

MATH 126

Sliceform Project

In this project, you will explore the interplay between two and three dimensions. As we will discuss in class, many real life applications require that we navigate between 2D and 3D. Examples include GPS/Google Maps, medical imaging (CAT scans, X-rays), architecture/building/construction, 3D printing, holographs, IMAX, and computer animation. We will make a sample sliceform in class but this project requires that you plan, design, and make an original sliceform. Here are some guidelines:

(a) Submit a proposal with your intent. This can be done orally—just tell me what you would like to create and why. This is important because it is possible you may choose to make something too simple or too complicated. For example, a ball/sphere is too simple whereas a dragonfly may be too complicated. You will want to choose something interesting that can be reasonably accomplished in the given time.

(b) Submit your blueprint/template on regular grade paper (no need for poster board). Most of you will have two sheets of paper—one showing horizontal cross-sections and one showing vertical cross-sections. Label the pieces similar to the lightbulb we made in class (e.g., you can use the label H2 for the second horizontal cross-section and V6 for the sixth vertical cross-section). Each cross-section should show the parallel lines used for notches.

(c) Using the poster board provided to you, carefully construct your sliceform. Note that the finished product should travel easily (flat) if you make notches (not slits). **Second only to the planning stage, this is the part of the project where you will need to spend significant time.**

(d) Write a paragraph or two explaining what you did. You may answer some of these questions to guide your narrative: Why did you choose your object? Were there any unforeseen difficulties? Did any of the cross-sections surprise you? If you had a chance to do this again, what would you do differently?

Some hints:

- (1) **Careful planning is critical.** If you skip this stage or move too quickly, you will likely find yourself starting over.
- (2) Be sure to make notches (not slits) in your sliceform model. Notches require removing a small sliver of poster board. This ensures the sliceform will collapse into a flat state. Also, notice that the notches generally reach the halfway point of each cross-sectional piece.

The project is due on the last Friday that we regularly meet (before the Final Exam). Any time earlier will also be fine. Include your

- (1) **template(s),**
- (2) **sliceform, and**
- (3) **narrative.**

Your grade will be based on timely completion, creativity, design, completeness, care in construction, and accuracy.