
Concordia University Irvine’s general education mathematics course is taught to all freshmen regardless of major, and focuses on Great Works of mathematics (including “Liber Abaci”, “Elements” and Cantor’s Theorem) and the impact these Great Works have had on how people think. After attending IBL workshops ourselves, we realized the ineffectiveness of teaching these topics through traditional lecture, so have restructured our course to use IBL strategies utilizing active learning and groupwork. These activities allow students working in groups to ask questions, observe and generalize patterns and “re-invent” mathematical concepts on their own. Specifically, students discover the golden ratio from the Fibonacci numbers, generalize patterns using the Fibonacci numbers, investigate non-Euclidean geometries using spheres and hyperbolic surfaces, and determine that different sizes of infinity must exist. These active learning lessons have encouraged deeper discussions of mathematics, and students are more engaged with and in conversations about mathematics both in and out of the classroom. In this talk we will highlight activities we use in our general education mathematics course, and discuss changes we have seen in student involvement, attitude and success in the course. (Received September 17, 2019)