Etched Glass with Vinyl Stencils

Shared by: Edgerton Center K-12 Maker Team

Specialized tools and materials used:	Experience level required:
Vinyl cutter (such as Cricut)	Beginner/intermediate
2D graphics program (Google Draw, Vectr.com)	Beginner/intermediate
Glass etching cream (Armour Etch)	Beginner/intermediate

Grade Level and Subject (of this example): Grades 6 - 12

Topic/Content Standards (for this example): Introduction to graphic design, maker skills

Summary of Project:

This project is an opportunity for students to explore graphic design and express school spirit while building hands-on maker skills. The final product is a glass etched with the design of their choosing. Depending on the time available and skill level of the students, they may use an existing school mascot or logo, or create an original symbol to represent their school spirit.

Students may sketch their ideas by hand first, taking into consideration how the vinyl cutter will ultimately handle the design. Thin or delicate lines will be more challenging to handle and transfer - solid shapes are ideal. The designs can then be transferred into a 2D modeling software. Vectr.com is a free browser-based option, and some vinyl cutters (such as Cricut) have native design software that can be used.

To create solid shapes, students can model them using software, download silhouette images from the internet, or draw them by hand. If they are drawn by hand, students can

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upload them to software by taking a photo, and converting them to .SVG files using an online converter like www.picsvg.com. Teachers may wish to provide starter layouts.

When the designs are completed, students will use the craft cutter to cut the designs from vinyl. Students should remove the parts of the design which will be etched into the glass. What remains of the design is then transferred to the glass surface using sticky transfer paper. For optimal results, the glass surface should be clean and free of fingerprints.

Wearing appropriate safety gear (glasses, gloves), students will paint a thin layer of glass etching cream like ArmorEtch over the vinyl design. Remove with water according to instructions, and clean the glass thoroughly.

Students may work individually or collaboratively on their design. If students are creating unique designs, they may share their work in presentations. The duration of this project is contingent on familiarity with tools and software.

Suggested Resources

- Photo instructions for etching glass
- Silhouette School Blog "Silhouette Tutorial"
- Edgerton K12 Maker Vinyl/Craft Cutter guide
- Edgerton K12 Maker 2D Modeling guide

Possible Academic Content Explorations

Math:
- **Geometry**: fractals, symmetry

Social Studies:
- **Communications:** how do seals, flags, and symbols convey meaning? How can symbols influence public discourse? How can these tools be used by governments and authorities?
- **Culture:** exploration of themes in art through regions and time periods, astrology, mythology
- **History:** design a symbol or seal based on a significant event in local or state history

ELA:
- **Literature:** choose or create a symbol for an important character or theme

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