

Developing Computing Outreach Activities

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Abstract

In order to broaden the participation in computing as a field of study, undergraduate students can be trained as mentors to middle and high school students. Encouraging interest in studying computing can be accomplished through outreach activities conducted as part of a mentoring curriculum. These activities can be accomplished in two ways: with and without the use of computers. In this paper, some proposed and previously tried activities will be presented for discussion and comments. Activities without computers involve teaching computing concepts and practicing problem solving in creative ways; one activity used candy buttons (sugar dots on paper that the students could eat after the activity) to encode messages, and another used graph coloring (with crayons) to assign frequencies in a cell phone network. Computer-based activities may require some software development by the undergraduate students.

At the University of Cincinnati in the Electrical and Computer Engineering Department, we have begun planning activities with community partners to train undergraduate computing students to work with youth and develop outreach activities. Two of the community partners are the Cincinnati Youth Collaborative and The Cincinnati Arts and Technology Center. Both are non-profit organizations that serve Cincinnati Public Schools. The effort has been recommended for funding by the National Science Foundation under the Broadening Participation in Computing program.

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