

Mathematical Symmetry in Visual Art Design

The Power of



University of Wisconsin-Eau Claire

Student Researchers: Austin Angell, Roslyn Cashman
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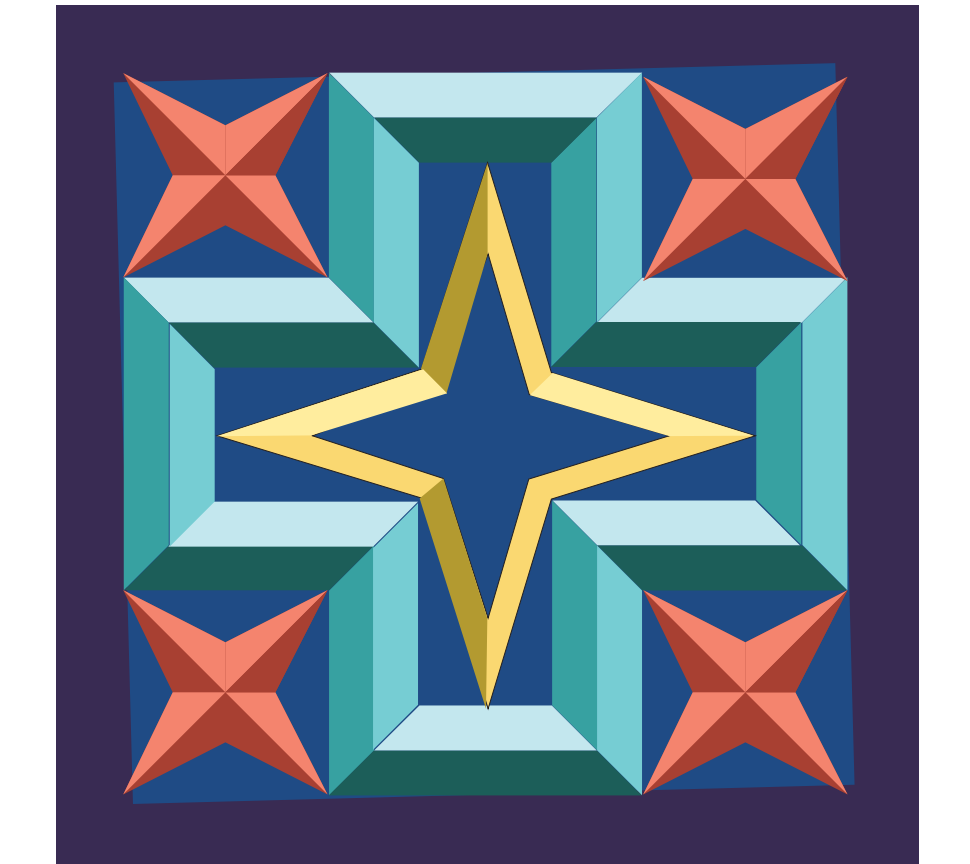
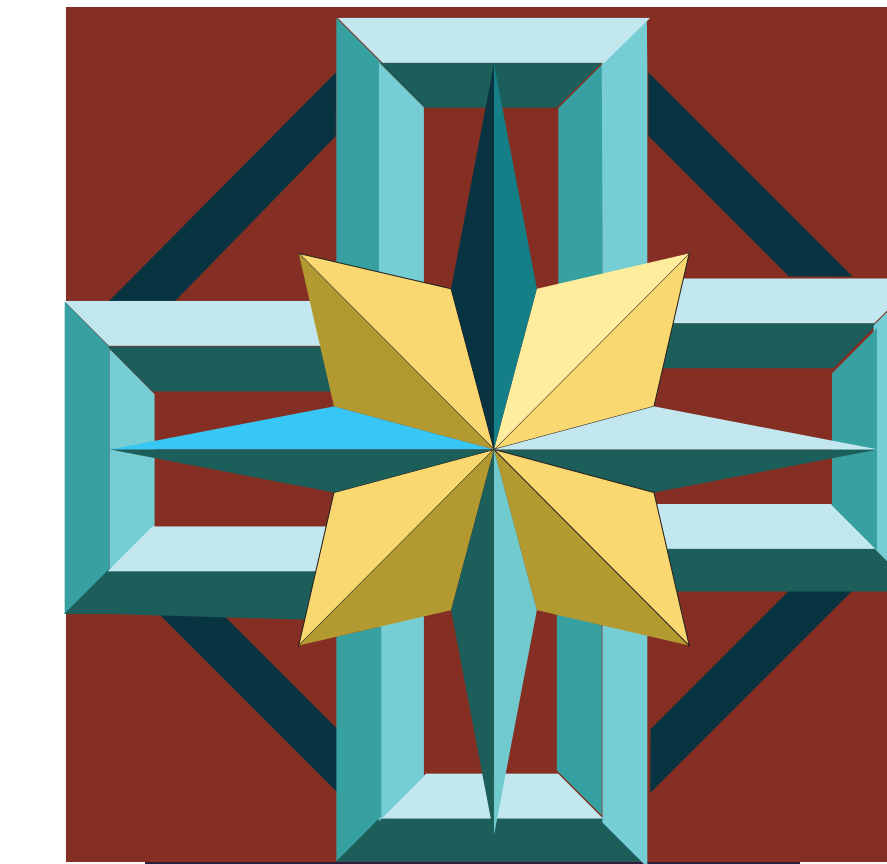
Departments: Art & Design, Mathematics, University of Wisconsin - Eau Claire

ABSTRACT

Our research project integrated aspects of the mathematical principle of symmetry, artistic imagination, and color theory to form three 3D quilts. Each student made an individual quilt prior to the final collaboration to become familiar with the techniques of

sewing and creative designs. The designs were made using Adobe Illustrator to ensure perfect symmetry, accurate measurements and proper perspective.

Preliminary designs

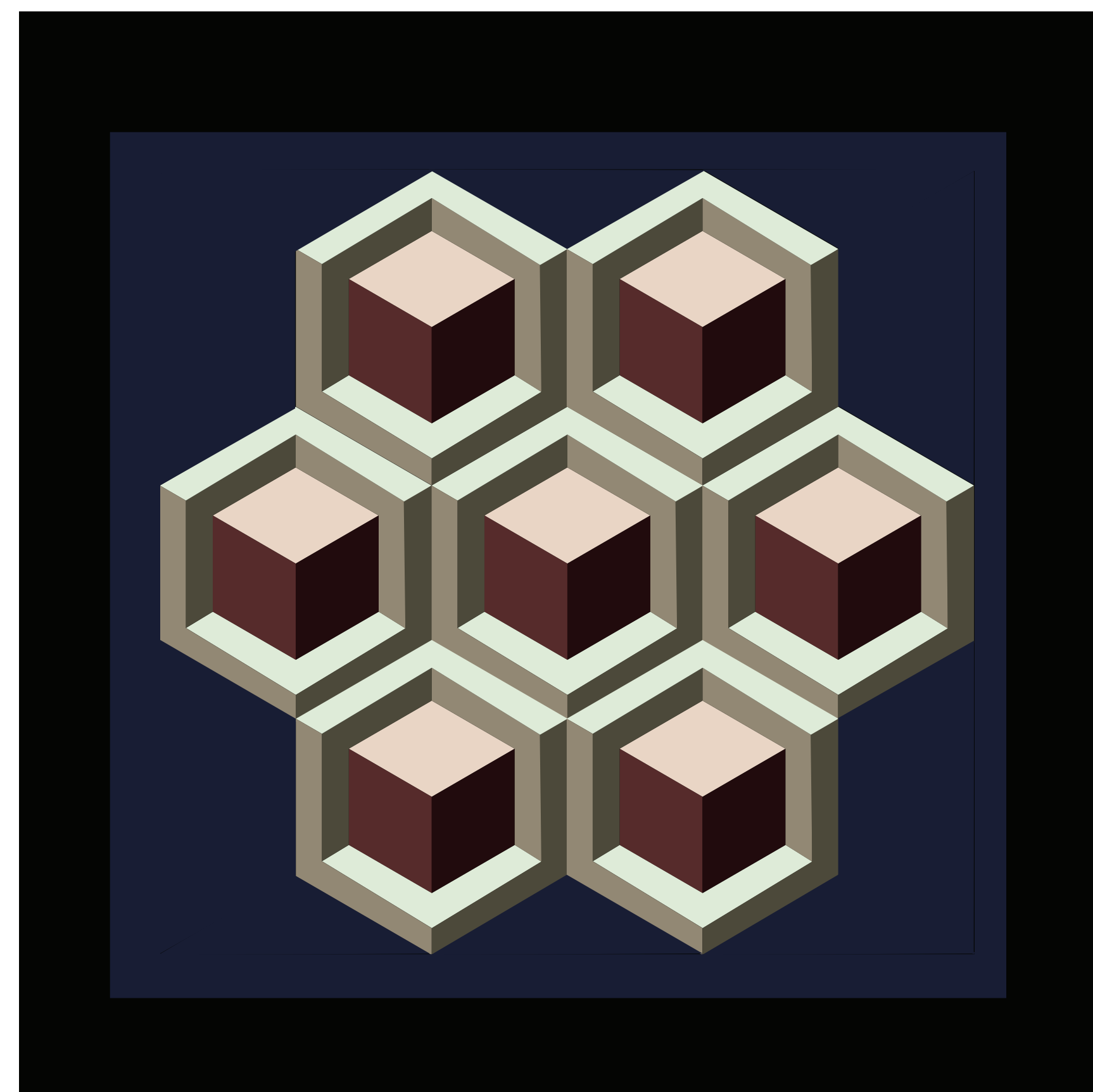


Frontier - Spring 2017

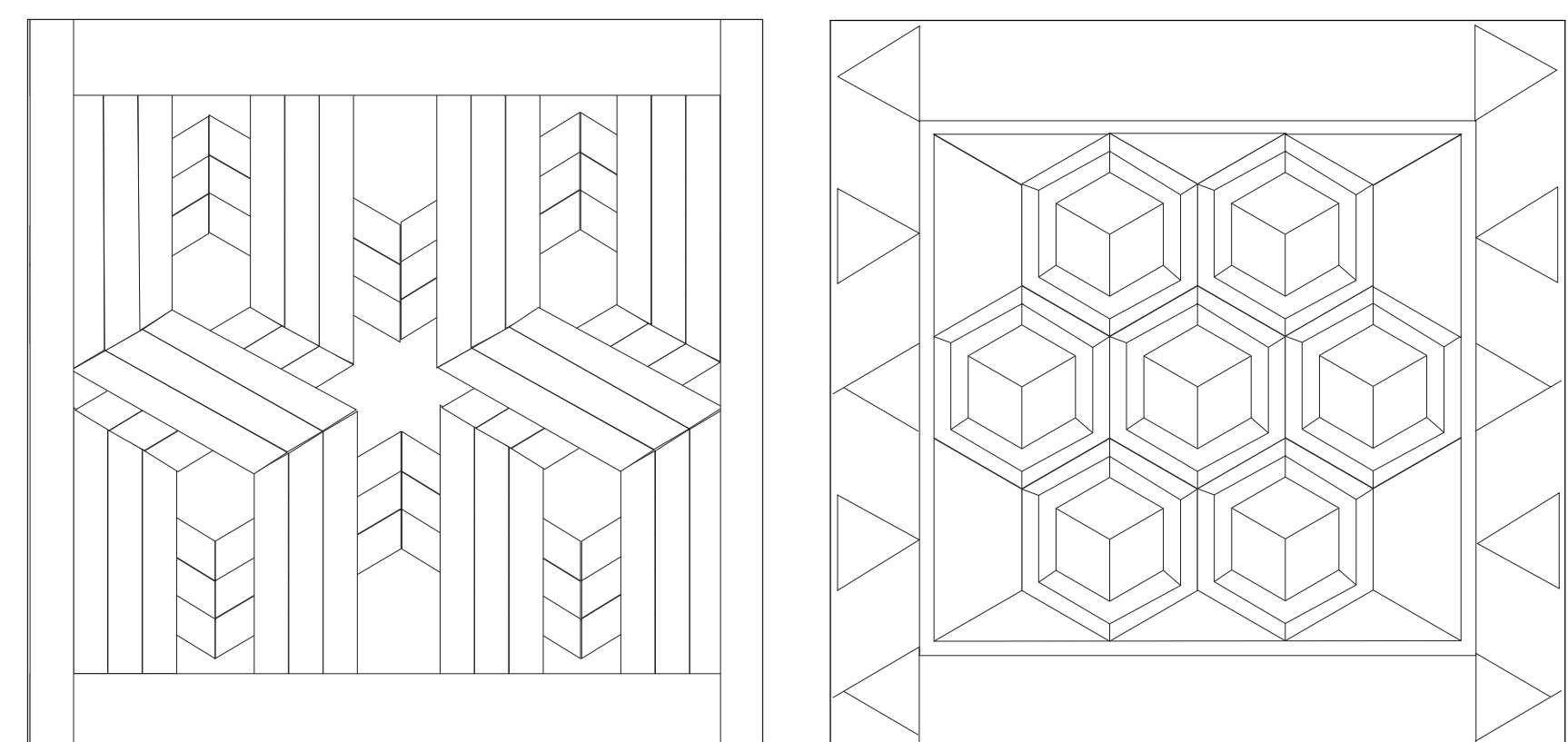


The collaboration is entitled Frontier. The focal point consists of three overlapping four-point stars in primary colors of red, yellow, and blue. The variation of value and saturation form the illusion of three-dimensions. The background contains a green diamond underneath a blue circle symbolizing the never ending process of discovery on an unknown frontier.

Nested Cubes - Fall 2016



Preliminary designs



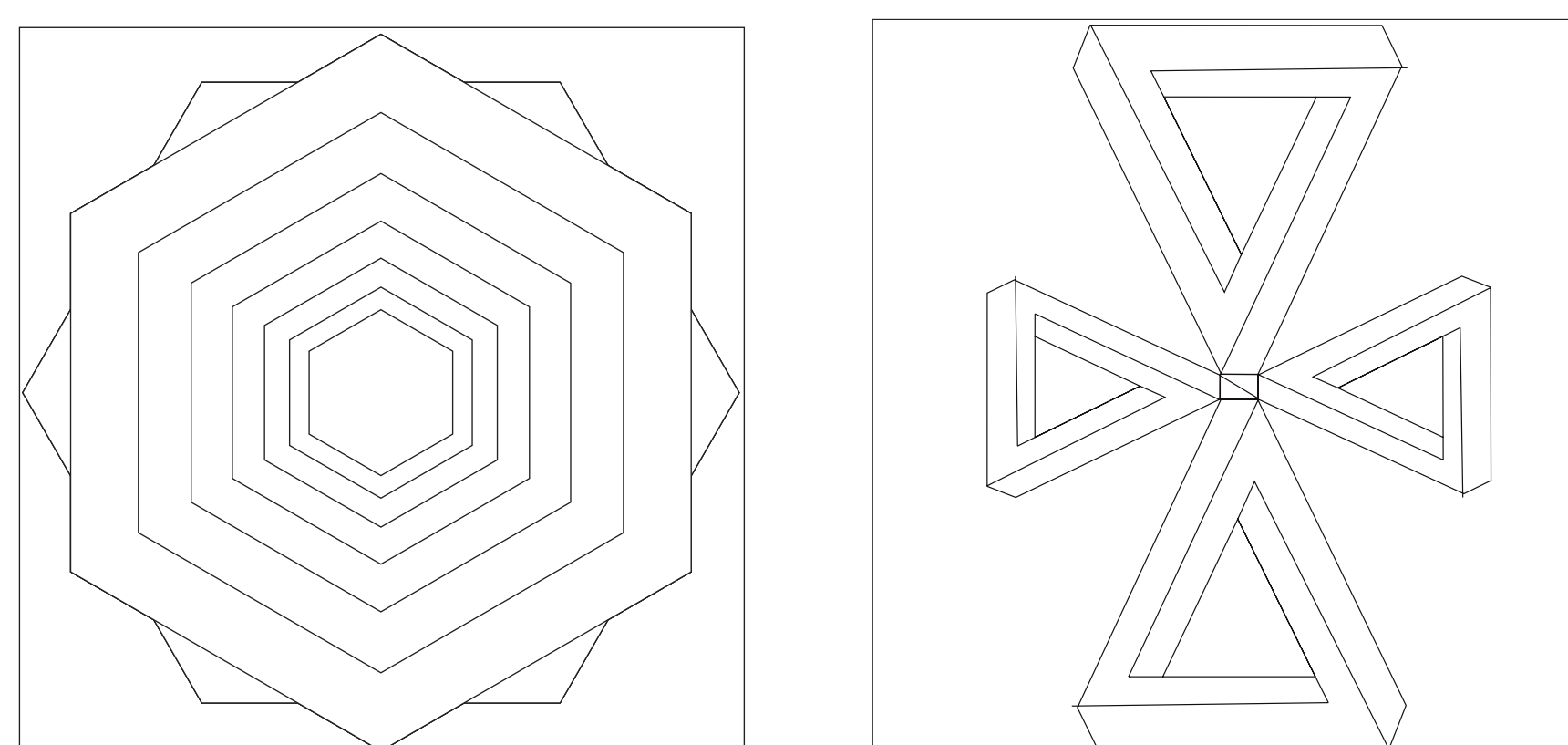
Roslyn Cashman created the quilt entitled Nested Cubes.

Equilateral triangles were used to construct hexagons. Using color theory she selected and arranged fabrics to create the illusion of nested, 3D cubes.

3D Mobius Stars - Fall 2016



Preliminary designs



Austin Angell created the quilt entitled 3D Mobius Stars.

Three pairs of 3D Mobius triangle and tetrahedron shapes were rotated 120 degrees to form a circular pattern. Using varying color schemes on each rotation creates the illusion of 3D lighting effects.

