Research Design:

Three Activities were conducted in sequence over three separate days. Use of manipulatives and peer collaboration were noted. Two kinds of manipulatives were available—3d designed round stackable pegs and craft sticks. Both were colored and a numeric key was provided.

Activity 1- Day One

The first activity was adding and subtracting money. We noticed that the students had the most success with getting questions correct on this day. There were five questions: two addition problems and two subtraction problems. The average questions correct was 2.19. It was common for students to just do addition for all of the problems instead of paying attention to the sign used. Many students had their own methods, but some used the math manipulatives. Many students assigned their own values to the math manipulatives instead of using the key because it was their preferred method, and it worked for them. We did notice some students using the math manipulatives as noted on the numeric chart and we kept track of their work. The children were not identified as gifted and talented but the way in which they used the math manipulatives, their factoring, and the way they interacted with peers and researchers, indicated that they may be gifted. Two students had been identified as gifted and talented and they averaged a four out of five, but they used the math manipulatives differently than indicated from numeric coded chart.

Activity 2 - Day Two

The second activity was based on identifying place values: ten's place, one's place, and tenth's place. Our data showed that there was a dramatic decrease in the number of correctly answered questions. The average answers correct out of five was .25. Many of the students seemed confused and just added the numbers they saw together instead of following the example and identifying the place value. We believe that this could indicate that the students have not covered this lesson yet this year despite it being part of the first-grade standards. It is still early in the year, so this seems to be the most likely cause behind this decrease in the average. We did notice that one of the two students that we indicated as gifted got four out of five of the questions correct. We observed him using the math manipulatives and looking at the example to help him. The two students who had been identified as gifted and talented got zero out of five correct. They did not use the math manipulatives or look at the example, so we believe they were confused since they had not learned it yet. We believe that if we were able to work one on one with the students, they would have an easier time understanding the activity.

Activity 3 - Day Three

For the third activity we read the students a page from a book about monsters going to the market. We made photocopies for the students to complete the two problems from the book. These problems were simple addition and subtraction problems. Most students correctly answered the problems; some utilized the math manipulatives to solve them. Then we gave the students a worksheet on which they had to convert “American” currency to “Mexican currency.” This was based on conversions of tens place. We knew this activity would be a bit more challenging for students, but we wanted to see how they would use the math manipulatives to help them find the answers. The students averaged 1.39 answers correct out of five. This was a new concept to the students, but many of them asked questions to help them work out the problems. We found that when students asked questions they did much better on the activity which led us to believe that students would do much better if they were able to work instructor-learner. The students who have been identified as gifted and talented got zero out of five correct. The non-identified but possibly gifted and talented students averaged 1.5 out of five questions correct. The non-identified students correctly utilized the math manipulatives and worked together to solve the problems which led to a better understanding of the concept.