Geometric String Design

The students enjoyed the opportunity to explore geometry in a creative venue. The designs turned out so nice that many students gave their creations as gifts for Mother’s Day.

Curriculum/State Standard
Use of transformations to demonstrate geometric properties.

Overview
It’s a pleasure to see students blending their creative art skills with standards-based math curricula. Students began by developing a line design using x and y coordinates, transformation, and geometry. They transferred their design onto mat board and sewed the lines with colorful embroidery floss.

Objectives
• The students will transform their line design into a colorful, creative geometric string art.
• The students will use their knowledge of symmetry, perpendicular, and reflection in their design.
• The students will practice their graphing skills by drawing on an x and y coordinate plane and formula the equations for their lines.

Materials
10”x10” mat board for each student, 2 skeins of embroidery floss for each student, 2 sewing needles with large enough eyes for 3 threads for each student, masking tape, pin cushion (recycled styroform works great), scissors, colored pencils, copies of the line design sheets

Readiness Activity
linear and parabolic graphing geometric transformation, symmetry, reflection, rotation

Strategies/Activities
Day 1: Introduction to Line Design handout.
Day 2: Students choose their 10”x10” design, must be completed before putting on the mat board.
Day 3: Students center their line design on their mat board using geometric constructions. Perpendicular to base, symmetry of color and design are all part of the final grading.
Day 4: Students punch sewing holes into their mat board.
Day 5-7: Students sew their designs.

Continued on the back . . .
“Geometric String Design” project continued . . .

**Culminating Activity**
The final product is impressive, creative, colorful, and rewarding. Students often comment, “This was easier than I thought” or “Cool looking.”

**Evaluation**
Attached to the back of the string design is the rubric where students have the opportunity to evaluate their final project along with me.