
Desk Organizer

Client Company: Office Supply Chain

Target Consumer: Teachers, Corporate Executives, and home office workers

Designer: _____

Problem Statement: Keeping an office desk from becoming cluttered with papers, and devices such as pens, pencils, staplers, paper clips, Post-It Notes, and writing pads is a neverending task. This hinders work space and organization.

Design Statement: Design and model a product that will reduce the clutter that accumulates on office desks and frees up space.

Constraints:

1. Must not attach to the desk.
2. May not have a footprint that exceeds 6" depth x 12" width x 10 height.
3. Must include a recessed area, a bent plastic part and have a base $\frac{3}{4}$ " thick.
4. Must have a minimum of five different parts once assembled.
5. Must hold a minimum of six items.

Virtual Design Project – Indoor Miniature Golf Course

Client : Mall of America

Target Consumer : mall patrons 6-60 years old

Problem Statement : The Mall of America in Minneapolis, MN has designated 5000 square feet of mall space to construct a hole indoor golf course. Since this is a RUSH project small design teams will be utilized.

Design Statement : Design 3 or 4 consecutive holes of the golf course as assigned by the project manager. The holes your group designs have to have a **consistent theme** and be related to each other. The overall course will **not** have a single theme.

Constraints:

1. All holes within a group have a consistent theme.
2. All groups will be assigned 500 square feet of space
3. Holes can be elevated up to 5', but appropriate safety precautions must be taken.
4. All components of the hole must be less than 5' tall.
5. Pathways as needed to move from hole to hole must be a minimum of 30" wide.
6. Groups need to pay attention to where players will be entering and exiting their areas (assigned by project manager)
7. All holes can have some moving or animated parts. (optional)
8. All holes will have a standard tee off pad and scoring podium (provided by the project manager)
9. All modeling should be done to FULL SCALE.

Project Manager :

The project manager will provide a team layout diagram, assigning teams space, and a pattern of play establishing where players will enter and exit each area.

The project manager will design the tee off pads, scoring podiums and the 150 sq. foot office. They will also assemble the holes into a final layout.

Speaker Support System

Client: Your classroom teacher

Designer:

Problem Statement: The teacher does not have sufficient space in the classroom to utilize a set of quality speakers. One speaker sits on the floor and one sits on top of a bookshelf, thus occupying space that is needed for classroom activities and storage. Also, the sound quality is poor due to the current arrangement.

Design Statement: Design a speaker support system that will allow the two speakers to be securely mounted to the classroom's concrete block wall(s).

Constraints:

1. Design must be ready for manufacturing in 2 weeks.
2. Each speaker is 12"H x 9"W x 9"D.
3. Each speaker weighs 10 lbs.
4. System must not require any alteration to the speaker (including drilling holes).
5. The system must be able to fit in a 11"x 8.5"x 5.5" USPS Priority Mail Flat Rate Box for shipping purposes (not including the speakers).
6. The system must weigh under 20 lbs (not including the weight of the speakers).
7. Must be mechanically fastened to a concrete block wall (mechanical fasteners provided by the clients).
8. System must allow speakers to be adjusted by tilting forward/backward and panning left/right.

Note: Speaker part file will be provided.

Bicycle Storage (Bike Rack) System

Client: Ms. Whitmore

Designer:

Problem Statement: Ms. Whitmore is a college student who uses her Mongoose XR250 mountain bike for all of her transportation needs. Her apartment complex does not provide a safe place for her to store her bike, which is currently kept in her small kitchen until she can find an alternative means.

Design Statement: Design a bicycle storage system that will allow Ms. Whitmore to safely store her bicycle inside her apartment in such a way that the bicycle is easily accessible, but does not take up space in the major living areas of her apartment.

Constraints:

1. System must not cause damage to the walls or ceiling, which would cause Ms. Whitmore to lose her \$600 deposit.

Modular Coffee Shop Table

Client: Mr. Smith's Coffee Shop

Target Consumer: University students 17-30 years old

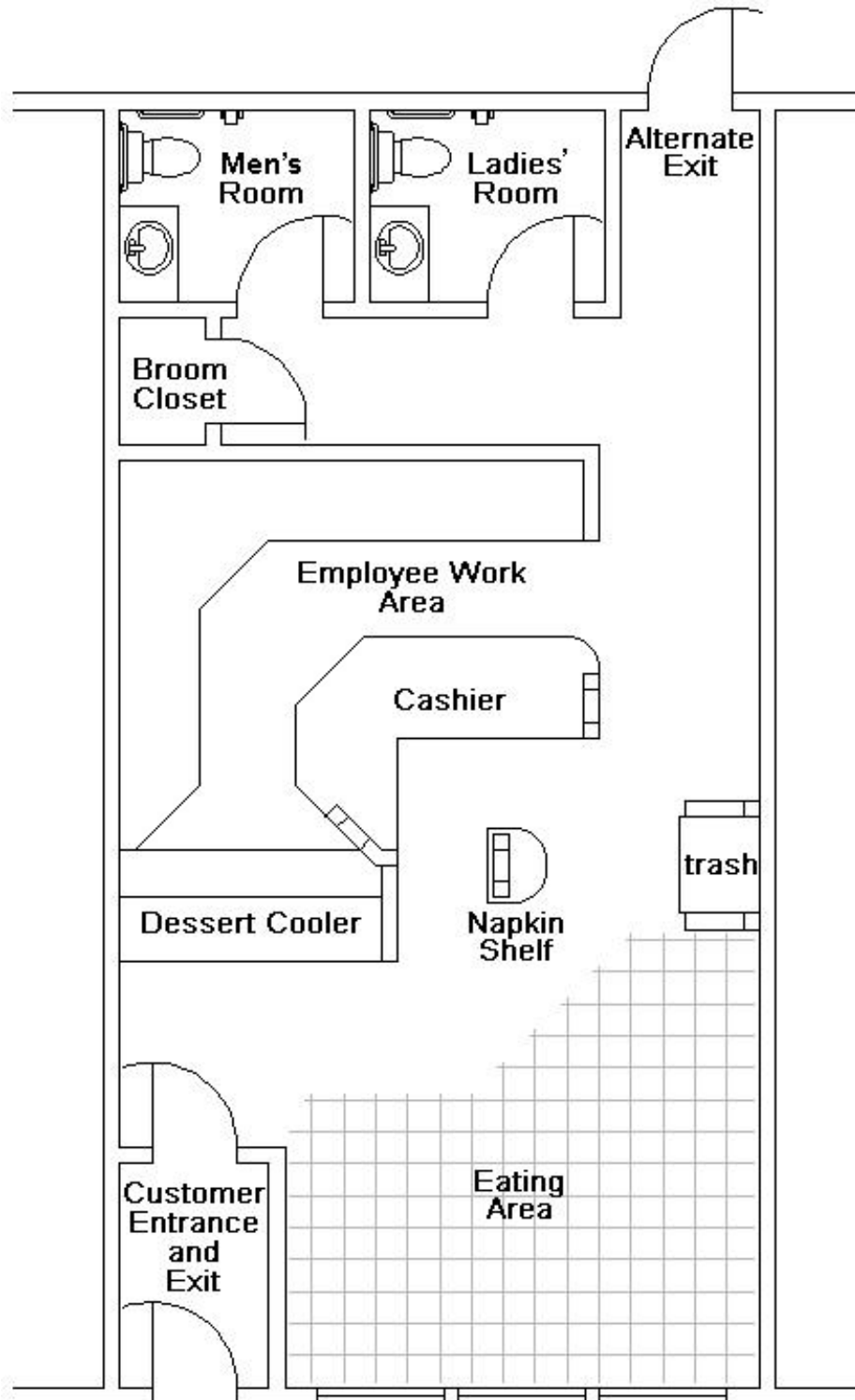
Designer: _____

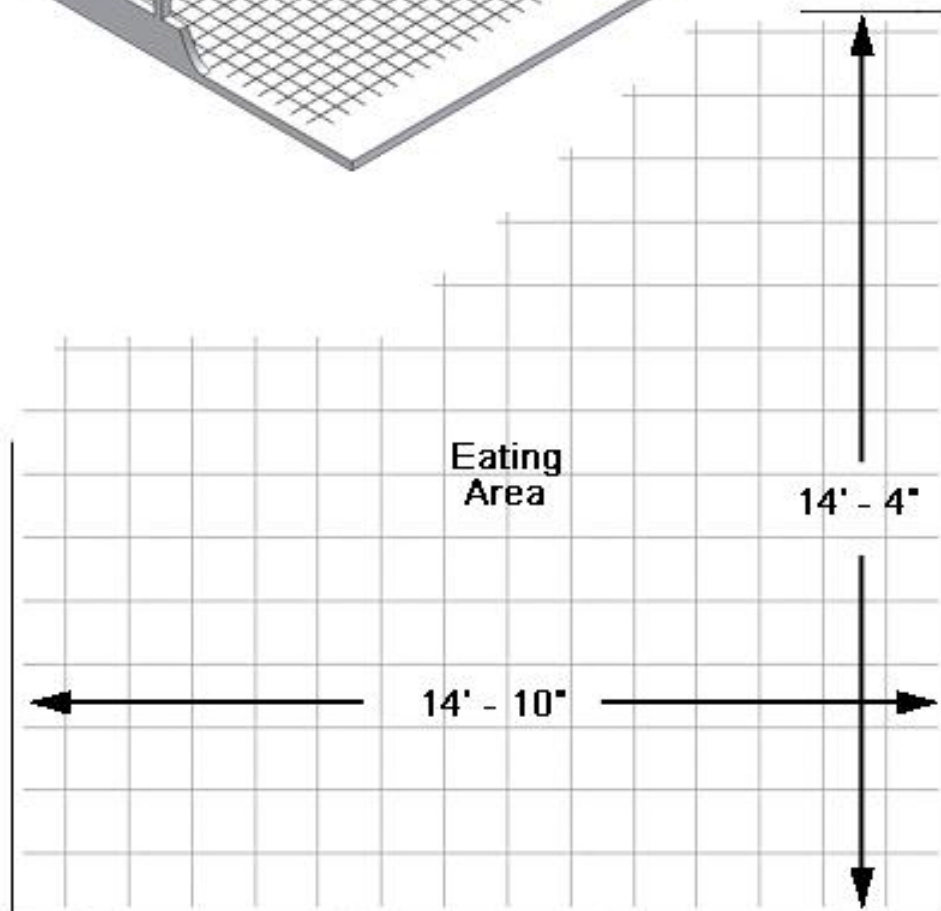
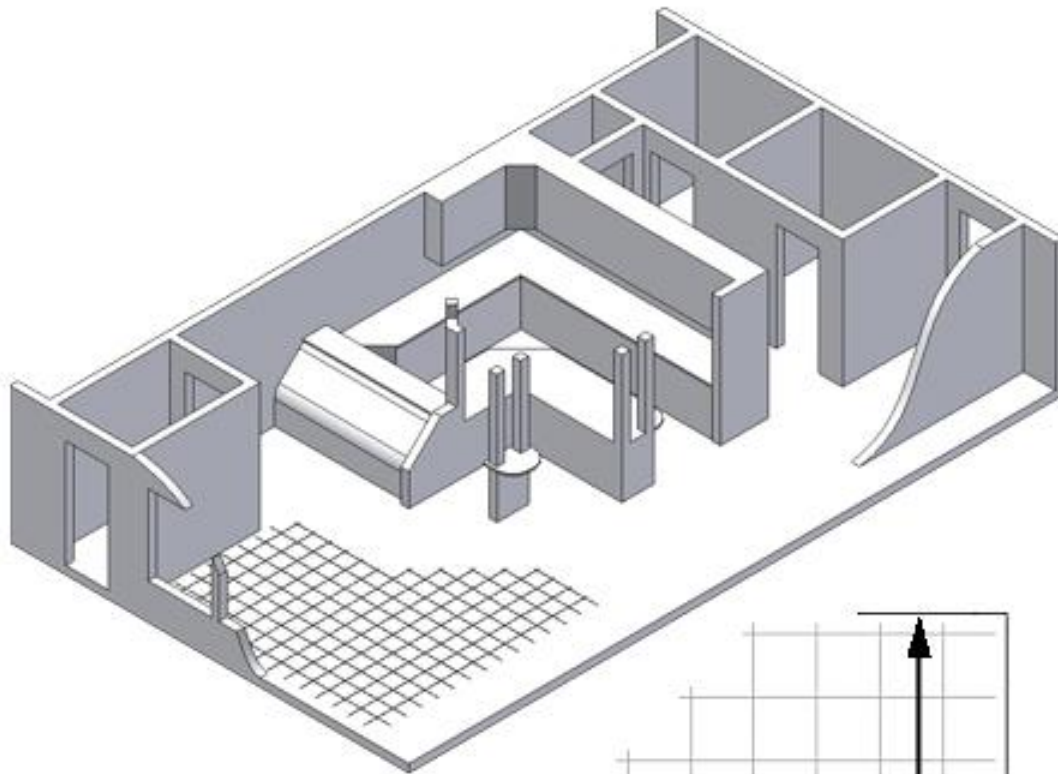
Problem Statement: The current lounge chair and living room-style seating areas in Mr. Smith's Coffee Shop are too large and cannot accommodate the growing number of patrons.

Design Statement: Design and model a modular table that will allow a greater number of patrons to be serviced at Mr. Smith's Coffee Shop.

Constraints:

1. Minimum of two (2) adults seating per table.
2. Modular table design must interlock for stability.
3. Maximum material costs are \$200 per table.
4. Maximum weight limit of 50 lb per table.
5. Initial design concept is due in 1 week.





Note: Each tile is 12" x 12"

Antique Goblet Display Case

Client: Sweeney & Meltzer Antiques LLC

Designer: _____

Problem Statement: Existing shipping containers for antique goblets provide protection while in transit but do not allow for easy viewing of the goblet. Existing display cases offer great visibility but do not protect goblets during shipping. The owner of an antique priceless goblet has agreed to allow the artifact to travel among museums only if the item will be protected and if people will be able to clearly see it.

Design Statement: Design a shipping container for an antique goblet that will protect the goblet during shipping but can also be used to give an unobstructed view of the goblet when it is on display. The case should be able to be modified on the inside to accommodate other goblets that vary slightly in size. Also the case should be designed to fit into a larger flight case that holds four (4) of the display cases.

Constraints:

1. The container must accommodate the goblet provided by the client. The file has been provided for your use in the design (grail.ipt).
2. The case must be made of 8 parts minimum, with each team member creating 4 parts minimum.
3. The case must be assembled with simple joinery (no butt joints). Constraints do not count as joinery.
4. The case should be designed to fit four (4) cases into the flight case provided by the museum. See photo at end of document.
5. The case must have a device that holds the goblet secure when the case is open and does not obstruct the viewing of the goblet.
6. The case must have a latch or locking mechanism to provide a secure closure while in transport.

Image of the Goblet (grail.ipt)



Goblet Specifications:
Overall Height = 7.59 inches
Base Diameter = 3.96 inches
Mouth Diameter = 4.97 inches

Image of Flight Case



Flight Case Specifications

Exterior Dimensions	Interior Dimensions **
Height = 22.5 inches	Height = 21 inches
Width = 26.75 inches	Width = 25.25 inches
Depth = 13.5 inches	Depth = 12 inches
** These values do not include any interior case padding.	

Recreational Chair

Client: Sun lovers Inc.

Target Consumer: Families, teens, adults

Designer: _____

Problem Statement: Consumers have to purchase different chairs in order to partake (participate) in multiple recreational activities, making it costly and creating storage problems when not used.

Design Statement: Design, build, test, and present a multi-use portable chair designed to allow a person to use it in a stadium, at the beach, or park. This design should be tested and approved by the majority of a random sampling of consumers.

Constraints:

- Holds a least 3 different items
- Support 2 different functions (eating, reading, etc)
- Available in multiple colors
- Easy to clean
- Easy to transport
- Must be affordable

Happy Meal Toy Virtual Design

Client: McDonald's Restaurant Chain

Target Consumer: Children 3-7 years old

Designer: _____

Problem Statement: McDonald's has recently acquired the film rights to all Disney Entertainment films. The first film project that they are going to use in the Happy Meal is based on the film "Rolie Polie Olie – The Great Defender of Fun."

Design Statement: Design a Happy Meal Product Line based on the Disney Film "Rolie Polie Olie – The Great Defender of Fun". The toy should reflect the theme of the film.

Constraints:

1. The toy must reflect the theme of the film.
2. The toy must be made up of at least 5 parts.
3. The toy must be able to do something related to the film (i.e., ride, fly, etc.).
4. The toy must have an additional feature that functions as an accessory.
5. The toy may not exceed 3" x 3" x 5".
6. The toy must comply with U.S. Consumer Safety Commission's child safety regulations.

Note: You must prove that the toy complies with toy safety regulations

Wooden Mechanical Toy

Client: Craft supply and toy sellers

Target Consumer: People who like to construct home craft projects

Designer: _____

Problem Statement: Do-it-yourself home projects are becoming increasingly popular. People are often looking for beginner to intermediate home craft projects.

Design Statement: Design and model a mechanical toy that can be assembled with small brads and/or glue.

Constraints:

1. Must be a free standing toy.
2. May not have a footprint that exceeds 6" depth x 12" width x 10" height.
3. Must be manually operated.
4. Must have a minimum of three separate motions or moving actions once assembled.
5. Must be made of wood or plastic.
6. Motions should be cause/effect.