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Stewart W Hengeveld* (hengevels1@mail.montclair.edu), 27 Mountain Road, Wayne, NJ 07470. *Integrating Graduate Research into the Middle School Class Room*. Preliminary report.

In this talk, I will present a project that was designed to integrate graduate level research into middle school classrooms. The project starts with an early secondary level problem involving money and banking. Briefly, the problem deals with dollar bill distribution in certain ways. Solving the problem uses simple methods of counting, basic arithmetic, discrete math ideas, and some graphic techniques. Students involved in the project will have the opportunities to attempt to solve the problem by hands-on activities and mathematics manipulations assisted by the teacher and the graduate fellows. After students have thoroughly understood the problem and explored simple ways to find solutions, the graduate fellows will show students how to apply advanced algebraic techniques and algorithms to solve the problem. This illustrates and emphasizes the need and usefulness of mathematics beyond the classroom. It is expected that through activities like this, students raise the level of their mathematics skills, critical thinking, logical reasoning, and appreciation of mathematics. This project was developed with the support of the GK-12 grant under the NSF at Montclair State University (NSF Award #0638708). (Received September 22, 2010)