

Building an Open-top Box: A New Look at a Familiar Problem

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We take a fun new look at a familiar optimization problem from Calculus I. This miniproject is both mathematically rigorous and whimsical, inviting the students to be creative and to build. Students do the calculus and build paper open-top boxes at home. On the due date, everyone brings their boxes to class. Students (and faculty) enjoy seeing their calculus work displayed on a teacher's table full of optimal open top boxes of different shapes and sizes!

Keywords: calculus, optimization, projects, active learning



Jennifer Switkes received a BS from Harvey Mudd College in 1994, an MS from Claremont Graduate University in 1996, and a PhD from Claremont Graduate University in 2000. After teaching briefly at Citrus College and at the University of Redlands, she joined the tenure-track faculty at California State Polytechnic University, Pomona in 2001. Her primary mathematical interests are in mathematical modeling and operations research. She has volunteered extensively with the Prison Education Project, teaching mathematics and leading STEM-faculty seminars at a prison in Southern California.