The Art of Trigonometry

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Synopsis

This curriculum unit is intended to help students of Advanced Functions and Modeling (AFM) and/or Honors Pre-Calculus understand and use the trigonometric functions   , and   , and their associated graphs.

   The unit starts with refresher lessons on the basic trigonometric ratios in right triangles and applications of trigonometry. It then covers the concepts of: the unit circle, trigonometric functions for angles in standard position, the Laws of Sines Cosines, radian measure, arc length and area of circular sectors, and, the graphs of the functions   and   .

   The final component of the curriculum unit is the visual art aspect. Students will look at and look for art that has trigonometric functions visually incorporated in it. They will spend time using various internet resources to explore sinusoidal curves and experiment with geometric transformations of those curves, using computer graphics to generate ideas for an original work of art. Then they will be assigned a project which gives them the chance to get creative and create an original work of art, in the medium or mixed media of their choice, which uses or visually represents one or more of the trigonometric functions.