

The Many Lessons in Fractals

Fractals are what many people think of when they think of Mathematics and Art. Fractals are rich with lessons in basic and advanced mathematics, along with computer programming techniques. This talk will demonstrate a few assignments using fractals in a course in which mathematics and basic programming is covered. Students program fern fractals to demonstrate affine linear transformations and programming techniques. The basic geometry of complex numbers are introduced to program variations of the Chaos Game. Complex numbers are again used in line replacement fractals such as Gosper Island and the Koch Snowflake. The students also review geometric sequences in this assignment. These assignments can easily be adapted to accommodate any programming level of the student and the course.