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*Mathematics, Excel, and Graphic Design in Multicultural Alphabet Books for Papua New Guinea.*

Papua New Guinea is a nation of 6 million people, widely diverse cultures, hundreds of traditional counting systems, and over 800 distinct languages. This presentation describes a multidisciplinary project that combines cultural aspects with such academic areas as art, language, mathematics, and computing science to produce creative alphabet books in the country's three official languages (English, Melanesian Pidgin, Hiri Motu). The innovative visual images in the books consist of modern and traditional objects created employing standard features of Microsoft Excel. The designs incorporate a variety of classical mathematical curves and geometric constructions. Together with the development of a related Web site, the work is designed to be extended to the nation's other languages to help in preserving cultures, to promote renewed interest in children's reading, and as a tool to encourage innovative applications of mathematics and computing in schools and universities. The approach employed is fully adaptable to the languages of other nations. This presentation will not only display examples of the books' full-color graphic designs and artwork, but also will illustrate how mathematics can be used with a spreadsheet to produce eye-catching animated versions of the images. (Received August 11, 2010)