1145-D1-2772   **Sandy M. Spitzer*** (`sspitzer@towson.edu`), 8000 York Road, Mathematics Department, Towson University, Towson, MD 20705, and **Julia M. Daniel** (`danie22@students.towson.edu`) and **Alexandria H. Wilhelm** (`awilhe5@students.towson.edu`). *Transformed by Escher: Discovering the Art and Mathematics in a Regular Division of the Plane.*

M. C. Escher's artwork involving tessellations has intrigued students alike for generations, and has the potential to spark students' interest in mathematics through its connection to the visual arts. Escher drew inspiration for his artwork from Islamic tiling that he found in the Alhambra, a Moorish stronghold in Granada, Spain. Just as Escher unraveled the underlying geometric properties of Islamic art, this presentation will illuminate the mathematics behind Escher's artwork. We will explore regular tilings of the plane and engage participants in an investigation into how the interior angles of a polygon are related to whether and how it can tessellate. Then, we will demonstrate how Escher created modified polygons to tessellate a plane through a series of transformations. We use three of Escher's images (Pegasus, #105; Horsemen, #67; and Flying Fish, #99) to illustrate how translations, rotations, and glide reflections can create a recognizable figure. Finally, we will challenge participants to test their skills as they examine examples of Escher's iconic tessellations to decipher the underlying polygon and type of transformation that he used to create each piece of art. (Received September 25, 2018)