ZMATH 2012a.00514

Siegrist, Raymond

Inquiry into fractals.

Math. Teach. (Reston) 103, No. 3, 206-212 (2009).

From the introduction: The exotic images of fractals often pique the interest of high school mathematics students, and this interest presents an opportunity for geometry teachers to draw students into an investigation of transformations and patterns. By using a simple building block and fractals' self-imaging characteristic (as the figure grows, it retains the pattern established by the building block), teachers can bring construction of fractals into the high school geometry curriculum. The three activities described in this article engage students in constructing a fractal, searching a fractal for patterns, and using transformations to build different fractals. Students gain insight into patterns as their fractals grow; they flip or rotate fractal pieces by following a design and translating the pieces into place.

Classification: G50 I90 U70 R20
Keywords: construction of fractals; student activities; Sierpinski triangle; Sierpinski fractal family; construction matrix; congruent transformations; computer graphics; word processing software; rotations; reflections