

PUZZLE CUBE

By Om Patel
BVT
Engineering & Robotics
1-14-21



TABLE OF CONTENTS

- : Design Brief
- : Constraints
- : Dial Caliper Measurements
- : 20 Puzzle Cubes Sketches
- : Plastic Prototype Pictures
- : Colored Cube Layers
- : Wooden Puzzle Cube and Pieces



TABLE OF CONTENTS

- : Puzzle Cube Instructions
- : Puzzle Cube Packaging Pictures
- : Picture of Puzzle Cube in Inventor
- : Drawing of Puzzle Cube from Inventor
- : Project Reflection

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 seven years of age or older.

Design Brief

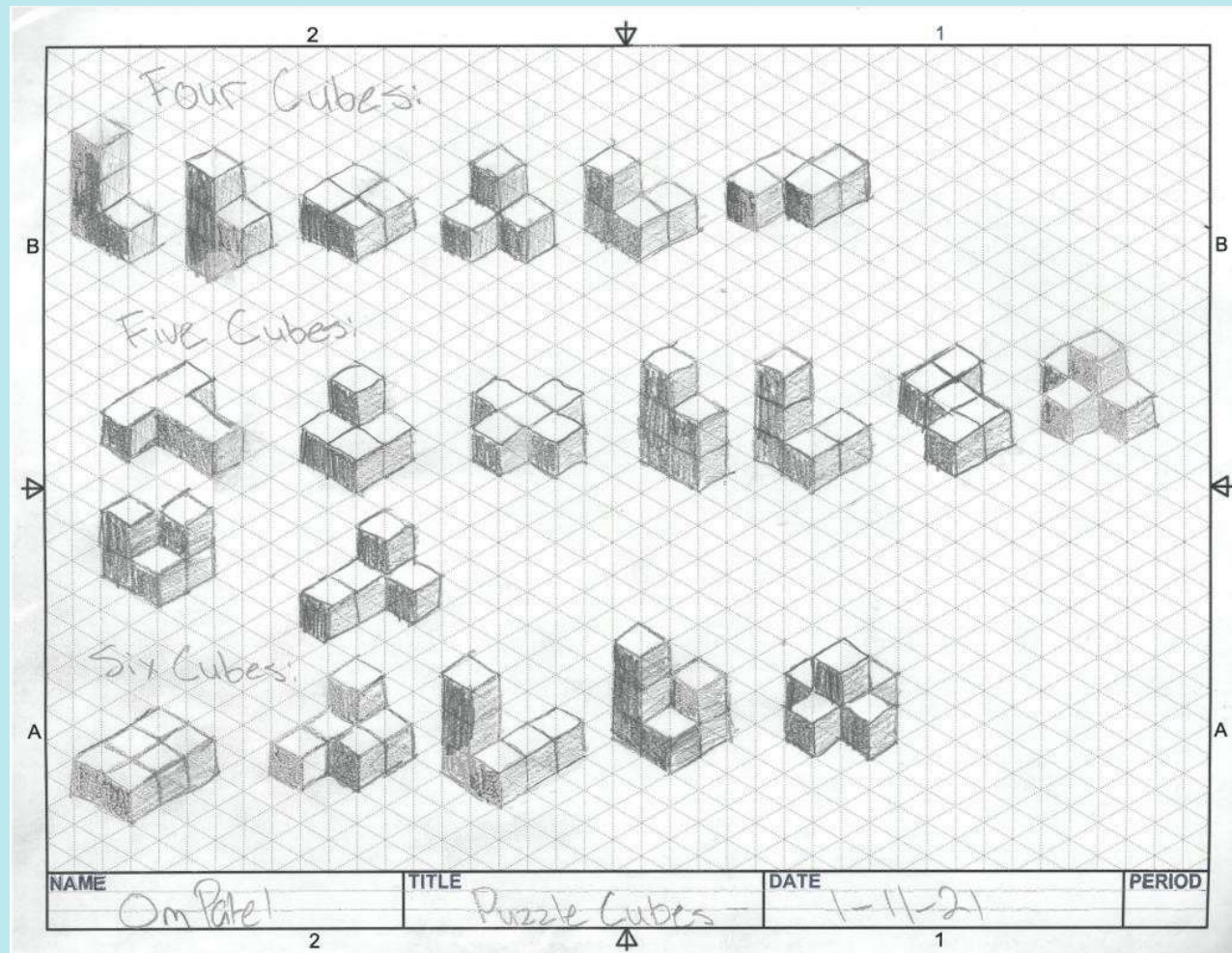
1. The puzzle must be fabricated from .76"- .74" hardwood cubes.
2. The puzzle system must contain exactly five puzzle pieces.
3. Each individual puzzle piece must consist of at least four, but no more than six hardwood cubes that are permanently attached to each other.
4. No two puzzle pieces can be the same.
5. The five puzzle pieces must assemble to form a 2.25" cube.
6. Puzzle parts should interlock.

Constraints

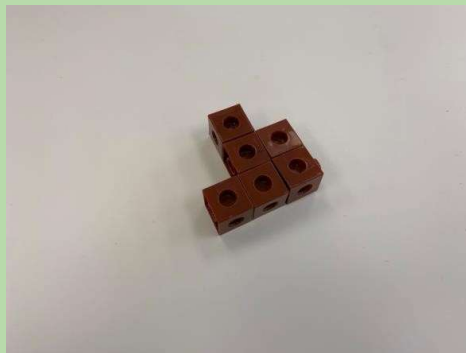
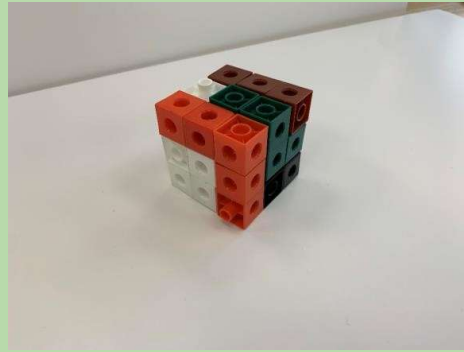
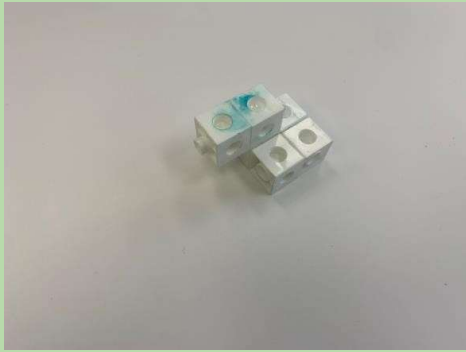
Block	Dimension
1	0.7531
2	0.7508
3	0.7557
4	0.7491
5	0.7544
6	0.7523
7	0.7506
8	0.7479
9	0.7568
10	0.7519
11	0.7490
12	0.7421
13	0.7552
14	0.7489
15	0.7533
16	0.7542
17	0.7516
18	0.7481
19	0.7539
20	0.7407
21	0.7503
22	0.7441
23	0.7509
24	0.7442
25	0.7505
26	0.7437
27	0.7517

Mean	0.7502
Median	0.7508
Mode	#N/A
Max	0.7568
Min	0.7407
Range	0.0161
Standard Deviation	0.0041

Dial Calipers Measurements



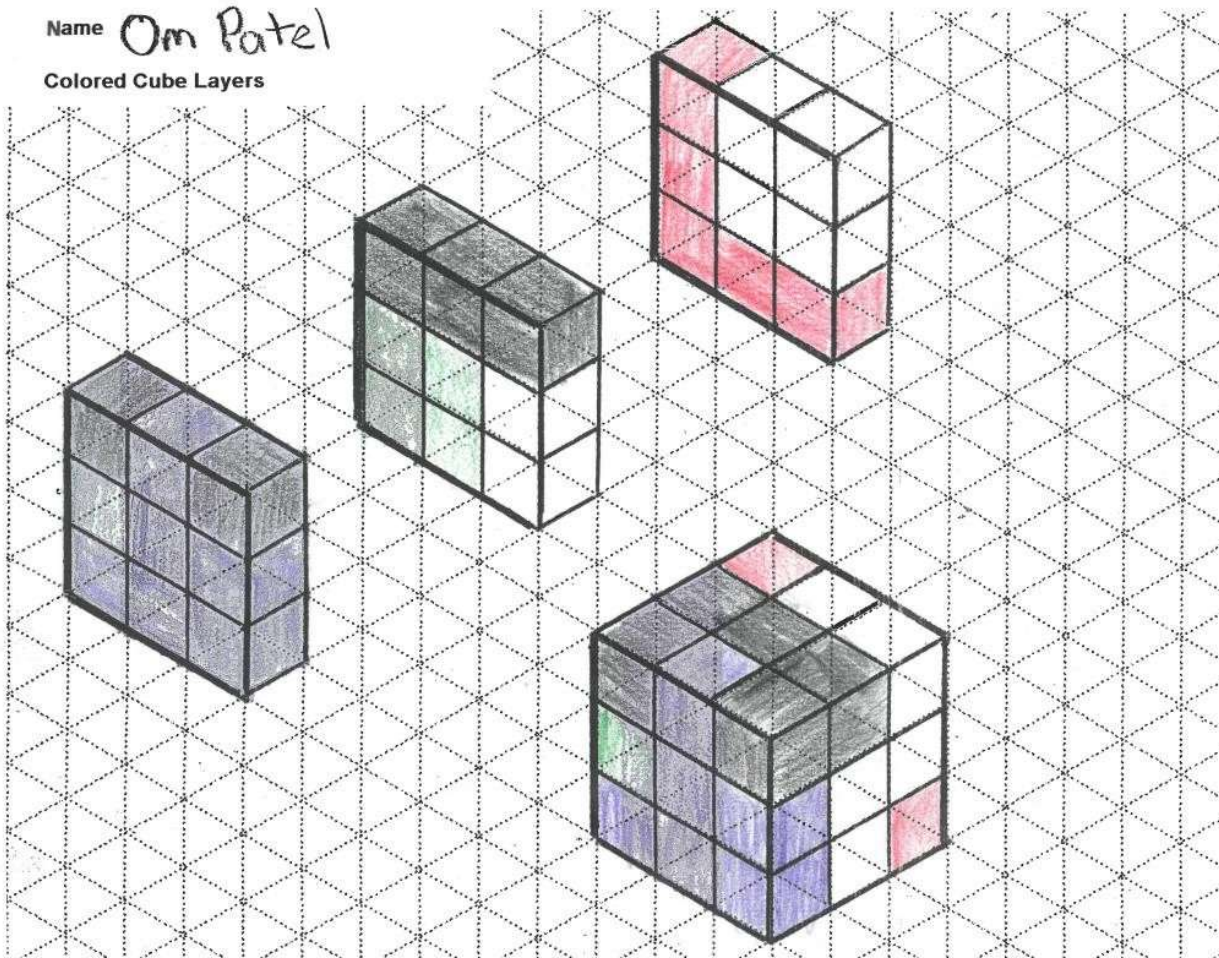
20 Puzzle Cubes Sketches



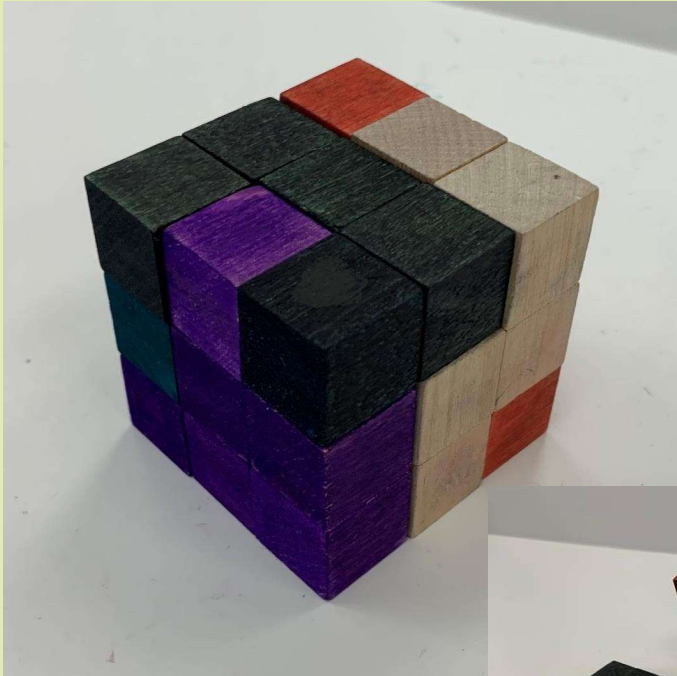
Plastic Prototype Pictures

Name Om Patel

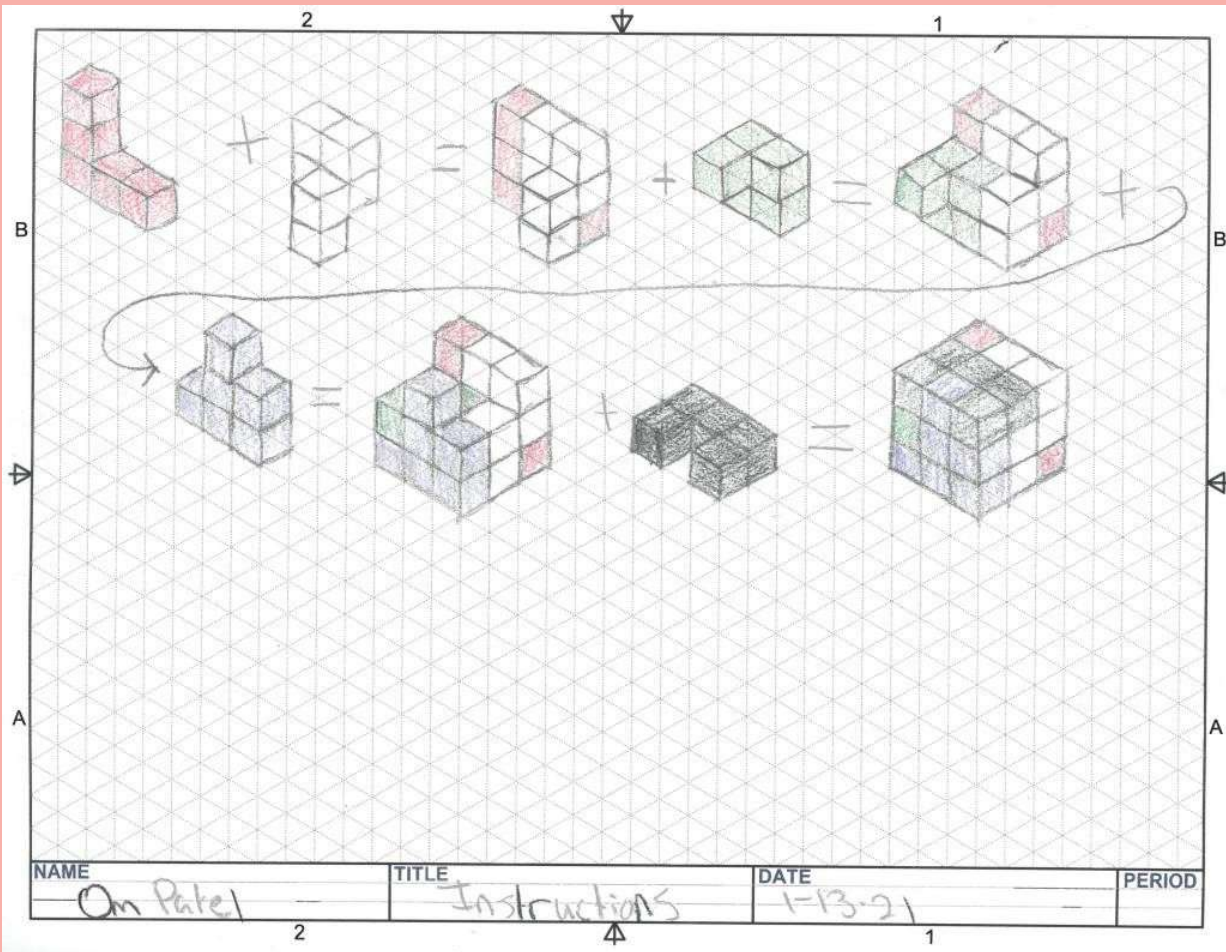
Colored Cube Layers



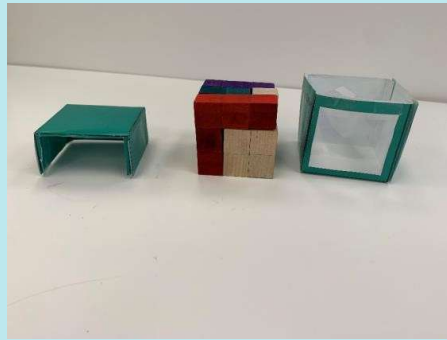
Colored Cube
Layers



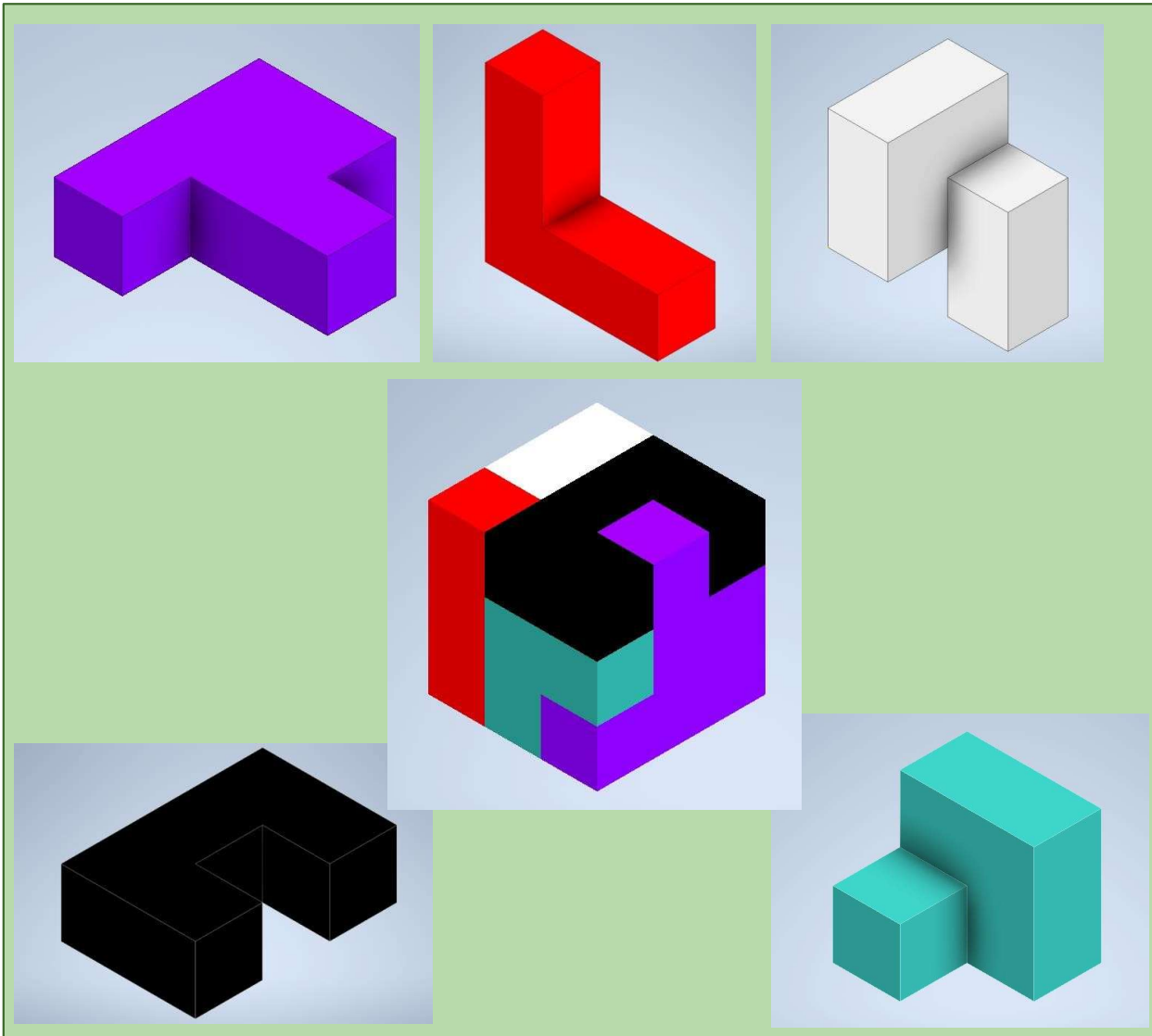
Wooden
Puzzle Cube
and Pieces



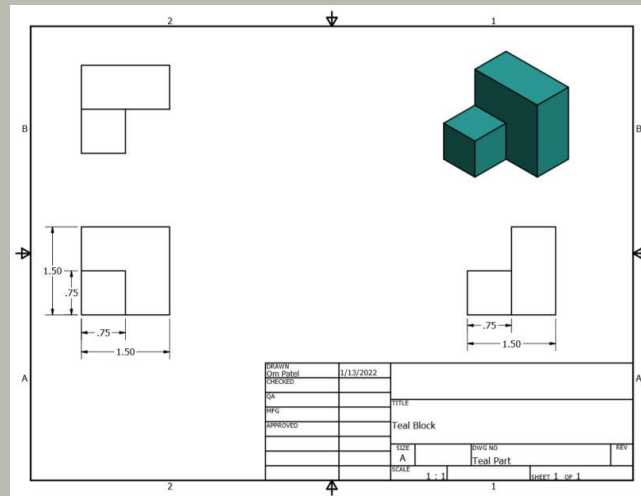
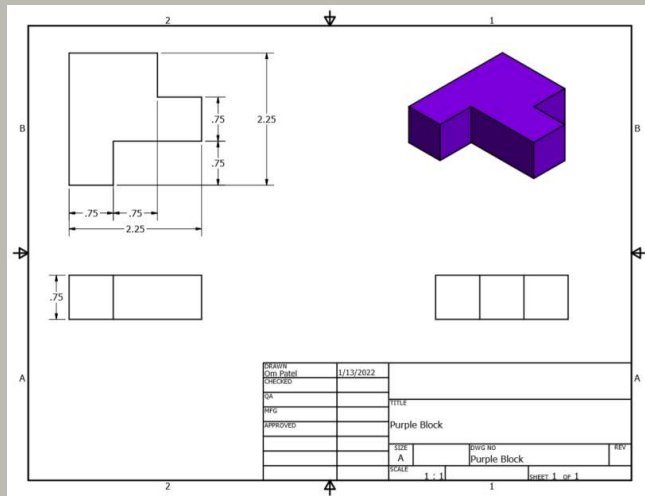
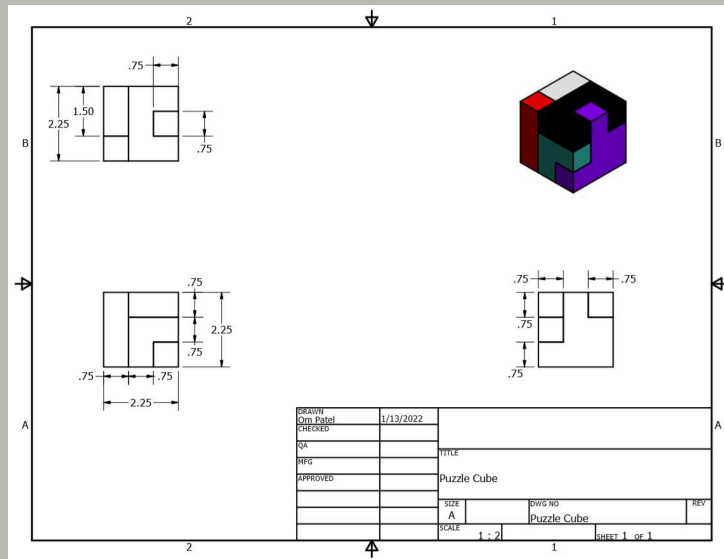
Puzzle Cube Instructions



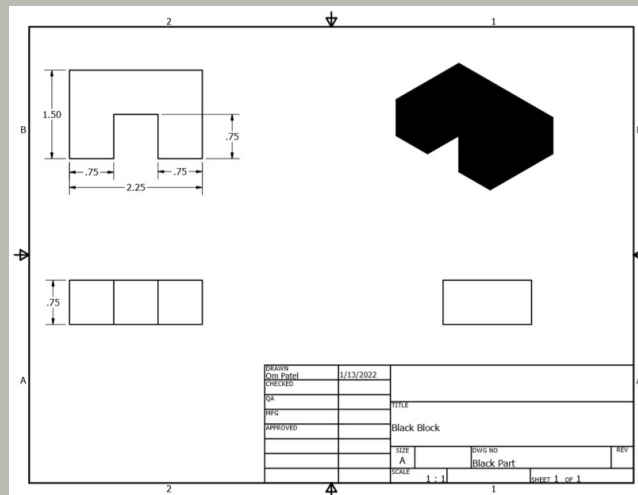
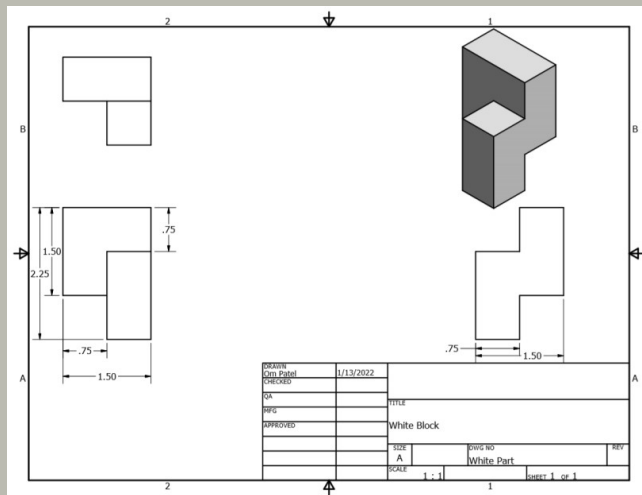
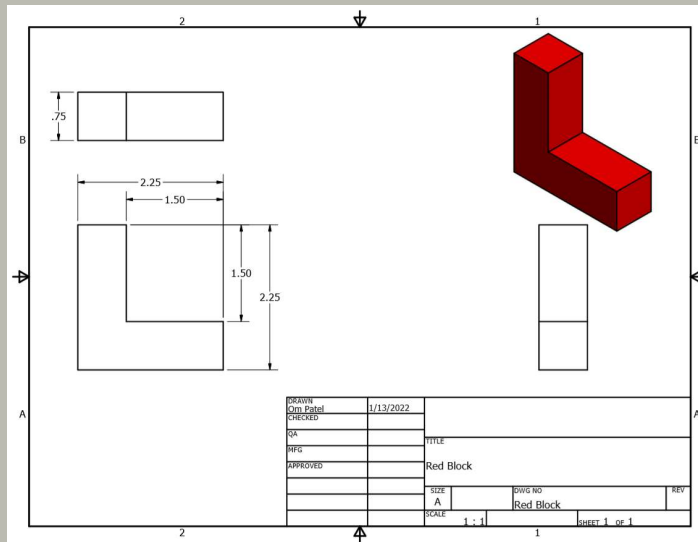
Puzzle Cube Packaging Pictures



Picture of
Puzzle Cube in
Inventor



Drawing of
Puzzle Cube
from Inventor



Drawing of
Puzzle Cube
from Inventor