

Puzzle Cube Design Brief

Client: Fine Office Furniture, Inc.

Target Consumer: Ages 3+

Designer: You

Problem Statement:

A local office furniture manufacturing company throws away tens of thousands of scrap $\frac{3}{4}$ inch hardwood cubes that result from its furniture construction processes. The material is expensive, and the scrap represents a sizeable loss of profit.

Design Statement:

Fine Office Furniture, Inc. would like to return value to its waste product by using it as the raw material for desktop novelty items that will be sold on the showroom floor. Design, build, test, document, and present a three-dimensional puzzle system that is made from the scrap hardwood cubes. The puzzle system must provide an appropriate degree of challenge to a person who is three years of age or older.

Constraints:

1. The puzzle must be fabricated from 27 cubes.
2. The puzzle system must contain exactly five puzzle pieces that are uniquely colored.
3. Each individual puzzle piece must consist of at least three, but no more than six cubes that are permanently attached to each other.
4. No two puzzle pieces can be the same..
5. The five puzzle pieces must assemble to form a cube.
6. Some puzzle parts should interlock.