1086-P5-2778 **Jennifer Wilson***, wilsonj@newschool.edu. *Mathematics of Pop-up Books.*

The construction and analysis of pop-up books presents a wonderful opportunity to apply concepts from geometry and linear algebra to problems that arise naturally as the "pop-ups" are unfolded. Historically, one of the earlier pop-up books was Sir Henry Billingsley's 1570 English translation of Euclid which included several pages with paper-flaps that could be folded up to create three dimensional figures. With the aid of computational geometry, modern pop-up books have become increasingly intricate. In this talk, we look at a number of simple constructions which lead to questions about area, volume of negative space and angles of orientation and how they change as the pages are unfolded. Students develop their own hypotheses as they experiment with variations on basic constructions. They are then able to test their spatial and tactile intuition using precise mathematical arguments. (Received September 25, 2012)