

The Golden Ratio: Making Math Beautiful

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Synopsis

“The Golden Ratio: Making Math Beautiful” is a unit based on research of the Golden Ratio and its use in art, architecture, and photography. The Golden Ratio is thought to be aesthetically beautiful. Once called the “Divine Proportion,” the Golden Ratio seems to have been employed by many artists and architects throughout the ages, whether purposefully or as an interesting coincidence. The unit explores this through the use of Golden Rectangles, constructions, measurement, proportions, Fibonacci numbers, and Algebra. Mathematically, students will explore the number ϕ , how to derive the irrational number algebraically, and its relationship to the Fibonacci sequence. Students will construct a Golden Cut and a Golden Rectangle. These constructions will be used in activities to discover if the Golden Ratio is used in various architectural structures, in pieces of artwork, and in the way in which photographs are composed. Students are also encouraged to explore ratios in everyday rectangular objects and in the human form through the use of measurement and proportions. The unit will culminate with an art project in which students will create an original work that incorporates the Golden Ratio or Fibonacci Numbers in some way.