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Perspective on a String

Colorful string art + linear perspective = line art that POPS!

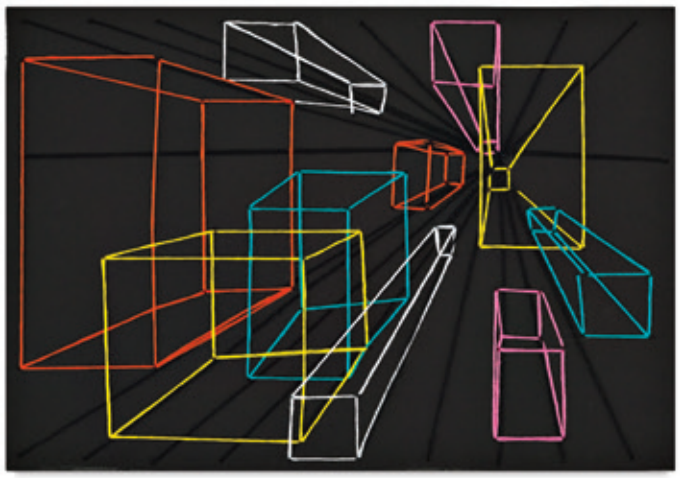
(art + math)

Mathematician Mary Everest Boole first used stitched cards in the 19th century to help strengthen her students' understanding of geometry and algebra. Her work inspired sculptors Henry Moore and Naum Gabo to produce works that incorporated string, and in the late 1960s string art became extremely popular as a decorative craft.

Linear perspective in art is a geometrical way to depict objects as three-dimensional on a two-dimensional plane. It uses straight lines projected from defined points in the same manner as string art. So, to combine string art with perspective is really only a matter of changing up materials.

The traditional way to create string art is to suspend thread or wire above the surface with nails or pins. This lesson plan uses a process more like Mary Boole's stitched cards by pulling string through holes pierced in foamboard. The foamboard is rigid enough to remain flat and secure the string, even if pulled tightly. It also has the benefit of being preprinted on one side with a light grid, making perfect spacing a breeze!

GRADES 9-12 Note: Instructions and materials are based upon a class size of 24 students. Adjust as needed.

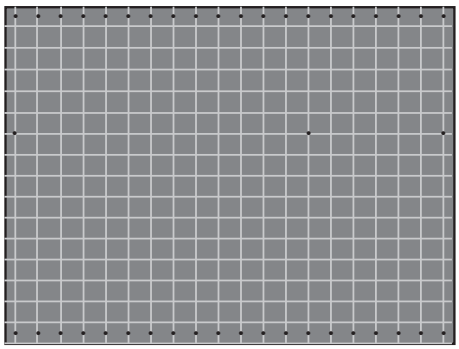


Preparation

1. Cut 20" x 30" gridded foamboard into 7-1/2" x 10" pieces (eight per sheet). As an option, create a grid on plain foamboard using a permanent pen and ruler.

Process

1. Starting on the gridded side of the foamboard, determine the horizon line by finding the halfway mark and choosing a line above it. It can be formatted either horizontally or vertically. Mark the horizon line with a pencil to make it stand out from the other grid lines.
2. Along the horizon line, choose a point where a vertical line intersects, and determine the vanishing point. Mark this with a dot. (Note: mark a dot at either end of the horizon line for two-point perspective.)
3. Using a push pin, punch holes on either end of the horizon line and on the vanishing point. Next, punch holes along each of the grid intersections at the top and the bottom of the foamboard. It should look something like illustration (A).



(A)

Materials (required)

Elmer's® Guide -Line Foamboard, 3/16" thick, 20" x 30" sheet, Black (13204-2053) or White, Package of 2 (13204-1043); share one sheet among eight students

Blick® No. 2 Pencil, Box of 12 (20341-4002); one pencil per student

Blick® Aluminum Non-Stick Rulers, 12" (56014-1012); one per student

Moore® Push Pins, Package of 100, assorted (57307-1009); share across class

Blunt Tapestry Needle #18, Package of 12 (66903-1009); need one per student

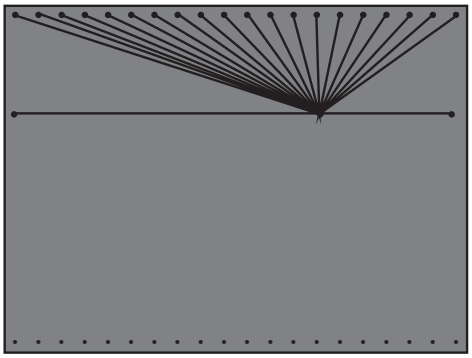
Creativity Street® Embroidery Floss, set of 24 skeins (63100-1009); share among class

Optional Materials

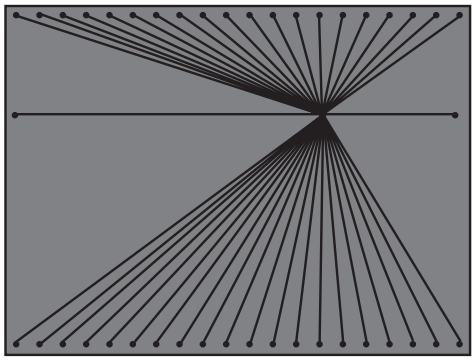
Maysville Cotton Warp, 8 oz, 800 yards (62800-)

Process - continued

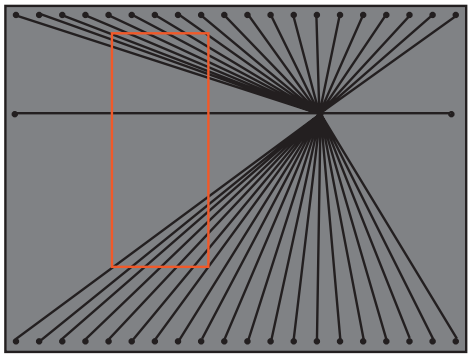
4. Choose a string that matches the foamboard color (Black or White). Cut a piece approximately 30" long and thread it onto a blunt tapestry needle. Knot the string at one end.
5. The gridded side of the foamboard will now be the back side. It doesn't matter what the back side of the board looks like, so when the string is finished, always try to tie it off on the back side. The needle will need to be reloaded frequently — it takes about 20 ft of string just to create the radial lines!



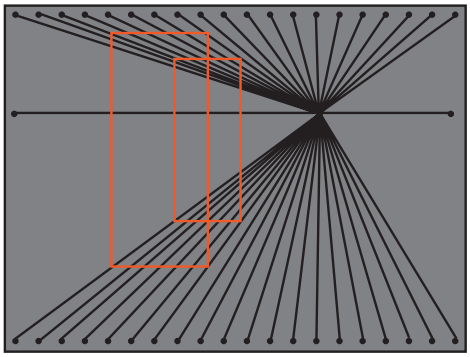
Step 1: *Stitch the horizon line. End at the vanishing point and stitch from the vanishing point up to the hole on the end of the row above. Continue stitching so that radial lines are created from all of the holes at the top of the board to the vanishing point.*



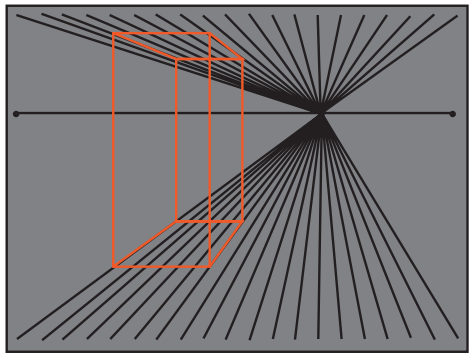
Step 2: *Stitch radial lines from the vanishing point to the holes at the bottom of the canvas.*



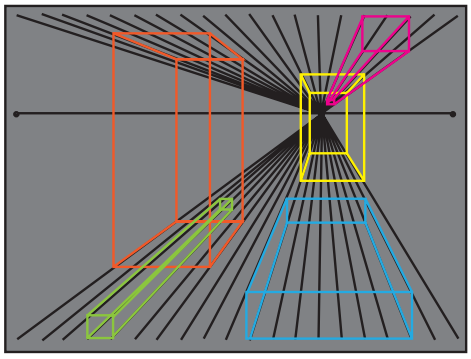
Step 3: *Choose a point on the far left radial and punch a hole with the push pin. Create a rectangle anchored on each corner to a radial line. Use the grid on the back side to line up the points. Stitch with brightly colored string.*



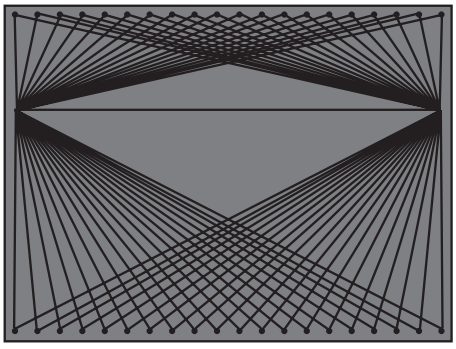
Step 4: *Create a second rectangle of the same color string, anchored on the same radial lines. The second rectangle will either be larger or smaller than the first, depending on the placement along the radial lines.*



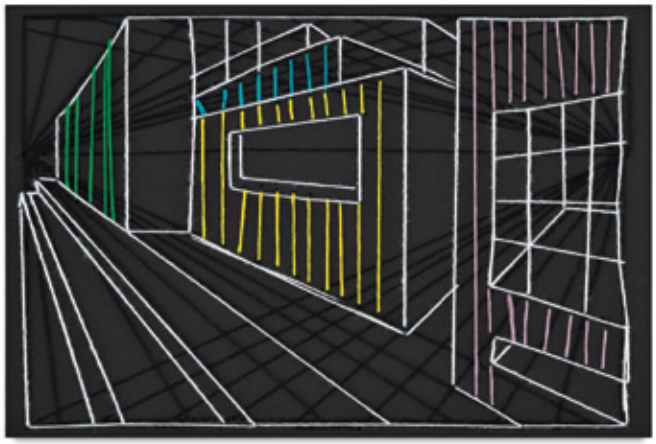
Step 5: *Join each of the corners with string of the same color. Notice that the color strings go right over the radial lines. Now, it looks like a 3-D box!*



Step 6: *Repeat the same steps to create more boxes. If the first rectangle is anchored to just the lower radial lines, then the second one will be, too. The same rule applies to boxes above the horizon line. Use different colors of thread and try for different shapes — they can overlap each other, too.*

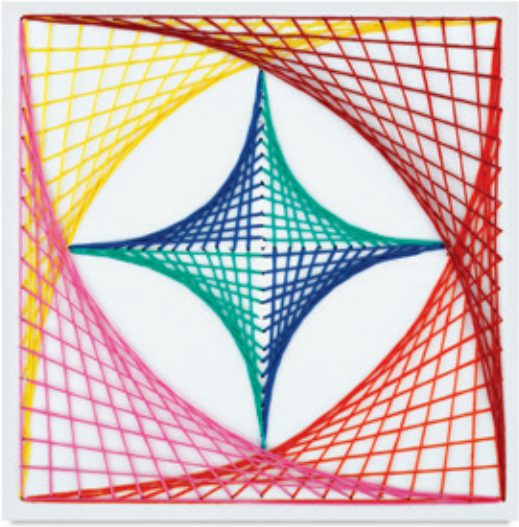


Step 7: *After you've mastered 1-point perspecive, try 2-point! The layout at left shows how the radial lines appear for 2-point perspective and the finished example is on the right.*



Options:

1. The punched foamboard base can be used for String Art as well as perspective drawing. Many patterns and instructions for pictures can be found by conducting a quick online search. Or, better yet, design your own pattern!



National Core Arts Standards - Visual Arts

Creating

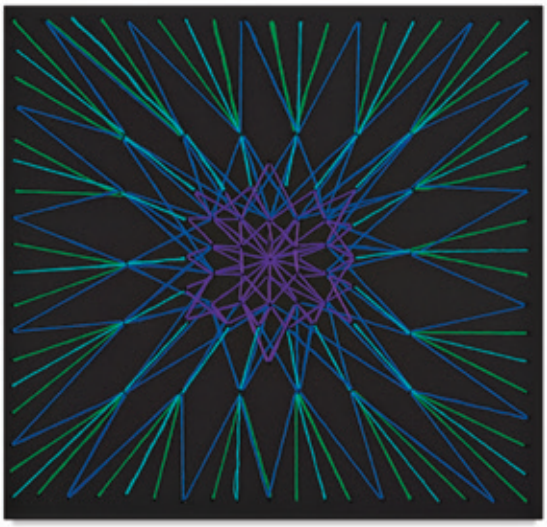
Anchor Standard 2: Organize and develop artistic ideas and work.

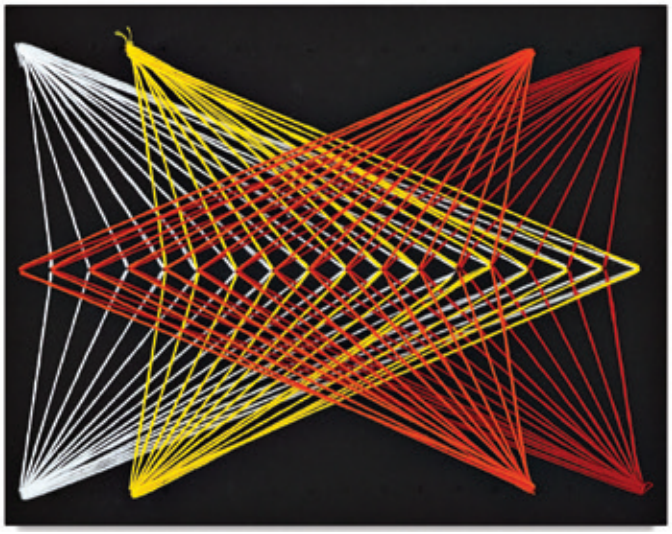
Presenting

Anchor Standard 4: Select, analyze, and interpret artistic work for presentation.

Connecting

Anchor Standard 10: Synthesize and relate knowledge and personal experiences to make art.





Watch the Lesson at:
https://www.youtube.com/watch?v=lkfOtExymX4&feature=youtu.be