

Screen-printing at the Castlewood Makerspace

What is Screen-printing?

Screen-printing is a printing technique where a mesh or screen is used to transfer ink onto a material, usually pushed through a (emulsion) stencil. A common example of a screen-printed item is graphic t-shirts. To find out more, let's look at the equipment we will be using to screen-print.



Exposure Unit!

The Makerspace has a standard UV exposure unit - this allows us to do screen-printing in the traditional way by using emulsion to create a stencil in the mesh of a screen. The exposure unit is simply a light source - it has UV LED's that hardens the emulsion we use.



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Screens!

Screen-printing screens come in a variety of sizes, mesh counts, and material compositions. The size of the screen will dictate how large your design can be. Mesh counts vary and they effect the level of detail that can be achieved with the design with higher mesh counts resulting in more details. The mesh is usually polyester, though professional printers will also have nylon and steel meshes. Frames will likely be aluminum or wood.



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Designs!

For our set up, one color designs are recommended. You can create a design file in a number of ways; The final result simply needs to be a one color(black) image file (PNG, JPEG) that we can send to our printer to create the needed transparency. Most design softwares (Illustrator, Inkscape, Photoshop, GIMP) can create custom files for screen-printing. You can also simply find images that are one color to use as a print file.

Design file examples:



Transparencies!

Once you have your design ready, it must be put onto a transparency. This is simply a piece of clear plastic that can be run through an inkjet printer. It must be transparent in order to work with the rest of the process. Each color for the design needs its own transparency. The makerspace has transparencies that work with our printer and patrons are welcome to use our stock.

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Stencils!

In traditional screen-printing you will use emulsion to create a stencil on the screen. Emulsion is a viscous liquid that reacts (hardens) when exposed to light. You create a stencil with emulsion by first applying the emulsion to your screen. Once dried, you attach your design to the front of the screen and you expose the screen using our exposure unit. The light will harden the emulsion and your design will block some of the light from hardening the screen. After exposure you wash out your screen revealing the design. Screens done in this method should retain design clarity for a long time dependent on emulsion type and screen type.

You can also create a stencil using thin plastic or sticky backed vinyl using a machine like our Glowforge or Cricut.



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Ink!

Screen-printing ink comes in a lot of varieties, colors, and brands. Be sure to use the correct kind of ink for your project by deciding on what you will be printing on before picking your ink. The makerspace has both fabric and regular acrylic printing ink. When printing on fabric, most inks require a 'heat set' which ensures the ink adheres to the fabric and won't wash out. With any ink, prints should be allowed to completely dry. This is the brand of ink we use and offer at our screenprinting station.



Medium!

This term is in reference to the material you are printing on. Screen-printing has a lot of uses and can print on to a large variety of materials, even circuit boards! Common things you can print on would be paper, fabric, wood, cardboard, or almost anything flat.



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Clean up!

Printmaking can be a messy process and the screens need to be cleaned as soon as they are no longer in use. If you are using vinyl /plastic stencils then this can be done easily in the maker spaces sink, no need for the pressure washer. Aprons are plentiful!



Pressure Washer!

In order to reclaim screens (strip the emulsion on a screen and prepare it to be used again) you will need to use our pressure washer. Used in conjunction with an emulsion stripper you can easily remove the emulsion from an old screen so that it can be used again. Patrons will only need to do this process when creating custom screens.

