1.4: Puzzle Cube

- 17 Days
- 1.4.1 Puzzle Design Challenge
- 1.4.2 Puzzle Part Combinations
- 1.4.3 Packaging Design
- 1.4.4 Marketing
1.4: Puzzle Cube

Lesson Plans:
• Study Guide 1.4
• Essential Questions 1.4
• Project 1.4.1: Puzzle Design Challenge
• Notes: Design Process
• Activity 1.4.2: Puzzle Part Combinations
  – Isometric Graph Paper
• Notes: Sketched Puzzle Parts Example
• Notes: Sketched Puzzle Parts Solution
• Rubric 1.4.1: Puzzle Design Challenge
• Model
• PowerPoint 1.4: Marketing
• Video: Happy Fun Ball
• Activity 1.4.3: Puzzle Cube Package
• Rubric 1.4.3: Puzzle Cube Package
• Worksheet 1.4: Word Search
• Worksheet 1.4: Cross Word Puzzle
• Quiz 1.4: Key Terms
• Daily Review at Beginning of Class
1.4: Puzzle Cube

**Essential Questions**

1. Why is a design process so important to follow when creating a solution to a problem?
2. What two-dimensional shapes are most often associated with three-dimensional forms?
3. What is the difference between a geometric constraint and a numeric constraint?
4. Why would you create a prototype of a product before the actual production takes place?
1.4: Puzzle Cube Combinations

**Brainstorming**

- Sketch the following:
  - 3 cube combinations (2 or more)
  - 4 cube combinations (4 or more)
  - 5 cube combinations (4 or more)
  - 6 cube combinations (4 or more)
  - Isometric Graph Paper: 1 grid = 1 cube
  - Tonal Shading

- Sketch parts & assembled product (2 sets)
  - Non-identical parts (5 per set)
    - no more than 6 cubes per part
  - 3x3x3 Puzzle Cube assembly (1 per set)
    - Isometric Graph Paper: 2 grid = 1 cube
    - Color tonal shading
1.4: Puzzle Cube Portfolio

Criteria for Puzzle Cube portfolio

- File saved as (i.e. smithj-1.4-puzzle cube) in a folder called “1.4-Puzzle Cube” in a folder called “Unit 1”

- Cover Page with no borders
- Assembly with labeled parts, parts list, & major dimensions (1 set)
- Presentation with labeled parts
- Parts (5) with major & minor dimensions
- Sketches (2 sets) colored
- Brainstorming Sketches
  - Puzzle Combinations
- Stapled together with binding
- Model
- Packaging