Why do so many spectacular spirals appear in the coneflower and sunflower pictured above? Why are the seeds in each packed so efficiently?

A marvelous combination of plant biology, mathematics, and a computer model enables us to generate seeds according to a fixed angle of rotation, experiment with different angles, and explore patterns in the numbering of seeds. In so doing, we discover some startling connections between a famous number and the ubiquitous Fibonacci sequence that help explain these spiral patterns and the evident beauty that captures our eye. Along the way, we’ll also discuss the nature of mathematics and think about some of the deep observations and questions about mathematics posed by a few of humankind’s greatest minds.

“How can it be that mathematics, being after all a product of human thought independent of experience, is so admirably adapted to the objects of reality?”

-Albert Einstein