



Drexel-SDP GK-12 LESSON

- Lesson Title and Identifier:

Title: Visualizing Math: Engineering Drawings and the Holidays

Identifier: 2.4

- Module: Math
- Grade Level: 6th
- Subject Area (Unit): Math
- Concept:
 - Front View
 - Right View
 - Top View
 - Orthographic View
 - Isometric View

- Objectives:

This exercise will give students a chance to practice using a 2D representation to obtain a 3D object. This will also exercise their measurement skills. This should be conducted just prior to the Winter Holidays.

- Keywords: measurement, isometric, engineering drawing
- PA Academic Standards:
 - Math** 2.3 Measurement and Estimation
 - 2.9 Geometry
- Setting/Group Size: 30 students
- Duration/Time Required: 1 class period
- Materials List (include safety equipment if applicable)
 - Engineering Drawings
 - Pencil



Construction Paper (At least two different colors)
Protractors
Scissors
Glue
Rulers

Step 1: Review the parts of an engineering drawing and the drawing created in the last activity.

Step 2: Introduce the activity. Also hand out the engineering drawings. Discuss any questions the students might have about the drawings. (If you are working in groups, suggest an assembly line process or creating one set of parts and using those for models.)

Step 3: Hand out supplies to the students and let them create/manufacture the product. The engineering drawings are in the appended attachments A, B, C, D, and E.

- Assessment

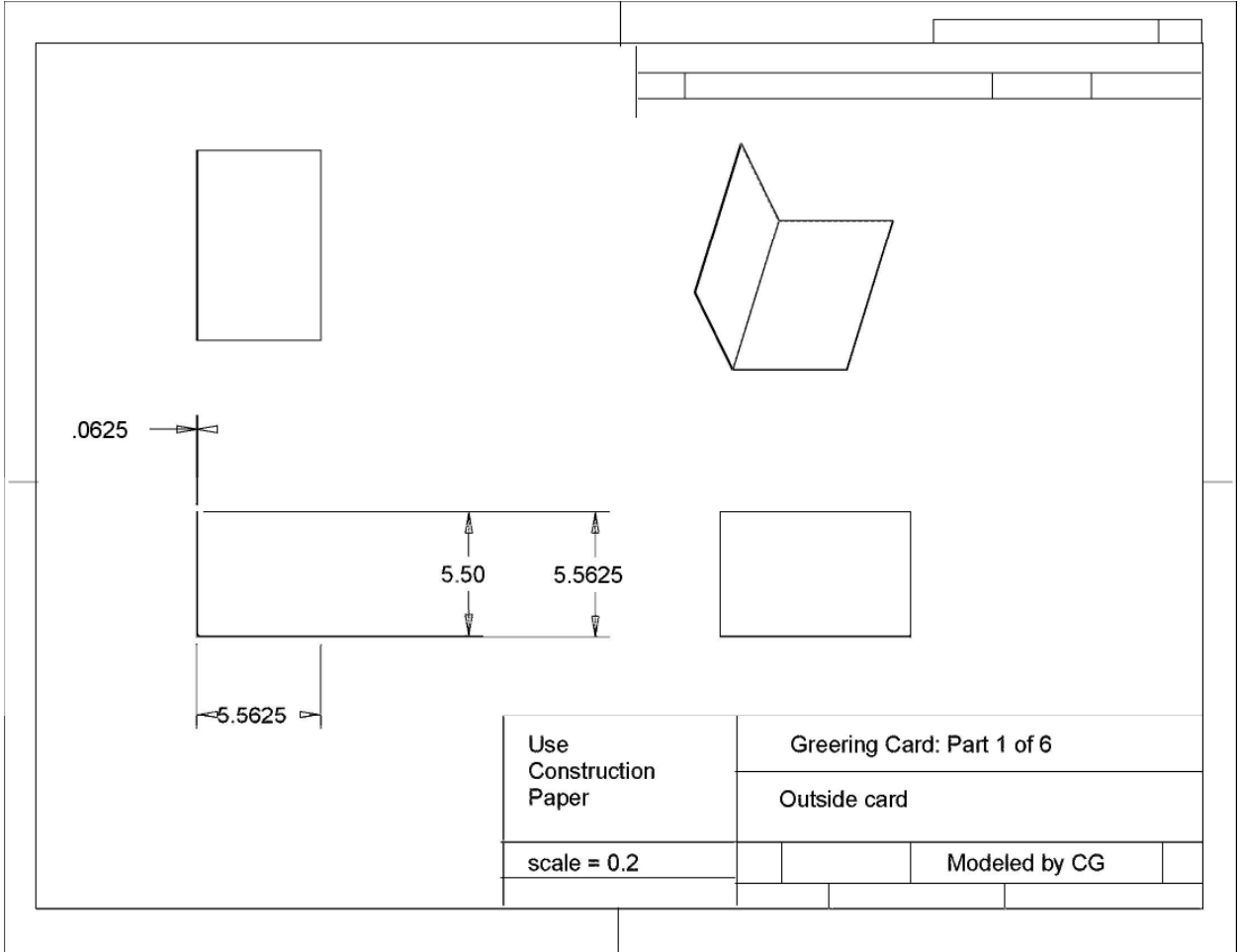
You will be evaluated on a scale from 0 to 4 on:

_____ _____ _____
Participation Task Completion Dimension Correctness

- Authors

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Attachment A (outer card)



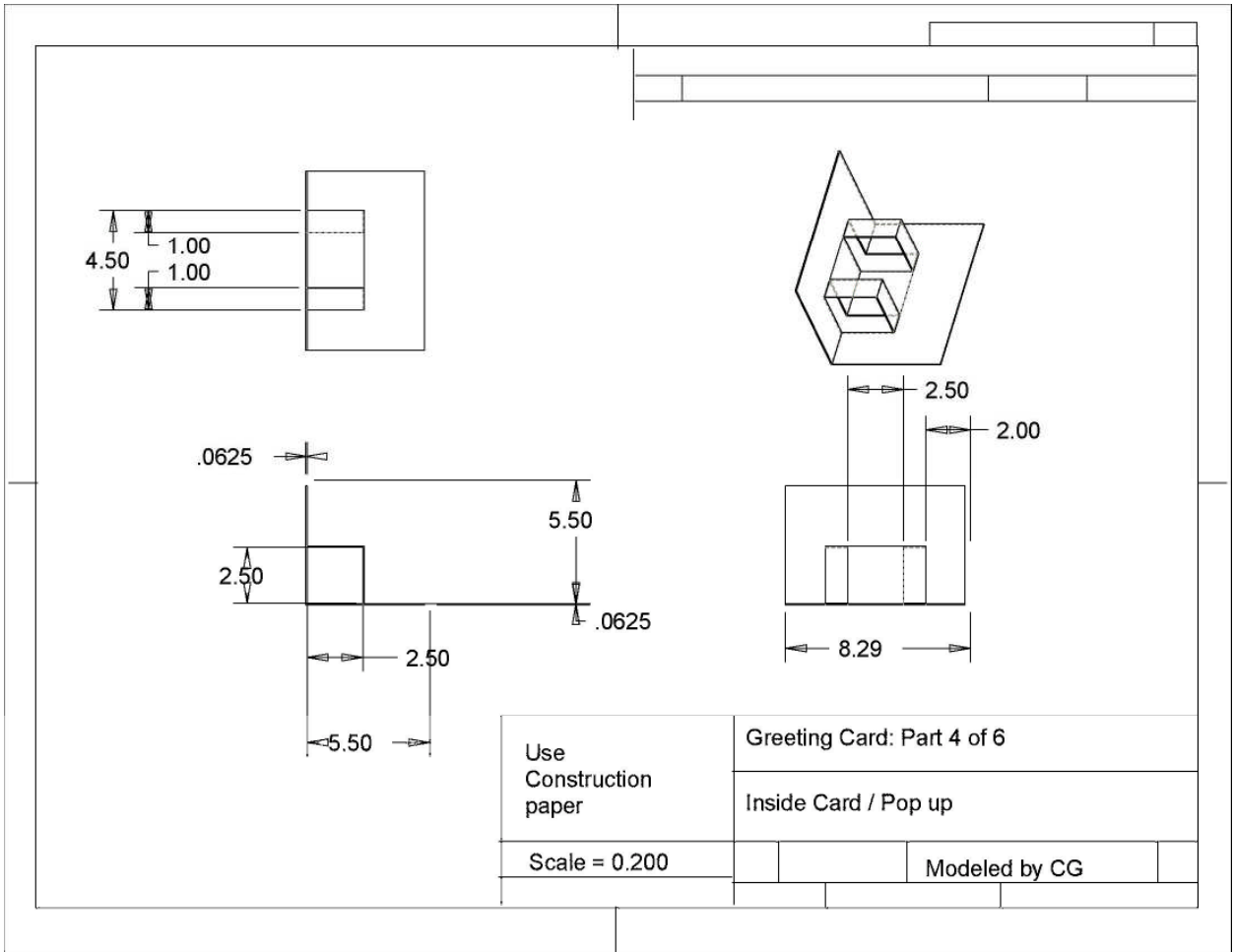
Attachment C (outer card star)

The drawing shows a star-shaped card attachment with the following dimensions and features:

- A horizontal strip with a thickness of $.0625$.
- A star shape with a vertical height of 1.96 and a horizontal width of 1.09 at its top edge.
- Angles of 18.00° and 36.00° are indicated at the top and bottom points of the star.
- A vertical strip is shown below the star.
- A larger star shape is shown in the upper right, representing the final assembly.

| | | | |
|------------------------------|----------------------------|---------------|--|
| Use Construction Paper | Greeting Card: Part 3 of 6 | | |
| | Outside Decoration | | |
| Scale = 1.0 | | Modeled by CG | |

Attachment D (inner card)



Attachment E (inner card tree)

