Fibonacci Gaps

Madeline Ceccia and Martin V. Bonsangue
California State University, Fullerton

The Fibonacci number sequence has been a source of fascination for both mathematicians and lay persons for hundreds of years. In this article we look not at the Fibonacci numbers, but at the numerical negative space, or gaps, between them. These Fibonacci Gaps are based on the number of natural numbers between two successive Fibonacci numbers. We prove the relationship between the Fibonacci sequence and their related Fibonacci Gaps, and explore other mathematical relationships found in these gaps.

Keywords: Fibonacci numbers, Fibonacci gaps, number theory

Madeline Ceccia is a third-year undergraduate mathematics major at California State University, Fullerton. She has long been fascinated by Fibonacci numbers, and wondered, “What if ...?” which led to the idea of the Fibonacci Gaps.

Martin V. (Marty) Bonsangue has taught mathematics at the middle school, high school, community college, and university levels. He is the author of more than fifty articles and technical reports on mathematics teaching and learning and has served as principal investigator on more than eight million dollars in federal grants. In 2011, he received the Outstanding Professor award at California State University, Fullerton.