

1096-97-1928      **Heidi Burgiel\*** (hburgiel@bridgew.edu), Mathematics Department, Bridgewater State University, Bridgewater, MA 02325. *Shapes (and Rates) of Vases*.

This activity found in middle- and high-school classrooms promotes deep understanding of rates of change, including second derivatives.

Pour 10cc of water into a vase, then measure the height of the water. Repeat this process until the vase is full, then graph height vs. volume. How is the shape of the graph related to the shape of the vase?

In discussing the results of this activity, students who have never taken calculus offer observations about rates of change and increasing and decreasing slopes; in this context the second derivative is accessible and tangible. (Received September 16, 2013)