Math 2008, Foundations of Numbers and Operations, is a course designed specifically for early childhood education majors. The course emphasizes the understanding and use of the major concepts of numbers and operations and provides the students with not only the basic principles of mathematics, but with multiple strategies, tools, and manipulatives needed to teach these principles in an early childhood classroom. Over the past two years, we have incorporated a Service Learning component into the course on the Dunwoody Campus. The Service Learning project allows our students to visit Kingsley Charter School for at least 10 hours during the semester. GPC students work with K-5 teachers at Kingsley, helping them in the classroom, providing individual and small group tutoring to children in need, and even teaching entire math lessons in some instances. The service learning project promotes leadership, personal responsibility, and establishes partnerships with the community and GPC. In addition, the project enhances the academic knowledge of the students and includes structured activities to help increase children’s understanding of mathematics.

The culmination of the students’ service is a Family Math Game Night designed to foster an interest in, and appreciation for mathematics among elementary school students. The Game Night provides Early Childhood Education majors the opportunity to interact with large groups of students in preparation for a career in teaching at the elementary level. The Math 2008 students are an integral part of the planning and implementation of the event. Thus far, we have held two Games Nights, and the events were very well received by the children and their parents. Thanks to a STEM Mini Grant awarded two years ago, we were able to purchase games and activities for the event. The Math 2008 students worked in teams, two to three members per team. Each team was assigned a game dealing with a different mathematical concept at different grade levels. The teams were responsible for explaining the game rules to parents and children as well as assisting at the game tables. Each team created a colorful display for the game table illustrating their particular topic. In addition, each team was responsible for providing at least two other math related activities at their respective game tables which emphasized their topic. For example, some teams incorporated math across the curriculum by including activities involving math and music, math and art, math and literature, while some activities involved
amusing and intriguing mathematical puzzles, riddles and mathematical tricks designed to pique children’s curiosity and capture their attention. Other activities incorporated into Math Game Night included a display of M.C. Escher tessellation designs in which the children discovered which geometric figures tessellate as well as creating their own tessellation artwork. Another activity, called Cartesian Cartoons, allowed students to discover the Cartesian coordinate system by plotting points and making fun pictures which they later decorated.

This past semester, in addition to the board games, we included a new feature called “Math Quiz Show” for grades K-3, and grades 4-5. There was a lot of laughter and excitement as students competed for prizes in a game show format. The Quiz Shows proved to be the most popular feature at Game Night this year. Due to the positive feedback we received from our last two events, the Assistant Principal asked if we could offer the Family Math Game Night twice a year, one in the fall and again in the Spring. For this reason, I respectfully request funding for the purchase of additional Quiz Show games, such as Math Jeopardy, and others so that we may set up more game stations for children and parents and increase participation. In addition, since Math Game Night takes place after school hours and close to dinner time, we would like to offer some refreshments such as pizza and drinks for children and their families.

The service learning project, including Family Math Game Night, has enhanced the academic knowledge of preservice teachers by providing practical, hands-on experience in the K-5 classroom. Through this experience, GPC students gain insight into how children process mathematics concepts. In addition to involving all Dunwoody Campus Math 2008 students, math students from other campuses are invited to volunteer at the event, helping at the registration table and assisting children at the game and activity tables. The project provides structured activities for students to reflect on their service experience. All games and activities purchased will be shared with all Math 2008 faculty members who wish to incorporate this service learning component into their classes.

At the conclusion of each event, Math 2008 students will be required to submit a reflection paper describing their experiences working with the children and the impact on their career choice. Students’ summaries will be compiled and shared with the mathematics and education faculty.