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Curriculum Units by Fellows of the National Initiative

2019 Volume V: Perimeter, Area, Volume, and All That: A Study of Measurement

SmArt Math: Paper Polyominoes and Ceramic Tetradic Cuboids

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by Tina Berry

Math and art skills are combined in this SmArt Math unit. The unit is based on 7th grade art and math standards, but could easily be adjusted and used in any grade in math or art class. Students use measuring tools (ruler, yardstick, and tape measure) after a brief review of how to use them and unit squares to measure perimeter, area, and volume. Manipulatives will be used to create polyominoes and nets for hands-on experiential learning. Students will learn how 2-Dimensional shapes can be folded to make 3-Dimensional forms using nets. The replication of the area of a square shape to form the planar surface area of a cube will be investigated. Art skills will be used to add texture and color to a student created net that will then form a cube. Students will work in groups with their cubes to form tetradic cuboids. They will then choose a tetradic cuboid to create a net template of, then use it to cut out clay slab pieces. Finally, students will piece together and create a ceramic tetradic cuboid based on the paper cube arrangements. Steps for integrated differentiation are included in the unit activities.

(Developed for Art, grades 7-8; recommended for Math, grades 5-10, and Art, grades 6-9)

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