1096-P1-1868 **Elizabeth Biernat*** (ebiernat@brynmawr.edu), Department of Mathematics, Bryn Mawr College, Bryn Mawr, PA 19010, **Victor Donnay** (vdonnay@brynmawr.edu), Department of Mathematics, Bryn Mawr College, Bryn Mawr, PA 19010, and **Hannah Weinstein** (hannahjweinstein@gmail.com), Penn Graduate School of Education, University of Pennsylvania, 3700 Walnut St, Philadelphia, PA 19104-6216. *Is it "Worth It" to Change Your Light Bulbs?*

Is it "worth it" to change the light bulbs in your home or school from incandescent to compact flourescent or LED? This intriguing, open-ended prompt is the start of a problem-based unit on mathematical modeling in which students grapple with the question of how to define "worth it" and how to translate their definition into mathematics. To reach their conclusions, students must learn about power (watts and kW) and energy (kWh), and then consider how factors such as cost of electricity, product lifetime, payback time, and even carbon footprints may influence their decision to change the light bulbs. This low-threshold, high-ceiling problem can be approached at a variety of levels and provides opportunities for students to represent mathematics in numerical, graphical and analytical form. The unit concludes with students presenting their findings, focusing on the mathematical analysis that informed their conclusion, and making recommendations for change on campus. (Received September 16, 2013)