

Understanding Cross Sections

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Educational Goals: Explore what everyday objects look like in section.

Description: This is intended to be treated as a sketch charette, where students (with the help of mentors) draw sections through any of the following items found around the office:

- coffee mugs, trash can, flower vase, tape dispenser, stapler, light bulbs, soda bottles, sample building component (hinge, flange, light fixture, etc), fruit (orange, apple, banana, etc), chair

Time: 60-90 minutes.

Materials: 4-8 sheets of 16"x24" newsprint, black markers of varying thicknesses.

Additional Resources: None

Activity: Individual Activity

Encourage the students to draw the object at least twice as big, filling as much of the sheet as possible with one object. They can be as detailed as they want, but let them "warm up" by beginning with simple mass/void objects like the coffee mug or a trash can.

Ask the following questions to them to facilitate their sketches:

- If you were to take a knife and slice through the center of this object, what would you see? (do this demonstration with the fruit)
- What is the silhouette of the object?
- What different materials is it made of?
- How can each material be drawn differently?
- Can the object be drawn using simple shapes: rectangles, circles, etc?
- How does a thick black line illustrate a material differently than a fine black line?
- How are materials connected?

The key here is to have fun sketching. All of these objects can be laid out on the table space in an array. Students can rotate around from object to object at their own pace. Encourage students to draw spontaneously. Some students may feel timid towards drawing. Encourage them to sketch without worrying about making mistakes. Guide them to push their limits, to draw in a way that may be uncomfortable. Encourage some to draw really fast, faster than they normally would, to get on paper what their eyes see before their hand has a chance to interpret it. Then have them draw it over at their normal pace and compare.

At the end of the charette, pin-up all drawings and hold a brief discussion about what they made. Get their feedback on their efforts:

- the similarities/differences in the representation of the objects
- the different scales of the drawings
- how space and form can be represented through different drawing techniques

You can wrap up the session by reminding them that this is one of the many ways that the different disciplines communicate to one another when working on a project.