

**ZMATH 2013f.00798**

**Spence, Thomas; Calzada, Maria**

**How many calories: an applied project.**

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From the introduction: We present an interdisciplinary project suitable for assignment in an introductory computer programming or scientific computing class. Students are asked to analyze temperature data from a calorimetric experiment to determine the caloric content of a bag of potato chips. Numerically it involves simple least squares linear fitting and integration. Computationally it requires data input and output, graphing, while loops, and if statements. The idea is to integrate techniques that students often learn independently into an applied project that has immediate meaning to the students. In using these mathematical and computational techniques to find the solution to a chemistry question the student can see interconnections in these disciplines and learns to value learning as applicable in the world.

*Classification:* M65 U75 R25 K45 N55 K85

*Keywords:* modeling; interdisciplinary instruction; approximation; least squares; MATLAB