Cornstarch or baby powder – Sprinkle over wet paint before printing. Creates speckled, matte, old-plaster effects. Brush off plate after drying for different results.

Drawing and Mark Transfers

- Ballpoint pen emboss transfer – Draw hard with ballpoint pen on paper (pad underneath for depth). Place face-down on wet paint; embossed grooves stay paint-free and transfer as line work.
- Charcoal transfer – Make a charcoal drawing, press face-down onto clean plate. Charcoal transfers to plate surface. Add paint, pull a print.
- Graphite transfer – Similar to charcoal. Pencil drawings transfer to the plate and can be reworked for multiple prints.

Specialty Inks and Media

- Alcohol inks – Drop onto plate, spread with air blower, drinking straw, or tilt. Creates vibrant, flowing effects. Stains the plate permanently (doesn't affect function). Dries fast; pull prints quickly or wait for full dry and lift with pick-up layer.
- Mica powder / Pearl-Ex – Sprinkle onto wet paint before pulling a print. Adds shimmer and metallic effects. Can outline stencil edges.
- Metallic paints – Lumiere, iridescent acrylics. Adds shimmer to any print.
- Water-soluble printmaking inks – Speedball / Akua, Derivan Block Ink, Caligo Safewash. Different feel than acrylics; longer working time with some brands.

Water and Fluid Effects

- Water droplets – Flick or spray water onto wet paint. Creates organic, unpredictable spots and rings. Let sit, blot excess, wait for dry, then pull with pick-up layer.
- Isopropyl alcohol spray – (Variable success) Mist onto inked plate for watercolour-like effects. Use sparingly; may affect plate over time. It's better to spray onto printed paper; the effects are better.

Tape Techniques

- Packing tape transfer (make your own decorative tape) – Let paint dry completely on plate. Press clear packing tape (the kind you use to seal packing boxes, usually 48mm) onto dried surface. Peel tape—it lifts the dried paint, creating translucent decorative strips.
- Tape as mask – Lay strips of painters' tape on plate before painting. Paint over tape, pull print, revealing stripe patterns.

Drawing Directly on the Plate

- Permanent markers (like Sharpies or Artline) – Draw on clean plate. Will stain permanently but can be incorporated into prints.
- Posca pens / paint pens – Draw on dried layer, add pick-up layer, pull print. Creates graphic, screen-print effects.

Printing on Fabric

- Fabric printing – Works on tight-weave cotton, PFD (Prepared For Dyeing) fabric, muslin. Add fabric medium to paint, heat-set after drying.
- Silk scarves, quilting cotton, tote bags – All printable. Larger plates (50×40) work well for fat quarters.

Layering and Registration

- Multi-layer prints – Let each layer dry before adding the next. Use corner marks or placement tools to align repeat prints.
- Printing on existing prints – Layer ghost prints, botanical prints, or new patterns onto already-printed pages for complex, layered effects.

Collage Integration

- Print onto book pages, maps, sheet music – Existing text/images show through thin and translucent paint layers.
- Collage on prints – Tear printed papers, layer with medium, stitch, or paint over.

